Against Rigidity

An investigation of the semantics and pragmatics of indexicality

by

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Abstract

Saul Kripke, for whom the paradigmatic de jure rigid designator is the proper name, suggests that the link between such a name and its designatum is first established at an 'initial baptism' and that the link thus established is maintained by means of a 'causal chain'. One of the most significant properties claimed for such a designator is that its propositional meaning is exhausted by its referent. A second claim is the more mysterious one concerning the transworld identity of objects designated in this way.

David Kaplan prefers to use the expression 'directly referential' to describe the semantic function of such terms. For him the paradigmatic directly referential term of natural language is the pronoun used indexically. He claims that such terms are also de jure rigid designators which contribute objects, not descriptions, to propositions.

These two theses are closely associated, and it is against them both that I wish to argue as they give rise to a range of problems. In chapter one, some of the traditional philosophical problems are introduced. It is also suggested that there are additional, linguistic, reasons for believing the theses of rigid designation and direct reference to be mistaken.

In chapter two certain problems arising from the assumption that indexically occurring pro-terms are directly referential are investigated in greater detail. In chapter three an alternative analysis of indexical reference, developed from Geoffrey Nunberg's model of indexicality, is presented. In chapter four the distinction between indexicality and deixis is investigated, and in chapter five I argue that the analysis of indexical interpretation developed in the previous chapters may be extended to include anaphoric reference also, thus providing a unitary semantic model for all the functions of pro-terms.

Finally, the viability of this model is tested with respect to well-known problem utterances. The results of these tests are encouraging.
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I must also acknowledge my indebtedness to Saul Kripke, David Kaplan and François Recanati, whose writings inspired my research. My greatest debt in this respect, however, is to Geoffrey Nunberg, on whose theory of indexical reference my own thesis is based.

At this point, I must add the usual disclaimer. None of the above-mentioned linguists or philosophers is to blame for any shortcomings in what follows. The mistakes are mine.

Lastly, I must thank my family, some of whom have grown up while I have been working my passage to that geriatric ward. They have always encouraged me, and I'm grateful.
Introduction

As should be apparent from the title, the avowed aim of this thesis is to question the validity of the doctrine of rigid designation. The challenge, however, is of a limited nature. I do not question the claim that it is possible to construct formal languages with respect to which the free variables denote - as is required of rigid designators - the same entity across worlds or, as Kaplan might say, in all circumstances of evaluation. I do, however, question the ancillary claim that the free variables of logic may be analogised in the relevant respect to the pronouns, and other pro-terms, of natural language.

Furthermore, although the problems which I associate with the thesis of rigid designation are introduced in the context of their relation to proper names, the subsequent argument is not pursued at this level. It is focused rather on the question of whether the so-called 'indexicals' of natural language are indeed directly referential - and consequently rigidly designating - as it is claimed they are, or whether we should seek some other analysis of their interpretative function.

I reason that if the rigidity of indexically used pronouns is effectively called into question, then this opens the door to a related investigation concerning the rigidity of proper names. To this extent, the entire thesis might be seen not as an end in itself, but rather as a prolegomenon to that related further investigation.

The stages of my argument are relatively simple and straightforward. In chapter one I introduce the concept of rigidity as it applies to proper names. It is fitting that I should start with such terms despite the orientation of the subsequent investigation, as the expression 'rigid designation' was originally coined by Saul Kripke to describe the referring function of proper names.
In the opening chapter I also introduce a range of problems that are associated with the thesis of rigid designation as it relates to proper names. Some of these problems are already well-documented in the philosophical literature, and are therefore discussed only briefly, others are less familiar, possibly even novel, and are discussed at greater length.

The purpose of the opening chapter is to explain why I feel that a further investigation of the expressions that are claimed to be rigid designators should be undertaken. In other words, my purpose is not to explore the nature or properties of rigidity itself, but rather to investigate further the interpretative functions of the terms that it is claimed bear these properties.

Furthermore, I would hesitate to claim, even with respect to the subsequent chapters in which specific arguments against the combined theses of direct reference and rigid designation, as they relate to indexically occurring expressions, are presented, that these arguments constitute a definitive refutation of these theses. What I do suggest is that out of these arguments there arise serious questions which the rigid designation theorist might be well advised to address.

The most fundamental and searching of these questions are raised in chapter two, and they relate to the positing - by Recanati - of the semantic feature REF as a mandatory component of all directly referential terms. I suggest that the purely linguistic implications of assuming such a feature as a component of indexically occurring pro-terms lead to conclusions that, for the direct referentialist, should be - at the very least - disquieting. I further suggest that this feature, or its functional equivalent, is either entailed or implied by both Kripke's and Kaplan's arguments relating to rigid designation and direct reference.

Another significant conclusion to emerge from the arguments presented in chapter two is that the pro-terms of natural language are univocal across their functions.
That is to say, I argue that both anaphoric and indexical occurrences of such terms involve the use of a single lexical type rather than the use of homonyms.

In chapters three and four I develop an alternative analysis of indexical interpretation. This account is based on the work of Geoffrey Nunberg, and although my analysis differs in certain significant respects from his, my completed model is essentially a modification of Nunberg's.

Finally, in chapter five I suggest that if the conclusion that the pro-terms of natural language are univocal across their functions is correct, and if the analysis of indexical reference presented in chapters three and four is also correct, then it should be possible to make accurate predictions concerning the interpretation of anaphoric utterances also. This possibility is investigated and predictions concerning anaphora made on the basis of the analysis of indexical interpretation appear to be borne out.

This is encouraging. Furthermore, although the somewhat brief investigation of anaphora is introduced primarily as a test of predictions, the consequent emergence of a unitary semantic analysis which is applicable to pro-terms in all their functions, thus unifying the semantics of anaphora and indexicality (deixis), is gratifying.

However, there is still much work to be done. Not only does the question of the referring function of proper names remain open, but it is also the case that many pressing questions relating to anaphora have not been broached either. Peter Bosch, for example, posits a division of anaphoric pronouns into two distinct categories - syntactic and referential. It would, therefore, be instructive to investigate how - or whether - such an analysis might be incorporated into the model developed in this thesis.

Francis Cornish has also developed an account of anaphoric interpretation - briefly discussed in chapter five - that is of equal interest, in that it is closely
analogous in certain significant respects to the model of indexical reference that is presented here. Furthermore, Cornish's more notably cognitive approach suggests ways in which my own model might be expanded and enriched.

I would say, therefore, that not only do I view this thesis as a prolegomenon to an investigation of proper names, but I also suggest that it may be seen as a prelude to an extended investigation of anaphora.

It also occurs to me that the final chapter invites further investigation in a rather more unexpected direction. When I embarked on this thesis I assumed that the distinction between indicative meaning and descriptive meaning was relatively clearcut. I also accepted (as I was taught) that in the context of meaning the terms 'indicative' and 'descriptive' are virtually interchangeable with the terms 'procedural' and 'conceptual' respectively. However, as I wrote the final chapter the distinction began to seem less readily definable than I had originally thought. Furthermore, it became apparent that indicative meaning should not be equated with procedural meaning. I have even begun to doubt the existence of the latter.

It seems to me that the problem that requires further thought concerns how - or whether - we might define the distinction between true indicativeness and mere descriptive incompleteness. With some regret I have had to leave this puzzle unresolved.

Taken as a whole, therefore, I repeat that I see this thesis as constituting an approach to further beginnings rather than as leading to an ending. In particular, I do not claim to have laid to rest the thesis of rigid designation. However, I do suggest that the alternative model of indexical reference developed here offers solutions to many of the interpretative problems associated with such reference, and that these solutions are arguably more satisfactory than those offered by the combined theses of rigid designation and direct reference. I also believe that the questions asked and the problems raised with respect to these latter theses deserve a response and warrant further investigation.
1. Introduction

Although the following discussion will be focused on indexicality, I will make proper names my starting point. This is because it was almost entirely due to my strongly held views concerning the thesis of rigid designation as it applies to proper names that I ever embarked upon the investigation of indexicality. Indexically used expressions are also held to be rigid designators, and it occurred to me that if the thesis of rigidity could be shown to be unworkable with respect to one of these two categories, then it might be radically undermined with respect to the other. It also became apparent that powerful and persuasive arguments might be raised against the claim that pronouns and other indexically occurring terms are rigid designators, and that analogous arguments are not so readily available with respect to proper names.

It, therefore, became increasingly clear to me that if I wished to challenge the thesis of rigid designation, it might be sensible to direct my initial efforts towards the construction of a new model of indexical interpretation and leave proper names for later, and this is what I have done. Nonetheless, Saul Kripke is the acknowledged 'founding father' of the thesis of rigidity and he relates his arguments almost exclusively to proper names. Therefore, in this opening chapter I will summarise the views and concerns relating to proper names that initially motivated my research.

2. The Millian perspective

Proper names are not connotative: they denote the individuals who are called by them; but they do not indicate or imply any attributes as
belonging to these individuals. When we name a child by the name Paul, or a dog by the name Caesar, these names are simply marks used to enable those individuals to be made the subject of discourse. (J.S. Mill, 1843, 1896, *A System of Logic*, p 20).

Saul Kripke (1980), in his monograph *Naming and Necessity*, resurrects this Millian view, according to which proper names are no more than convenient, but meaningless labels. It typifies an approach which has given rise to numerous, apparently intractable, difficulties, and which has been challenged by both Frege\(^1\) and Russell.\(^2\)

Now, after a century of argument and theorising, it might be said that in some respects little has changed. The revived Millian view of proper names still gives rise to the same range of problems. It is not my purpose, however, to embark on a discussion of Fregean or Russellian philosophy, nor even to conduct the following investigation at a philosophical level.

Furthermore, although I shall in this introductory chapter review, briefly, certain problems which have surfaced in the philosophical literature, and which are directly attributable to the Millian view, my main objective is to discuss other, linguistic, problems which arise, not in the literature but as a corollary of it. In chapter two, I focus on one such difficulty, and in the following chapters I endeavour to resolve it. I shall not, on the other hand, endeavour to resolve the classic problems of Millianism.

Although my arguments in subsequent chapters will be almost wholly linguistic in orientation, some discussion of the philosophical background is necessary. This discussion, however, will be kept to a minimum. Furthermore, it is arguments concerning the related theses of rigid designation and direct reference, rather than the earlier philosophical theorising of Frege and Russell, that constitute the true

\(^1\) See Frege (1892, 1980).
\(^2\) See Russell (1905, 1985) and (1918, 1985).
starting point and focus of this investigation. However, it is important to note that 'rigid designation' and 'direct reference' are not notational variants. In this introductory chapter, the concept of rigid designation will be introduced and described. Direct reference, on the other hand, will not be discussed until chapter two.

It is undoubtedly the case that Kripke's characterisation of proper names as being both Millian and rigidly designating has considerable intuitive appeal. Nonetheless, there are four quite distinct reasons why I believe this characterisation to be flawed. One of these reasons is pitched at a largely, although not entirely, atheoretic and intuitive level. These initial intuitions are given further support, at a linguistic level, by morphological evidence that is difficult to account for if the Millian/Kripkean picture - sometimes called the 'Fido'-Fido' view - of proper names is accepted. Finally, at a philosophical level, there is an apparently unresolved incoherence. These four reasons for instituting this inquiry may be summarised as follows:

I. The thesis of rigid designation, as defined by Kripke, effectively restores the Millian view of proper names, according to which the meaning of a name is exhausted by its referent. In resurrecting this view, Kripke also resurrects the problems associated with it.

II. Kripke's stipulations concerning the identity of individuals, on which the thesis of rigidity depends, are at variance with certain intuitions expressed by other researchers (and experienced by myself) regarding how proper names are actually used.

III. Linguistic facts concerning the productive morphology of proper names are not readily compatible with the thesis that proper names have no descriptive content.
IV. There is considerable confusion in the philosophical literature regarding the definition of rigid designation.

In discussing these four issues I hope to show why I feel that a renewed inquiry into rigidity is warranted. However, in themselves, points I to IV are not intended to serve as arguments demonstrating the falsity of the thesis. More precisely, such a demonstration is not my primary aim in this chapter, although - perhaps inevitably - there is some overlap in intentions.

3. The traditional problems

These fall into three major categories; each category being associated with a specific 'puzzle'.

3.1 Frege's puzzle

This concerns identity statements. If the Millian (or some essentially similar) view of proper names is correct, why does (1), below, appear to be informative, whereas (2) is clearly tautologous?

(1) Cicero is Tully.

(2) Cicero is Cicero.

The problem is broached by Frege:

... if we were to regard equality as a relation between that which the names 'a' and 'b' designate, it would seem that $a = b$ could not differ from $a = a$, (provided $a = b$ is true). (Frege, 1980, p 56).

Frege's well-known solution is to postulate the bifurcation of meaning into two distinct components: Sinn and Bedeutung, with Sinn being invariably rendered into English as 'sense' and Bedeutung being variously translated as 'nominatum',

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'denotation', 'reference' and 'meaning'. This solution is more complex than it first seems; for although Frege writes as though sense were a unitary concept, in fact he requires it to fulfil three apparently distinct functions. These are identified by Tyler Burge and summarised by Nathan Salmon:\(^4\)

\[\text{Sense}_1:\] The purely conceptual representation of an object which a fully competent speaker associates in a particular way with his or her use of the term. Sense\(_1\) is a psychological or conceptual notion...

\[\text{Sense}_2:\] The mechanism by which the reference of the term (with respect to a possible world and a time) is secured and semantically determined. Sense\(_2\) is a semantical notion.

\[\text{Sense}_3:\] The information value of the term; the contribution made by the term to the information content of sentences containing the term. Sense\(_3\) is a cognitive or epistemic notion... (Salmon, 1982a, p 12).

David Kaplan\(^5\) sees this conflation of functions as problematic and, in his analysis of indexically used expressions, sense\(_2\) is replaced by character and sense\(_3\) approximates to content, although Kaplan comments that his notion of content 'is closer to Russell's signification than to Frege's Sinn'. (1989b, p 568).

In this thesis, I shall not be committed to this Fregean analysis, and the terms 'sense' and 'meaning' will be used largely intuitively and in a pre-theoretic manner. However, when the term 'meaning' is prefaced by 'linguistic' or 'encoded,' then it relates to the constant semantic content of the term that bears it. It most definitely does not relate to Bedeutung, or 'meaning' in the Fregean sense, but possibly approximates more closely to his Sinn. Finally, the Fregean view that meaning is compositional is embraced.

\(^3\) See Burge (1977), p 356.
\(^4\) See also Linsky (1977).
\(^5\) See Kaplan (1989a) and (1989b).
3.2 Russell's puzzle

This concerns 'empty' reference in general, and by extension vacuous names. Russell discusses the problem with respect to examples, the best-known of which is reproduced as (3) below:

(3) The present King of France is bald.

The difficulty is this: How can an utterance of (3) be evaluated for truth or falsity when there is no King of France, that is to say when the definite description has no reference? The puzzle may be extended to include proper names; in the extreme case it takes the form of a negative existential:

(4) Father Christmas does not exist.

If the Millian view is correct, and the meaning of a proper name is exhausted by its referent, how can we even understand (4) if it is true?

The puzzle is resolved by Russell in two stages:

Stage 1: The elimination of definite descriptions from propositions. This is done by assuming a quantificational analysis for descriptions. Thus (3) may be formally expressed as (5):

(5) \( \exists x (Fx \& \forall y (Fy \rightarrow x = y) \& \text{bald}(x)) \)

\([F = \text{The King of France}]\)

This may be read as (6):

(6) There exists an entity \( x \), such that \( x \) is the King of France, and for every entity \( y \), if \( y \) is the King of France then \( x \) is identical to \( y \), and \( x \) is bald.
For the sake of simplicity the pre-modifier 'present' has been omitted from (5) and (6). However, assuming this quantificational analysis, (3) may now be straightforwardly evaluated for truth or falsity.

Stage 2: The assimilation of proper names into definite descriptions. This is done by postulating that every proper name is a disguised description.

The names we commonly use, like 'Socrates', are really abbreviations for descriptions ... when we use the word 'Socrates' we are really using a description. Our thought may be rendered by some such phrase as, 'The Master of Plato', or 'The Philosopher who drank the hemlock', or 'The person whom logicians assert to be mortal', but we certainly do not use the name as a name in the proper sense of the word. (Russell, [1918], 1985, p 62).

This two-stage solution is well known and will not be discussed further.

3.3 Kripke's puzzle

This is the puzzle about belief. If the Millian view is correct, and the meaning of a proper name may be identified with its referent, rational language users would seem to be capable of holding, simultaneously, contradictory beliefs. For example, Tom may believe ('sincerely assent to') the proposition expressed in (7), while simultaneously and equally sincerely assenting to the contradictory proposition expressed by an utterance of (8).

(7) Tully denounced Cataline.

(8) Cicero did not denounce Cataline.

(adapted from Kripke, 1994, p 355).

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* See Kripke (1979, 1994),
This puzzle is also noted by Frege, who in an attempt to resolve it appealed to the
distinction between oratio recta and oratio obliqua. According to Frege, in oratio
recta a name 'expresses its sense' but 'means or designates its meaning' (Frege,
1980, p 61), whereas in oratio obliqua (reported speech or intensional contexts) a
name refers to its sense not its usual referent. However, if the thesis of the
rigidity of proper names denies sense to such names, it is difficult to see how this
solution could be available to it.

This should not be taken to imply that no solutions have been suggested; indeed
there is an extensive literature on the subject. Perhaps the most promising
approach is that identified by Schiffer as the 'hidden-indexical theory':

The theory begins by holding that the relation expressed by "believes" in
sentences of the form "A believes that S" is a three-place relation,
B(x,p,m), holding among a believer x, a mode-of-presentation-less
proposition p, and a mode of presentation m under which x believes that p.
Thus it is possible for x to believe p under one mode of presentation m
while believing not-p under a second mode of presentation m', and while
suspending judgement altogether under a third mode of presentation m''
(Schiffer, 1995, p 108).^3

Schiffer believes that he detects serious problems (which I will not discuss here)
inherent in this theory. Ludlow, among others, believes these difficulties may be
overcome. I don't know who is right, or how much the hidden indexical theory
can contribute towards resolving Kripke's puzzle. However, I believe there are
other problems associated with the theory of rigid designation, which the hidden
indexical theory could do little to resolve. Some of these problems will be
discussed below. Furthermore, by reinstating the Millian view of proper names,

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^8 See also Crimmins and Perry (1989), Richard (1990), Fodor (1990) and Recanati (1993).
^10 See Ludlow (1996).
Kripke also resurrects Frege's and Russell's problems concerning identity statements and empty names.

Finally, although there are significant differences between the Fregean and the Russellian solutions to their individual puzzles, both of which purport to resolve Kripke's puzzle also, a discussion of those differences will not be undertaken here. Kripke also ignores the differences and focuses on the similarities. It is the fundamental thesis that proper names have descriptive content and are, indeed, disguised descriptions - a thesis that he attributes impartially and not quite accurately to both Frege and Russell - that he challenges.

4. Kripke's 'picture'

As has already been indicated, Kripke challenges the theory that proper names have descriptive content. It is therefore incumbent on him to explain how such terms succeed in referring.

4.1 The causal chain

Kripke's suggestion is that proper names are linked to their referents by a causal chain. This chain stretches, unbroken, from the original naming event through an indefinite number of utterances, to its most recent use:

> When a name is 'passed from link to link', the receiver must, I think, intend when he learns it to use it with the same reference as the man from whom he heard it. (Kripke, 1980, p 96).

Kripke seems to imply that this is *all* the hearer/speaker standardly intends, but this is implausible. Furthermore, it is not borne out by the empirical data. When a language user hears a proper name for the first time, in the absence of the actual referent, he normally requires that it be accompanied by some identifying (although not necessarily uniquely so) description. Ariel comments on this requirement:
Languages that do not impose a grammatical distinction between familiar and unfamiliar name-bearers dictate instead that unfamiliar proper names should be accompanied by some description. Hence [3a] below is a more natural phrasing of the facts than [3b] when the referent of the name Joan Smith is not familiar ...

[3]  
a  Joan Smith, an IBM engineer from Tel-Aviv, was recently accused by the company of theft.

b  Joan Smith was recently accused by IBM of theft.

(Ariel, 1990, p 40).

Ariel also notes (p 39) that a survey of newspaper articles revealed that all unfamiliar names were accompanied by some, at least partially identifying, description. That is to say, a speaker (or writer) who introduces what might be an unfamiliar name into the discourse does not assume that her hearer will be content to determine to use that name with the same reference - whatever that may be - that the speaker herself intended. The speaker recognises that the hearer is going to require more than this, and to the best of her ability will usually supply what is required. Thus:

Harry Greenway, Tory MP for Ealing North, and a senior member of the committee, wrote to its labour chairman, Greville Janner ... (The Times, 15. 5. 95).

Or:

The Sinn Fein leader Gerry Adams said yesterday that meeting with Patrick Mayhew, the Northern Ireland Secretary, was not a precondition for his party continuing talks with British Ministers. (The Times, 15. 5. 95).
Interestingly, even when there is very little that can usefully be said to identify the bearer of the name, something is almost invariably offered. This is typically demonstrated in local journalism:

Joining in the fun last Thursday was Jean Faulkner who attended the nursery ... in 1940 ... She is pictured with nursery nurse Dorothy Folds and Sam Dennis aged three and a half [emphasis added] ... (Review, St Albans and Harpenden, 11. 5. 95).

Now, let us suppose that it happens that Dorothy Folds, say, is not a nursery nurse, and that this is pointed out to the reader. Will he then be happy in his turn to repeat the news item, saying of Jean Faulkner and Sam Dennis - to both of whom properties are attributed - that they are pictured with Dorothy Folds, to whom no properties are attributed? That is to say, will such a reader-speaker be content simply to intend to refer as the original user did, and to expect his hearers to do the same?

It seems unlikely. What a speaker in such a situation will - again almost invariably - do, is insert into the report the only item of information about Dorothy Folds that he has, and this is that she is called 'Dorothy Folds'. Language users employ this device constantly, as is illustrated in (9) and (10) below:

(9) Someone called 'Jack' phoned while you were out.

(10) He keeps talking about some woman called 'Jasmine'.

I am not suggesting that being a nursery nurse is any part of the meaning of 'Dorothy Folds', or that 'Harry Greenway' means 'Tory MP for Ealing North'. What I do suggest is that names are not simply passed from speaker to speaker like a relay baton. Furthermore, what the evidence seems to suggest, is that if a speaker is to feel that she is using a name rather than merely mentioning it, then she needs to have access to some information concerning the bearer of the name that is
entirely independent of any causal chain. In view of this evidence, how can we be sure - how can Kripke be sure - of just what a speaker of an unfamiliar name intends?

4.2 Possible worlds and rigidity

Even if Kripke is correct concerning intentions, if this were all there were to his picture it might be tempting to view it as little more than an elaborate restating of Mill's views. In fact, Kripke's aims - and his achievements - are considerably more far reaching than this. Although the arguments in Naming and Necessity are informally presented, the underlying philosophy has its roots in mathematical logic. His model of the referential functioning of proper names is part of a much larger edifice. As Putnam (1983, p 56) explains, Kripke assumes a 'set of objects called possible worlds' - an idea originating with Leibniz - in order to combat the difficulties associated with attempts to combine quantifiers and modal operators.

The suggestion is that necessity and possibility may be expressed in terms of this set of worlds; possibility involving at least one such world, and necessity entailing every possible world. Each world is itself a 'model for the non-modal part of language' and 'determines a universe of discourse that the quantifiers range over'. (Putnam, p 56). In this way, the problems attaching to any attempt to combine modality and quantification are not so much resolved as avoided.

From positing a set of possible worlds as a formal mechanism for expressing modality, it is but a short step to the postulation of the trans-world identity of individuals; that is to say of the constancy of individual essences across worlds. This may seem to be a fundamentally metaphysical notion. However, the motivation for the claim is also cognitive and linguistic. That is to say, Kripke's intention is to describe how the language user conceives of the entities she refers to when using a proper name.

11 See Parkinson (1973), pp xii, 54 and 187
Kripke's suggestion is that certain expressions, in particular proper names, refer to entities that have the property of retaining a constant identity across worlds. Such terms are in direct contrast to definite descriptions; for a definite description may denote a different individual (or no individual at all) in each of the worlds in the model.

Thus, according to Kripke, the name 'Aristotle', say, always refers to the same entity - ARISTOTLE - in all possible worlds. (This is a controversial oversimplification, as will become apparent in section 8, below.) The description 'the last great philosopher of antiquity', on the other hand, although it may be satisfied by Aristotle in this world, might be true of some individual other than Aristotle in some other world.

In order to avoid confusion (and forestall objections) I should point out that, for the sake of simplicity, Kripke follows the convention of the 'classical description theorists' in assuming that names have unique referents. He comments:

As a speaker of my idiolect, I call only one object 'Aristotle', though I am aware that other people, including the man I call 'Onassis'... had the same given name (1980, p 8).

It is the constant association of a (possibly ambiguous) linguistic symbol with the same individual across worlds that Kripke calls 'rigid designation'. As has already been noted, this is an over-simplification, for it is not clear whether the linguistic symbol is associated with any individual at all in those worlds in which the customary referent does not exist. Robert Adams suggests that confusion on this point may be avoided if we are careful to observe the distinction between designating in and designating at a possible world:

A singular proposition about an individual x cannot be true in a world in which x would not exist, because the proposition also would not exist there. But we can say that it is true at such a world if it correctly
characterises that world from our vantage point [emphasis added] in the actual world. ... A name or other expression n rigidly designates an object x at (though not in) every possible world. (Adams, 1989, p 33).  

Putnam makes a related point:

When we say 'Aristotle might have been born in Athens', we do not just mean that someone named 'Aristotle' might have been born in Athens. ... What we mean is that the same individual named Aristotle [sic] [in this world]... might have been born in Athens ... [and he] might have been named Diogenes [sic] .... (Putnam, 1983, pp 56-57).

It should be apparent from these two extracts that the distinction between designating in and designating at a world is here related to two quite separate issues. The first, discussed by Adams, is represented by the claim that even at worlds in which an individual does not exist, the name by which that individual is known in this world designates that same individual. The second, introduced by Putnam, is represented by the claim that a name such as 'Aristotle' designates ARISTOTLE even at those worlds in which Aristotle is called by some other name - 'Diogenes', perhaps - and does not designate some individual other than Aristotle who happens to be called 'Aristotle' in that world.

Among rigid designation theorists, the first claim - that made by Adams - is controversial; the second claim - that made by Putnam - is not. Adams' claim will be discussed in more detail in section 8.

If Kripke's ideas are to be understood, it should also be noted that the causal chain theory mentioned briefly above and the theory of rigidity, although intimately related, are at least partially dissociable. An expression may be rigidly designating without being causally linked to its referent. Indeed, this might almost be taken as a definition of de facto rigidity. This relates to definite

13 See also Adams (1981).
descriptions, attributively used in Donnellan's sense, which necessarily designate the same entity in all possible worlds, e.g., 'the positive square root of 16'. However, the fact that this expression, in all possible circumstances of evaluation (i.e., necessarily) designates the same entity - the number 4 - is a fact about mathematics, not about language or the human mind. *De jure* rigidity, on the other hand, is as much about language and the mind as it is about the world. It is Kripke's expressed claim that a *de jure* rigid expression picks out the same entity in all possible worlds by semantic stipulation.

... *de jure* rigidity, where the reference of a designator is stipulated to be a single object .... (Kripke, 1980, p 21, fn 21).

### 4.3 Individual identity

With this much of the theoretical framework now in place, it is possible to return to the second ground for objection to the thesis of rigid designation in general, and its application to proper names in particular - the arguments concerning the identity of individuals.

Any story concerning rigid designation depends, by definition, on the assumption that a unique entity is individuated by its essence; it is these hypothesised essences that are claimed to persist across worlds. They account for the otherwise puzzling claim that there is some possible world, $W_2$, say, in which Aristotle is not a philosopher, is not born at Stegira, never even meets Alexander the Great, and indeed never does any of the deeds by which he is known to us, and at which it still makes sense to say that he is nonetheless Aristotle.

For Kripke, individual identity is essentially linked to origins, more specifically as Putnam says to 'causal continuity', and 'composition' (Putnam, op cit, p 64). Clearly, such a claim may be challenged; and it has been. A.J. Ayer (in an unpublished lecture cited by Putnam) suggests that 'there is nothing wrong with

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14 See Donnellan (1966).
such a modal assertion as "Aristotle might have been Chinese". (p 65). However, such an assertion is not compatible with Kripke's account, for given Aristotle's phylogenetic origins (causal continuity) and genetic make-up (composition), he could not have been Chinese.

Putnam suggests that Ayer's point might have been a dualist one (it probably wasn't), and that Aristotle's identity might be determined according to spiritual rather than physical criteria. Kripke's notion of individual essence is not the only possible one. We might, therefore, be tempted to ask why it should be supposed that language maps on to this or that theory of metaphysics.

This would be sadly to miss the point. If all that were required for a refutation of the thesis of rigidity was a demonstration that Kripke's metaphysics are not universal, then the battle would be over. Demonstrably, language does not, by some semantic stipulation, map on to Kripke's metaphysics. It does not do so for Ayer, and a single dissenter - provided he is rational and a competent language user - is sufficient to demonstrate the lack of universality. However, the significant question concerns not why it should be supposed that Kripke's metaphysics are to be universally favoured by language, but rather why it should be supposed that language maps on to any metaphysical theory - however ill-formed - at all.

Peter Carruthers makes a similar point on a related topic:

I doubt very much whether we do use the phrase 'human conscious thinking' with the intention of designating a natural kind ... folk-psychology is not intended as a scientific theory, even though it may actually be one. ... All the same, there is nothing to stop someone turning the phrase 'human conscious thinking' into a natural kind term by fiat, simply by deciding to govern their own use of the phrase by an intention to designate the real internal structure of the activity, whatever it might turn out to be. And so, for them, if it is naturally necessary that human
conscious thinking involves natural language then it will also be metaphysically necessary. (Carruthers, 1994, p 6).

The point that Carruthers is making is that, in general, when we use the expression 'human conscious thinking', in Donnellan's terminology we use it attributively rather than referentially. This being so, it is a definite description that may be satisfied by different entities (internal structures) in different circumstances of evaluation (possible worlds). Carruthers suggests that, in general, speakers are totally indifferent to - even unaware of - the possibility that, on the one hand human conscious thinking might have been other than it actually is, or on the other hand that it is open to us to determine to refer to human conscious thinking as it actually is and that that could not have been different.

Interestingly, Carruthers does not entertain similar doubts about the way we use proper names:

Metaphysical necessities, in general, result from the identities expressed by terms which are rigid designators - that is, which designate the same items in all possible worlds in which they exist. Thus 'Ruth Rendell is Barbara Vine' is metaphysically necessary because we use the names 'Ruth Rendell' and 'Barbara Vine' with the intention of referring to the person who is actually the referent in all hypothetical and counterfactual circumstances. (Carruthers, op cit, p 5).

How can he be so sure? Why should the ordinary language user become a self-conscious metaphysician when using proper names, but remain hopelessly unscientific when using terms such as 'human conscious thinking'?

Kripke's point - and probably that of Carruthers also - is that unless she is prepared to take a metaphysical stance the ordinary language user just does not resort to proper names. The claim is that the metaphysical stance is built into the semantics of the names themselves. However, it should not really matter what the
details of this stance are; different speakers may have different ideas of individual essence. Thus Ayer's example does not constitute a counter-example to Kripke's claim, or certainly not a very frightening one. It may be regarded as no more than a challenge over detail.

For Kripke, individual identity is defined by physical origins and composition, while for someone voicing Ayer's objection, individual identity might be essentially spiritual. In familiar linguistic jargon, the underlying principle remains intact; it is only the parameters that vary. In this case, those parameters are set, not by language specific grammars, but by culture-specific beliefs.

However, I would like to ask again, this time with respect to Kripke: How can he be so sure? Do language users really commit themselves to designating individual essences (however such essences may be represented) whenever they use proper names? I doubt it. Or is it stipulated by the language itself perhaps? I doubt that too. If I search my own intuitions, I find that (11), say, has implications for me quite distinct from those which Kripke (and Carruthers) prescribe.

(11) Eric Blair is George Orwell.

With respect to (11), Kripke would make the following claims:

(i) 'Eric Blair' and 'George Orwell' are both rigid designators.
(ii) (11) is an identity statement.
(iii) (11) expresses a necessary identity; i.e., if (11) is true it is necessarily true.

I would like to challenge all three claims. With respect to (i), the arguments I shall advance will be largely intuitive. Nonetheless, I believe they merit consideration, for it is the fact that I have these intuitions, combined with the substantial problems associated with the Millian view of proper names, that has persuaded me that the thesis of rigidity should be questioned.
In order to see how my intuitions work, let it be stipulated that in some world - $W_2$, say - Eric Blair never writes a word. Let it further be stipulated that *Nineteen Eighty-Four, Animal Farm, Down and Out in London and Paris*, and all Orwell's other works, are written by Aldous Huxley. Furthermore, let it be stipulated that in $W_2$ Aldous Huxley takes the name 'George Orwell' when writing and publishing these works.

My intuition is that, with respect to $W_2$, Aldous Huxley just *is* George Orwell; not a 'George Orwell', other than the 'real' George Orwell, but simply George Orwell. This does not seem obviously absurd to me. Perhaps it will seem less absurd if, instead of being couched in metaphysical New Speak, the above outline is expressed in ordinary language, as in (12) to (14) below:

(12) $E_{ric Bliar}$ might never have written anything.

(13) Aldous Huxley might have written *Nineteen Eighty-Four, Animal Farm, Down and Out in London and Paris*, etc.

(14) Aldous Huxley might have published all the works mentioned in (13) under the name 'George Orwell'.

After considering sentences (12) to (14), and upon introspection, I am happy to add (15):

(15) Aldous Huxley might have been George Orwell.

Alternatively, suppose it should be discovered, perhaps tomorrow, that Aldous Huxley really did write all those books, and that for some undisclosed reason Eric Blair took all the credit, masqueraded as the author, and pocketed the royalties. That is to say, let us suppose that Eric Blair masqueraded as George Orwell. It would now seem that even though Eric Blair went through much of his life
answering to the name of 'George Orwell', in reality Aldous Huxley was George Orwell. By this I certainly cannot mean that Aldous Huxley was called 'George Orwell', because he wasn't. Nor do I mean that he was Eric Blair.

What I am suggesting is that I can accept, without any metaphysical or linguistic misgiving, the idea that the property of being George Orwell is transferable. If this is correct, then (i) above is false, (ii) is not an identity statement, and (iii) is inapplicable.

Kripke would almost certainly respond, as would Putnam (see the Aristotle-Diogenes example above), that all I am demonstrating by my first example is that it is possible to imagine a world in which Aldous Huxley does all, or most of, the deeds which are attributed to Eric Blair in this world, up to and including taking the name 'George Orwell'. He would argue that this does not make Aldous Huxley the actual man GEORGE ORWELL who is designated by that name in our language.

Well, of course, if proper names are rigid designators identifying unique individuals, then Kripke is clearly correct; one individual cannot be another individual, so it is nonsense to say that he might have been. But the answer I am attributing to Kripke and Putnam simply begs the question. If they are correct and proper names are rigid designators, then of course, proper names designate rigidly. However, the suggestion I wish to put forward is that proper names do not designate individuals, rather they denote properties. This may sound quite Russellian, but in fact my idea diverges significantly from the Russellian concept of proper names being disguised descriptions, and this should become apparent in section 7 below.

Furthermore, I am not imagining a world in which Aldous Huxley does all the deeds attributable to Eric Blair in this world. I am imagining a world in which he performs just that portion of Eric Blair's acts which are commonly associated with the name 'George Orwell'.
I'm not certain what Kripke's response to my second example concerning Huxley and Blair would be, however, my position is that the properties denoted by 'George Orwell' are - in this example - simply being predicated of the wrong subject.

4.4 Descriptive names

Kripke's fundamental claim is that proper names are given at an 'initial baptism' not as descriptive terms, but as labels of convenience, which - in Mill's words - 'enable individuals to be made the subject of discourse'. Furthermore, he claims that such namings may be achieved either by ostension or by description. Either way, the name given is a rigid designator, and the individual picked out by ostension or by the description is identifiable across worlds. As an example of descriptive naming, Kripke cites Leverrier's (putative) naming of the planet Neptune:

Neptune was hypothesized as the planet which caused such and such discrepancies in the orbits of certain other planets. If Leverrier indeed gave the name 'Neptune' to the planet before it was ever seen, then he fixed the reference of 'Neptune' by means of the description just mentioned ... Nevertheless, ... 'Neptune' was introduced as a name rigidly designating a certain planet. (Kripke, 1980, p 79, fn 23).

Evans makes a similar claim. He suggests that a name may be introduced by what he terms 'reference-fixing stipulation', as demonstrated in (16) below:

(16) Let us call whoever invented the zip 'Julius'.

(from Evans, 1982, p 31.)

He calls such names 'descriptive', and later comments:
... it is a feature of the way proper names, pronouns, and demonstratives are used in English that, in evaluating the truth with respect to a possible situation of a sentence containing one of these terms, we are exclusively concerned with whether or not the referent of the term (if any) satisfies (with respect to that situation) the relevant predicate. And I assume that this holds good of those expressions whether or not they have their reference fixed by description ... we would not say

(22) If you had invented the zip, you would have been Julius. (p 60).

Evans also remarks that 'these facts should come as no surprise', and that the name 'Julius' was introduced into the language by a reference-fixing agreement that precludes the use it is put to in his (22). Of course, once it is agreed that proper names are always and only rigid designators, the inadmissibility of (22) is so obvious that it hardly warrants comment. But what is the situation if this prior commitment to a theory has not been made?

When I first read the passage just quoted I was disturbed, because I had, in fact, assumed that 'Julius' could be used in just the manner which Evans claims is disallowed. This was a particularly naïve mistake to make, and demonstrated to me that I had completely misunderstood Kripke's theory - or overlooked its implications. Now, I am less embarrassed by the error. It seems to me that, qua language user, my intuitions should not be ignored. If when I use the names 'Julius' in Evans' zip-inventing context, or 'George Orwell' in a context such as that described above, it does not seem to me that I am internally conceding that I am using them in just the way that Kripke and Evans describe, my intuitions are as valid as theirs. Donnellan (1979) makes a similar point with respect to Leverrier and 'Neptune'.

4.4.1 Donnellan's objection

Donnellan argues that we must be careful to distinguish the 'theoretical issue' of whether it is possible to introduce names as rigid designators by reference-fixing
description from the 'factual issue' of whether this is what we actually do. He further comments that Leverrier probably gave no indication of whether he intended the name 'Neptune' to function as a rigid designator or as an abbreviated description. Indeed, it is unlikely that Leverrier gave much - if any - thought to the matter; the man was an astro-physicist, not a metaphysician. We might well echo Carruthers' view on folk-psychology and say that it is almost certain that Leverrier had no intentions at all regarding trans-world identity. He just wanted to *name* whatever was disturbing the orbit of Uranus, not rigidly designate it.

It is also idle to suppose that he made some private stipulation to the effect that in some counterfactual situation, in which some other entity satisfied the description, that other entity would not be Neptune, or that in that same counterfactual situation in which the planet which in this world *is* disturbing the orbit of Uranus does not do so, that planet would still *be* Neptune.

Of course, Kripke is not suggesting that Leverrier actually made any such conscious and tortuous stipulations. His suggestion is that that just *is* the way we use language, and those just are the entailments which fall out from such a use. To this Donnellan responds:

Kripke tells us that this is an example of the introduction of a name as a rigid designator, but why is he so confident that it is not an example of a name introduced as an abbreviation? (Donnellan, op cit, p 47).

A little later, he comments:

For my part, when I think of such examples as the "Neptune" case, I don't find myself with any strong intuitions one way or the other. (p 49).

Even more tellingly, he concludes:
... I doubt that anyone would have any strong intuitions about this concerning a situation such as that of Leverrier and the introduction of the use of "Neptune" - at least not one not motivated by a theory about the matter [emphasis added].

Indeed, this point bears emphasising: pre-digested theory should not be allowed to exert undue influence over intuitions. Sperber and Wilson, in a different context make just this point:

It is well known that linguistic judgements may be affected by explicit teaching or conscious theorizing ... (Sperber and Wilson, 1981, p 297).

It might be added that the same is true of philosophical judgements.

4.5 Further doubts concerning rigidity

In section 7 below, I will discuss briefly why I do not think that proper names are the 'meaningless' ciphers the proponents of the thesis of rigid designation suppose them to be. Furthermore, in chapter two, I shall try to show that however appealing that thesis may be there are serious flaws in the analysis of how it actually works with respect to indexically used expressions. I shall argue that the assumption that such terms are rigid designators is not compatible either with the empirical evidence or with linguistic - as opposed to philosophical - requirements. That is to say, I shall argue that the thesis of rigid designation with respect to indexicality cannot withstand linguistic analysis. If this can be demonstrated, then I suggest that it will also cast doubt on the validity of the rigid designation account of proper names.

5. Eponymy

There are three main groups of eponymic words; those derived from mythological or fictitious names; those which are descriptive of a person
or his works (as, for example, Shakespearean or Shavian); and the true
eponymic words which have become a part of the language in a fuller
sense and are taken from the names of people who actually exist or once
existed. (Beeching, 1989, p vii).

For Beeching, 'entering into the language in a fuller sense' seems to entail
lexicographical recognition. Thus, in group 3 - that of the 'true' eponyms - he
includes 'Darwinism' (and possibly 'Darwinian'), but explicitly excludes
'Shakespearean' and possibly excludes 'Thatcherism' and 'Majorism' also, although
'Gaullism' gains admittance. This seems quite arbitrary and in the absence of a
dictionary, groups 2 and 3 become indistinguishable. There is, however, a
distinction which I believe Beeching wishes to make and which may be
significant.

There are certain proper names, 'Cardigan', 'Sandwich', and 'Quisling', for
example, which on the basis of anecdote, invention, or association, etc., are used
to name entities quite distinct from the original bearers of those names. Such
names possibly do form a distinct class. For example, it is because we already
know what sandwiches are that - if we make any association at all - we know that
the Earl of Sandwich ate them. We do not 'calculate' the meaning of 'sandwich'
by searching through our encyclopaedic knowledge of John Montagu for
appropriate attributes. Furthermore, not only are such words fully
institutionalised, they are also created quite independently of productive
morphological process. Perhaps these are the 'true' eponyms.

Such terms are not, however, the subject of the following discussion. In what
follows 'eponym' is taken to have a much wider sense which embraces, more or
less indiscriminately, Beeching's groups 1 and 2 and also morphologically derived
terms which, due to their institutionalisation, Beeching places in group three.
Perhaps I should call these terms 'quasi-eponyms' to distinguish them from the
ture. For the sake of convenience, however, I shall continue to call them simply
'eponyms'.

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5.1 Eponymic morphology

Having stipulated how I intend to use the term, I would now suggest that if proper names indeed lack all descriptive content, it might prove difficult to give a satisfactory account of the semantics of eponymy. The eponymous derivations 'Homeric' and 'Hobbesian', for example, seem to be at least as descriptive as the analogous general term derivates 'metallic' and 'mammalian'. In the case of both pairs it seems plausible to suggest that we draw on encyclopaedic knowledge and make a choice of attributes associated with the base term which are appropriate in the context.

It may not be possible to identify precisely what property, commonly associated with 'Homer' (or Homer), say, is also associated with the derived adjective 'Homeric', and this indeterminacy may be taken as indicative of the proper name's fundamental lack of 'meaning'. But such a conclusion would - at the very least - be premature, if not misguided. Outside of a context of use 'metallic' is equally indeterminate; it might be intended to attribute properties relating to taste, smell, appearance, texture, or even composition.

It might be objected that there is a fundamental flaw in this argument, and that whereas general terms clearly do contribute some meaning (however indeterminate) to their derivates, the meaning of eponymous derivations is always institutionalised independently of any descriptive content erroneously assumed to inhere in the base term (the proper name) itself. That is to say, it might be claimed that the meaning of general term derivates is compositional while that of eponymous derivation is not.

I shall present two separate responses to this objection. The first appeals to the phenomenon of 'semantic coherence'; the second to the rules of productive morphology.
5.1.1 Semantic coherence

This term was coined by Aronoff (1976) to describe certain phenomena. For example, a particular group of de-adjectival nominalisations formed by the addition of '-ness' have totally predictable, tripartite meanings, which are transparently compositional. It is this transparency and predictability which Aronoff calls 'semantic coherence'.

Spencer lists the three elements of meaning identified by Aronoff with respect to all words of the form 'Xousness' as follows:

(a) 'The fact that Y is Xous', e.g. 'His callousness surprised me'.
(b) 'The extent to which Y is Xous', e.g. (again) 'His callousness surprised me'.
(c) 'The quality or state of being Xous'. e.g. 'Callousness is not a virtue'.

(Spencer, 1991, p 88).

Now, it seems to me that similarly predictable, tripartite, transparently compositional meanings may be derivationally produced from proper names. For example, a name such as 'Blair' may first be made adjectival by the addition of the derivationally productive suffix '-ish'. Thus: 'Blairish'. This may be inelegant, but it is acceptable. To this may be added '-ness': 'Blairishness'. Now consider (17) and (18) below:

(17) His Blairishness surprised me.

(18) Blairishness is not a virtue.

I would suggest that the interpretation of these sentences precisely reflects Spencer's (a), (b) and (c). On the other hand, it must be conceded that despite this compositional transparency (semantic coherence), there is still a degree of semantic indeterminacy. However, a similar degree of indeterminacy of meaning
is also to be found in 'callousness'. On this evidence, it would seem to be quite arbitrary to suggest that the meaning of 'callousness' is compositional whereas the meaning of 'Blairishness' is not.

5.1.2 Morphological rules

Current morphological theory is a minefield of conflicting views; I shall therefore restrict the discussion to comments on two of the least controversial interpretations of observed regularities.

One question that needs to be addressed is this: If proper names are not meaningful words, how can they constitute bases to which to attach derivational suffixes? Before this question can be addressed, however, we need to ascertain whether proper names do, in fact, constitute satisfactory bases for derivational suffixation. That is to say, we need to know whether eponymous derivations are rule-governed or merely ad hoc.

Spencer notes that Siegel distinguishes two types of derivational suffix, Class I and Class II. Class I suffixes may induce phonological changes in the base to which they are joined; Class II suffixes are 'phonologically inert'. He continues:

Most importantly, Class I suffixes may cause stress shift in the base to which they attach. (Spencer, op cit, p 97).

An example of a Class I suffix that may attach to a proper name is '-ic', as in 'Homerian' and 'Napoleonic'. In both cases the stress is indeed shifted to the penultimate syllable. This is not surprising, nor is it conclusive evidence that proper names are indeed meaningful, as these stress shifts would probably occur with nonsense words also. Nonetheless, such conformity is encouraging when taken in conjunction with other evidence.

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15 See Siegel (1979).
Fabb, also cited in Spencer, takes a rather different approach. He identifies four groups of suffixes, each group defined by selectional criteria. For example, whereas the suffix '-ism' attaches to either roots or to other suffixes, the suffix '-ian' (or '-an') may only attach to roots. Thus, while both 'vulgarian' and 'vulgarismian' are possible, of the converse pair, 'vulgarism' and 'vulgarismian', only the first term is acceptable.

Interestingly, the same rule-governed patterns are seen in eponymous derivations. As Pinker notes, 'Darwinian', 'Darwinism' and 'Darwinismian' are all possible. 'Darwinismian' and 'Darwinsian', on the other hand, are not. This is despite the fact that 'Darwinismian' has the possible interpretation 'pertaining to Darwinism' and 'Darwinsian' has the possible interpretation 'pertaining to two (or more) Darwins' (possibly Erasmus and Charles). In the latter case, it is not only the fact that '-ian' must attach to roots that makes the resulting (non-) word unacceptable, this unacceptability is determined by the equally powerful morphological rule which prohibits any derivational suffix whatever from attaching to an inflectional suffix.

Once again, the rule-governed conformity of eponymous derivation is encouraging as it indicates that proper names do constitute satisfactory bases for suffixation. It is also compatible with the claim that the meaning of eponymous derivates and those of general terms are equally compositional. But can anything else be deduced from it? I think that it probably can as the rule-governed derivational productivity of proper names stands in notable contrast to the derivational inertness of pronouns. This is significant, as many writers - wishing to deny any type of Fregean sense to proper names - have suggested that they are, in fact, indexical terms, in some sense analogous to pronouns.

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6. Proper names, pronouns and indexicals

Sommers, for example, makes the following bold claim:

The right way of understanding rigidity in proper names is to understand it in pronouns. And this is an easy thing to do as soon as one recognises that proper names are pronouns. ... Note that pronominalisation precedes baptism. ... We can thus view the official act of baptism as an act that introduces a special duty pronoun that may henceforth be used in place of the highly equivocal pronouns 'it', 'he' and 'him' that have hitherto been used to refer to the thing in question. (Sommers, 1983, p 230).

For Sommers, a proper name is not only pronominal, it is anaphoric, and the antecedent subject term, i.e., the first link in the Kripkean chain is 'an indefinite referring expression used in an epistemic context'. (p 231).

Tyler Burge argues that proper names have combined metalinguistic and demonstrative elements. He asserts:

Roughly, singular unmodified proper names ... have the same semantical structure as the phrase 'that book'. (Burge, 1973, p 432).

In fact, this is not a totally accurate description of his own theory. For Burge, a proper name - 'Alfred', for example - is more closely equivalent to 'that "Alfred" ', i.e. 'that person named "Alfred" ', which Burge inaccurately reduces to 'that Alfred'. If Burge is correct, then a proper name is a disguised demonstrative and reference may then only be assigned in a context. This reduces proper names to the status of indexicals. In another paper he acknowledges this:

... the differences between meaning and sense are easiest to notice with indexicals (including proper names) ... (Burge, 1979, p 398).
Recanati also argues that proper names are a combination of metalinguistic reference and indexicality.¹⁷ For Recanati, the meaning of a name 'NN' is appropriately interpreted as 'the bearer of "NN"'. The most obvious way in which this varies from Burge's account is that the demonstrative element is missing.

The nature and function of indexicality is the topic of the rest of this thesis, so it will not be discussed in any detail in this introductory chapter. However, it is generally assumed that indexicality is a function of pro-terms - pronouns, pro-adverbs, even pro-verbs - or more accurately that it is not a function of fully lexical terms. Therefore, it would seem to be the case that anyone advocating an indexical theory of proper names is also committed to recognising that if a proper name is indexical it must be less than fully lexical and must therefore be some type of a pronoun. Indeed, Sommers explicitly claims that this is the case.

Now, empirical evidence relating to eponymous derivation suggests that such a view cannot be correct. It has been shown not only that proper names accept derivational suffixation, but that they do so in a rule-governed manner. However, as will be illustrated below, pronouns appear not to accept suffixation at all. If this is correct, then the matter is simple. Proper names cannot be pronouns.

Consider (19) and (20) below.

(19)  *(The speaker points at John Major): *Heism is on the way out.

This is clearly unacceptable, despite the fact that (19) does have a possible - and accessible - interpretation, as given in (20):

(20)  Majorism is on the way out.

It might be argued that all the unacceptability of (19) demonstrates is that 'he' cannot accept '-ism', not that 'he' cannot accept any suffix whatever, and certainly

¹⁷ See Recanati (1993); see also Almog (1980).
not that no pronouns at all can accept suffixation. However, the proper name 'Major' accepts the suffix readily, which seems to reinforce the claim that proper names are not pronouns.

It might be instructive to look at a few more examples:

(21) (The speaker holds aloft a book): *Thisishness is an unattractive trait in a woman.

(22) (The speaker indicates a small child): Churchill did not have a happy *thathood.

(23) (The speaker places his hand on a bust of Shakespeare): I am writing a sonnet that is quite *himian in its lyricism.

Examples (21) to (23) above would all have highly accessible interpretations if we were accustomed to interpreting pronominal derivates. More precisely, the interpretations would be highly accessible if the language-system permitted pronominal derivations. But apparently it doesn't.

It seems to me, therefore, that valid counter-examples to the claim that pronouns do not accept suffixation must be adduced if any objection to that claim is to be sustained. In the absence of such examples, it seems safe to conclude that pronouns do not accept suffixes and that therefore proper names are not pronouns, or indeed pro-terms of any sort, and if they are not pronouns, then it seems plausible to suggest that they are not indexical either.

Before closing this discussion, it should be noted that there are at least three pro-terms which do accept suffixes: 'thisness', 'thatness', and 'suchness'. However, they do not constitute counter-examples to the above argument. Firstly, although 'this' and 'that' may function as demonstrative pronouns, they have a second function as demonstrative adjectives. Indeed, it is not clear to me that they are not
better defined as ambiguous terms. If this is correct, then if 'this₁' is pronominal it is 'this₂' - the adjectival member of the pair - that accepts suffixation. This is an uncontroversial claim because the suffix '-ness' always attaches to adjectival stems. 'Such' need not concern us here as it is never pronominal, and if proper names are pro-terms at all they would have to be pronouns.

Furthermore, it seems to me that when 'this' and 'that' do occur in derivational structures, this is a case of mention rather than use. I would further suggest that 'thisness' and 'thatness' are fully lexicalised items rather than currently productive forms.

6.1 Lexicalisation

It might be worth noting here the distinction between institutionalisation and lexicalisation. According to Bauer:

A nonce formation can be defined as a new complex word coined by a speaker/writer on the spur of the moment to cover an immediate need. (Bauer, 1983, p 45).

Institutionalisation follows when (and if) 'the nonce formation starts to be accepted by other speakers as a known lexical item' (p 48). Thus, a productive form such a 'Darwinism' may be said to be institutionalised. Of lexicalisation, Bauer writes that this occurs when

... because of some change in the language system, a lexeme has, or takes on, a form it could not have had if it had arisen by the application of productive rules. (p 48).

What Bauer has in mind is the lost productivity of certain affixes, for example 'th' as in 'warmth'. Hence 'warmth' may now be considered to be lexicalised as well as institutionalised. 'Coolth', on the other hand, is not a part of our lexicon, and cannot now be formed by the application of productive morphological processes.
Of course, 'coolth' can still occur as a nonce form, not because '-th' is still productive (it isn't), but in virtue of a kind of playing with language, a sort of joke. It might even come to be accepted as common currency. That is to say, 'coolth' could still be institutionalised. Unlike 'Darwinism', however, in such circumstances 'coolth' would also be *lexicalised*, whereas 'Darwinism' is not. 'Darwinism' can still be formed today by the application of productive rules. 'Coolth' cannot.

It therefore seems plausible to suggest that 'thisness' and 'thatness' are also lexicalised items, in that they could not be formed by the application of productive rules, and that like 'coolth' they were originally formed by some kind of language play.

It should be noted here that not all writers would agree with Bauer's definitions or divisions. I don't think this matters too much, as much of the disagreement is terminological. Furthermore, Bauer has, in fact, identified true distinctions. However, if I understand him correctly, the distinction that he draws between institutionalisation and lexicalisation is tenuous. Nonetheless, 'thisness' and 'thatness' are at best several steps, or at worst one step, removed from posing a threat to the claim that pronouns do not accept suffixation. This conclusion is summarised below:

(i) 'Thisness' and 'thatness' may be lexicalised items, originally created by non-productively attaching the otherwise productive suffix '-ness' to metalinguistic, echoic, uses of 'this' and 'that'.

(ii) 'Thisness' and 'thatness' may be merely institutionalised rather than lexicalised, but nonetheless non-productively created, by attaching '-ness' to echoic 'this' and 'that'.

(iii) 'Thisness' and 'thatness' may be non-metalinguistic (i.e. non-echoic), derivationally produced lexemes.
Even in the worst-case scenario expressed in (iii) 'thisness' and 'thatness' are de-pro-adjectival, not de-pronominal, derivations, and consequently do nothing to overturn the conclusion that proper names cannot be pronouns because pronouns do not enter into morphologically productive processes.

7. The meaning of proper names

Finally, I would like to return to the question of the 'meaningfulness' of proper names. I have argued that the facts of eponymous derivation suggest that proper names contribute some descriptive content to their derivates. I have also argued that these same facts demonstrate that proper names are neither pronominal nor indexical. As their meanings, therefore, can be neither anaphorically or indexically pronominal, nor demonstrative, it remains to be shown just how that meaning might be characterised.

I would like to suggest that, in Millian terms, proper names are connotative in precisely the same way as general terms are connotative. Thus 'Saul Kripke', say, denotes Saul Kripke and connotes the property of being Saul Kripke. This is a view that has been eloquently summarised by Linsky:

Common names, for Mill, have both connotation and denotation. Thus 'horse' connotes certain properties, and the name 'horse' denotes the things that have those properties. By contrast, proper names have no connotations; they do not denote in virtue of the possession of certain properties by their denotations, but so to speak, directly. Thus Socrates received his name by being dubbed 'Socrates'; and he might just as well have been given any other name.

The contrast is misleading. After all, we might have named horses by another name, too, 'cow' or 'Pferd'. However, once the convention by which they are called 'horses' is established, it is not correct to call them 'cows'. A horse is not a cow. Just so Socrates could have been named
'Plato' or 'Moses', but once he has been named 'Socrates', it is just as wrong to call him 'Plato' as it is to call a horse a 'cow'. What is correctly called a 'horse' is so called in virtue of its possession of certain properties, just as what is called 'Socrates' is so called in virtue of his possession of the requisite properties. From this point of view, proper names are words like any others. (Linsky, 1983, pp 16-17).

I have quoted this passage at length because I believe it accurately represents the facts. John Tienson, on the other hand, quotes the same passage because he believes that the argument it embodies is flawed (as does Linsky). Tienson argues that '[g]eneral terms apply to new instances' whereas proper names do not. He observes:

If you know the meaning of a general term, normally you can apply it to things you encounter for the first time. If you could not tell whether some new object was a horse, or brown, that would be good evidence that you did not understand the word 'horse' or 'brown'. (Tienson, 1986, p 73).

His assumption seems to be that the impossibility of there being new instantiations of Pavarotti, say, demonstrates that 'Pavarotti' is not correctly applied to an entity in virtue of the possession by that entity of some appropriate property. (The example is mine, not Tienson's.) This argument is clearly fallacious. Oddly enough, Tienson recognises the fallacy, but goes ahead and commits it anyway.

Indeed, this argument may be two-ways fallacious. Firstly, the fact that only a single entity may be correctly called by a certain name does not demonstrate that that name does not, in some sense, describe that entity, or conversely, that that entity is not correctly called by that name in virtue of the possession of some appropriate property. Secondly, I suggest that there can be, indeed are, new instantiations of the entities that are denoted by proper names, but that these new instantiations are not generally recognised as such.
I suggest that proper names are not - as Sommers suggests - some type of 'special duty' pronoun - but that they are rather some type of 'special duty' mass noun. If this is approximately correct, and 'Luciano Pavarotti', say, names the entire mass that is Pavarotti, in much the same way as 'coal', say, names the entire mass that is coal, then Tienson is correct to assume that we will not encounter separable and novel bits of Pavarotti in the way that we might encounter separable and novel bits of coal. But we can, and do, encounter novel time-slices of Pavarotti, which are conceptually, if not mathematically, as far from being the entire mass of Pavarotti as a single lump of coal is from being the entire mass of coal.

Furthermore, if we understand the word 'Pavarotti', then we can tell whether this or that time-slice of a particular entity is a time-slice of Pavarotti or of Placido Domingo or of George Formby or of Margaret Bennett - provided we 'understand' the words naming those entities also.

We do not say that the man singing in the park (in the rain) is Pavarotti because he is called 'Pavarotti', but because he is PAVAROTTI. Furthermore, we can tell that that man is Pavarotti in virtue of his possession of certain requisite properties. If certain of his attributes - his appearance, the quality of his voice perhaps - conform with certain bits of encyclopaedic information and perceptual memory we have about and of Pavarotti, then we say that that man is Pavarotti. This, I suggest, is also the way we can tell whether an object, encountered for the first time, is or is not a horse, or brown, or whatever.

An objector might now say that reference-fixing criteria are here being confused with connotative meaning; and that of course a language user can fix the reference of 'Pavarotti' by checking off properties. Such an objector might further assert that Pavarotti is not Pavarotti in virtue of the possession of this check-list of attributes, which may be convenient for identification purposes, but are entirely contingent.
This is the argument of the rigid designator theorists, but I do not understand it. I doubt if many speakers (outside of a laboratory) recognise water or gold or dandelions or horses or brown in virtue of any properties that Kripke (or the hypothetical objector) would consider to be other than contingent. Furthermore, even chairs and tables, which presumably may be recognised by what turn out to be defining properties, do not in virtue of this fact confer those properties onto 'chair' and 'table' as part of their respective meanings. Should we then conclude that none of these words has any connotation? Perhaps we should. Some such consideration was presumably behind Putnam's despairing cry 'Cut the pie any way you like, 'meanings' just ain't in the head!' (Putnam, 1975, p 227), or Fodor's more resigned comment:

The older I get, the more inclined I am to think that there is nothing at all to meaning except denotation; for example, that there is nothing to the meaning of a name except its bearer and nothing to the meaning of a predicate except the property it expresses. (Fodor, 1990, p 161).

I understand Putnam and Fodor, and - depending on how 'meaning' is understood - they may even be right. What I do not understand is the claim that the (intensional) meaning of 'Aristotle' or 'Boris Yeltsin', say, is more elusive (to the point of non-existence) than is the (intensional) meaning of 'horse' or 'computer' or 'hot' or 'headache', let alone 'good' and 'happy' and 'pain'.

I do not, however - either here or later - wish to enter into any discussion concerning the relative merits of informational semantics or theories appealing to conceptual roles or holistic or atomistic meaning. All I wish to suggest is this: whatever meaning is, proper names have as much (or as little) of it as any other word. I further suggest that it is a mistake to argue that they merely 'designate' objects - rigidly - and that they do not attribute properties, although just what those properties are may be uncertain. Connotations are notoriously difficult to pin down.
8. Defining rigidity

If it could be shown that rigid designation cannot be coherently defined, then there would be no need to go further. The theory would simply collapse under the weight of its own contradictions and another account of the referring properties of proper names and indexically used expressions would have to be sought. In fact, defining rigidity is not a straightforward task, and although the problems are philosophical, and in some respects arcane, the issue is of such fundamental relevance to the rest of my project that I will - briefly - outline the most significant of those problems.

8.1 Kripke's definition

Kripke makes various claims concerning the nature of rigidity. He writes:

Let's call something a rigid designator if in every possible world it designates the same object. (Kripke, 1980, p 48).

On the next page, however, he qualifies this:

... a designator rigidly designates a certain object if it designates that object wherever that object exists. [emphasis added].

Kaplan, whose work on demonstratives and direct reference is equally seminal, comments:

There are two 'definitions' of 'rigid designation' in Naming and Necessity ... The first conforms to what seems to me to have been the intended concept - the same designation in all possible worlds - the second ... conforms to the more widely held view that a rigid designator need not designate the object, or any object, at worlds in which the object does not exist. According to this conception a designator cannot, at any given world,
designate something that does not exist in that world. (Kaplan, 1989a, p 493).

In fact, when pushed (by Kaplan), Kripke redefines his position on rigidity, and Kaplan reports his response:

In a letter ... Kripke states that the notion of rigid designation he intended is that "a designator $d$ of an object $x$ is rigid if it designates $x$ with respect to all possible worlds where $x$ exists, and never designates an object other than $x$ with respect to any possible world". (Kaplan, 1989b, p 569).

As can be seen from this response, Kripke does not wish to be drawn on the question of whether a rigid designator can or cannot designate an object at worlds in which that object does not exist. Kaplan comments that the definition 'is designed to be neutral' on just this point as Kripke wishes 'to avoid getting bogged down in irrelevant discussion of the existence question'. (Kaplan, 1989b, p 569).

This is confusing, partly because in the preface to Naming and Necessity, which predates his response to Kaplan, Kripke seems to endorse the stronger position, i.e., that a rigid designator has the same designation in all possible worlds:

... a proper name rigidly designates its referent even when we speak of counterfactual situations where that referent would not have existed. (Kripke, 1980, p 21, fn 21).

Also, it is not clear that the existence question should be dismissed as irrelevant when the definition of rigidity is under discussion. Moreover, it is not only in the preface to Naming and Necessity that Kripke appears to adopt the stronger position. In the body of the text, he writes:

... when we speak of a counterfactual situation, we speak of it in English, even if it is part of that counterfactual situation that we were all speaking
German ... in describing that world, we use English with our meanings and our references. It is in this sense that I speak of a rigid designator as having the same reference in all possible worlds. I also don't mean to imply that the thing designated exists in all possible worlds, just that the name refers rigidly to that thing. If you say 'suppose Hitler had never been born' then 'Hitler' refers here, still rigidly, to something that would not exist in the counterfactual situation described. (pp 77-78).

It is not clear to me that there is any distinction between designating an object 'at worlds in which the object does not exist' and designating a referent 'even when we speak of those counterfactual situations where that referent would not have existed'. Why then does Kripke retreat to the weaker, neutral, position in his later response to Kaplan, when it appears that he has already committed himself to the stronger? Kaplan also appears baffled by these apparent contradictions and comments:

It is good to know [Kripke's] mind on the matter, and I regret misrepresenting his views. I cannot, however, feel embarrassed by my reading of the textual evidence. (1989b, p 570, fn 8).

8.2 Various views of rigidity: the problems

The important point to note is that there appear to be (at least) three distinct definitions of rigid designation current in the literature:

RD1: This is the view which Kaplan identifies as being 'the more widely held'. According to this definition, a rigid designator does not, indeed cannot, designate an object at worlds in which that object does not exist. This view is possibly the one held by Carruthers who, in the passage quoted above, observes that rigid designators 'designate the same items in all possible worlds in which they exist'. This does not, of course, preclude the possibility that they also designate entities in (or at) worlds in which those entities do not exist. Carruthers may just be maintaining a neutral position, but he fails to make this clear.
RD2: This is the middle ground, apparently held by Kripke. The definition is neutral with respect to whether a rigid designator does, or does not, designate an object at worlds in which that object does not exist.

RD3: This is the strong position - held by Kaplan. According to this view, a rigid designator has the 'same designation in all possible world'. (Kaplan, 1989a, p 493) irrespective of whether the object thus designated does or does not exist in all of those worlds.

Salmon notes the apparent emergence of yet a fourth definition:

Dummett (1973), Linsky (1977), and Putnam (1973) each define yet a fourth notion of rigid designator, distinct from each of the three notions given here. They call a designating expression a rigid designator if it designates the same thing with respect to every possible world with respect to which the expression designates anything at all. (Salmon, 1982a, p 33, fn 36).

Salmon comments that it is unlikely that the above-mentioned writers intend to diverge from the definition proposed by Kripke. This may well be so. On the other hand, the confusion over what actually is proposed by Kripke is instructive.

8.3 The problems

It has been suggested by various writers¹⁸ that there are distinct difficulties associated with RD1. The most notable of these takes the following form: If a possible worlds treatment of modality is adopted, a statement such as that in (24) below may be paraphrased as in (25).

(24) Saul Kripke might not have existed.

¹⁸ See, for example, Gallois (1986) and Smith (1984).
There is a possible world in which Saul Kripke does not exist.

The truth or falsity of the propositions expressed by (24) and (25) can then be evaluated by checking the worlds in the model. If there is at least one world in which (or at which) (26) is true, then (24) and (25) will be true also:

(26) Saul Kripke does not exist.

If we assume RD1 the problem should now be apparent. At any world in which Saul Kripke does not exist 'Saul Kripke' fails to designate anything. At such a world (26) either cannot be evaluated at all or it is false. For those who are reluctant to adopt a tri-valent logic, Saul Kripke will thus turn out to be a necessary existent, as in every world in the model (26) will be false. For those who are prepared to concede that (26) is unevaluable rather than false (24) will also be unevaluable, whereas intuitively it seems to be true.

Nathan Salmon discusses the problem with respect to (27).

(27) Nathan Salmon is dead.

He writes:

It is assumed that I cease to exist when I die. On the usual theories of the truth-value of a simple subject-predicate sentence containing a non-denoting subject term we should not expect the sentence displayed above to be true with respect to a future time if the name 'Nathan Salmon' denotes no one with respect to that time. (Salmon, 1982a, p 37).

In other words, if RD1 is assumed it becomes impossible to say truthfully of any individual that he is dead. Kaplan makes a similar observation:
There are worlds in which Quine does not exist. It does not follow that there are worlds with respect to which 'Quine' does not denote. What follows is that with respect to such a world 'Quine' denotes something which does not exist in that world. Indeed, Aristotle no longer exists, but 'Aristotle' continues to denote (him). (Kaplan, 1973, p 503).

If this is correct, then it would seem that Kripke cannot afford to sit on the fence, as he apparently does by adhering to RD2, but must accept Kaplan's view of rigidity. Unfortunately, the adoption of RD3, as Kaplan advocates, is not a problem free solution either, but for rather different reasons. The main difficulty is that Kaplan's view of the rigidity of natural language expressions is subordinated to his view of the rigidity of the free variables of modal logic. Indeed, in order to promote the acceptance of RD3 as the correct definition of rigid designation, he writes:

... it is a striking and important feature of the possible world semantics for quantified intensional logic, which Kripke did so much to create and popularize, that variables, those paradigms of rigid designation, designate the same individual in all possible worlds whether the individual "exists" or not. (Kaplan, 1989b, p 493).

Kaplan's point is that as the free variables of modal logic are rigid designators in the sense defined by RD3 then their analogues, the free pronouns of natural language must be rigid designators in the sense defined by RD3 also. As my knowledge of quantified intensional logic is strictly limited, I will stipulate that with respect to the free variables of that logic Kaplan's assertion is correct. The problems start when we try to analogise natural language to formal languages.

Now, it is quite clear that in his account of the demonstratives - and other indexical usages - of natural language Kaplan does assume just such an analogy. That is to say, he really does assume that the free pronouns of natural language
are analogous to the free variables of logic. As this assumption is of considerable significance, I shall quote his views at length:

Pronouns in natural language have often been analogized to variables. Pronouns are lexically ambiguous, having both an anaphoric and a demonstrative use. An anaphoric use of a pronoun is syntactically bound to another phrase occurring elsewhere in the discourse. In meaningful discourse, a pronoun not used anaphorically is used demonstratively. As I saw the matter, a demonstrative use of a pronoun was simply a syntactically free use. Like a free occurrence of a variable, it requires something extralinguistic, a demonstration ... to assign it a value. Demonstrative and anaphoric occurrences of pronouns can thus be seen to correspond to free and bound occurrences of variables. What I want to stress is that the difference between demonstrative and anaphoric uses of pronouns need not be conceptualized primarily in terms of lexical ambiguity; it can also be seen in terms of the syntactic distinction between free and bound occurrences of terms. I saw the analogy between variables and pronouns as even closer than had been thought. (Kaplan, 1989b, p 572).

It should be noted that the use of the past tense in the above extract is misleading. In this passage Kaplan reviews and reaffirms the conclusions he reached in Demonstratives. He is not setting the stage for a reversal of opinion. This is evidenced by his next comment:

I believe that the case of the free pronoun, the demonstrative, can take a lesson from the case of the free variable.

What is striking about the above passage is Kaplan's apparent indifference as to whether a pronoun such as 'he', say, is best defined as being lexically ambiguous or as a single lexeme with multiple functions. However, I shall argue in chapter two that when certain characterisations of direct referentiality and de jure rigidity
are taken into consideration, the lexical status of pronouns as being either homonymously ambiguous or univocal across functions may be seen to be an issue of paramount importance. Furthermore, I shall argue that if pronouns are not ambiguous - and I hope to show that they are not - then it will follow that they cannot be directly referential or de jure rigid either. If this is correct, then they cannot be equated with the variables of quantified intensional logic.

If all this can be demonstrated, it will affect Kaplan's claims concerning rigidity quite profoundly. In the passage quoted above, Kaplan claims that variables 'are paradigms of rigid designation'. Now, if being a paradigm is to mean anything, then this claim may be reduced to:

**If anything is a rigid designator then a (free) variable is.**

Or less idiomatically:

**If anything is a rigid designator then free variables are rigid designators.**

This may be expressed as the simple modus ponens formula: $P \rightarrow Q$,

where $P = \exists x \ (\text{rigid designator} \ (x))$,

and $Q = \forall y \ (\text{free variable} \ (y) \rightarrow \text{rigid designator} \ (y))$.

As was seen above, Kaplan further claims that pronouns may be analogised to variables and that the free pronoun 'can take a lesson' from the free variable. If this claim is to be taken seriously, then it must surely mean that the free pronoun is to natural language what the free variable is to quantified intensional logic. Kaplan's intention must, therefore, be to claim that, with respect to natural language, a free pronoun is a prototypical rigid designator. That is to say:
If anything is a rigid designator then free pronouns are rigid designators.

This also may be more formally expressed as $R \rightarrow S$,

where $R = \exists x \ (\text{rigid designator (}x\text{))},$

and $S = \forall y \ (\text{free pronoun (}y\text{) \rightarrow \text{rigid designator (}y\text{))}.$

Now, if it can be shown that free pronouns (i.e. demonstratives or other indexical usages) are \textit{not} rigid designators - that is to say, if it can be shown that $\sim S$ - then by modus tollens it follows that $\sim R$. This may be presented syllogistically:

$$
\begin{align*}
R & \rightarrow S \\
\sim S & \\
\therefore \sim R
\end{align*}
$$

This may be read as:

If there is something that is a rigid designator then free pronouns are rigid designators.

Free pronouns are not rigid designators.

Therefore there is not something that is a rigid designator.

Less formally:

\textbf{If free pronouns are not rigid designators then nothing is.}

I am inclined to think that this is correct, and that if it \textit{can} be shown that free pronouns really are not rigid designators, then the whole edifice of rigid
designation would be radically undermined, and indeed nothing in natural language would designate rigidly.

However, such a conclusion at this point would be precipitate. It could be that the major premise in the syllogism is not sustainable. That is to say, it might be argued that if free pronouns are not rigid designators, they quite clearly cannot be prototypically rigid. This would leave the way open for the suggestion that even though free pronouns may be shown not to be rigid, nonetheless there may be another category of terms - proper names say - which are.

Denying the major premise but hanging onto the thesis of rigidity seems to me to be a gallant but ill-advised - possibly even a doomed - move. If the major premise is denied, then with respect to natural language the proponents of the thesis of rigidity will have lost the support of quantified intensional logic, since the analogy between variables and pronouns will have been shown to be unsustainable. That is to say, if pronouns cannot be analogised to variables, then the formulae of quantified intensional logic which demonstrate the rigidity of free variables will tell us nothing whatever about the semantics of natural language.

Therefore, if the analogy between variables and pronouns disintegrates, Kaplan's strongest argument in favour of RD3 - i.e. that this analogy requires that definition RD3 be adopted - will disintegrate also. I suggest that the effect of this would be to add to the uncertainty over whether rigid designation can, in fact, be coherently defined as a function of natural language. I do not dispute the fact that it may be possible to construct formal languages which presuppose rigid designation, and in which free variables are indeed rigid designators. However, such rigid designation is rooted in the arcane metaphysics of possible worlds, and it is not clear to me that stipulating the nature and content of such worlds tells us anything at all about the workings of natural language.

Although it has yet to be demonstrated that the pronouns of natural language cannot be rigid designators, it must now be clear that an analysis of their functions
and those of other pro-terms - the 'indexicals' of natural language - is of fundamental importance to the thesis of rigidity as it now stands. Therefore, although proper names constituted my original motivation for challenging that thesis, it is by means of an investigation into the functions of the pro-terms of natural language that I shall carry that challenge forward.
A problem with stipulation

1. On stipulation

If the views of various writers on model theoretic (possible worlds) semantics are taken into account, there are at least three distinct ways in which a speaker/writer - hereinafter 'speaker' - may stipulate the way in which an expression $\alpha$ shall contribute to the truth conditions of a sentence $S$, where $\alpha$ may be identical to $S$. These three types of stipulation are listed below.

1.1 Non-overt 'internal' stipulation

This relates to the speaker's intentions; the speaker may make some private, internal, 'agreement' with herself to the effect: 'When I use the expression "$\alpha$" I shall mean "$\varphi$".' It seems to me that this should not be confused with overt 'Humpty Dumpty' stipulations, such as: 'When I say "glory" I shall mean "a nice knockdown argument".' As Alice points out, 'glory' just does not mean 'a nice knockdown argument'. A speaker may overtly stipulate the rules of a personal code, but she cannot thereby change the meanings of words in the common domain.¹

On the other hand, it seems to be the claim that certain internal stipulations are universally binding. Thus when (if) Leverrier makes an internal agreement with himself to the effect that when he uses the name 'Neptune' he shall intend to use that name as a singular term rather than as a disguised description then, in virtue of this intention, 'Neptune' is introduced into the language as a rigid designator. That, at least, appears to be the theory although, as Donnellan has pointed out, it is difficult for the hearer to ascertain just what were Leverrier's precise

intentions. Kripke, of course, does not concede that any additional intention - other than the intention to use a proper name - is required.

The significance of this type of non-overt, private stipulation has already been discussed briefly in chapter one with respect to ‘human conscious thinking’ and just such descriptive names as ‘Julius and ‘Neptune’, and it will not be discussed further.

1.2 Modal stipulation
The speaker may stipulate how things shall be in some set of possible worlds. That is to say, modal statements concerning how things might or must be are interpreted as stipulations with respect to the state of affairs that shall obtain in at least one possible world in the model, or in all of them respectively. According to those versions of the theory under discussion that are most relevant in the present context, the fundamentally important point is that possible worlds are, in some sense, the speaker’s creation; they are not independent existents waiting somewhere ‘out there’ to be discovered. Kripke spells this out:

A possible world isn’t a distant country that we are coming across, or viewing through a telescope. ... A possible world is given by the descriptive conditions we associate with it. ... ‘Possible worlds’ are stipulated not discovered ... (Kripke, 1980, p 44).

1.3 Lexical stipulation
The speaker may utter a word or expression which encodes, as a feature of its 'meaning', a specific 'stipulation' concerning the truth conditions of the sentences in which it occurs. With respect to this last type of stipulation fundamentally challenging questions concerning the nature of direct reference and de jure rigid designation may be raised, and it is on these questions that the discussion in this chapter will focus.

^ See Donnellan (1979).
2. Rigidity and direct reference

There exists a large literature on rigidity and direct reference and philosophers such as Putnam and Donnellan are frequently associated with Kripke as being early proponents of the new Millianism,\(^3\) or the 'new theory of reference' as it is sometimes somewhat misleadingly called - an expression that was first used by Schwarz.\(^4\) Donnellan's arguments against description theories with respect to proper names, for example, are well known,\(^5\) as is his advocacy of the 'historical chain' thesis - a label which he prefers to the possibly more common 'causal chain'. Ruth Barcan Marcus\(^6\) has also been accredited with 'anticipating important aspects of contemporary theories of reference',\(^7\) but the general consensus is that she anticipated, rather than initiated, such theories.\(^8\) However, in this chapter I shall, for the most part, focus on the notions of rigidity and direct reference as defined and developed by Kripke and Kaplan respectively.

What I wish to suggest is that if the *linguistic*, as opposed to the *metaphysical*, implications of the associated theses of direct reference and rigid designation are investigated more thoroughly, then it turns out that there are good reasons for rejecting these theses - at least with respect to the interpretation of indexically used expressions. However, before going further, some discussion of the terminological distinctions and definitions might be helpful.

Kripke identifies two major types of rigidity: *de facto* and *de jure*. *De facto* rigidity, briefly mentioned in chapter one, applies exclusively to those definite descriptions, such as 'the cube root of 125', which necessarily pick out the same

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\(^{3}\) See Putnam (1973) and Donnellan (1972) and (1974).
\(^{4}\) See Schwarz (1977), p 20. See also Wettstein (1986), and Devitt (1989) for a state of the art commentary on the various versions of the theory.
\(^{5}\) See the Thales argument in Donnellan (1972).
\(^{6}\) See Marcus (1947), (1961), and (1993).
\(^{7}\) Soames (1995); see also Devitt (1989, p 210).
\(^{8}\) For a somewhat acrimonious discussion of this issue see Smith (1995a), (1995b) and Soames (1995).
entity in all possible worlds. It is not against this type of constant reference that I wish to argue. Of *de jure* rigidity Kripke writes that it relates to those usages where the reference of a designator is *stipulated* to be a single object, whether we are speaking of the actual world or of a counterfactual situation. (Kripke, 1980, p 21, fn 21).

It is worth noting that the emphasis on *'stipulated'* is Kripke's but, unfortunately, he never enlarges on *how* such stipulation is achieved; he just assumes it. He also assumes that it is unproblematic, but this is not the case. The problems will become more apparent when the distinction in orientation between the terms 'rigid designation' and 'direct reference' is taken into consideration. This may, perhaps, be seen as a distinction between *what* rigidity entails metaphysically and *how* these entailments are achieved linguistically.

In chapter one, three definitions - or characterisations - of rigid designation were discussed. All three appealed to the concept of possible worlds, and none distinguished between *de facto* and *de jure* rigidity. However, it may be that rigidity can be defined in semantic terms rather than in the metaphysical language of transworld identity. Indeed, Kripke himself observes that the thesis of rigid designation 'is a doctrine about truth-conditions' (p 12). Furthermore, in the preface to the 1980 edition of *Naming and Necessity*, he suggests:

... if one wishes to avoid the *Weltangst* and philosophical confusions that many philosophers have associated with the 'worlds' terminology, I recommended [in the original lectures] that 'possible state (or history) of the world' or 'counterfactual situation' might be better. (p 15).

This is clearly reminiscent of Carnap's 'state-descriptions', which in turn are intended to represent Leibniz's possible worlds or Wittgenstein's 'possible states of affairs'. A detailed discussion of the ontological confusion - the *Weltangst* - that

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9 See Carnap (1956), p 9; see also Wittgenstein (1922) §§ 2.014, 2.202, 2.203.
arises out of the varying approaches in the possible worlds interpretation of these counterfactuals is beyond the scope of the current investigation. Nonetheless, it is relevant to ask how, if worlds talk and Weltangst is to be avoided, rigidity might be defined.

2.1 Defining rigidity without worlds

Peacocke tackles the problem of 'restating Kripke's thesis' without appealing to the possible worlds 'apparatus' in a formulation which I have labelled 'RDP':

\[
\text{RDP: } t \text{ is a rigid designator of } x \text{ in } L \text{ iff for any sentence } G(t) \text{ in which } t \\
\text{occurs, the truth (falsity) condition of } G(t) \text{ is that } < x > \text{ satisfy (respectively, fail to satisfy) } G(\).
\]

(adapted from Peacocke, 1975, p 110).

He continues:

We may say, metaphorically, that we are here basing rigid designation on the idea of a certain object entering into the truth conditions of all the sentences of the language in which \( t \) occurs. What a rigid designator designates is just the object that so enters into the truth conditions. (ibid).

Peacocke observes that his definition of rigidity, as it does not appeal to the possible worlds idiom, has the advantage of showing rigidity to apply with respect to all operators - for example tense indicators - not just with respect to modals.

However, despite this claim, it is not clear to me that RDP represents a significant advance over RD1, 2, and 3. The familiar problems associated with intentional contexts and empty reference still remain. Furthermore, Peacocke apparently equates his definition of rigidity with a criterion of pure referentiality (in Russell's

\[\text{For an approach that exemplifies extreme modal realism see Lewis (1986) and, at the other pole, for discussion of modal fictionalism see Divers (1995), Hale (1995a), (1995b), Menzies and Pettit (1994), and Rosen (1995).}\]
sense),\textsuperscript{11} and this surely is a mistake. More specifically, Peacocke is mistaken to assume - as he does - that definite descriptions are excluded by his criterion. As Recanati (1993) points out, some definite descriptions - the \textit{de facto} rigid designators - do meet the requirements of \textbf{RDP}.

Peacocke, apparently, wishes to define \textit{de jure} - or stipulatory - rigidity, but his formulation no more excludes attributively used definite descriptions such as 'the positive square root of 9' or even - arguably - 'the products of zygotes X and Y' than does the possible worlds terminology favoured by Kripke.

2.2 Defining direct reference

Michael Lockwood, David Kaplan, and Recanati,\textsuperscript{12} among others, all take up the challenge of defining the 'pure' or 'direct' referentiality which is so intimately linked with rigid designation. However, it is Recanati's approach that most clearly spells out the nature of the semantic stipulation implied by Kripke's use of the term '\textit{de jure} rigid'.

2.2.1 Recanati and Kaplan

Having rejected Peacocke's formulation as being too broad, i.e, as failing to exclude the \textit{de facto} rigidity of certain attributively used definite descriptions, Recanati next considers Lockwood's criterion for referentiality, which he simplifies as shown below:

\textbf{RDL:} A term \( t \) is referential if and only if there is an object \( x \) such that:
(i) an utterance of \( G(t) \) is true iff \( x \) satisfies \( G(\cdot) \), and
(ii) to understand the utterance, one must know that it is true iff \( x \) satisfies \( G(\cdot) \).

(Recanati, 1993, p 17).

\textsuperscript{11} See Russell (1905), (1918); see also Neale (1990), chapter 2.
\textsuperscript{12} See Lockwood (1975), Kaplan (1989a) and Recanati (1989a) and (1990).
Of this criterion Recanati notes that it presupposes that the referent of any referential term must exist if an utterance containing it is to be understood. This, of course, is one of the problems inherent in causal chain and direct reference theories. It is a problem which description theories of names are intended to resolve. However, although Recanati considers Lockwood's definition 'as it stands' to be less than satisfactory, it is not on this point that he wishes to challenge it, and he certainly does not wish to endorse any description theory of names. His complaint, rather, has essentially metalinguistic implications of a special nature:

What I think ... is that identification of the reference is not a necessary condition of referentiality. A term may well be referential, and understood by the hearer as referential without its referent being identified. To understand the utterance 'Ralph Banilla is a midget' involves knowing who Ralph Banilla is, but to understand the sentence only involves knowing that the term is referential, that there is an individual that must be identified for an utterance of this sentence to be understood. (Recanati, op cit, p 15).

Recanati's position is this: In order to recognise what type of proposition is expressed by an utterance of a sentence containing a proper name or an indexical term the hearer must first recognise the name or the indexical as being a certain type of expression. This ultimately reduces to the claim that proper names and indexicals are, in virtue of their internal semantic structure, recognisable as singular terms and that sentences containing them are thereby recognised as expressing singular propositions. Recanati's argument is that the competent language user will be able to recognise that utterances of such sentences express such propositions even in those cases where the actual referent remains unidentified.

He argues that proper names and indexical expressions - the prototypical rigid designators of Kripke and Kaplan respectively (although Kaplan prefers the term
directly referential' to de jure rigid) - are directly referential types and that type referentiality itself should be defined as follows:

(TR) A term is (type-)referential if and only if its linguistic meaning includes a feature, call it 'REF', by virtue of which it indicates that the truth-condition (or, more generally, satisfaction-condition) of the utterance where it occurs is singular.

(Recanati, op cit, p 17).  

Recanati's aim is to distinguish the referring function of such expressions from what he calls the 'token-referentiality' of the (arguably) rigid uses of Donnellan's referential descriptions. He writes:

... a description can be used referentially, so as to express a singular proposition, with the reference of the description as a constituent, the individual concept expressed by the description, in such a case, is external to the proposition expressed. This ... is entirely a matter of context, of utterance meaning as opposed to sentence meaning: no feature REF is involved ... In other words, descriptions can only be 'token-referential'. (p 31).

Describing how type-referentiality differs from token-referentiality, however, does not complete the story. Indeed, with respect to proper names, it is interesting to note that, superficially at least, Lockwood's - and Recanati's - requirement for understanding an utterance containing a proper name appears to echo Strawson's much earlier claim that 'it is no good using a name for a particular unless one knows who or what is referred to by the use of the name'. (Strawson, 1959, p 20).

Strawson's point is that such knowledge is dependent on a name being associated in some way with a 'backing of descriptions', without which it is 'worthless', while

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13 See also Recanati (1988).
14 See Donnellan (1966).
for Recanati identifying individual bearers of proper names entails *de re* (psychological) modes of presentation of which the most significant property is that they are 'truth-conditionally irrelevant'.\(^{15}\) That is to say, 'they do not affect the truth-conditions of the thought in which they occur'.

With respect to indexical expressions - the second category of directly referential or rigidly designating terms - Recanati concedes that these are 'not wholly devoid of descriptive content', but argues that this content, which he calls 'the linguistic mode of presentation', although a component 'of the meaning of the sentence where it occurs ... is no part of the proposition expressed by the utterance' (p 18). If I understand this correctly, this amounts to the claim that both the psychological, *de re*, mode of presentation of a proper name and the linguistic mode of presentation of an indexical expression are, in Recanati's view, 'truth-conditionally irrelevant'.

The notion of truth-conditional irrelevance is central to Recanati's model of direct reference and, although expressed somewhat differently, it plays an equally significant role in Kaplan's account. Of direct reference Kaplan writes:

> For me, the intuitive idea is not that of an expression which *turns out* to designate the same object in all possible circumstances, but an expression whose semantical *rules* provide *directly* that the referent in all possible circumstances is fixed to be the actual referent. In typical cases the semantical rules will do this only implicitly, by providing a way of determining the *actual* referent and no way of determining any other propositional component. (Kaplan, 1989a, p 493).

The point that Kaplan is making is that although his prototypical directly referential expressions - demonstratives and other indexicals - have distinct linguistic meanings ('conventionally fixed semantical rules'), such rules *do not*
provide a complex which together with a circumstance of evaluation yields an object. They just provide an object'. (Kaplan, 1989a, p 495).

In other words, the linguistic meaning (the semantical rules) of directly referential expressions does not enter into the truth conditions of the proposition expressed. Furthermore, although directly referential expressions may designate different objects in varied contexts, once an object has been identified as the referent of such an expression in a context, that expression designates that object in all stipulated counterfactual circumstances relative to that context. This point may best be understood with respect to examples such as (1) and (2) below:

(1)  He might have been a philosopher.

(2)  The president of Singapore might have been a philosopher.

The claim is that in (1), once 'He' has been assigned a referent in a context of utterance, then it is of that very individual that it is said that he might have been a philosopher. In (2), however, if an attributive reading is assumed for the definite description then such a description does 'provide a complex which together with a circumstance of evaluation yields an object', and it is not stipulated by the very meaning of the words themselves that it is said of the same particular person in all circumstances of evaluation that he might have been a philosopher. Earlier Kaplan writes of direct reference:

... certain singular terms refer directly without the mediation of a Fregean Sinn as meaning ... the proposition expressed by a sentence containing such a term would involve individuals directly rather than by way of ... "individual concepts" or "manners of presentation". (Kaplan, 1989a, p 483).

By this Kaplan is not asserting that such terms have no sense at all. Indeed, his claim is somewhat misleadingly expressed. As he explains in his 'Afterthoughts':
I argued that Fregean *Sinn* conflates two quite different notions of meaning. One, which I called *character* is closer to the intuitive idea of linguistic meaning (and perhaps of cognitive content). Another, which I called *content*, is what is said or expressed by an expression in a particular context of use. (Kaplan, 1989b, p 568).

There is a temptation to equate *character* with *Sinn* and *content* with *Bedeutung* - a temptation succumbed to by Recanati - but as the above passage makes clear, this would be a mistake; both character and content are - according to Kaplan - separate aspects of Fregean sense. Content may perhaps be equated with what Salmon (see chapter one) identifies as *Sense*; while character more nearly approximates to Salmon's *Sense*, although in neither case is the fit exact. It is, moreover, the *character* of an indexical expression - that aspect of its sense which may be equated with linguistic meaning - which Kaplan claims does not enter into the truth conditions of the proposition expressed, and which might, therefore, be described as being - in Recanati's terms - 'truth-conditionally irrelevant'. Kaplan comments:

> Whatever rules, procedures, or mechanisms there are that govern the search for the referent, they are irrelevant to the propositional component, to content. When the individual is determined ... it is loaded into the proposition. (Kaplan, 1989b, p 569).

While, according to Recanati:

> ... the 'mode of presentation' associated with a referential term makes a certain object contextually identifiable, and the utterance is presented as satisfied if and only if this object has the property expressed by the predicate in the sentence. (Recanati, 1993, p 18).

In fact, although Recanati's position is rather more complex than this, it should be clear that his analysis of the referential function of indexical expressions closely follows that of Kaplan. The major, apparent, difference lies in his positing of the semantic feature REF which ascribes to both proper names and indexical expressions a rather more complex semantic structure than that acknowledged by Kaplan. According to Recanati, such terms have two distinct types of semantic component - the *truth-functional* REF and the *truth-conditionally irrelevant* modes of presentation. He also complains that Kaplan is 'prone to equate cognitive content with linguistic meaning'. (Recanati, 1990, p 697). He comments:

The distinction between the meaning of a sentence and what is said (the proposition expressed) by an utterance of a sentence is commonly recognized to be necessary when one deals with indexical sentences, but there is also a third term - the *cognitive* content of the utterance - whose irreducibility to either the proposition expressed or the meaning of the sentence ... has not been properly appreciated. (ibid).

It is true that Kaplan does state in the passage quoted above that character, or linguistic meaning, might be reducible to cognitive content. If we follow Salmon, this would seem to implicate Sense₂, which - somewhat confusingly - has already been associated with, although perhaps not too closely, *content*. Kaplan, however, cannot himself intend to equate character with content. On the other hand, it is not altogether clear what he does intend.

What appears to be missing from his model is that aspect of Fregean sense defined by Salmon as Sense₁ and this is more readily identifiable - in Recanati's terminology - with the psychological mode of presentation. Now whether this is subsumed by character or by content in Kaplan's model is not immediately obvious to me, but, if I understand him correctly, Recanati claims that it is
confounded with Sense, both in Kaplan's character and in Perry's 'role'. This may or may not be a valid complaint, or indeed, I may have misinterpreted Recanati, as it is unclear whether Recanati sees cognitive content as being an element of Fregean Sinn at all.

I shall not endeavour to resolve the issue, as I believe that there is another - radically different - solution to the problem of how indexicals refer which effectively by-passes these problems, although they are interesting in their own right. This alternative approach will be described in chapter three. Meanwhile, the bare fact that such confusions do exist in the various versions of the direct reference theory might be thought to reduce its authority.

Finally, Recanati likens REF to Kaplan's special demonstrative DTHAT, but notes that whereas 'DTHAT is an operator in an artificial language', REF is 'a semantic feature of natural language'. (Recanati, 1993, p 31).

Nonetheless, as has already been noted, there is an essential similarity between Kaplan's and Recanati's approaches and for the purposes of the present discussion it is the similarities which are significant. It should, for example, be apparent from the foregoing that both Recanati's type-referentiality and Kaplan's direct referentiality might be equated with de jure rigidity. The distinction between the two terms, or concepts, is largely a matter of emphasis or orientation: Kaplan began his investigations into the semantics of demonstratives 'by asking what is said when a speaker points at someone and says "He is suspicious" '. (Kaplan 1989a, p 489). That is to say, Kaplan's starting point is with language and the language user. Kripke, on the other hand, has a very different agenda according to which the most significant questions do not concern the nature of the referring entity - the proper name - but the essential properties of the thing named. Joseph Almog comments:

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18 See Kaplan (1985).
The intuitive test for rigidity that Kripke devises ... reflects this point. We start with an individual (Nixon), and we observe that that individual couldn't have failed to be Nixon. ... This observation is an observation in "metaphysics"; it is surely not an observation in "linguistics." (Almog, 1986, p 211).

However, Kripke's metaphysical preoccupations lead him to formulate a theory about language, while Kaplan's preoccupation with the demonstratives of natural language has an underpinning in the formal languages of philosophical logic which leads him to formulate a theory with metaphysical implications. By contrast, Recanati's introduction of the semantic feature REF marks a more notably linguistic approach, not tied to any philosophical agenda. However, he uses the term 'type-referential', not to signal a distinction between his concept of direct or 'pure' referentiality and Kaplan's, but rather as a more precise way of expressing what he understands by 'directly referential'.

What needs to be determined now is whether type referentiality, as defined by Recanati, really is the equivalent of the direct referentiality defined by Kaplan, and whether - by extension - it always implicates the de jure rigidity posited by Kripke. The question is of considerable significance. Indeed, it touches on the central issue of this chapter, for I shall argue that the semantic feature REF is not a plausible (and maybe not even a possible) component of the semantic structure of indexical expressions. It is important, therefore, to ask whether this feature is presupposed by either Kripke or Kaplan.

2.3 Kripke and de jure rigidity

With respect to Kripke, the answer seems clear. He writes of de jure rigid expressions that the reference of any such term 'is stipulated to be a single object'. Now, it must surely be the case that by 'stipulated' Kripke intends to indicate 'semantic' or 'lexical' stipulation, as described in section 1.3 above. It cannot be that he intends to indicate no more than that those conditions are stipulated by the speaker - on each occasion - in accordance with some type of private agreement.
as described in 1.1. If rigid designation is simply a matter of the speaker having the right intentions, then Humpty Dumpty really is lord of all he surveys and any expression whatever might be a rigid designator. But as Gillett remarks:

... Humpty Dumpty cannot be right. A word does not mean whatever he chooses or even what he is disposed to use it for on any given occasion. But to answer him, Alice must show why the meaning of a word is under constraints which go beyond individual use and why he ought to obey those constraints. (Gillett, 1995, p 191).

Indeed, Kripke expressly opposes the idea that language might operate - or be operated - in the cavalier way suggested by Humpty Dumpty, and in the following passage on Wittgenstein's private-language argument he goes some way towards supplying Alice with the answer that she needs:

What is really denied is what might be called the 'private model' of rule following, that the notion of a person following a given rule is to be analysed simply in terms of facts about the rule follower and the rule follower alone, without reference to his membership in a wider community. ... the impossibility of a private language in the sense just defined does indeed follow from the incorrectness of the private model for language and rules, [emphasis added]... Does this mean that Robinson Crusoe, isolated on an island, cannot be said to follow any rules, no matter what he does? I do not see that this follows. What does follow is that if we think of Crusoe as following rules, we are taking him into our community and applying our criteria of rule following to him. (Kripke, 1982, pp 109-110).

It would seem to follow, therefore, that Kripke's de jure rigidity cannot depend on some ad hoc and private stipulation of the speaker's. But perhaps it might be explained in terms of Kaplan's DTHAT. Let us assume that by 'stipulated' Kripke does not mean stipulated by the word (name) itself, and that his claim concerning
*de jure* rigidity reduces to the claim that any use of a proper name is always preaced by some functional equivalent of Kaplan's DTHAT-operator.

However, if - as Kripke claims - the rigidity of certain expression *types* is an immutable linguistic fact, which cannot be dependent on the mere whim of the speaker, then this constant conjunction of name and operator must be seen as an established 'rule' or convention of language respecting the use of names. And this, of course, is extensionally equivalent to the claim that DTHAT (or its functional equivalent) is invariably present as a semantic 'attachment' or feature of all proper names. So we have come full circle. It further seems to me that it is just such an assumption of the linguistic inevitability of such a conjunction, or semantic *incorporation*, of a direct reference operator that underlies Kripke's argument concerning 'Neptune' as discussed in chapter one.

If this is correct, then we may surely conclude that the stipulation that is central to *de jure* rigidity cannot be achieved other than by the inclusion of some semantic feature in the linguistic meaning of *de jure* rigid expressions. As this putative feature is claimed to stipulate that the referent of the term in question is 'a single object', the conclusion that the feature Kripke (somewhat obliquely) posits is indistinguishable from Recanati's REF is virtually inescapable.

Finally, it is worth noting that Kripke does not restrict his thesis concerning rigidity to proper names, although they are his primary target. In a footnote on page 49 of *Naming and Necessity* he remarks that demonstratives also 'can be used as rigid designators' for unnamed objects. As they clearly are not *de facto* rigid, Kripke must surely here be claiming that such terms also 'stipulate' their own rigidity.

### 2.4 Kaplan and character

The position with respect to Kaplan is somewhat different. Initially, the situation seems straightforward. Kaplan writes that 'the semantical rules' of a directly referential expression 'provide ... that the referent in all possible circumstances is
fixed to be the actual referent'. However, he then claims that these rules only do this 'implicitly' - i.e., by default, rather than by positive stipulation. That is to say, they provide 'a way of determining the actual referent and no way of determining any other propositional component'.

However, it is not clear to me that Kaplan can justify this second claim if he cannot spell out just what the semantical rules for expressions such as 'he' and 'that', say, are. Simply dubbing these rules 'character' is not sufficient, nor is it sufficient to define character as a function from possible contexts to content. (Kaplan, 1989a, p 505). We still need to know in greater detail the nature of the 'semantical rules' that implement this function. If we do not, how can we be sure that they do not provide a way for determining propositional components other than the actual referent?

In fact, my argument will be that these rules do just that. That is to say, I shall later argue that they do indeed determine just such alternative propositional components. However, if Kaplan wishes to maintain that they do not and cannot, he needs to show why they do not and cannot. There is a very real difficulty here, which will be explored at greater length in chapter three where many examples are adduced with respect to which the most natural interpretations of indexical utterances do not have singular truth conditions. If these 'natural' interpretations are to be rejected - as Kaplan says they must be - then he needs to show what it is about the semantics of indexical utterances that implements such a rejection.

Recanati has an answer to this problem, which is that it is encoded in the very semantics of indexical expressions that general readings must be rejected. When, therefore, according to the most natural interpretation of an indexical utterance a general proposition appears to have been expressed, Recanati is able to assert that the natural interpretation is not the literal one, and that at some more basic level it is a singular proposition that would have been expressed. That is to say, he is able to claim that the general proposition that conforms with the natural reading should be regarded as a pragmatically determined aspect of the interpretation. Recanati
claims that once a competent language user has recognised a term as belonging to a certain category - either that of proper names or indexicals - then such a language user will inevitably know that *that* term picks out a single object, i.e., is rigidly designating. This knowledge is directly dependent on the (subliminal) recognition of the semantic feature REF. Kripke implicitly adopts a similar position.

The question is this: Would Kaplan also wish to assent to the proposition that the recognition of a demonstrative, say, as a demonstrative is sufficient to trigger the associated - albeit subdoxastic - recognition that the proposition in which the term in question features must have singular truth conditions? That is to say, would Kaplan concede that the competent language user must recognise - at some level of cognitive awareness - a rigid designator as a rigid designator when he comes across one? It seems to me that if he wishes to uphold the theory of direct referentiality he must make such a concession, because if a language user does not recognise the posited inherent rigidity of a proper name or demonstrative, then his interpretation of utterances in which such a term features may turn out not to be constrained by it. Donnellan, for example (see chapter one), does not recognise the postulated rigidity of Leverrier's use of 'Neptune', and therefore claims not to be constrained to interpret utterances in which 'Neptune' features as singular propositions. It must be presumed, therefore, either that 'Neptune' does not incorporate the semantic feature REF, or that it does encode such a feature but that Donnellan simply fails to understand the word 'Neptune'. Similarly, as will be seen in chapter three, Nunberg claims not to be constrained by the putative rigidity of demonstratives.

It would seem, therefore, that if such recognition is essential if demonstrative usages are always to be interpreted as being directly referential and hence rigid, then it is plausible to suggest that it must be some feature of the semantics of such terms that ensures such a reading. As is the case with respect to Kripke's *de jure* rigidity such a feature would, presumably, be functionally indistinguishable from Recanati's REF.
Kaplan's avowed position, however, is that the positing of such a feature is not necessary, and that demonstratives just do pick out single individuals and single individuals only, and that any semantic feature indicating that they must do what they in fact do would be otiose. On the other hand, he concedes in 'Demonstratives' that 'he', say, may occur in contexts where it is neither demonstrative nor directly referential (i.e. where it occurs as a bound variable).

We can therefore conclude that his claim concerning the direct referentiality of demonstrative 'he' must be equivalent to one or other of the following:

I. 'He' and other demonstratives are univocal across their functions and their singular interpretations are pragmatically determined by the context of utterance, not semantically 'stipulated' by the meaning of the term itself; or

II. 'He' and other demonstratives are ambiguous as between their functions, but nonetheless whatever it is that makes demonstrative 'he' semantically distinct from non-demonstrative 'he' does not indicate direct referentiality, and therefore the singular reference is pragmatically determined by the context of utterance.

On further investigation, it turns out that Kaplan is uncertain as to whether 'he' and other like terms are, in fact, ambiguous or univocal. In 'Demonstratives' he writes:

These words have uses other than those in which I am interested (or perhaps, depending on how you individuate words, we should say that they have homonyms in which I am not interested). (1989a, p 489).

However, in a passage from 'Afterthoughts' already quoted in chapter one, he reverses the emphasis:

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20 Expressed in a very brief private conversation with MLG.
What I want to stress is that the difference between demonstrative and anaphoric uses of pronouns need not be conceptualised primarily in terms of lexical ambiguity, it can also be seen in terms of the syntactical distinction between free and bound occurrences of terms. (1989b, p 572).

Either (or both) I and/or II would therefore seem to summarise his position. Either way, the significant claim is unequivocal: with respect to indexicals, direct referentiality is pragmatically determined. However, if the interpretation of such terms as directly referential really is governed solely by pragmatic considerations, then nothing should prevent the assumption of a general (rather than a singular) reading when such a reading is more natural, and any claim that such a reading is merely a pragmatic implicature enriching a directly referential, or singular 'literal' interpretation would be hard to sustain.

As will be seen in chapter three, there are many contexts in which a general reading of an indexical utterance is more natural that a singular reading, and unless Kaplan is prepared to posit the existence of a semantic feature constraining a singular reading it is hard to see how he can account for the interpretation of such utterances and retain his theory of direct reference with respect to indexicals. Unfortunately, the acceptance of such a feature generates its own problems, as will be shown later in this chapter.

For the moment, however, all may not be lost for Kaplan. In a paper on the meaning of idioms such as 'goodbye' and exclamations such as 'oops' and 'ouch', Kaplan suggests that there is a 'semantics of use' in addition to a 'semantics of meaning', and that how such expressions as 'goodbye' and 'oops' should be correctly - or appropriately - used is semantically encoded in the expressions themselves and quite definitely does not depend on the language user's pragmatic competence, i.e., knowledge of the world and social mores.

\footnote{Kaplan (1996).}
This is not a new idea; nearly twenty years ago Nunberg rather more moderately observed:

... the semantics/pragmatics distinction cannot be validated even in principle; there is no way to determine which regularities in use are conventional, and which are not. This is not to say that there are no purely linguistic conventions of use, but rather that the content of these ... is necessarily indeterminate. (Nunberg, 1979, p 143).  

It seems to me that Nunberg's more cautious approach is to be preferred, but I shall not argue the point here. What is significant in the present context is Kaplan's willingness to posit esoteric semantic features to explain the use and interpretation of specific expression types. It therefore seems plausible to suggest that if he were persuaded that pragmatics alone could not deliver the required directly referential interpretations for all indexical utterances he might then be willing to concede, perhaps even to insist, that such an interpretation is, after all, semantically indicated. It is possible, of course, that in such a case he would prefer to abandon the theory of direct referentiality with respect to indexicals.

Finally, although in 'Demonstratives' (pp 492-3) Kaplan writes that he prefers to describe indexicals as being 'directly referential' rather than as being 'rigid designators', this is because he believes that his usage of the term 'rigid designator' differs from Kripke's usage; it is not because he does not believe that indexical usages are rigidly designating.

The difference between Kripke's and Kaplan's notions of rigidity has already been discussed in chapter one, and it is clear that it is not the stipulatory content of de jure rigidity that Kaplan finds unacceptable. Furthermore, in his 'Afterthoughts' (p 569), Kaplan writes of the 'characteristic, direct reference, form of rigid designation'. Now, by definition, this cannot refer to de facto rigidity, which is implemented by attributively used definite descriptions, and cannot be directly

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22 Cf Quine (1960) and (1969) on the indeterminacy of meaning.
referential. Therefore, unless he wishes to introduce some third form of rigid designation which is neither *de facto* nor *de jure* - and goodness knows what such a form might be - he must surely mean that directly referential terms are *de jure* rigid.

Finally, it has already been argued that *de jure* rigidity, as described by Kripke, must entail the positing of some semantically encoded stipulation enforcing that rigidity. It is, therefore, reasonable to suggest that as Kaplan's directly referential terms are also claimed to be *de jure* rigid, then his model of indexical reference must also implicate the positing of the functional equivalent of Recanati's REF.

It seems to me, therefore, that the burden of proof has been shifted to Kaplan. That is to say, if he wishes to maintain that his theory of demonstrative reference does *not* entail reliance on the semantic equivalent of Recanati's feature, REF, then he must show how demonstratives actually do refer without there being such an entailment. Indeed, although I shall argue that Recanati's positing of the semantic feature REF is fundamentally mistaken, his genuine insight that an adequate working model of direct reference requires just such a feature should not be undervalued.

2.5 Summary

1. The prototypical rigid designator, for Kripke, is the proper name.
2. The prototypical rigid designator (directly referential term), for Kaplan, is the free variable (see chapter one), which he sees as being closely analogous to the indexical usage of the pronouns and other pro-terms of natural language.
3. For Kripke, the link between a name and its referent is 'stipulative' rather than 'qualitative'.
4. By positing the semantic feature, REF, Recanati spells out the form such stipulation might take.
5. According to Recanati, REF is a feature of *all* type-referential (directly referential) expressions, both proper names and indexicals.
6. Kaplan claims that the semantical rules which mediate reference 'do not provide a complex which together with a circumstance of evaluation yields an object. They just provide an object'. That is to say, like Kripke with respect to proper names, he denies that the link between an indexically used expression and its referent is qualitative, but he also holds back from claiming that it is stipulative. Unfortunately, as we shall see, the 'semantical rules' Kaplan posits may not be powerful enough invariably to implement the object-dependent interpretations of indexical utterances that he predicts.

7. Although Recanati does not suggest that REF is a feature of either Kripke's or Kaplan's model of rigidity, REF, or its functional equivalent, is presupposed by Kripke and - arguably - is an essential feature of Kaplan's model also, if certain contra-theoretical readings of indexical utterances are to be blocked as their literal interpretations.

3. The ambiguity thesis

The problem, which may now be introduced, is simple. If Recanati is correct and REF (or some equivalent semantic property or set of semantic rules) is an encoded feature of all directly referential/de jure rigid terms, then direct referentiality or rigidity must be an invariant function of such terms. A term marked by the semantic feature REF cannot in some contexts function as a singular term and in other contexts not do so. By definition, REF ensures that 'the truth condition ... of the utterance where it occurs is singular'.

Now, all the proponents of the rigidity and direct reference theses seem to be agreed on at least two points: Indexical expressions are always directly referential, and direct referentiality entails de jure rigidity. However, as will be seen in chapter three, most (if not all) indexically used expressions are pro-terms. For example, 'T' and 'you' are pronominal, while 'now' and 'there' are pro-temporal and pro-locative respectively. But such terms have other uses, or functions, other than the indexical.
As a first approximation, we might say that collectively pronouns, and other pro-terms such as the pro-locatives 'here' and 'there' and the 'pro-temporals 'now' and 'then', have at least four distinct functions, although severally there may be gaps in the paradigm. That is to say, not all of the terms have access to all of the functions. These functions may be listed as follows:

(i) indexical; (ii) anaphoric; (iii) bound variable; and (iv) E-type.

It will be necessary to modify these categories later, but for the moment they will serve their purpose.

The first category may be sub-divided further into (a) demonstrative, for example 'this', 'that', 'he', 'she', etc; and (b) non-demonstrative, for example 'I', 'you', 'here', 'now', 'tomorrow', etc. Kaplan calls these latter terms 'pure indexicals'.

Category (ii) may also be sub-divided into two groups, comprising (a) syntactic anaphors, that is to say, reflexives and reciprocals, as defined by Principle A of Chomsky's binding theory; and (b) more general discourse anaphora, in which a term - although coreferential with some endophoric antecedent - is free in its governing category, as prescribed by Principle B of binding theory. As this is not an investigation of binding theory in particular, or indeed of syntax in general, no attempt will be made to define or discuss what is entailed by the concept described by the term 'governing category', although anaphora will be discussed in more detail in chapter five.

The members of category (iii) are distinct from the anaphors in (ii) in that they are bound by quantified expressions. Category (iv) will be discussed in chapter five.

In what follows only reflexives and reciprocals will be termed 'anaphors', while the terms 'pronominal anaphora', 'discourse anaphora', 'anaphoric pronouns', etc., will be reserved for Principle B pronouns, and other pro-terms which are...
referentially dependent on endophoric antecedents, whether this be intra- or inter-sententially. The discussion will be pitched at a very general level, and more special problems such as those associated with donkey anaphora, say, or the definition of E-type pronouns, will not be considered here.

The problem which now arises is self-evident, and in part it is the result of a sloppy way of speaking. It is a common practice, prevalent throughout the literature, to write of 'indexicals', as though such terms constituted a distinct and separate category whereas it may be that indexicality is no more than one function of terms which have other functions also. Therefore, it might be more accurate to speak (or write) of 'terms which have an indexical function'.

When pro-terms do occur indexically - as in (3) to (6) below - it is claimed that they are directly referential, and that this entails their rigidity. On the other hand, when the pro-forms featured in (3) to (6) occur non-indexically - as they do in (7) to (10) - they are not, presumably, directly referential, nor are they rigid.

(3) He'll never make it.
   (Said of a man running for a bus.)

(4) Give that to me.
   (The speaker points at some object.)

(5) Please put the exercise books there.
   (Said by a teacher indicating one end of her desk.)

(6) That is his order.
   (Said by a customer in a restaurant, indicating first a plate of food and then her dinner companion.)

(7) [NP A man]j came in and hej sat down.
(8) Sam has [NP a new camera] and that is what I would like too.

(9) There is [NP a square in the centre of the town] and it is there that the anarchists gather every Sunday.

(10) [QP Every dog] has his day.

The pro-form in (7) is a more or less straightforward example of pronominal discourse anaphora; that is to say 'he' is non-demonstrative and co-indexed with an endophoric antecedent. The use of 'that' in (8) is, perhaps, a little less obviously straightforward. In general, non-complementiser 'that' is defined as being either a demonstrative pronoun or a demonstrative adjective (or determiner). Either way, it is a demonstrative, but in (8) we want to say that 'that' is anaphoric and, analogously to 'he' in (7), non-demonstrative.

It seems to me that the confusion is, at least in part, also terminological in origin. That is to say, we should not speak of pronominal 'this' and 'that' as being demonstrative pronouns, but rather as being non-specific, non-personal, pronouns which - like the personal pronoun 'he' - have a demonstrative use. The problem is further compounded when adjectival or determiner 'this' and 'that' occur as part of an anaphorically dependent NP. Indeed Maes and Noordman oxymoronically dub such instances 'demonstrative nominal anaphors':

In other words dem Nas [demonstrative nominal anaphors] constitute the anaphoric subclass of demNps (i.e. non-pronominal demonstrative NPs). An example of a demNA is given in (1):

(1) Once upon a time there was a prince. This prince, / That prince, ...


It seems to me that this is an error, and that 'this' and 'that' are not functioning demonstratively in the above example. Nonetheless, it is an interesting error,
and poses a nice problem with respect to interpretation, which will be discussed in chapter five.

Lyons has also noted that some pro-terms appear to perform two functions simultaneously. That is to say, in certain contexts a pro-locative may appear to be both deictic and anaphoric. If he is correct, then we will need a unitary semantic account covering all the functions of pro-terms in order to explain such simultaneity. The pro-locative 'there', in (9) above, may have just such a dual function. This point will be discussed in more detail in section 5 below.

The immediate significance of examples (7) to (10) is that in each case the anaphoric expression is referentially dependent on an antecedent indefinite description. Furthermore, if we assume for the moment that 'referential dependence' reduces to 'co-referential with', it would seem to follow that they may not be interpreted as being either rigidly designating or directly referential, nor may the bound variable 'his' in (10). If this is correct, it follows that they cannot bear the semantic feature REF, nor can they be constrained by 'semantical rules' which are such that they ensure that 'the referent in all possible circumstances is fixed to be the actual referent'. (Kaplan). Yet this is what is claimed for these word forms with respect to their indexical uses.

In these difficult circumstances there are two options open to us:

(i) We may conclude that 'He' in (3) is not a token of the same word type as 'he' in (7), that 'that' in (4) is not a token of the same word type as 'that' in (8), that 'there' in (5) is not a token of the same word type as 'there' in (9), and that 'his' in (6) is not a token of the same word type as 'his' in (10). That is to say, we may conclude that 'he', 'that', 'there' and 'his' and all their pronominal and pro-adverbial analogues, are at least two-ways homonymously ambiguous; or

23 See Lyons (1977), vol II, p 676.
(ii) We may conclude that each of these paired examples do feature tokens of the same word types, but that in each case that word type cannot - irrespective of the context in which its tokens may occur - bear any semantic feature, or features, ensuring its direct referentiality. This is because if such word types were constrained by such a feature (or features), then all tokens of those types would necessarily be directly referential, and hence rigidly designating, in all contexts of utterance, and in all linguistic environments, which quite patently they are not.

Before going further, perhaps a brief note on the use of the term 'homonymous' is called for. It is used here in a fairly broad sense to indicate lexical as opposed to structural ambiguity, no contrast with polysemous ambiguity is intended. Furthermore, as nothing hangs on the distinction in the present context, and as the term 'homonymous' is more usual in the philosophical literature, this is the term that will be used in this discussion.24

If we adopt solution (i), which may be generalised across all pro-forms, we commit ourselves to the lexical ambiguity of all those pro-forms which, in addition to occurring indexically, have at least one other function. I shall call this option 'the ambiguity thesis'.

If we adopt (ii), we must deny the rigidity of indexicals. This is the solution which I favour. I shall call it 'the univocality thesis'.

It would seem, however, that anyone who wishes to support the claim that indexicality entails rigidity must adopt solution (i). Nothing as yet may be concluded concerning the rigidity of proper names, which are not vulnerable to the foregoing arguments, as they do not appear to have an analogous range of functions.

As was seen above, Kaplan recognises that there is some doubt over the lexical status of pronouns with respect to their different functions. He seems unaware, however, of the graver implications of this uncertainty. What emerges from the extracts quoted is that he apparently sees the resolution of this question of lexical status as being a matter of choice, which may be exercised according to how we 'individuate words' or 'conceptualise' pronouns, rather than as a crucial matter of psycholinguistic fact. However, it is difficult to accept that it is simply up to us to carve up the categories of grammar to suit our current theoretical preoccupations; presumably there really is some hard fact of the matter.

As I see it, there is a nice problem here for Kaplan. On the one hand, if the question of the lexical status of pronouns is resolved in favour of their ambiguity this would, at least, be compatible with his claims concerning their direct referentiality and singularity. That is to say, the semantic feature REF, or its extensional or functional equivalent, might then be posited as a component of the meaning of indexical terms. However, as was seen in chapter one, it is on the assumption of their univocality that Kaplan analogises pronouns to the variables of logic. Indeed, it seems to me that univocality is an essential feature of such an analogy.

On the other hand, if the question of the lexical status of pronouns is resolved in favour of their univocality, while this might initially seem to support the analogy with the variables of logic, it may turn out that such support will avail Kaplan little. It has been argued above that such univocal terms cannot be directly referential singular terms, i.e., rigid designators. They cannot, therefore, be the analogues of the variables of logic as it is central to Kaplan's thesis that the prototypical rigid designator is the free variable.25 It seems, therefore, that whichever choice is made between (i) and (ii), the analogy between the variables of logic and the pro-terms of natural language breaks down.

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25 In a paper delivered to a philosophy conference in San Marino in May 1966, Scott Soames expressed a similar view.
In fact, this analogy has been challenged for independent reasons by Marti on the grounds that whereas

[i]ndexicals have a meaning that transcends their picking out an object in a context ... variables do not have anything that could qualify as meaning. (Marti, 1995, p 285).

Kaplan, also, is aware of this distinction. He comments:

These formal analogies should not cause us to lose sight of the fundamental difference between free variables and indexicals. Indexicals are real, meaning-bearing elements of language. Free variables are not, they are artifacts of our formalism. (Kaplan, 1989b, p 593).

Once again, Kaplan seems unaware of the graver implications entailed by a distinction of which he is aware, and he does not believe that this 'fundamental difference' stands in the way of the analogy as he draws it. However, it is the very fact that indexically occurring expressions have 'meaning' while the variables of logic do not that gives rise to the present difficulty. If pro-forms generally were no more than meaningless ciphers, whose semantic significance is determined by an assignment function, then questions concerning their ambiguity or univocality across usages would not arise.

As a first move in an attempt to answer these questions and settle the debate, appeal might be made to the principle of parsimony as expressed by Grice: 'Senses are not to be multiplied beyond necessity.' (Grice, [1967], 1989c, p 47). However, by itself, this does not constitute a very convincing argument against the ambiguity thesis. For the moment this principle is perhaps best viewed as having no more than the weight of a casting vote. If the empirical data can be adequately explained by two or more theses, then - ceteris paribus - any explanation that does not involve multiplying senses is to be preferred over one that does. However, if the data can be more convincingly explained by a thesis that posits ambiguity than
one that doesn't, then Occam's Razor loses its cutting edge. In the event, I hope to show that the empirical data cannot be adequately explained by the ambiguity thesis. If this is correct, then the principle of parsimony may be used not merely as a casting vote, but as an additional argument in its own right. Such a multiplication of senses would clearly be 'beyond necessity'.

4. Challenging the ambiguity thesis

The simplest way to initiate a challenge to the ambiguity thesis is to test its predictions against the sentences of natural language by assigning REF-values to all occurrences of pro-forms. More precisely, it would be instructive to ascertain whether this can be done, and if it can whether any significant patterns emerge. The determining of REF-values, however, turns out to be a far from straightforward undertaking. Firstly, it is not always clear what function a pro-term is performing in a given context.

4.1 Distinguishing anaphora from deixis

It has already been remarked that pro-terms have a range of functions, briefly relisted below:

(i) indexical; (ii) anaphoric; (iii) bound variable; (iv) E-type.

Furthermore, it has been stipulated that in general the term 'anaphora' and its derivates will apply only to those expressions which have endophoric antecedents. By default, therefore, pro-terms which have no endophoric antecedents will be assumed to be indexical, and will be referred to as such. E-type pronouns, quantifier-bound pronouns, and syntactic anaphors, also have endophoric antecedents, although the practical usage so far adopted has implied their exclusion from the category of anaphora. However, the criterion stipulated above for determining how the terms 'anaphora' and 'indexicality' will be used also

\[26\] For a similar view, see McCawley (1970), p 178.
excludes these other forms of anaphoric usage from the category of indexically functioning terms, and this is as it should be.

Nonetheless, the criterion suggested above, does constitute a radical simplification of complex - and perhaps ill-understood - linguistic phenomena. The assumption that anaphoric pronouns, say, have an endophoric antecedent whereas deictic (indexical) pronouns do not, although definitionally simple and aesthetically satisfying, is not uncontroversial.\(^{27}\) Perhaps a more generally acceptable distinction is that noted by Ehlich:

The anaphoric procedure is a linguistic instrument for having the hearer continue (sustain) a previously established focus towards a specific item on which he had oriented his attention earlier. (Ehlich, 1982, p 330).

And:

The deictic procedure is a linguistic instrument for achieving focusing of the hearer's attention towards a specific item which is part of the respective deictic space. (p 325).

This is essentially the given-new distinction, apparently first noted by Apollonius Dyskolus nearly two thousand years ago.\(^{28}\) However, with respect to specific cases the distinction between anaphora and deixis is still variably determined by different writers. Lyons, for example, takes a broad view of what might be entailed by 'previously established focus', which he discusses with respect to (11) below:

(11) I was terribly upset to hear the news: I only saw her last week.

(The speaker is condoling with a friend on the death of the friend's wife.)

\(^{27}\) See Bosch (1983), chapter one.
\(^{28}\) See Bosch (1983).
Lyons argues from this example that the 'intersubjective experience or common memory' that is 'exploited in the interpretation of texts' and that is necessary for the operation of anaphora need not be textually represented and that - despite the lack of an endophoric antecedent - 'her' in (11) is, nonetheless, anaphoric. Peter Bosch, on the other hand, discusses a superficially similar example - reproduced as (12) below - about which he takes a rather different view.

(12) I saw Mr Smith the other day, you know she died last year.
    (from Bosch, 1983, p 59.)

Bosch's position is that the 'semantic content' of 'she' in this example is 'sufficient to single out a new object of attention' and that the pronoun may, therefore, be interpreted as deictic. The point that Lyons wishes to make is that the presence of an endophoric antecedent is not a necessary pre-condition of anaphora, whereas Bosch wishes to demonstrate that 'the pointing gesture is not an essential feature of deixis'. What I hope to show is that if an adequate unitary account of the semantics of pro-terms can be supplied and is adopted then many of the problems arising from a failure to distinguish between anaphora and deixis simply dissolve. This is because the interpretative procedure with respect to certain utterances will turn out to be the same whichever way the decision goes.

In addition to the problem of distinguishing between anaphora and deixis, however, there is also the difficulty encountered in distinguishing between deixis and indexicality. A rather specialised approach to this distinction will be discussed in chapters three and four. However, in much of the linguistic literature the term 'deictic' is used where 'demonstrative' or 'indexical' would be used with (apparently) equivalent signification in the philosophical literature. In this chapter, therefore, the terms 'deictic and 'demonstrative' will be used almost interchangeably, and both will be taken to imply indexicality in Recanati's and Kaplan's sense. Later on these usages will be redefined.
On the assumption that the deictic uses of pronouns may be equated with their demonstrative, or indexical, uses it should be obvious that any failure to distinguish accurately between anaphoric and deictic pronouns may be of considerable significance for theories of direct reference as they relate to indexicality. Nonetheless, with respect to the linguistically straightforward examples adduced in what follows, the simplistic distinction stipulated above that anaphora requires an endophoric antecedent whereas deixis, or indexicality, presupposes the absence of such an antecedent should be adequate. Provided its limitations are not lost sight of, adopting it for the purpose of the present discussion should be harmless.

4.2 Determining REF-values

According to the theory of direct reference as it is explicated by Recanati's story, all directly referential terms are marked by the semantic feature REF, or somehow constrained by REF's functional equivalent. Thus demonstrative 'he', say, may be represented as 'he+REF', while non-demonstrative, anaphoric occurrences of 'he' might be represented as 'he_{REF}^{-}'. The negative REF-value is placed in square brackets because Recanati nowhere suggests that '[-REF]' is also a semantic feature of pro-terms, or indeed of any lexeme. Nonetheless, for convenience, '[-REF]' will be treated here as if it were a genuine semantic feature, on a par with the posited '+REF'.

Indeed, the assumption that REF itself is a genuine semantic feature should be seen as no more than a strategy of convenience, adopted to facilitate the following discussion as a way of distinguishing between supposedly ambiguous homonyms. Furthermore, it should be reiterated that the ultimate aim in this chapter is to show that the existence of such a feature has not been adequately demonstrated, and to argue that even if such a feature should be shown to exist it cannot be a component of the meaning of indexically occurring expressions.

The real issue is this: If there exists a semantic feature, or set of semantic rules, equivalent to Recanati's REF, it should be possible to determine whether any
particular instantiation of a pro-form in a context does, or does not, bear it - or
them. (Henceforth, the term 'REF' will be used to cover all semantic features or
sets of semantical rules with which REF might be equated.) Recanati makes the
(implicit) assumption that such a determination is unproblematic, and that the
presence of such a feature is virtually self-evident. He writes:

The truth-condition of an utterance $G(t)$ is singular if and only if there is
an object $x$ such that the utterance is true if and only if $x$ satisfies $G()$. If,
therefore, the term $t$ is referential, its meaning includes a feature by virtue
of which it indicates that there is an object $x$ such that an utterance of $G(t)$
is true or more generally satisfied if and only if $x$ satisfies $G()$. (Recanati,
1990, p 17).

Indeed, it is not easy to see how a semantic feature can 'indicate' anything at all,
let alone anything as specific as the satisfaction condition outlined above, if it is
not possible to determine whether the feature is or is not present. As I hope will
become apparent, it is our inability - both as theorists and as language-users - to
determine whether REF should or should not be present in a wide range of
contexts that renders the positing of such a feature suspect.

It must be conceded, however, that initially it does seem as though the assumption
that the REF-value of pro-forms is self-evident is justified. For example, a
demonstrative use of 'he' accompanied by ostension, as exemplified in (3) above,
may readily be marked '+REF' (if it is conceded that there is such a feature).
This is shown in (3'). A bound variable use, on the other hand, as exemplified in
(10) above, is equally clearly '[-REF]'. This is shown in (10'). Indeed, Kaplan
cites such uses as that in (10) as being paradigmatically and transparently non-
demonstrative and non-referential.

(3') He [+REF] will never make it.

(10') [QP Every dog]$_m$ has his$_m$[-REF] day.
The obviousness of such examples is misleading. It is easy to assume that the apparent clarity of the distinction represents the norm. To put it another way, it is assumed that there is a category of terms associated with the very distinctive property, rigidity, or the equally distinctive function, direct reference, and that by identifying REF-values it is possible to determine with respect to any particular term whether or not it belongs in this category. What Recanati does not recognise is the uncomfortable fact that, if we accept the reality of this organisation of pronouns and pro-adverbials into discrete '+REF' and '-REF' semantic categories, it turns out that there are vast intermediate grey areas where the distinction between the categories is blurred. Furthermore, even if we are not committed to the reality of the semantic feature REF, the difficulty in distinguishing between directly referential and non-directly referential uses of pro-terms remains acute.

For example, somewhere in between the two extremes represented by the theoretically clear '+REF' deictic usages and the equally clearly '-REF' bound variables lies the set of referentially dependent anaphoric pronouns, as exemplified in (7) above and reproduced again for convenience below.

(7) \[\text{A man} j \text{ came in and } he_j \text{ sat down.}\]

Before discussing the REF-values of such examples, however, the problems associated with reference determination with respect to anaphoric pronouns in general should, at least, be mentioned. It is quite clear in example (7), in virtue of the coindexing, that 'he' is coreferential with 'A man'. However, in the more general case, as represented in (7a), there is no overt marking of indices and any utterance of such a sentence is putatively ambiguous, there being - in addition to that given in (7) - an alternative interpretation available in which there is disjoint reference between 'A man' and 'he'.

(7a) A man came in and he sat down.
The difficulties associated with assigning reference to pronouns become more pronounced when there is more than one potential endophoric antecedent, as in (13) to (15) below:

(13) Boris teased Horace and he laughed.

(14) Harry chased Barry and Clarry caught him.

(15) Jilly bit Milly and she scratched her.

Several strategies, appealing to both the prosodic and the grammatical features of such troublesome utterances for their disambiguation, have been postulated, for example The Parallel Function Hypothesis, and The Subject Assignment Strategy.²⁹

Such multiple ambiguities, however, are only relevant in the present context to the extent that REF ambiguities interreact with them. It would be nice, for example, if predictions concerning reference assignment could be made on the basis of REF-values. Unfortunately, as will become apparent, this appears not to be the case. It does not even turn out that the distinction between co-reference and disjoint reference can be reliably predicted by determining the REF-values of the relevant terms. Nor can the converse predictions be made.

Furthermore, REF ambiguities are of a rather special nature. The main difficulty lies not in the pragmatics of reference determination, or the identifying of principles, heuristics and cognitive strategies by which such determination might be achieved, but rather in the semantic identification of the pronouns (pro-terms) actually used. This remains problematic even after the correct reference assignment has been achieved.

4.2.1 Difficulties in determining REF-values

If the ambiguity thesis is correct, then 'he₁' and 'he₂', say, constitute a minimal pair, distinguished (and distinguishable one would have thought) from each other by the presence or absence of the semantic feature REF. As I have already indicated, the problem does not lie at the level of reference assignment. Indeed, it is just as pressing from the viewpoint of the speaker, about whom it may be stipulated that she is rational and linguistically competent, and with respect to the examples to be discussed makes no performance errors.

That is to say, it may be stipulated that the speaker knows what she wants to say and says it, assigning the correct reference to the appropriate pronouns. The difficulty lies in determining in each case which member of the minimal pair is used to pick out the referent rather than in how the actual reference assignment is achieved. The questions that require answering are, therefore, essentially metalinguistic and relate to lexical choice and the semantic structure of words.

In all the following examples, therefore, indices will indicate referential dependencies and with respect to these examples there will be no discussion of the pragmatic problems relating to reference assignment.

It might now be appropriate to look at example (7) again.

(7) \[NP \text{A man}, \text{ came in and he}, \downarrow \text{ down.}\]

With respect to REF-values this example also is easy enough to disambiguate. If we assume (for the moment) that the antecedent expression 'A man' is neither directly referential nor rigidly designating, it should follow that the anaphoric pronoun 'he', which is referentially dependent on this antecedent, will not be directly referential or rigidly designating either. This needs to be spelled out more precisely. Two assumptions have, in fact, been made:
(i) Indefinite descriptions have only one reading according to which they are neither directly referential nor rigidly designating; and

(ii) If an expression is neither directly referential nor rigidly designating then any pro-term which is referentially dependent on that expression will not be directly referential or rigidly designating either.

With respect to (i), although there is considerable disagreement over what type of expressions indefinite descriptions are, there is widespread agreement over what they are not. They are not directly referential, nor are they rigid designators. Chierchia (1992), for example, argues that they are 'existentially quantified terms', and such terms do not require to be satisfied by unique individuals. Even widest scope readings of definite descriptions do not amount to examples of rigid designation. Indeed, this point is stressed by Kripke in the preface to Naming and Necessity, and by Recanati in chapter one of Direct Reference. On the other hand, the quantificational interpretation of indefinite descriptions has been challenged, most notably by Heim and Kamp. Heim writes;

The logical analysis of an indefinite ... is just a proposition with a variable free in it. E.G. "a cat" corresponds to something like "cat (x)". When an indefinite occurs in a sentence ... the logical analysis of that sentence is again a proposition with a variable free in it ... (Heim, 1983, p 179).

There should, however, be no temptation to equate Heim's free variables with the quintessential rigid designators of Kaplan's quantified intensional logic. Heim claims that when a sentence such as (16) below is considered in conjunction with her criteria for logical forms, reproduced below as CLF, it turns out that the truth conditions for such a sentence are existential even though the logical form is not. The logical form of (16) is given as (16').

30 See also Smith (1984) and Soames (1996).
A cat arrived.

(SNP1 [-def] a cat)[S[+def] ei arrived]]

(adapted from Heim, 1983, p 176.)

CLF: Let F be a true file and p a logical form. Then p is true w.r.t. F if F + p is true, false w.r.t. F if F + p is false, and truth-valueless w.r.t. F if F + p is undefined.

(from Heim, 1983, p 178.)

It is not necessary to reproduce Heim's argument in full here. It should be sufficient to note that her conclusion is that (16) 'is true if and only if at least one cat arrived'. Quite clearly, this does not allow a reading according to which 'A cat' is either directly referential or rigid, not does Heim wish to claim that it does. Her challenge to the quantificational analysis has been introduced here because the assumption that indefinite descriptions are not directly referential is crucial to the later stages of my argument, and I hope to forestall any suggestion that Heim's free variables may be equated with Kaplan's. From this it should be clear that whether we regard indefinite descriptions as existentially quantified expressions, or as Heimian variables, their significance with respect to REF-values remains the same.

On the other hand, Fodor and Sag have argued that indefinite descriptions are semantically ambiguous as between a quantificational and a referential reading. This is a stronger claim than that made by Recanati with respect to definite descriptions. He argues that the distinction between attributive and referential readings is pragmatically determined. However, even if the strong ambiguity interpretation of indefinite descriptions is accepted, and it probably should not be, the argument that is developed below will depend on examples for which a
quantificational reading is at least possible, and in the final analysis this is all that is necessary.

With respect to assumption (i), therefore, we can say that even if Fodor and Sag's analysis is accepted, if a narrow scope, or - in Fodor and Sag's terms - a quantificational (as opposed to a referential) reading of 'A man' in (7) is assumed, then this expression is neither directly referential nor rigid and may, in different circumstances of evaluation, be satisfied by different entities. Furthermore, if anaphoric referential dependence entails coreference then it might safely be assumed that assumption (ii) follows from assumption (i). For example, the anaphoric pronoun 'he', in (7), because it is referentially dependent on 'A man', will - on the quantificational reading of this latter expression - also have different referents in different circumstances of evaluation, and this is contrary to what is required of rigidity or indicated by REF. Therefore, assuming this interpretation of the antecedent term, we may say that 'he' in (7) is not marked by the semantic feature REF.

Such a straightforward validation of assumption (ii) may not, however, be the end of the story.

Lewis offers an alternative analysis with respect to certain utterances of pronouns anaphoric on indefinite descriptions:

It is worth mentioning another way to shift comparative salience by conversational means. I may say "A cat is on the lawn" under circumstances in which it is apparent ... that there is some one particular cat that is responsible for the truth of what I say. Perhaps I am looking out the window, and you rightly presume that I said what I did because I saw a cat, and further ... that I saw only one. What I said was an existential quantification, hence, strictly speaking, it involves no reference to any particular cat. Nevertheless it raises the salience of the cat that made me say it. Hence this newly-most-salient cat may be denoted by ... pronouns,
in subsequent dialogue: "No, it's on the sidewalk." (Lewis, [1979], 1983, p 243).\(^{37}\)

According to Neale, if we accept this interpretation, the anaphoric pronoun 'it' in the final utterance is not only a 'referring expression' but the proposition in which it occurs is 'object-dependent', i.e., singular.\(^{38}\) In other words 'it' designates (presumably rigidly) a specific cat, which has been 'raised to salience' by the antecedent indefinite description. Therefore, it might be claimed that despite the indefinite nature of that antecedent the pronoun anaphoric on it should be marked with the semantic feature REF.

If I have understood Lewis correctly (and I confess to experiencing some difficulty) then it seems to me that the consequences of such an analysis with respect to truth conditions are untenable. This will become clearer if Lewis's example is modified as in (17) and (18):

\[(17) \quad \text{A: A cat is on the lawn.} \\
\quad \text{B: It is chasing butterflies.} \]

\[(18) \quad \text{A cat} \_i \text{ is on the lawn and it} \_i \text{ is chasing butterflies.} \]

Let us assume that in each case a specific cat is raised to salience for the reasons given by Lewis. Now, as 'A cat' is - according to Lewis - an existential quantification the first, or antecedent, clause is true just in case at least one cat is on the lawn, whereas - ex hypothesi - the anaphoric clause is true iff a specific cat - let us call it 'Felix' - is chasing butterflies. If this is correct, then there will be some world in which (17) is true even though the cat on the lawn is not Felix and is not chasing butterflies and Felix is chasing butterflies (but is, of course, not on the lawn).

\(^{37}\) Page reference is to 1983 publication.

\(^{38}\) See Neale (1990), pp 177-178.
If (17) is true in such a world, then it should follow that (18) is also. The problem with this is that in such a case 'it' cannot be anaphoric on 'A cat'. Furthermore, even if we are prepared to overlook the coindexing - and I don't see why we should - it is doubtful whether 'it' could felicitously be used demonstratively (i.e. non-anaphorically) in such a context. Indeed, Nunberg (1993) claims that 'it' has no demonstrative (deictic) use at all. Conversely, it seems to me that as 'it' quite clearly is anaphoric on 'A cat' then - despite any claims Lewis might make to the contrary - (18) will be true just in case at least one cat is on the lawn and that cat, whichever cat it is, is chasing butterflies.

This would seem to suggest that a pronoun referentially dependent on a [-REF] expression must itself be [-REF], and that assumption (ii) may, after all, be validated.

Finally, the interpretative problems which might arise if the Fodor and Sag analysis is adopted and the referential reading of 'A man' in (7) (or 'A cat' in (18)) is assumed will not be discussed. However, similar problems may be introduced less controversially with respect to certain other terms. For example, (7) may be slightly modified - as in (19) and (20) - to give rise to rather different intuitions with respect to REF.

(19) He, came in and he, sat down.
    (The speaker indicates a seated man.)

(20) Jack, came in and he, sat down.
    (Said long after the event and in the absence of Jack.)

Perhaps, echoing Donnellan in another context, it would be more accurate to say that I don't have any strong intuitions with respect to (19) and (20) one way or the other. In each example it is clear that - according to the theory of direct reference/rigid designation - the antecedent term must be marked '+'REF', but it is not at all obvious that the referentially dependent anaphoric pronoun must also be
thus marked. Being referentially dependent on - if such dependence entails coreferentiality with - a directly referential term, it will in each case behave like a rigid designator. Or rather, it will do if the thesis of direct reference is correct. That is to say, according to the theory, both clauses in (19) and (20) will have singular truth conditions.

However, Recanati is at pains to point out that many expressions behave like rigid designators without being type-referential. Taking his cue from Donnellan, he argues that descriptions 'can be used referentially' and that when they are thus used the propositions in which they feature have singular truth conditions. However, he characterises such descriptions as being merely token-referential, and token-referential expressions do not bear the semantic feature REF. Whether such token-referential expressions are or are not rigid designators has been the subject of much confusion and debate.

With respect to 'he' in (20) there are further arguments against identifying this pronoun with the directly referential form. According to Kaplan, indexical 'he' is a demonstrative and - although he nowhere says this it is strongly implied - if it is not demonstrative it is not indexical. Of demonstratives he writes:

A demonstrative without an associated demonstration is incomplete. The linguistic rules which govern the use of the true demonstratives 'that', 'he' etc., are not sufficient to determine their referent in all contexts of use. Something else - an associated demonstration - must be provided. (1989a, p 490).

Now, it is difficult to see how any 'associated demonstration', either explicit or implicit, would be either appropriate or helpful in the case of an utterance of (20) in the circumstances stipulated.

40 See, for example, Kripke's (1977) response to Donnellan (1966).
It might be less troublesome to conclude that the behaviour of pronouns which are anaphorically dependent on directly referential terms is simply a reflection of the behaviour of the antecedent term, rather than being a function of the inheritance from that term of the semantic feature REF itself. After all, if the antecedent term is singular, and the anaphoric pronoun always refers to whatever its antecedent refers to, then such a pronoun cannot avoid aping the referential behaviour of that antecedent. That is to say, if we subscribe to the theory of direct reference and if we also subscribe to the theory that anaphoric pronouns always refer to whatever their antecedents refer to (and I will later challenge that theory also) then it will always turn out that a pronoun anaphorically dependent on a rigid designator will have the same referent in all circumstances of evaluation.

However, this is also a characteristic of de facto rigid expressions which - by definition - do not incorporate any semantic feature stipulating specific truth conditions. Perhaps, therefore, we should identify all anaphoric pronouns, i.e., all pronouns which are referentially dependent on an endophoric antecedent, as being marked '[-REF]' irrespective of whether they do or do not turn out to have the same referent in all circumstances of evaluation.

There are certain benefits to be derived for the ambiguity thesis from this conclusion, the most notable being that it marks the distinction between anaphora and indexicality definitively, thus assigning to REF a certain explanatory and predictive power. For example, if the REF-value of a pro-term is known then, if the presence or absence of this feature really does reliably mark the distinction between indexicality and anaphora, sentences such as (7a) may be disambiguated by the application of a rule.

However it is not clear what, if anything, this contributes to a pragmatic or cognitive theory of communication, as the real problem of disambiguation remains unchanged for the hearer. That is to say, in examples such as (7a), REF-values cannot be determined by the hearer until disambiguation is complete,
although the appropriate value will presumably have been selected by the speaker. Furthermore, in examples such as (13), (14) and (15), where the ambiguity stems from the multiplicity of possible antecedents, REF-values are completely uninformative with respect to reference assignment and would remain so even if they marked the distinction between anaphora and deixis.

In any event, if the ambiguity thesis is correct then, if only for the following two reasons (there are almost certainly others), the suggestion that all anaphoric pronouns should be marked '[-REF]' is less than convincing.

(i) A consideration of syntactic anaphors indicates a rather different and equally plausible account; and

(ii) Empirical evidence indicates that indexicality and anaphora cannot be thus separated.

Point (i) will be discussed immediately, whereas point (ii) will not be addressed until section 5 - the final section of this chapter. With respect to (i), the examples chosen to illustrate this point - see (21) to (23) below - will be kept extremely simple, and problems relating to long-distance anaphora or suggestions concerning logophoricity will not be discussed, as it seems unlikely that a consideration of such issues will contribute anything to the present discussion.41

(21) Hei is shaving himselfi.
    (Speaker points to barber.)

(22) Samk is shaving himselfk.

(23) [NP A man in the street]j is shaving himselfj.

41 But see Huang (1994) and Sells (1987) for further discussion.
Now I have no more than an intuition about this, but it seems to me that in examples such as these, where the anaphor is so closely dependent - both syntactically and semantically - on its antecedent term, that it would be at least reasonable to expect there to be a referential parallelism between antecedent term and dependent anaphor. Furthermore, a consideration of emphatic appositive reflexives, such as those in (24) to (26), seems to me to reinforce this intuition.

(24) Although he went to the football game, John himself had no interest in it.

(25) The chancellor herself threw out the first ball.

(26) Smith's murderer himself, whoever he is, must have left the footprint in the library.

(Examples (24) and (25) are adapted from McKay, 1991, p 368.)

At this purely intuitive level, therefore, we might expect the anaphors in (21) to (23) and the emphatic appositive reflexives in (24) to (26) to copy the REF-values (if there are any) of their antecedents. That is to say, we might reasonably expect the individual terms of one set to be in semantic concord with the relevant terms of the other.

As 'He' in (21), 'Sam' in (22) and 'John' in (24) are all (according to the theory) directly referential, the reflexives in these examples might be expected to be directly referential also. In (23), on the other hand, the antecedent term, being an indefinite description, is not directly referential, consequently in this example the anaphor will presumably not be directly referential either, nor - for familiar reasons - will the definite description-appositive reflexive pair in (26). The referential status of 'herself' in (25), however, is less readily determined, but this is because the referential status of the controlling NP is also controversial, not because the semantic concord between the description and the appositive
reflexive is in doubt. Schiffer, for example, 'construe[s] the class [of indexicals and demonstratives] broadly, so that it includes "improper" definite descriptions, such as that in (25). If he is correct to do this, then presumably 'The chancellor' should be construed as indexical and consequently - according to the theory of direct reference under discussion - it will have a positive REF-value, although how such a value might be incorporated into a description is not immediately obvious. However, if it does have a positive REF-value so, arguably, will the appositive 'herself'.

It is doubtful, however, whether Recanati, who sees the referential/attributive distinction as being a function of pragmatic rather than semantic forces, would accept this attribution. He might well wish to argue that 'The chancellor' is at best no more than token referential, and at worst that it is not referential at all. Kaplan, on the other hand, embraces (in 'DTHAT') Donnellan's referential/attributive distinction enthusiastically, without making any commitment to a pragmatic explanation of this distinction. He might, therefore, be prepared to accept the direct referentiality of both 'The chancellor' and 'herself' in (25).42

It might be pertinent to inquire here how it is, if not even linguists and philosophers can agree on the referential status of an antecedent term, that ordinary language users can determine which of two possible homonyms to choose when that choice is determined by the referential status of that antecedent.

The point is that what is at issue here may not be explicable in terms of grammatical knowledge (competence), innate or acquired, much of which quite clearly is subdoxastic, because the choice concerns not syntactic or phonological form or structure but the semantic content of individual lexical items. The choice the speaker has to make relates to vocabulary rather than to syntactic category or structure. If the answer to this particular puzzle is that the speaker does not choose, and indeed remains unaware that there is a choice to be made, but that

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42 For a more philosophical approach to the semantics of reflexivity see Salmon (1986) and (1992).
somehow whatever the status of the antecedent the anaphor just does match its referential semantics, the question must surely now be: How do we know, and what difference would it make if it didn't?

Despite these doubts, or rather setting them aside, we might still want to say that if there really are REF ambiguities, then whether or not a particular expression is construed as being directly referential, it is plausible to suggest that syntactic anaphors adopt the REF-values of the terms by which they are governed. Furthermore, for want of arguments to the contrary, we might be tempted to conclude that if syntactic anaphors inherit the REF-values of their antecedents, rather than being invariably ['-REF'] terms, then anaphoric pronouns do the same.

The significance of this tentative conclusion lies in the assumption that the distinction between a particular pro-form which is marked '+REF' and that same pro-form marked ['-REF'] is a distinction between ambiguous homonyms. It is now being suggested, therefore, that there is a mixing of such homonyms within the single functional category of anaphora. This is not impossible, but it might be thought to reduce the explanatory usefulness of REF, possibly to the point of vacuity.

This is all highly speculative and there seems to be no clear indication of how we might choose between the various possibilities. Rather more depressingly, it seems as though little linguistic enlightenment will be attained if we do.

Nonetheless, there are good reasons for pursuing these questions here. It has been argued above that both Kripke's and Kaplan's theses concerning rigidity and direct referentiality implicate the semantic feature REF. Furthermore, in the philosophy of language these are influential theses and the nature and extent of their logical and semantic implications for natural language should not be overlooked. If REF really is a feature of natural language, it is an important and pervasive one, and we really should find our how it is distributed and how it works. It is supposed to draw an explicit line between expressions which are of a very special type, i.e.,
directly referential, and those which are not. Yet it is quite unclear where - or how - this line is drawn. This is puzzling.

Furthermore, a little thought will reveal that even if the concept of REF itself is abandoned the underlying difficulties remain exactly the same. That is to say, with or without the complications added by the postulation of REF, if some terms really are directly referential, it would be nice to know which those terms are. However, once we start to examine utterances that are structurally more complex than the examples around which the direct reference theory is built it becomes apparent that we really can't tell which pro-terms are directly referential and which are not. This also is puzzling.

However, if REF is not abandoned and the ambiguity thesis is assumed to be correct the problems consequent upon this assumption do not concern the interpretation of the speaker's communicative intentions. As has already been indicated, they relate to a more fundamentally linguistic/semantic problem facing the speaker rather than the hearer and concerning lexical choice. Despite what has been argued above, perhaps the choice is made on the basis of an intuitive innate, or acquired, grammatical competence. Should we, therefore, upon introspection, be able to identify those choices? Perhaps not. Clearly, we do make similar lexical selection decisions with respect to arguably ambiguous terms without any conscious awareness that such a choice is being made. However, in such cases the choice is (usually) theoretically determinable and involves a distinction in syntactic category. Consider (27) and (28) below:

(27) Please give me that.
    (Speaker indicates a book.)

(28) Please give me that book.

According to the most generally accepted analysis 'that' in (27) is a demonstrative pronoun - let's call it 'that1' - whereas 'that' in (28) is a demonstrative adjective -
let's call it 'that\textsubscript{2}'. It is probably fair to say that most competent users of English are unaware of this distinction. However, once a speaker has understood the theoretical underpinnings of the lexical ambiguity of 'that' she will, presumably, have no difficulty in determining which of two possible terms is used in any utterance of (27) or (28) respectively.

Is it reasonable to expect a similarly theoretically well-informed speaker to be able to determine which of the two possible versions of 'himself' occurs in utterances of (21), (22) and (23) or of 'he' in (19) and (20), say? Is it also reasonable to assume that if, even after prolonged consideration and possibly introspection, the speaker is unable to determine which of two homonyms she actually chose in such an utterance, then there was, in fact, no choice made and no ambiguity at all? Once again, possibly not. The trouble is the theory does not as yet seem to give us sufficient information and the theoretically well-informed speaker may not exist.

However, it does seem to me that the ball is now in the court of the direct referentialists. It is up to them to make their theory work. If that theory cannot explain how it is that these crucial lexical choices are made, then I suggest that it is not a very satisfactory theory.

Nonetheless, still assuming that the ambiguity thesis is correct, I shall make one more attempt to uncover some principle that might govern those choices.

### 4.3 The agreement hierarchy

In general, agreement between anaphoric expressions and their linguistic antecedents contributes to discourse cohesion\textsuperscript{43} and as will become apparent not all such agreement is strictly constrained by syntax. However, Corbett has argued that neither is the implementation of various types of anaphoric agreement totally random\textsuperscript{44}. Nonetheless, there are problems, which do not relate exclusively to

\textsuperscript{43} See Halliday and Hassan (1976).
\textsuperscript{44} Corbett (1979).
pronominal anaphora, but to various types of agreement within a text. In order better to understand the difficulties that relate to anaphoric pronouns and agreement it might help to look at other aspects of the agreement problem. For example, why is it that both (29a) and (29b) are acceptable, whereas of (30a) and (30b) only the first member of the pair is?

(29a) The committee has decided.
(29b) The committee have decided.

(30a) This committee sat late.
(30b) *These committee sat late.

(These examples are taken from Corbett, 1979, p 203.)

Corbett's solution entails the formulation of what he calls an 'agreement hierarchy'.\(^{45}\) Firstly, he distinguishes two types of agreement: syntactic and semantic, although he notes:

The latter term is not wholly satisfactory for, as [30b] shows, 'semantic agreement' is restricted by the syntactic environment. (ibid.)\(^{46}\)

He then posits the following four hierarchically ranged agreement positions:

attributive - predicate - relative pronoun - personal pronoun

Of these he writes:

The possibility of syntactic agreement decreases monotonically from left to right. The further left an element on the hierarchy, the more likely syntactic agreement is to occur, the further to the right, the more likely

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\(^{45}\) For further discussion of this hierarchy and anaphoric agreement see Cornish (1986), chapter six.

\(^{46}\) See also Perlmutter (1972).
semantic agreement. (Thus with committee, only syntactic agreement is possible in attributive position, and either agreement is possible in the remaining positions.) (Corbett, 1979, p 204).

Syntactic agreement relates entirely to form, whereas semantic agreement relates to content and allows for distributive readings and gender and number agreement that is contextually salient but formally independent. This is straightforward and transparent in examples such as (29) and (30), where the subject expression comprises a single singular word-form and the optional plural predicate displays semantic agreement enabling a distributive interpretation which relates to content.

The agreement patterning, however, becomes slightly less straightforward and transparent when the subject expression comprises conjoined singular terms, as in (31) and (32).

(31a) Frost and freezing fog has affected most of the country today.
     (BBC News, 3 December 1976, from Corbett, p 207).

(31b) Frost and freezing fog have affected most of the country today.

(32a) This mother and daughter has squatted in a castle.

(32b) This mother and daughter have squatted in a castle.

(32c) *These mother and daughter have squatted in a castle.
     (The examples in (32) are adapted from Corbett, p 207.)

As we have seen, Corbett notes that the further to the right an agreement position is, the more likely it is to be affected by semantic rather than syntactic criteria. This would account for the acceptability of the plural predicate in (31b) and (32b), if this plurality is due to a distributive reading, although it is not yet clear that it is.
But it would not account for the marginal acceptability of the singular predicate in (32a) when in the analogous (31a) the singular predicate is as acceptable as the plural. With respect to this irregularity Corbett's explanation has two parts:

(i) The plurality of the predicate in these examples is semantically mediated.

(ii) Nouns denoting animates are more sensitive to semantic criteria than are nouns denoting inanimates.

With respect to (i), it is not immediately obvious that the plural predicate is due to semantic sensitivity. Perhaps, after all, plurality is a syntactic requirement imposed by the conjoined subject terms. On the other hand, the singularity of the subject expression appears to be indicated by the absolute unacceptability of the plural determiner in (32c). However, it might be possible to argue that the demonstrative determiner 'This' modifies only the first of the two nouns and is elliptically represented with respect to the second and that these conjoined subject terms do indeed licence a syntactic requirement for a plural predicate.

If, however, Corbett is correct and the plural predicate is a response to semantic sensitivity, then we will have to say that 'This' modifies a unique mother-daughter pair in (32) and a unique cup-and-saucer pair in (33) below, and that subsequent plurals in predicate position, say, are indeed attributable to the semantics of a distributive reading.

(33) This cup and saucer is/are badly stained; let's throw *it/them out.

In fact, there is some evidence to support this suggestion. Consider example (34):

(34) This mother and landlady is very tired.47

In this example, where there is no natural association between mothers and landladies, the unique pair interpretation is not available, neither is the ellipsis

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47 This example was suggested to me by Neil Smith.
interpretation, and the only acceptable reading is that which predicates of the
denotation of 'This mother' the property of being also a landlady. There is, on
the other hand, a natural association between mothers and daughters and cups and
saucers, and it is our awareness of this natural association, i.e., our knowledge of
the world, which enables us to interpret (32b) and (33) as referring to distinct
conjoined entities rather than to single entities with dual attributes (as is the case
in (34)).

This being the case, it is at least plausible to suggest that 'This' modifies the highly
salient mother-daughter pair in (32) and the equally salient cup-saucer pair in
(33). Perhaps it would be more accurate to say that it is the salience of the
habitual pairing of mothers and daughters and cups and saucers that enables these
unique pairs to be presupposed in the interpretation of (32) and (33). If this is
correct, then any subsequent plurality manifested in either predicate term or
pronoun would indeed be attributable to semantic influence and should be
interpreted as a distributive reading and not as representative of syntactic
agreement with conjoined subject terms.

Furthermore, the acceptability of the singular verb in (35), also taken from
Corbett, cannot be attributed to the presence of an elliptically repeated occurrence
of 'this' in the subject expression, but must surely indicate that frost and freezing
fog in this context are interpreted as being the constituents of a pair rather than as
existing solely as distinct and separate entities.

(35) [This frost and freezing fog] which has/have affected most of the
country, caused particular havoc in the north. Itn / Theyn will be with us
again tomorrow.

Finally, the acceptability of the plural verb in (29b) - the distributive reading -
when contrasted with the mandatory singularity of the demonstrative adjective in
(30) - can have no syntactic motivation.

All this seems to confirm (i) above. Point (ii) concerns Corbett's claim that nouns
denoting animates are more sensitive to semantic considerations than are nouns
denoting inanimates. However, if we consider only examples (31) and (32), it is not at all clear that the significant distinction might not, in fact, be that between mass and count nouns. A consideration of example (33), however, might indicate that with respect to the sensitivity of predicates to semantic influence the animacy/inanimacy distinction, as remarked on by Corbett, is probably equally significant. Whereas in (32b) the semantically constrained plural predicate is almost mandatory and is anaphorically related to an animate-denoting antecedent, in (33), where the antecedent conjoined nouns denote inanimates, the singular predicate is not only possible, it may even be marginally preferred over the semantically constrained distributive reading represented by a plural predicate.

It may plausibly be suggested, therefore, that if the plural predicate in such examples does indicate a sensitivity to semantic factors then mass nouns and/or nouns denoting inanimates would appear to be less sensitive to those factors than are count nouns denoting animates. However, it seems to me that the decisive factor is the animate/inanimate opposition as Corbett suggests, as mass nouns may be included in the category of inanimates. Unfortunately, by itself the noting of the apparently enhanced semantic sensitivity of certain expression types has little explanatory power. It would be nice to know why such expressions are thus sensitive.

In fact, with respect to the final position in the hierarchy, that of the personal (anaphoric) pronouns, a possible explanation accounting for this enhanced sensitivity is not hard to find.

Consider the inter-sentential anaphoric pronouns in (35) above and (36) below.

(36)  \[This \textit{mother and daughter} \_\_ \textit{was/were} squatting in a castle. Now *it \_\_ \textit{is/they} \_\_ \textit{are} homeless.\]

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48 This was pointed out to me by Marjolein Groefsema.
It is significant that if we accept that conjoined singular nouns denoting closely associated entities implicate a unique singular pair, then the singular pronoun anaphorically dependent on such an antecedent conjunction can only be the neutral 'it', irrespective of the grammatical gender of the member terms of that pair or the natural gender of the entities denoted by those conjoined terms. That is to say, although both 'mother' and 'daughter' denote female entities, the pair that comprises these entities is not itself either grammatically feminine or naturally female. When an antecedent conjunction of terms denotes inanimates, referring to the pair comprising those inanimates by a neutral pronoun is not absolutely rejected. This is demonstrated in example (35), where the use of the singular pronoun, although odd, is not totally impossible. In (36), on the other hand, where the antecedent conjunction denotes female animates, use of the neutral pronoun 'it' to refer to a mother and daughter is totally unacceptable. It must be noted that the choice is not between 'she is' and 'they are', but between 'it is' and 'they are'. 'She is' is simply not an option as it satisfies neither the syntactic requirements for agreement with a singular, neuter, set, nor the semantic requirements for a distributive reading. However, as the pronoun 'it' implies inanimacy, as well as neutrality with respect to gender and singularity with respect to number, it is hardly to be wondered at that speakers rebel against its use to refer to an animate, feminine, plural, mother and daughter.

Can the additional semantic sensitivity of animate-denoting antecedents with respect to predicates be analogously explained? It probably can.

The question is: Why is the singular 'has' so readily acceptable in (35) while the analogous 'was' in (36) is certainly odd? Or perhaps we should ask why the singular predicate in (36) is marginally less objectionable than the singular pronoun in the same example. The answer must surely be that although the singular predicate apparently denies the mother and daughter their individuality and hence their animacy, it does not also deny them their gender, and is therefore less objectionable than the anaphoric pronoun 'it'.

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It might, therefore, be plausibly suggested that the greater semantic sensitivity of animate-denoting terms as compared to that of inanimate-denoting terms is more apparent than real. I suggest that all antecedent terms are capable of exerting semantic influence over choices of predicate and anaphoric pronoun, but that the semantic requirements of inanimate-denoting expressions turn out to be less demanding in practice. To put it another way, these semantic requirements are less readily differentiated from the semantic requirements of the inanimate pair they constitute, and these requirements are met, more or less automatically, by the operation of syntactic agreement with respect to gender and number as between that pair and the predicate and anaphoric pronoun that pair controls. That is to say, inanimacy and neutrality with respect to gender are attributes common to both the pair and its constituent parts. The only feature on which they differ is number.

It might be objected that the evidence from a handful of sentences is not sufficiently convincing to support the conclusions outlined above concerning a hierarchy of agreement. Corbett, however, does not base his arguments concerning this hierarchy exclusively on evidence adduced from example sentences in English. He also draws on evidence from French, Latin, Spanish and Serbo-Croat. These languages, being far more highly inflected than English, present richer evidence of the relevant agreement phenomena. Corbett's strategy is to 'begin with instances where strict syntactic agreement is dominant and progress to those where semantic agreement has made greater inroads'. (Corbett, op cit, p 204). With respect to French, he notes, for example, that:

French titles, now largely obsolete, were of feminine gender, though naturally they could refer to men. The norm was feminine agreement throughout:

(5) Sa (fem.) Sainteté n'est pas si ombrageuse (fem.) de s'en formaliser. (Hermant, quoted by Grevisse, 1964: 314)

...
(7) Votre Majesté partira quand elle (fem.) voudra.

(Voltaire, quoted by Grevisse, 1964: 406)

He continues:

Though (7) represents normal usage, examples with a masculine pronoun do occur:

(8) Sa majesté fut inquiète (fem.), et de nouveau il (masc.) envoya La Varenne à son ministre. (J. & J. Tharaud, quoted by Grevisse, 1964: 405)
(Corbett, op cit, pp 204-5).

These examples seem to indicate that semantic agreement is (sometimes) no more than optional. However, there is evidence to suggest - and this is one of the claims made for the agreement hierarchy - that once semantic agreement has been selected with respect to one term, then any term to the right of it in that hierarchy must also agree semantically with its antecedent. Thus, whereas (37), (38) and (39) are acceptable - although (39) may seems a little odd to some speakers - (40) is not.

(37) The committee has decided that it will not vote on the issue until next week.

(38) The committee have decided that they will not vote on the issue until next week.

(39) The committee has decided that they will not vote on the issue until next week.

(40) The committee have decided that *it will not vote on the issue until next week.
What remains to be determined, however, is whether these accumulated examples throw any light at all on the question of REF assignment with respect to anaphoric pronouns.

First, it should be remembered that personal pronouns (i.e., anaphoric pronouns) occupy the most rightward position in the agreement hierarchy, which is the position apparently most sensitive to semantic criteria.

Secondly, it should be noted that REF (if it exists) is a semantic feature. As such it might be expected to contribute to the semantic concord that Corbett's examples suggest frequently holds between anaphoric pronouns and their antecedents. Indeed, we might be justified in concluding that if Corbett is correct and personal pronouns are - for whatever reason - in the most semantically sensitive agreement position, then the probability that anaphoric pronouns will have the same REF-values as their antecedents is high. That is to say, if 'it' in (36) is unacceptable because it implicitly and inappropriately excludes the semantic features FEMALE and ANIMATE as well as explicitly excluding the syntactic/semantic feature PLURAL, then we might predict an analogous rejection of any anaphoric pronoun that explicitly but inappropriately excludes a semantic feature as powerful as REF is claimed to be.

Thus, in (35) and (36) above, on the assumption that the antecedent demonstrative phrases are directly referential the anaphoric pronoun 'They' will, in each case, be directly referential also and bear the semantic feature REF. In (41) below, on the other hand, where the antecedent is an indefinite description, and therefore not directly referential, the anaphoric pronoun 'they' will not be directly referential either.

(41) [A mother and daughter]^{k} [+REF] were squatting in a castle. Now they^{k} [+REF] have left and the castle is empty.
If the above reasoning is correct, and if there is indeed a semantic feature REF, then it would seem that anaphoric pronouns in some contexts do and in other contexts do not bear it. Whether it should be concluded from this that indexical expressions are sometimes anaphoric, or that anaphoric expressions are sometimes indexical, or whether it should simply be concluded that with respect to pro-terms direct referentiality and rigidity are not confined to their indexical uses is not clear. What is clear is that however useful a job REF may initially appear to do, when the wider implications of the postulation of such a feature are investigated more fully its usefulness becomes less certain.

Finally, it bears repeating that even if the semantic feature REF is not assumed as a feature of directly referential terms, the problem of determining whether anaphoric pronouns are or are not directly referential remains, as does the confusion as to whether - with respect to pro-forms - direct referentiality is confined to indexicals.

4.4 Summary

According to the ambiguity thesis:

1. REF is a semantic feature of all directly referential terms.
2. REF is a semantic feature of all deictic pro-terms.
3. REF is not a feature of pronominal bound variables.
4. Either: (a) REF is not a feature of any anaphorically occurring pro-terms irrespective of the REF-value of the antecedent expression; or (b) REF is a feature of some anaphorically occurring pro-terms but not of others, depending on the REF-values of the antecedent expression.
5. If 4(a) is correct, then the distinction between anaphora and indexicality is semantically and definitively marked by the absence or presence of the semantic feature REF. That is to say, indexical uses are always marked '+REF' and anaphoric uses never are.
6. If 4(b) is correct, anaphoric pronouns may be of two theoretically distinct (yet apparently indistinguishable) homonymously ambiguous lexical types, and the distinction between anaphora and indexicality is not definable in terms of REF-values.

5. Testing the ambiguity thesis

What we need to do now is to test both options of assumption 4 against the sentences of natural language. This may be done quite readily and briefly by appealing to the evidence adduced from a few final examples. This closing investigation is not a simple continuation of the attempt to assign REF-values. The idea now is to assume that these values may be assigned in accordance with certain fixed principles - whatever those principles may be - and to examine the consequences of applying them.

In other words, the aim is to ascertain whether, if one or other of 4(a) or 4(b) is assumed the resulting sentences are coherent. I hope to show that they are not. That is to say, I shall suggest that the examples adduced indicate that the principles embodied in 4(a) and 4(b) both turn out to be unworkable, and furthermore that anaphora and indexicality cannot invariably be separated.

Finally, I suggest that apart from 4(a) and 4(b) there are no other sensible alternative principles available according to which the ambiguity theorist might endeavour to assign REF-values.

Principle 4(b), which on balance appears to be the preferred option, will be employed first. Consider (42) and (43) below:

(42) I was born in London_k and I have lived here_k/there_k all my life.

(43) I was born in London_k and this_k/that_k is where I have always lived.

(These two examples are taken from Lyons, 1977, vol. II, p 676.)
Lyons comments:

In both [42] and [43] the use of the pro-locative 'here' vs 'there' and the pro-nominal 'this' vs 'that' is simultaneously deictic and anaphoric, since the selection of one expression rather than the other is determined, under normal conditions of utterance, by whether the speaker is in London or not at the time. (Lyons, 1977, p 676).

On the assumption that 'London' is directly referential, that deictic (indexical) occurrences of 'here', 'there', 'this' and 'that' are directly referential also, and that anaphoric pro-terms copy the REF-values of their antecedents, this apparently works out quite nicely, as may be seen in (42') and (43').

(42') I was born in London and I have lived here and I have lived there all my life.

(43') I was born in and that is where I have always lived.

It will be seen that all the functions of all the pro-terms in the above examples turn out to be marked ' +REF'. Therefore, the fact that these pro-terms are claimed (by Lyons) to be deictic and anaphoric simultaneously causes no problems. However, the situation is not quite so happy with respect to (44) and (45).

(44) Sam was born in a village somewhere in the north of France and he has always lived there.

(45) Sam was born in a village somewhere in the north of France and that is where he has always lived.
If we assume a narrow scope, quantificational or quasi-quantificational, non-referential reading of 'a village somewhere in the north of France' the difficulty seems intractable. This is demonstrated in (44') and (45').

(44') Sam was born in [NP a village somewhere in the north of France][-[REF]] and he has always lived there↑deictic,++REF /there↓anaphoric,[-REF].

(45') Sam was born in [NP a village somewhere in the north of France][-[REF]] and that↑deictic,++REF /that↓anaphoric,[-REF] is where he has always lived.

The problem with these examples is that not only are 'there' and 'that' simultaneously deictic and anaphoric, they are also simultaneously both +REF and [-REF] terms, which is absurd.

It might be objected that 'there' and 'that' are not simultaneously anaphoric and deictic in (44) and (45) because they are not, in fact, deictic. Lyons claims that these pro-forms are deictic in (42) and (43) on the grounds that the speaker may select between 'here' and 'there' and 'this' and 'that', depending on whether she is or is not in London at the moment of utterance. However, these options are not available to the speaker of (44) and (45). Nonetheless, it seems reasonable to suggest that in (44) and (45) the use of 'there' and 'that' indicates that the village in question is located at some place other than the place of utterance. Perhaps it would be more accurate to say that utterances of either (44) or (45) would be decidedly odd if the location at which they occurred were not distinct from that of the village in question. If the speaker of either sentence knows that Sam was born in the very village in which she is at that moment situated, the hearer might well feel that he is being deliberately misled. At the very least, the speaker is hardly being co-operative in the Gricean sense. Thus, we may say that in (44) and (45) 'there' and 'that' are simultaneously deictic and anaphoric. And as has been illustrated in (44') and (45') this leads to a logical absurdity.
As with all logical absurdities, the solution can only be found in the negation of one of the premises. In this case, the most obvious premise to negate is the one that claims that anaphoric pro-terms copy the REF-values of their antecedents. One available alternative to this premise is that anaphoric pro-terms never incorporate the semantic feature REF, i.e., assumption 4(a). Unfortunately, this just makes the situation worse, as it does nothing to resolve the problem as it relates to (44) and (45) and it extends the contradiction to (42) and (43).

In fact, I have been unable to find a solution to this problem other than the rejection of the ambiguity thesis and with it the semantic feature REF. Furthermore, I suggest that with these rejections the rejection of the thesis of direct reference with respect to indexicality must surely follow.

This may seem to be too large a result to abstract from an analysis of a handful of problem utterances, but the problems extend well beyond these last few examples. Even if the positing of REF did not lead to this ultimate incoherence, the more general problems associated with anaphora are formidable. The major difficulty is that REF is a postulated feature which is intended, or supposed, to determine a set of referring expressions comprising proper names and indexically used pro-terms, yet it signally fails to distinguish between indexicality and anaphora. Furthermore, such distinctions as it is claimed to make are frequently counterintuitive. Consider some final examples:

(46) Axel gave the briefcase to Zelda, and she still has it.

(47) Axel gave the briefcase to her, and she still has it.

(The speaker indicates a woman carrying a briefcase.)

Only the pronoun 'she' will be discussed, and this time assumption 4(a) will be considered first.
In (46) 'she' is clearly anaphoric, and according to 4(a) it is not directly referential. Therefore (46) may be analysed as in (46').

\[(46') \text{ Axel gave the briefcase to } Zeldap^{+\text{REF}} \text{ and } she_p^{-\text{REF}} \text{ still has it.}\]

In the parallel structure in example (47) 'she' is presumably also anaphoric and again according to assumption 4(a) (47) may be analysed as shown in (47').

\[(47') \text{ Axel gave the briefcase to } her_j^{+\text{REF}} \text{ and } she_j^{-\text{REF}} \text{ still has it.}\]

In this case the lack of referential concord between 'her' and 'she' seems less acceptable than does that between 'Zelda' and 'she'. Perhaps we should say that in (46) 'she' is both anaphoric and deictic. This would apparently resolve the problem by allowing that both 'her' and 'she' are deictic and hence directly referential, but it reintroduces the familiar problem of the logical absurdity of a term simultaneously bearing and not bearing the semantic feature REF. Assumption 4(a) does not seem very attractive.

The final example, therefore, will be interpreted according to assumption 4(b).

\[(48) \text{ [np a man from the accounts department]_m lent me } his_{1m} \text{ hat and Jack, lent me } his_{2j} \text{ coat.}\]

Now if we assume the variable agreement analysis of anaphora, according to which anaphoric pronouns adopt the REF-values of their antecedents, as prescribed by assumption 4(b), 'his' and 'his' in (48) will turn out to be distinct ambiguous homonyms. The question now is this: How on earth does a child ever acquire this distinction? More to the point, would it make a jot of difference if he didn't?
1. Introduction

In this chapter and in chapter four, I want to discuss an alternative to the direct reference account of indexicality. This alternative is based on arguments developed by Geoffrey Nunberg,¹ and it should be noted that it constitutes a thesis about *indexicality* not about *indexicals*. If the rejection of the ambiguity thesis is justified, and I suggest that I have in fact demonstrated that it is untenable, then it may be concluded that it is a mistake to posit a semantic/syntactic *category* of indexicals. Indexicality is better considered as a *function* of some more general category of terms that also have other functions. In what follows, however, for the sake of convenience, I shall sometimes refer to the terms that have access to this function as 'indexicals', as this is less cumbersome than the more accurate 'terms which are functioning indexically'. However, if it is remembered that this is just a matter of convenience, then this usage should be harmless.

There is a further terminological confusion that cannot be resolved so easily. It has already been noted that the terms 'indexicality' and 'deixis' are frequently used more or less interchangeably by philosophers and linguists, and in chapter two this conflation or imprecision was also accepted as harmless. However, it will eventually become necessary to consider how indexicality and deixis might be distinguished from each other, for if an alternative to the direct reference thesis of indexicality is to be developed, it will be desirable to determine how - or whether - such an account relates to deixis. That is to say, it would be helpful to know whether, irrespective of any difference in orientation, the two terms do in fact denote the same range of phenomena.

The answers to these questions are elusive. This is in part due to the fact that neither term is readily definable. More precisely, the terms may be defined more or less readily, but - as will become apparent - the implications of the definitions are complex and frequently obscure. A further complication is that it is not always easy to distinguish deixis from anaphora. Historically there has been considerably disagreement as to what criteria should be invoked in making the distinction, and currently - even when identifying criteria are agreed, there is continuing uncertainty and disagreement among linguists as to how the criteria should be applied.

In view of these uncertainties, Nunberg's 'Indexicality and Deixis' seemed (to me at least) long overdue, and very welcome. Unfortunately, the discussion embodied in that paper fails to live up to the promise of the title as Nunberg's use of both terms is so idiosyncratic that his argument doesn't really address the questions outlined above. That the terms do not denote extensionally equivalent sets if one adopts Nunberg's specialised usages may turn out to be neither relevant nor helpful.

Nonetheless, his article is stimulating, challenging and insightful, and it is in virtue of those insights that ultimately I have been able to uncover the distinctions I seek. Furthermore, it seems to me that his controversial analysis of indexical reference is essentially correct. That analysis is additionally attractive in that, as I hope to demonstrate, it may be generalised to apply to all the functions of pro-terms. The alternative to the direct-reference account of indexicality that I shall develop is, therefore, based on Nunberg's model of indexical interpretation.

2. Meaning and indexicality

Stated very generally, Nunberg's aim is to present a more complete picture of indexicality than is provided by what he terms the 'standard story'. More precisely, his aim is to define the special interpretative property that is common to

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2 See, for example, the concise glossary definitions of both terms in Grundy (1995).
3 See Bosch (1983), chapter one.
all indexical expressions. The standard story to which he refers is based on various versions of the direct reference thesis. He notes in particular two major points:

I '... the linguistic meaning of an indexical term doesn't figure as part of what is said by the utterance containing it.' (p 4).

II Indexical terms are directly referential, that is to say '... they contribute individuals, rather than properties, to the interpretation'. (p 5).

2.1 Indicative and descriptive meaning

With respect to I, this is reducible to the claim that the linguistic meaning of an indexical term is indicative rather than descriptive. As this opposition will ultimately assume some importance in my discussion, it should be clarified.

Salmon (1982a) writes of a descriptive term that it 'denotes by way of properties' (p 15). That is to say, a descriptive term or expression succeeds in referring if some entity satisfies its descriptive content. Non-descriptionality he characterises as 'reference without sense' (p 14), and this would appear to equate non-descriptionality with direct reference, as defined by Kaplan. It may also be equated with indicative meaning, with respect to which reference is not achieved by the satisfaction of some descriptive content, rather the referent is in some way 'indicated' by what Kaplan has called 'semantical rules' or 'character'.

Wilson and Sperber (1993a) employ a slightly different terminology to mark what is essentially the same opposition. They describe 'meaning' as being of two distinct types: that which is procedurally encoded (indicative meaning); and that which is conceptually encoded (descriptive meaning). However, for Wilson and Sperber the emphasis is on what is understood by the hearer, and how language is

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4 All page references in this chapter relate to Nunberg (1993), unless otherwise indicated.
5 For a rather different account of descriptive and non-descriptive meaning see Ackerman (1979a), (1979b), (1980), and (1989). See also Abbott (1989).
actually used in communication, rather than on the supposed metaphysical or logical entailments associated with such language use. Following their lead, we might say that the meaning of a pro-term should be seen as the encoding of procedural instructions which will enable the language user to arrive at the correct interpretation of an utterance in a context, even though such procedural meaning does not uniquely describe the intended referent.

According to this view, indexically used expressions - pro-terms - do not encode individual concepts, and the hearer must combine the procedural information supplied by such terms with contextual factors in order to infer the appropriate interpretations. Of course, it might be argued that this is essentially Kaplan's view also. The point I wish to make, however, is that we may endorse Wilson and Sperber's distinction and accept the view that pronouns, say, encode a procedure for accessing an interpretation, without committing ourselves to the metaphysical entailments of the view that such a procedure cannot help but pick out a unique individual that remains the constant referent of that particular use of that particular pro-term in all circumstances of evaluation (possible worlds). That is to say, procedural meaning is not a sufficient condition of rigid designation or direct reference. This is what Nunberg sets out to demonstrate. There is no evidence to suggest, however, that Wilson and Sperber themselves reject the theses of direct reference and rigid designation.

Finally, whether the meaning of terms which may be used indexically (in general such terms are pro-terms) is thought of as being indicative, non-descriptional, or procedural, two questions must now be considered.

(i) What is the nature of the procedural instructions that are encoded as the linguistic 'meaning' of pro-terms?

(ii) Is such meaning common across functions as required by the univocality thesis, or is it confined to 'indexicals' as predicted by the ambiguity thesis?
Nunberg's declared purpose is to provide an answer to question (i); question (ii) he does not address in any detail. However, I have argued that pro-terms are not, indeed cannot be, homonymously ambiguous. Therefore I must try to show that the procedural instructions are, indeed, common to all functions. This theme will be developed in the next two chapters.

2.2 Conditions of indexicality

Now, although Nunberg apparently wishes to accept proposition I above, that the 'linguistic meaning of an indexical term doesn't figure as part of what is said by the utterance containing it', i.e., that 'indexicals are indicative' (p 7), this acceptance is not unequivocal. Towards the end of his paper (p 36), he claims to identify terms which, although they 'are not properly indicative' [emphasis added], are nonetheless indexical. This is puzzling.

Clearly, these apparently conflicting claims need to be reconciled if a coherent alternative account of indexical interpretation is to be achieved. Nunberg suggests that such a reconciliation may be effected by positing two distinct types of indexicality, the first variety, which I shall call 'mainstream', bearing purely indicative meaning, and the second carrying a meaning that is perhaps more properly characterised as descriptive.

It seems to me that this is less than satisfactory. Quite simply, the question which urgently needs answering is this: Is the possession of the semantic property of indicativeness a necessary condition of indexicality, or is it merely an observed regularity? If the former is the case, then the non-indicative examples adduced by Nunberg simply are not examples of indexicality. If the latter is the case, then those same examples might be used to support the argument that indicativeness is not a necessary property of indexicality.
2.3 Nunberg's challenge

With respect to point II - the claim that indexical terms are directly referential - Nunberg's position is less equivocal. Quite simply, he challenges the claim it incorporates:

While indexicals are indicative, they are not limited in the kinds of interpretation they can express. That is, the rules that determine how indexicals are used don't determine what you can say with them, but how you say it. (p 7).

In other words, indexicals are not semantically constrained to feature only in singular propositions. This is not to be confused with the weaker claim that terms which have indexical uses may also have other non-indexical, i.e., non-directly referential functions. It is the much stronger claim that qua indexicals such terms may contribute properties rather than individuals to the propositions in which they feature. It is the claim that indexical utterances have, in effect, a descriptive function - if not a descriptive meaning - and may express general propositions. A few pages further on, Nunberg states this more precisely.

... indexicals and descriptions have the same range of interpretation: there is nothing a description can express that an indexical can't. (p 14).

He also makes the further, highly combative, assertion:

If there is no discrepancy between the kinds of propositions that can be expressed by utterances containing indexicals and utterances containing descriptions, then the direct-reference claim no longer has any linguistic interest. (p 13).

His programme is to define the technical apparatus that makes such generality of expression and interpretation available to indexical utterances, and his arguments are based on the exposure of what he claims is a fallacious assumption.
The assumption in question, which is accepted as virtually axiomatic by direct-reference theorists, is that although the linguistic meanings of indexical terms do not describe their referents, such terms nonetheless invariably pick out, as their referents, uniquely identifiable individuals or entities in accordance with certain 'semantical rules', which are described by Loar as 'referential qualifiers', by Evans as 'referential features', by Perry as 'roles', and by Kaplan as 'character'.

It is widely accepted, for example, that in direct speech - in virtue of these 'semantical rules' - 'I' always refers to the speaker while 'you' always refers to the addressee and indexical 'he', 'it' and 'that' etc., always refer to some ostended entity. Indeed, quite independently of the theses of direct reference and rigidity, it is generally assumed that if we exclude those cases involving performance error, then whatever entity is indicated by the linguistic meaning of terms such as 'I' and 'you', or pointed at by gestures accompanying demonstratives such as 'that' and non-anaphoric 'he', is always the only possible referent.

As Nunberg observes (p 6), this all seems so obviously to be the case that the assumption that it is so is rarely either challenged or defended. Nonetheless, Nunberg does challenge it, and this challenge not only constitutes the corner-stone of his thesis concerning indexical reference or interpretation, it is also of fundamental significance for the construction of a unified semantic model for all pro-terms.

3. An alternative model of indexical interpretation

If the operation of this model is to be adequately explained some preliminary discussion of certain key expressions in Nunberg's specialised terminology might be helpful.

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3.1 Index

This term is the first to be introduce here, because the successful functioning of Nunberg's entire interpretative apparatus depends on the identification of an index *as he defines it*. Furthermore, it will be argued in chapter five that an index thus defined turns out to be central to the construction and working of a unitary semantic model of *all* the functions of pro-terms. Interestingly, Nunberg appears not to recognise the unifying power of his concept. He introduces the term as follows:

I will use the term *index* to refer to the contextual element picked out by the linguistic meaning of an indexical expression like *you*, as well as being the thing picked out by a demonstration associated with the use of a word like *that*. (p 4).

The index of an utterance of indexical 'you' therefore is the individual addressed, while the index of an utterance of indexical 'that' is the ostended object. It might seem that in the passage quoted above Nunberg is using a somewhat arcane method of confirming what it is claimed he is in fact setting out to disprove. But this is not the case. Without appealing to performance error, he denies that the contextual element - the index - which is picked out in this way is necessarily identical, or even intended to be identical, to the actual referent or interpretation of the indexical expression used. This is a surprising claim, the validity of which depends on how the function of the index is defined.

3.1.1 Kaplan and the logician's account of an index

Nunberg concedes that his use of the term 'index' differs substantially from 'the way the word has been used in recent work in semantics' (p 4), and while it would be straying too far afield to discuss such established usage in great detail, some explanation of just what it is that he is challenging seems called for.

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7 For examples of non-indexical 'you' see Levinson (1983), p 64.
Kaplan (1989a) writes:

When it was noticed that contextual factors were required to determine the extension of sentences containing indexicals a still more general notion [than that required for interpreting modalities] was developed and called an "index". The extension of an expression was to be determined with respect to an index. The intension of an expression was that function which assigned to every index, the extension of that index.

Of this index he further notes that it has been suggested - by 'a prominent logician' - that

In general we will have

\[ i = (w, t, p, a, ...) \]

where the index \( i \) has many coordinates: for example, \( w \) is a world, \( t \) is a time, \( p = (x, y, z) \) is a (3-dimensional) position in the world, \( a \) is an agent, etc. (Kaplan, 1989a, p 508).\(^8\)

The idea is that an index is a complex of coordinates to which values must be assigned, in a context, in order for the truth values of statements containing indexical expressions to be ascertained. Despite the initial attractiveness of this account, Kaplan claims that it is both 'technically' wrong and 'conceptually misguided'. If I understand him correctly, it is technically wrong in that it embodies a conceptual failure to distinguish between character and content which ultimately leads to logical error.

Kaplan argues that although an utterance of (1) below is 'deeply, and in some sense, ... universally true' (1989a, p 509), the above characterisation of an index does not lead to interpretations that 'reflect the intuitive difference' between (1)

and (2) where (2) represents the proposition that is in fact expressed by a particular utterance of (1).

(1) I am here now.

(2) David Kaplan is in Portland on 26 March 1977.

(These examples are taken from Kaplan, 1989a, p 509.)

Kaplan claims that in such a case the sentence, represented as (1), and the proposition expressed, represented as (2), will have the same truth value. That is to say, at the time of utterance, both (1) and (2) will be true. More precisely, the claim is that the semantic constraints of direct reference are such that in normal circumstances - i.e., those not involving voice-throwing, recordings, or written messages, etc., - in uttering (1) the speaker (agent) cannot help but speak the truth. (I shall later challenge this claim.) According to the direct reference theorists, this is the case whatever the actual proposition expressed.

The difficulty that Kaplan perceives arises from the blurring of 'the conceptual distinction between context and circumstance'. The crucial point is that the coordinate variable with respect to worlds - the variable that determines what might (or must) be, or have been, the case - relates to the circumstance of evaluation, and indexical usages occurring in a single utterance may be associated with an indefinite number of such counterfactual situations. That is to say, (most) things (or states of affairs) might always have been otherwise than the way they actually are.

By contrast, the remaining coordinates of the index determine unique referents with respect to the actual context of utterance. (Or so it is claimed.) According to the direct reference theory, these unique referents once selected do not, indeed cannot, vary across worlds. They themselves could not have been other than themselves, and even though a different value may be assigned to the variable that relates to worlds with respect to an utterance in a context the value assigned to
any entity that is the referent of an indexical in the world of utterance remains constant.

Of course, if the context rather than the circumstance of evaluation is varied, then any coordinate variable may be assigned a different value, and the values of the various coordinates may be conjoined in various combinations. For example, (3) below expresses a proposition which will also be true if it represents the state of affairs that obtains when (1) is uttered in a different context.

(3) Saul Kripke is in San Marino on 20 May 1966.

Kaplan argues that this distinction between possible worlds and the actual world is not reflected by the above account of indexicality. The problem is that if special conditions involving echoes, voice-throwing, or written or recorded messages are excluded, and if we further exclude all improper indices - i.e., all impossible combinations of coordinates - from consideration in the analysis of the interpretative procedure described then, as any utterance of (1) will always (so it is claimed) turn out to be true, the structure of the index encourages the logician to overlook the fact that the proposition actually expressed might nonetheless have been false. For example, David Kaplan might not have been in Portland on 26 March 1977.

Thus, although an utterance of 'I am here now' is - according to the direct reference theory - invariably true, the proposition expressed by such an utterance is not necessarily true. It is, therefore, unfortunate if a conceptual conflation of context and circumstance leads the logician to conclude that as an utterance of (1) is always true it follows that (4) below is logically true. (For a fuller discussion of this problem, see Kaplan 1989a, pp 507 to 510.)

(4) □ I am here now.
As Kaplan observes, (4) is, of course, false for it is entirely contingent that any agent who utters a token of (1) is at the place of that utterance at the time at which it is uttered. Kaplan further notes that the 'minimal requirement' for the type of index theory described above - if it is to have any hope of working - 'is a system of double indexing, one index for context and another for circumstance' (p 509).  

The potential complexity of such a system is somewhat daunting. It is not clear to me how, for example, it might overcome the really knotty problems associated with the semantics of the actual. The significant point in the present context, however, is that Nunberg's usage of the term 'index' differs radically from the standard described above, and consequently is not heir to the same range of problems. In particular, if Nunberg is correct, it will turn out that (1) is not in any sense at all 'universally' true. That is to say, it may be the case that in uttering (1) a speaker does not express a true proposition.

A situation may be imagined in which speaker B, say, while visiting the offices of company X, runs into an old friend who is also only visiting those offices. The following exchange might then take place:

(5) A: Are you still working for Y?
B: No, I am here now.

In B's response in (5) above, 'here' clearly refers to company X rather than to the actual place of utterance. Furthermore, it may be supposed that B - who is unemployed - is, in fact, lying. According to Nunberg such an interpretation of such an utterance is in no way exceptional. A discussion of the mechanics of how it comes about that 'here' in (5) may not refer to the place of utterance will be entered into below. For the moment it is sufficient to note that - contra Kaplan -

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9 See Kamp (1971) on double indexing with respect to 'now'. See also Partee, ter Meulen and Wall (1990), pp 423-428.

10 For a further discussion of these problems see, Plantinga (1974), Stalnaker (1976), Loux (1979), van Inwagen (1980), and Lewis (1986).
an utterance of (1) is not invariably true, and this central tenet of direct reference theory may be challenged.

3.1.2 Indices and the contingent a priori

This is interesting, because the formulation 'I am here now' represents a widely discussed problem utterance, frequently cited as a paradigmatic demonstration of 'contingent a priori' truth and knowledge. That is to say, if indexical expressions are indeed directly referential - as it is claimed they are - then any normal utterance of (1) just is invariably true. A corollary of this posited invariance is that this truth may be known a priori. That is to say (it is claimed that) the speaker/hearer does not need to consult the context in order to know that such an utterance is true. However, as Kaplan points out, the truth of any proposition actually expressed by an utterance of (1) is entirely contingent. Things might have been otherwise for the speaker. Thus, it is claimed, contingent truths may be associated with a priori knowledge. How close, or how significant, such an association might be is the subject of much debate.¹¹

Now, the apparent paradox of the 'contingent a priori' - as it is somewhat inaccurately called - although originally introduce by Kripke as a phenomenon associated with 'descriptive' names,¹² clearly underlies the problems associated with the standard definition of an index outlined above. Conversely, it is itself dependent on the combined theories of direct reference and rigid designation. However, it will become apparent that if Nunberg's model of deferred reference is fundamentally correct, then the truth value of an utterance such as (1) can never be known a priori, but must always be determined a posteriori, or - as Nunberg (p 29, fn 30) says - it is 'always empirical'.

In my view, this is as it should be, and if Nunberg is correct, with respect to indexicality at least, the problems associated with the so-called 'contingent a

¹¹ See Moser (1987).
¹² See Kripke (1980). See also Donnellan(1977) and Casullo (1977) for objections to Kripke's argument.
priori' would simply dissolve. We might then return (for my part, thankfully) to a more Kantian association of a priori knowledge with necessary truth and of contingent truth with a posteriori knowledge.\(^\text{13}\)

### 3.1.3 Nunberg and the Peircean index

For Nunberg an index is not a complex of coordinates, rather it is itself simply an entity, that is identifiable in a context and is not invariably identical to the referent of the relevant indexical expression. He defends this usage on the grounds that it is based on the way Peirce originally used the term. Somewhat obscurely, he notes that - according to Peirce - an index 'stands in a "relation of contiguity" to its object, as a rolling gait to a sailor, a rap on the door to a caller, a symptom to a disease'. (pp 19-20).

As it is not immediately obvious how this might be cashed out, it may be advisable to look to Peirce himself for help. For Peirce, an index is a sign, although not necessarily a linguistic one:

> As it is in itself, a sign is either of the nature of an appearance, ... or ... it is an individual object or event ...

He continues:

> I define an Index as a sign determined by its dynamic object by virtue of being in a real relation to it ... much as the occurrence of a symptom to a disease.

And:

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\(^{13}\) Kant (1781). See translation by Kemp Smith (1933), pp 42-48.
I define a Symbol as a sign which is determined by its dynamic object only in the sense that it will be so interpreted. It thus depends ... upon a convention .... (Peirce, 1958, p 391).

Reconsidered in this light, Nunberg's claim that indices 'figure not as individuals, but in virtue of their correspondence to other things' (p 20, fn 24) becomes more comprehensible, even if it is still far from clear how it actually works. We might, for example, wish to say that with respect to Grice's well-known example 'Those spots mean (meant) measles' the spots are the index that signals the disease. But how does this relate to the uses of such terms as 'here' and 'that'?

Nunberg's claim is that an index is an entity that in some manner indicates either another entity - the referent of an indexical expression - or some propositional interpretation where there is no referent. The simplest way to clarify this is by example. A speaker - let us say a general - may indicate a particular point on a map and utter (6):

(6) We will attack there.

(This example is taken from Berckmans, 1990, p 285.)

As Berckmans comments, the speaker may be referring to Verdun, say. He certainly is not requiring the forces under his command to attack a spot on a piece of paper, yet the spot indicated will point beyond itself and indicate to the hearer the intended interpretation. That spot is, therefore, the index. Alternatively, a doctor may indicate a particular spot on his own chest while uttering (7):

(7) When a person is shot here, we can usually conclude that it was not suicide.

(This example is taken from Nunberg, p 29.)

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Quite clearly, such a speaker is not referring to his own putative death by shooting. The point he indicates is relativised to human anatomy in general. Finally, a speaker may indicate a painting and make the comment reproduced as (8) below:

(8) *Now he knew how to paint goats!*

(From Nunberg, p 31.)

With respect to such an utterance it is usually clear that although it is at the picture that he points, the speaker is referring to the artist who painted that picture, not to the painting itself. Again, it is at least plausible to suggest that the picture in some way acts as a pointer to indicate some entity beyond itself. Furthermore, Nunberg argues that examples such as (6), (7) and (8) are in no way exceptional, and that it is the fact that 'contextual features are made to serve as pointers' in this way that constitutes 'the characteristic and most remarkable feature' of indexicality.

The basic idea that underlies Nunberg's thesis should now be clear:

> What makes indexicals exceptional is the manner in which their interpretation arises. A description characterises its interpretation, *an indexical provides an object that corresponds to it* [emphasis added]. (p 19).

### 3.1.4 Nunberg's indexless indexicals

There is, however, a potentially serious problem associated with this account. The difficulty is that Nunberg later claims that there exist certain terms - 'contextuals' (see chapter four) - which although they are 'clearly indexical' nonetheless fail to pick out any index. We are now forced to ask a question analogous to that asked with respect to indicativeness: Is the operation of the special interpretative property identified by Nunberg, which depends on the existence and identification of an index, a necessary condition of indexicality? If
it is, then indexless counter-examples simply cannot be examples of indexicality. If, however, Nunberg relies on the claim that this operation is only a necessary condition of the first type of indexicality, it is hard to see by what criteria he identifies the second type as indexicals. This problem, which will be discussed in chapter four, is particularly pressing as it is with respect to certain members of this same group of expressions - the 'contextuals' - that Nunberg also denies indicativeness.

If a satisfactory alternative to the direct reference theory of indexical interpretation is to be constructed then these problems must be resolved. However, solutions that are compatible with Nunberg's alternative approach to indexical reference in general cannot be discussed until certain other elements of that approach are themselves defined.

3.2 Deixis

The precise significance of this term turns out to be of considerable importance, not only with respect to the resolution of the above-mentioned problems, but also because the main thrust of Nunberg's argument apparently relates to deictic phenomena rather than to indexicality:

... it is deixis, not indexicality, that introduces the particular semantic properties associated with words like I and that. (p 38).

Nunberg's use of the term 'deixis' is, however, highly specialised and idiosyncratic and, as was the case with 'index', quite distinct from the standard. It might, therefore, be helpful to compare the two usages. The standard usage will be discussed first.
3.2.1 Bühler's approach

Karl Bühler did not coin the term 'deixis'. Indeed it may have been first used nearly two thousand years ago (in a purely Greek rendering) by Apollonius Dyskolus. Bosch claims that Apollonius distinguished between 'secondary and primary acquaintance', associating the former with the anaphoric use of pronouns and the latter with their deictic use. This clearly foreshadows the given/new distinction which is described by Ehlich, but which is not a central part of Bühler's definition. Nonetheless, Bühler provides a convenient starting point for a discussion of the term's significance in current linguistic theory.

He identifies two types of expression: symbols (Nennwörter) or 'naming words', and signals (Zeigwörter) or 'pointing words': symbols represent; signals merely indicate. This is reminiscent of Peirce; it also appears to anticipate the indicative/descriptive opposition. Bühler also identifies two distinct metasemantic fields. The first is the 'symbolic field', which need not concern us further; the other is the 'deictic field'. This field is accessed from the 'origo' - the point of origin of various deictic coordinates - and it is this idea of a deictic centre, rather than the given/new opposition posited by both Apollonius and Ehlich, that will turn out to be the most useful in identifying or defining deixis in the present investigation.

Levinson (1983) discusses the special nature of deictic context-dependence in some detail, and clarifies the concept of the 'origo' - which he calls the 'deictic centre'. This he describes as the point in '4-dimensional space-time' from which a deictic utterance emanates, and from which it points at some entity in the world. The various elements that constitute this centre are listed below:

1. The central person is the speaker.
2. The central time is the time of utterance.
3. The central place is the place of utterance.

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15 See Bosch (1983), p 1.
16 See Bühler (1934) and (1982).
17 See also Fillmore (1975) and Lyons (1968) and (1977).
This characterisation of the deictic centre is adapted from Levinson, 1983, p 64.

Problems associated with deictic projection\(^{18}\) or deictic shift\(^{19}\) phenomena in which the origo or deictic centre is other than as defined above, will not be discussed here, but see chapter four, section 2.2.4. In the present context it is sufficient to note that a deictic term succeeds in referring by establishing the relationship that obtains between the entity indicated and the relevant coordinates in the deictic centre. Bühler observes that 'three deictic words must be put at the place of the 0[the origo] ... namely ... here, now, and \(I\). (Bühler, 1982, p 13). He further comments that it is only in the case of these three terms that the referent coincides with one of the coordinates. With all other deictic terms reference determination is a function of the referent's relation to the relevant coordinate in the origo. Thus, for example, the pro-locative 'there' indicates an entity that is distal with respect to the deictic origo, whereas the demonstrative 'this', say, indicates an entity that is proximal. An antideictic centre, which represents the complement of the deictic centre, is also posited by some writers as a means of defining distality from the origo, but this will not be discussed further here either.\(^{20}\)

3.2.2 Nunberg's approach

Although Nunberg also presupposes the essential deictic feature of relativisation to the origo, he defines deixis itself as being no more than a component function of indexicality. That is to say, he suggests that all indexical expressions have a 'deictic component'. He argues that indicating the index - as opposed to identifying the referent - of an indexical expression is the sole function of deixis thus defined.

If this stipulatory definition is accepted, then although deixis might be distinguished from indexicality it would be impossible to separate it. As Nunberg

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\(^{19}\) See Segal (1995).

\(^{20}\) See Bouchard (1995).
recognises, this is clearly a very specialised usage and I shall argue that it is misleading. In chapter four, I shall suggest that if we adhere more closely to the Bühler-Levinson characterisation of deixis, then deixis and indexicality may indeed be separated.

However, as has already been stated, it seems to me that - despite these reservations - Nunberg's model of the semantics of indexicality, which is constructed round an operation he calls 'deferred reference', is essentially correct.

3.3 Deferred reference

As the name implies, deferred reference is indirect. Nunberg's challenge to the direct reference thesis is, in this respect at least, uncompromising and fundamental. On the other hand, he claims to be 'sympathetic to direct reference accounts' of indexicality. (p 4). It is not altogether clear to me what is implied by this sympathy (which I do not share) as he also states that he does not wish to defend the metaphysical or epistemological corollaries of that theory, and with respect to the much discussed 'essential indexical' - 'I'- he comments:

... it isn't always easy to say where the doctrine of the word leaves off and theses about belief or personal identity take over. (Nunberg, 1993, p 1).

A little later, he wryly observes:

A theory of personal identity that depends crucially on a certain analysis of the English pronoun T was probably not much of a thesis of personal identity in the first place. (p 4, fn 6).

It is this scepticism concerning the postulated essential link between language, epistemology and metaphysics that I wish to endorse. In particular, it seems to

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22 For logical objections to this supposed link see Salmon (1979).
me that theories of language and theories of metaphysics should be prised apart. However, no challenge will be here mounted against certain philosophical hypotheses concerning the metaphysics of identity which, for all I know, may be correct. My complaint is against the involvement of natural language in the construction of such theories. It may be that this approximates to Nunberg's position also.

### 3.3.1 Semantic types

Within what has been referred to as 'mainstream' indexicality Nunberg further identifies two distinct semantic types: (i) *participant* terms; and (ii) *nonparticipant* terms. He suggests that the semantic structure of participant terms varies significantly from that of nonparticipant terms and that such variation is reflected in the interpretation process. However, I shall try to show that although participant terms and nonparticipant terms may be distinguished that distinction is not as great as Nunberg supposes, and furthermore that the interpretation process for both sets of terms is essentially the same.

#### 3.3.1.1 Participant terms

These are the non-demonstrative indexical terms which also have a specific role in the speech event. Their primary distinguishing feature is that they do not require an accompanying demonstration or gesture. The personal pronouns 'I', 'you' and 'we', which always relate in some way to the speaker or the addressee of an utterance as appropriate, are prototypical examples.

Nunberg refers also to 'analogous' terms. By this he means other non-demonstrative indexical usages which are subject to similarly predetermined semantic constraints. The non-demonstrative adverbials 'now' and some uses of 'here', for example, fall into this category. Indexical 'now', for example, always relates in some way - i.e., through its index - to the time of utterance, and non-demonstrative indexical uses of 'here' always relate in analogous fashion to the
place of the utterance. However, it has already been suggested that such a
relation does not entail that 'now' always refers to the time of utterance - however
broadly that time might be construed - nor that non-demonstrative 'here' always
refers to the place of utterance. This claim may be demonstrated by example.
Imagine a context in which a patient visiting a dentist utters (9) as he sits in the
chair.

(9) It is usually round about now that the toothache disappears.

Then consider another patient, who faints on crossing the threshold of a dental
surgery he has never before visited. His wife then utters (10):

(10) It's always the same; he invariably passes out more or less here.

Examples (9) and (10) may be glossed as (11) and (12) respectively, in which
'now' and 'here' approximate to the italicised attributive descriptions:

(11) It is usually round about the time that I sit down in the dentist’s chair that
the toothache disappears.

(12) It’s always the same; he invariably passes out in the vicinity of the dental
surgery’s doorstep.

3.3.1.2 Nonparticipant terms

These are those indexical expressions which do not have a specific role in the
speech event. Primarily they are exemplified by the demonstrative uses of 'he'
and 'she' and 'they', etc. Demonstratives, such as 'this' and 'that' etc., may be
considered analogous terms.
3.3.2 The semantic complexity of indexical expressions

Nunberg suggests that every participant term comprises three distinct semantic components:

(i) the deictic component; (ii) the classificatory component; (iii) the relational component.

In his model, nonparticipant terms have a simpler semantic structure, in that the deictic component may be purely gestural, i.e., not semantically encoded, and the relational component may be entirely absent.

3.3.2.1 The deictic component

This is the indicator of the index. Nunberg observes that even when 'we' and 'I', say, are uttered by the same individual they quite clearly do not have the same referent, although equally clearly the interpretation of either term in a context of utterance implicates the speaker. His suggestion is that in both cases the speaker is the index and that this identity of speaker with index is semantically indicated. Conversely, in the case of demonstrative (nonparticipant) 'he', say, the deictic component is non-linguistic and typically gestural, and the index will be some ostended entity, although the ostensive gesture may be no more than notional.

3.3.2.2 The classificatory component

Nunberg writes that this relates to 'the interpretation' of an expression 'rather than to its index' (p 8). Typically, it will include information relating to number, animacy and gender. In the case of 'we', for example it comprises the semantic features PLURAL and ANIMATE. In some cases the interpretation will turn out to be an identifiable referent, but in others - those in which the indexical expression has a clearly attributive function - no individual entity or entities will be thus identifiable. This is exemplified in (8) above, which has one reading according to which the speaker knows perfectly well who painted the picture -
let's say it is Chagall — and refers to him. This reading may be glossed as in (13).

(13) Now Chagall knew how to paint goats.

However, there is another reading according to which the speaker fails to identify the artist, but simply appreciates goat-painting ability when he sees it. In such a case, the appropriate interpretation will, presumably, approximate to Donnellan's attributive reading of definite descriptions, and may be glossed as in (14).

(14) Now the painter of this picture, whoever he is, knew how to paint goats.

Therefore, despite the fact that Nunberg refers to the interpretative semantic operations under discussion as 'deferred reference', in general it will be less confusing if we follow his lead and state that the classificatory component relates to an interpretation rather than to an identifiable individual referent.

3.3.2.3 Classificatory or deictic?

It might also be thought that the distinction between the deictic and the classificatory component is not definitive. For example, are the 'proximal' and 'distal' indicators featured in 'this' and 'that' respectively classificatory or deictic? The answer is they are deictic and this may be demonstrated very simply. By definition, the deictic component is invariably associated with the Peircean index. That is to say, it is the deictic component of an indexical expression that indicates some entity that points beyond itself to the interpretation. The classificatory component, on the other hand, is always associated with the actual interpretation, which will be the referent itself, where there is one. This may still be somewhat obscure. Nunberg, however, adduces some interesting examples that illustrate and clarify these points. Consider [43] below.

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23 Richard Breheny suggested to me that this is what Nunberg himself intends.
24 In this chapter Nunberg's original numbering of his own examples will be retained throughout. Square brackets are used to distinguish such examples from my own numbered sequence.
These are over at the warehouse, but those I have in stock here. (p 20).

It is stipulated that [43] is uttered by a shopkeeper who is referring to two distinct sets of merchandise (plates). He picks up one plate and utters the first conjunct of [43], he then points to a different and more distant plate and utters the second conjunct. The point is that in each case what is actually indicated by ostension is a single plate, and quite clearly this single plate is not what the speaker is referring to as being either 'over at the warehouse' in the case of 'these' or 'in stock here, in the case of 'those'.

Nunberg's suggestion is that the plate indicated in each case is the index which points beyond itself to the referent or interpretation. Thus, it may be concluded that the semantic element of 'these' which indicates proximality - let's call it the 'proximality component' - relates to the index and implies that that (whatever it is) is close to the speaker. More precisely, it indicates that the index will be proximal with respect to the deictic origo. Similarly, the 'distality component' of 'those' indicates that the index is distal with respect to the deictic origo. To put it another way, as the proximality and distality components are features of the deictic component, it may be predicted that they will relate to indices rather than to referents. In [43] these predictions are borne out.

The index of 'these' is indeed proximal, whereas the index of 'those' is distal. It seems, therefore, that some nonparticipant terms such as 'this' and 'that' have a two-tiered deictic component, comprising both linguistic and non-linguistic elements. With respect to these terms, although for successful determination of the index an accompanying non-linguistic gesture is required, the proximality or distality of that index is linguistically indicated.

What is possibly more interesting is the fact that without apparently violating any grammatical rules or principles the plural demonstratives 'these' and 'those' in [43] are severally associated with a single (singular) entity. That is to say, each is associated with a single plate. This becomes less baffling once we realise that
the plurality element is a part of the classificatory component and that this, in turn, relates to the interpretation or referent and not to the index. Thus it may be predicted that 'these' and 'those' will both have plural referents or interpretations, but that in the case of 'these' the index will be proximal while in the case of 'those' it will be distal. The referent or interpretation of 'these', however, need not itself be proximal nor need the index be plural. Analogously, the referent of 'those' need not be distal, nor need its index be plural.

Examples relevantly similar to [43] are not only frequently encountered in English, they also have analogues in more highly inflected languages where gender markings clearly relate to the interpretation rather than to the index. This is demonstrated in [45], also taken from Nunberg, about which it is stipulated that it occurs in an exchange between Italian furriers. The speaker indicates a single living leopard (il gattopardo, masc.) and utters:

[45] Quelle [fem. pl.] si stanno per essere vietate.  
Those are about to be banned.

In this case 'Quelle' is understood to refer to fur garments, which are thus correctly denoted by the feminine plural, although the index - the entity actually ostended - is masculine and singular.

Nunberg notes that similar phenomena relating to gender marked pronouns also occur in English:

You can point to a girl child to identify her father ("He is in real estate"). You can point at a book to identify its author ("She was my chemistry teacher"), or at an author to identify a book ("That is a wonderful autobiography"). (p 26).

Even if initially some of these examples seem a little odd, they certainly can be justified in appropriate contexts. It should now be apparent, therefore, that there
is a simple test to determine whether a semantic feature is a part of the deictic
compartment or of the classificatory component. This test may be conducted by
asking what it is that any semantic feature of an indexical expression relates to or
'describes'. If the feature in question relates the demonstratum to some element
of the origo, then that feature is deictic. If it describes the referent or
interpretation, then it is classificatory.

3.3.2.4 The relational component

This is the least well defined and the most problematic of the components posited
by Nunberg. He suggests that it

... constrains the correspondence that has to hold between index and
interpretation. With we, the relational component stipulates that the
index must be included in, or more generally, must instantiate the
interpretation. (p9).

Thus, Nunberg claims that as the index of 'we' is always the speaker, the
pragmatically inferred interpretation of any utterance of 'we' will invariably
implicate some group of which the speaker is a member:

... the speaker's membership in the denotation of we is required by the
linguistic conditions on the use of the form. (p 18).

The pragmatic principles that constrain this inferential process will not be
discussed here. It will simply be assumed for the moment that if Nunberg is
correct and there is a relational component then there are pragmatic principles
which will resolve it. However, as will be seen, the assumption that there is such
a component is not unproblematic, and it will be challenged. Furthermore, it is
not only with respect to 'we' that Nunberg asserts that the instantiation of the
contextual interpretation by the relevant index is mandatory. He writes:
I have already mentioned the second difference between participant terms and demonstratives: the latter impose no requirement that the index instantiate the interpretation. (p 24-25).

The clear implication is that such a requirement is imposed with respect to all participant terms.

With respect to nonparticipant terms the position is rather different. Nunberg wavers between saying that they have no relational component whatever and claiming that their relational component is non-specific:

\[\text{p 25: ... we should properly say that nonparticipant terms simply have no relational component.}\]

\[\text{p 27: The absence of [an] explicit relational component in nonparticipant terms ...}\]

\[\text{p 27: ... nonparticipant terms, whose relational component imposes no requirement of identity between index and interpretation ...}\]

Ultimately, I shall go further than Nunberg and suggest that it may be a mistake to regard the relational component as being a part of the semantics of any indexical term, participant or nonparticipant. I shall suggest, however, that the conceptual content of such a component may be retained in a somewhat loose or metaphorical sense as relating to the pragmatic processes of indexical interpretation. I shall also argue that the last two comments quoted above, which stress the lack of specificity of the relational component, rather than its total absence, will turn out to be more helpful with respect to both nonparticipant and participant terms.
One of the immediate and obvious problems associated with the postulation of this component is that certain indexical expressions appear to have both demonstrative and non-demonstrative indexical uses. In (1) above, reproduced again below for convenience, 'here' is used non-demonstratively and is therefore an analogue of a participant term, whereas in (7), also reproduced again below, 'here' is used demonstratively and is therefore nonparticipant.

(1) I am here now.

(7) When a person is shot here, we can usually conclude that it is not suicide.

Indexical 'there' may also occur both demonstratively and non-demonstratively, as in (15) and (16) below.

(15) Move it from there to there. (demonstrative)

(16) Hello, is Harry there? (non-demonstrative)

(These examples are taken from Levinson, 1983, p 66.)

Levinson further claims that in addition to its more usual non-demonstrative use 'now' also may occur demonstratively, as in (17) below.

(17) Don't do it now, but NOW.

In this case the gesture or demonstration is, of course, vocal and the example may not be altogether convincing. It might be argued that the vocal emphasis is not, in fact, demonstrative, as it is not required to determine the two distinct temporal referents in the example, as each utterance of 'now' may be taken to refer, non-demonstratively, to the precise instant of utterance of that particular 'now' token. However, if the vocal emphasis is removed from (17), the instruction contained in

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25 This was pointed out to me by a student at the University of Hertfordshire.
the complete utterance becomes difficult to understand or obey, so perhaps this is an example of demonstrative 'now' after all. Furthermore, whatever is the position as regards 'now', there remains 'here' and 'there', which clearly do seem to have both demonstrative and non-demonstrative functions.

If Nunberg is correct, therefore, and non-demonstrative indexicals do have, as an encoded element of their semantic structure, a specific relational component, and if demonstrative indexicals do not have such a component, then we will be forced to conclude, somewhat counter-intuitively, that indexical 'here' and 'there' are lexically ambiguous as between their demonstrative and non-demonstrative uses. However, I have to confess that it is not altogether clear to me what the relational component of 'here' and 'there' would look like (if there is one). Nunberg does not elaborate on this point. In view of these difficulties, I suggest that if a semantic model of indexical utterances that does not include a specific relational component in the analysis of participant terms can be constructed, then - *ceteris paribus* - such a model is to be preferred over one that does include such a component.

It might be objected here that the putative ambiguity of two pro-locative terms hardly provides sufficient justification for the rejection of so substantial a part of Nunberg's model. However, as will become apparent, there are additional reasons for questioning the existence of the relational component.

### 3.4 The process of interpretation

The interpretation process as defined by Nunberg has two stages:

*Stage 1*

In this 'we go from the occurrence of the word to the index'. (p 8). On the next page Nunberg elaborates: '... the hearer has first to resolve the deictic component to determine the index'. (p 9).
This is fairly straightforward. The hearer has to determine just what entity is indicated - in the first instance - by an utterance of an indexical expression. Thus, 'these' in an utterance of [43] in the context stipulated has, as its primary target, the plate held aloft by the speaker. This plate is, therefore, the index, while in an utterance of (8) the index is the picture. Analogously, in direct speech an utterance of 'we' will have the speaker as its index, as will an utterance of 'I' - what distinguishes these two terms is the classificatory component - and an utterance of 'you' will have the addressee as its index. The hearer's task is the relatively simple one of identifying these entities or individuals in the actual context of use.

Stage 2

Of this Nunberg writes that we go 'from the index to the interpretation'. (p 8). This applies equally to participant and nonparticipant terms. With respect to the former, Nunberg writes that the hearer must 'resolve the relational component to determine the interpretation'. (p 9).

That is to say, the hearer must infer just what group or set instantiated by the index is salient in the particular context of the utterance. Later on (p 25), Nunberg enters into a brief, and extremely general, discussion of what constitutes salience.\(^{26}\) I shall assume that such generality doesn't matter too much, and that salience in a context is a real and definable property which possibly should be equated with, or perhaps replaced by, relevance as defined by Sperber and Wilson.\(^{27}\) However, for reasons of space, the pragmatic (or cognitive) processes which underlie the determining of an interpretation of an utterance in a context will not be discussed here.

The second stage of indexical interpretation is clearly considerably less straightforward than the first, and it is not always easy to see how it might work. Indeed, as will be seen below, in the case of certain utterances of the participant

\(^{26}\) But see also Nunberg (1979) for a more detailed discussion.

\(^{27}\) Sperber and Wilson (1986, 1995).
term 'we', the index apparently — contra Nunberg — does not instantiate the interpretation.

Aside from this difficulty there are two further problems inherent in the above account of the interpretation process.

I The interpretation of nonparticipant terms, which are said to have no relational component, remains largely unexplained.

II No mention is made of the role the classificatory component plays in the actual process of interpretation.

With respect to I, the solution might be to postulate that nonparticipant terms do, in fact, have a generalised relational component as shown below:

**GRC:** The index must stand in some contextually determinable relation to the interpretation.

However, to the extent that everything may be said to stand in some relation to everything else, the condition embodied in GRC may seem to be vague to the point of vacuity. I believe that there is a solution to this problem also and that it falls out from the solution to II. This second solution is simple. The classificatory component must be definitively incorporated into the interpretation process, which may now be rewritten as follows:

1. Resolve the deictic component to determine the index.
2. Resolve the classificatory component to determine the sortal or quasi-sortal features (number, gender, animacy, etc.,) of the interpretation.
3a. Resolve the relational component to determine the interpretation. [participant terms]
3b. Resolve GRC to determine the interpretation. [nonparticipant terms]
With respect to 3b, the hopelessly vague earlier formulation of this component may now be revised as is shown in $\text{GRC}'$: 

$\text{GRC}': \quad$ The index must stand in some contextually salient relation to an entity whose sortal or quasi-sortal features are defined by the classificatory component. That entity, or a description that must be satisfied by an entity with those sortal, or quasi-sortal, features, will be the referent or will constitute the interpretation.

Step 3b may therefore be rewritten:

3b. Resolve $\text{GRC}'$ to determine the interpretation.

Now, although $\text{GRC}'$ is postulated as a solution to I, which concerns the interpretation of nonparticipant terms, it seems to me that there is no compelling reason to suppose that the relational component of participant terms is any more specific than this either. It may be that the interpretation of non-demonstrative indexicals such as 'we' is frequently, but as will be seen not invariably, instantiated by the index of the term in question. Nunberg, however, suggests that this step in the interpretation procedure is semantically stipulated and is therefore, presumably, invariant. However, I shall argue that any instantiation of the interpretation by the index is more plausibly explained as being contextually - i.e., pragmatically - determined.

There are two reasons for supposing this to be the case:

(i) Despite the terminology introduced by Sperber and Wilson, the suggestion that certain types of expression encode 'procedures' is puzzling. How exactly is this done, and what does the encoded 'procedure' look like in semantic terms? To put it another way, semantic features such as MALE, SINGULAR, ANIMATE, (the features of 'he') are transparent and readily understood, but it is not at all easy
to imagine what the instructions for inferencing to a referent must look like if they are said to be actually encoded in this lexeme.

(ii) The empirical evidence is not compatible with the claim that terms such as 'we' have an encoded relational component.

If the relational component is not a semantic feature of participant terms, then the interpretation process of 'we', say, might be described as follows:

1. The deictic component of an utterance of 'we' indicates the index, i.e., the speaker. The actual identity of that index is then contextually determined.

2. The classificatory component of 'we' stipulates that the referent, or interpretation, of such an utterance shall be plural and animate.

3. GRC' stipulates that the index of 'we' shall stand in some contextually salient relation to the referent or interpretation and that such a referent or interpretation should either instantiate or predicate the semantic properties PLURAL and ANIMATE.

The referent or interpretation must, therefore, either be or be a description of an animate group, or set, comprising two or more individuals. Actual membership of such a group would be just one possible relation which might hold between index and interpretation. Membership of a similar group might be another. That is to say, index and interpretation might severally be members of distinct and proper subsets of the same superset.

What is now needed is some means of determining which of the two postulated components, Nunberg's relational component (hereinafter NRC) or GRC', has the greater explanatory power.
3.4.1 The semantics of 'we'

Nunberg initiates his discussion concerning how deferred reference works not, as might be expected, with a discussion of the singular pronouns, but with an investigation of the semantics of 'we'. He points out that in normal, standard, usage, 'we' is not equivalent to plural 'I'. The question which he then poses - and answers - is this: If 'we' does not refer to joint speakers (or writers) and, as he correctly observes, except in cases of choral recitation or cooperative authorship, it doesn't, then what group does exclusive 'we' denote? His reasonable suggestion, which I shall endeavour to modify, is that it refers to 'the group of people instantiated by the speaker or speakers of the utterance'. (p 7). Indeed, it is on the strength of this assumption that he formulates his relational component. However, he concedes that the precise identity of this group must be pragmatically determined and - as will become apparent - it is here that the problems arise. Nunberg merely comments:

... the interpretation of an occurrence of we can only be resolved by consulting the speaker's intentions, the conversational purposes, and the linguistic context. (p 10).

What is important in the present context is the claim that underlying the pragmatic processes that ultimately determine the interpretation of an utterance of 'we', say, or indeed of any indexical expression, there are certain systematic operations on specific semantic features (as described above) of the indexical term in question.

3.4.2 The semantics of indexical self-reference

A further, highly significant, claim is that the mechanism of deferred reference relates not only to those cases where index and referent are quite clearly distinct - as in examples (5) to (8) above - but that it relates to all indexical utterances, even those where index and referent are patently identical. For example, in direct speech most - although not all - utterances of 'I' fall into this latter category.
Nunberg rejects the suggestion that two distinct systems of indexical interpretation might be required, the one to operate in those cases where index and interpretation are distinct, and the other to operate in those cases where index and interpretation coincide. He writes:

It is much cleaner and simpler to suppose that the grammar of the language places no restrictions on deferred use, leaving it to pragmatics to sort out individual cases. This doesn't mean that the uses of indexicals to refer to their indices don't constitute a philosophically interesting class, but only that they don't correspond to a linguistic type. (p 31).

If I understand this correctly, this may be read as the claim that all indexicality (at least all 'mainstream' indexicality) operates within the constraints of the same two-stage 'deferring' mechanism already described. Now, it seems to me that Nunberg is correct to reject a proliferation of linguistic types, although it is not immediately obvious how the mechanism of deferred reference applies in those cases where index and referent are, in fact, identical. Nor is it clear just what Nunberg intends to concede by calling such occurrences 'philosophically interesting'.

As he has earlier commented that the standard story 'turns out to be a special case' of his more general account, it may be that he wishes to suggest that certain indexical uses are in some sense directly referential. If this is his view, I believe it to be ill-founded for reasons already discussed in chapter two. What is needed is an account that is compatible with Nunberg's general theory of indexical interpretation and which does not presuppose or concede direct referentiality to those instances where index and referent coincide.

One possible explanation of such coincidence, which indeed seems to be implied by Nunberg, is that in such cases reference is achieved by a token reflexive function in which the index of 'I say, - the speaker - reflexively indicates itself (herself/himself) as referent. However, this type of pronominal token reflexivity,
which is entirely pragmatically controlled, is not to be confused with semantically specified token reflexivity such as that posited by Reichenbach. In other words, according to Nunberg's theory of deferred reference, the meaning of 'I' - i.e., whatever is semantically encoded in the term - may not be glossed as 'the speaker of this token of "I"', although the deictic component of that meaning may be so interpreted.

It may, of course, turn out that the referent of a particular utterance of 'I' is indeed the speaker. In fact it usually does turn out this way. Nunberg's claim, however, is that all indexically used terms - including 'I' - pick out a contextually determinable index and that it is that index which, together with other contextual features, determines the relevant interpretation. The further suggestion spelled out more precisely here is that the index may, in certain contexts, point to itself.

According to this account of indexical interpretation, identification of the referents of 'I' and 'here' with respect to any utterance of (1) above is thus never semantically constrained. That is to say 'I' need not refer to the speaker (although it usually does), and 'here' need not refer to the place, nor 'now' to the time of utterance. Now, in practice it may not be easy (or possible) to construct a context in which in an utterance of (1) all three indexical expressions do not thus refer. However, as was demonstrated in (5) above, it is possible to imagine a context with respect to which at least one of them doesn't.

This is sufficient for it to be concluded that the truth value of such an utterance can never be known a priori, for even in those cases where the speaker does, in fact, refer to herself, and the time and place referred to are the time and place of the utterance, such token-reflexive reference is, according to my interpretation of Nunberg's account, pragmatically not semantically determined. From this it follows that the context must be consulted before it can be known (a) what proposition the speaker is expressing; and (b) whether that proposition is or is not true.

28 Reichenbach (1947).
In an earlier work on 'deferred ostensive reference', Nunberg offers a slightly different explanation of the semantics of self-reference.\(^{29}\) This has been concisely described by Berckmans:

[Nunberg] argues that successful accounts of demonstrative reference must include a theory of how the hearer's knowledge of the *demonstratum* (the object pointed at) will enable him to pick out the referent of the denoting phrase. The theory will provide a function which contains the *demonstratum* as argument and which returns the referent as value. This function is called the 'referring function' of the use of the term. An act of ostensive reference will be said to be successful just in case the hearer can identify the referring function. (Berckmans, 1990, p 286).

Berckmans further explains that if \(a\) is the ostended object and \(b\) is the interpretation, then the referring function is \(f(a)\). That is to say, the index of a demonstrative term is the argument of a function to an extension. This ascribes to the index the same logical role that is assigned to it in the standard approach described by Kaplan. But this is as it should be. Whatever its semantic or logical structure, the essential role of an index is to determine the referent or, in Nunberg's model, the interpretation. In order for the index to meet this requirement the claim here is that the hearer must first identify the relation - as defined by the referring function - that holds between the *demonstratum* (the index) and that interpretation.

One possible referring function is the 'identity function', which may be more formally represented as \(f(a) = a\). Selection of such a function would allow an utterance of 'I', say, to refer to the speaker. Berckmans concludes:

Presumably, the speaker intends that the hearer will choose that function which, given the circumstances, makes most sense. (ibid.)

\(^{29}\) Nunberg (1978).
A possible difficulty with this account is that there may be an indefinite number of referring functions, and they must - presumably - be constructed more or less ad hoc. Examples cited by Berckmans in addition to the identity function and set membership are 'x is a picture of y', 'x is the color of y', and 'x represents y'. Nunberg later (apparently) abandons this notion of a referring function and it is partially replaced by the precisely formulated 'relational component' described above. However, it seems to me that the difficulty associated with the possibility of there being an indefinite number of referring functions is more apparent than real, because although in theory there might be an indefinite number of such functions, in practice with respect to any particular utterance, only a very limited number of functions - perhaps only one - will be salient in the context. Indeed, it is postulated above that the operation of GRC would effectively identify just such a function.

3.4.3 The relational component of 'we'

Nonetheless, Nunberg prefers to posit a specific relational component. However, it cannot be used to explain how it is that 'I' or 'we' may refer to entities that are not instantiated by the speaker, and yet such examples do occur. Consider [18] below:

[18] We might all have been liberals. (p 14).

An utterance of [18] is attributed to Justice O'Connor and - according to Nunberg - the group that he as the speaker/index instantiates with respect to [18] comprises the members of the Supreme Court. Nonetheless, [18] is indeterminate as between two possible readings which are reminiscent of the referential and attributive readings of definite descriptions. Nunberg, in fact, glosses [18] as incorporating a definite description as is shown in [20]:

[20] The Justices of the Supreme Court might have been liberals.
He comments:

The utterance has one reading on which it says of the actual members of the Supreme court [the referential reading] that they might have been liberals. But it also has a reading on which it means that there might have been other, more liberal justices [the attributive reading] serving on the Court ... (p 14).

However, the referential reading is referential in the restricted sense identified by Recanati as token referential and it is not equivalent to a directly referential reading. In the case of intended reference to the actual members of the Supreme Court, definite descriptions do not, even according to Recanati, semantically encode any stipulation concerning singular truth conditions. Furthermore, in the case of 'we' - if the arguments presented in chapter two are correct - there could be no such stipulation and the distinction between the two readings of 'We' in [18] is and can only be pragmatically determined. The mechanism for determining both readings is, therefore, the same.

The index picked out by 'We' is the speaker (in this case, Justice O'Connor) and the group instantiated by Justice O'Connor when he utters [18] is the set of Supreme Court Justices.

This is relatively straightforward. It might be argued, however, that if we allow that the formulation of NRC is correct, then with respect to utterances of examples such as [18], the procedures of deferred reference would always - at least initially - give the reading according to which the actual members of the relevant group, in this case the Supreme Court, constitute the intended interpretation. As Nunberg comments, even in 'the normal case ...we involves deferred reference' (p 8), and quite clearly the alternative 'attributive' reading goes beyond such 'normality' and seems to require some kind of 'second-order' deferral. More problematically, Justice O'Connor is the index but he does not instantiate
the group of Justices denoted by the attributive reading. Yet NRC stipulates that he must. Something has gone wrong somewhere.

To put it another way, the index derived from an utterance of 'we' is always the speaker, in this case Justice O'Connor. From this index the actual group of justices of which that speaker-index is a member is inferred as the interpretation. And that is it; that apparently is as far as the deferred interpretation goes.

To achieve the attributive reading we have to go beyond this and say that from the actual group of justices the more general group of possible, but not actual, justices is derived. That is to say, the set of all possible judges has at least two proper, non-intersecting, subsets:

A: the set of possible and actual judges; and
B: the set of possible but non-actual judges.

As a member of set A, the speaker-index, Justice O'Connor, cannot be a member of set B. Nonetheless, there is a clear relation between the two sets, and hence between the interpretation and the index, although the former is not instantiated by the latter. So how is the attributive reading achieved?

In an earlier discussion of this problem I suggested that the speaker of [18] belongs to two relevant groups: the first being the group comprising the actual justices, the second being that comprising all possible justices. This is represented in C and D, below.

C: the set of possible and actual judges; and
D: the set of all possible judges.

In this case, C is a subset of D, whereas A is not a subset of B. I then suggested that relating the index to set C would give the 'referential' reading, while relating

30 Grimberg (1994).
the index to the set D would give the 'attributive' reading. However, it now
seems to me that this cannot be right. If we assume the most natural reading of
the attributive version of [18], the speaker does not include himself in the set of
justices referred to as being possibly more liberal. That is to say, the index (the
speaker) does not instantiate the interpretation of 'we' in [18]. Furthermore, such
exclusion of the speaker-index from the interpretation becomes even more
apparent when another of Nunberg's examples, reproduced as (18) below, is
considered.

(18) In a couple of years we'll probably all be women.

This example, quoted by Nunberg, originally appeared as a caption to a cartoon
depicting a group of middle-aged men, of whom the speaker is one, at a board
meeting. Quite clearly the speaker does not intend to include himself in the
postulated all-women group of directors of the company. If, therefore, NRC is
retained, it becomes difficult to avoid the conclusion that the attributive readings
of [18] and (18) can be no more than implicatures derived from a 'literal' first
reading in respect of which the index does instantiate the interpretation.

This is not a conclusion that Nunberg would welcome, as he presents the
availability of attributive readings as a strong argument in support of his thesis
that indexicals can express anything that can be expressed by definite description,
and that they achieve this through the mechanism of deferred reference. He
totally rejects the suggestion that such attributive readings are achieved as
pragmatic implicatures derived from 'literal' referential first readings on the
grounds that if that were the case

... we would expect that the same reading would be available for [21],
where the justices are referred to by name, ... (p 14).

[21] O'Connor, Rehnquist, Thomas etc., might have been liberals.
Clearly, an attributive reading of [21] is not available, whereas it should be if the attributive reading is no more than a pragmatically derived implicature based on a referential reading.

As things stand there seems to be no way forward. The attributive reading as a literal interpretation is blocked by NRC and it appears to be blocked also as an implicature by the demonstrable unavailability of such readings to referential expressions. If, however, GRC' replaces NRC, then there is no obvious reason why there should not be an indefinite number of steps in the inferencing process prior to the determination of the 'literal' interpretation, where 'literal' meaning is not equated with sentence meaning. That is to say, if - for some contextually salient reason - it is apparent that the utterer of 'we', say, does not intend to refer to a group of which he is a member, then it may be argued that the hearer will continue the inferencing process until he achieves what he concludes is the intended interpretation.

The point is that while the deictic component transparently indicates an index, and the classificatory component equally transparently indicates sortal properties, there is no equivalent transparency evident with respect to NRC. To put it another way, why should we suppose that language encodes a specific and 'hidden' instruction concerning how the one should be related to the other? Furthermore, there is no evidence to suggest that there is any component at all that dictates that the inferencing to an interpretation should be a single leap process. Indeed, it is difficult to see how there could be such a component, or how such an instruction could be incorporated in the deictic component. Neither the nature, nor the number, nor the scope of the inferences required are, nor can they be, semantically prescribed, for inferencing is not a semantic process. It seems to me that the semantics of a term can give no more than semantic information.

Now the semantics of 'we' are relatively simply. The deictic component semantically indicates the speaker-index; the classificatory component contributes the semantic features PLURAL and ANIMATE. And that is it. The rest is down
to pragmatics. That the contextually salient relation between index and plural referent frequently turns out to be that the former is a unit in the latter's plurality does not constitute evidence that such instantiation of the latter by the former is semantically stipulated. \textit{GRC'}, on the other hand, could operate at a pragmatic level.

This is a nice suggestion. If, as has been suggested, the thesis of direct reference is fatally flawed it must be replaced by something, and Nunberg's thesis of deferred interpretation is an attractive alternative. It not only avoids the complex difficulties of double indexing, endless \textit{Weltangst}, and the unattractive paradox of the contingent a priori, it also provides an extremely satisfying explanation of the cross-sortal mismatching such as that evidenced in examples (8), [43] and [45]. That is to say it accounts for such facts as the speaker being able - without doing violence to either grammar or comprehension - to indicate a single plate while uttering a plural demonstrative or point to an inanimate object while uttering 'he'. It is not unreasonable to suggest, therefore, that any modification of Nunberg's model that enables that model to run more smoothly should at least be given serious consideration.

### 3.4.4 The semantics of 'I'

Following the introduction of the deferred reference analysis of the semantics of 'we', Nunberg's next step is to work back to the more frequently discussed, singular, indexical usages. His argument is that they function in a manner analogous to that described for 'we'. This also is an attractive suggestion. Discussion of plural indexical usages has been largely avoided in the literature, on the grounds that such usages are too mysterious or problematic. However, Nunberg here proposes an analysis of indexicality that applies equally to both singular and plural terms, thus unifying their semantics. Furthermore, in chapter five I will suggest that if he is correct, then on the basis of his analysis a unified semantics for \textit{all} the functions of pro-terms - both indexical and non-indexical - may be posited.
Courageously, Nunberg starts his journey back from 'we' with what may be the toughest indexical of all - 'T'. In order to illustrate his argument that even this pronoun may have a descriptive use that does not refer to its index, Nunberg presents the following example:

[32]  *Condemned prisoner.* I am traditionally allowed to order whatever I like for my last meal.

It is Nunberg's claim that in [32] 'T has 'more or less the same interpretation as the attributively used [description] in [35] ...'.

[35]  The condemned prisoner is traditionally allowed to order whatever he likes for his last meal. (p 21).

Unfortunately, he does not tell us how this interpretation is achieved. However, we might - as a first approximation - assume that the hearer will infer that the index and interpretation share some salient property; i.e., are members of the same set. In the most usual case of self-reference that set is the set of all speakers. However, in those cases, such as [32], where the context indicates that the index (the speaker) is not the intended referent, the hearer will then focus on some other salient property of the index in order to arrive at an interpretation that is compatible with the classificatory features SINGULAR and ANIMATE. In the case under discussion, the salient property is that of being a condemned prisoner.

It might be objected that [35] does not constitute an altogether convincing or satisfactory example of an attributive use of 'T'. Perhaps the acceptability of [32] depends more on the interpretation given to 'traditionally' than on that given to the pronoun. However, if 'traditionally' in [32] is replaced by 'usually', as in [32'] - and there are indications to suggest that this is what Nunberg intended - then the acceptability of an utterance of this modified version does depend on T being given an attributive interpretation.
[32'] Condemned prisoner: I am usually allowed to order whatever I like for my last meal.

I suggest that in an appropriate context [32'] might well be acceptable. Let us assume, for example, that it is generally known that nine times out of ten the prisoner awaiting execution is accorded the privilege of ordering the meal of his choice. By uttering [32'], the current condemned prisoner is appealing to this knowledge and hoping that he will not be one of the few unprivileged ones.

Furthermore, Nunberg's argument concerning the descriptive use of 'I' does not depend on this single example. Consider [33], below.

[33] President: The founders invested me with the sole responsibility for appointing Supreme Court Justices. (p 21).

Interestingly, Michael Howard recently made a very similar claim:

The power I exercised was given to me by Parliament in the last century and updated three times since then. (quoted in The Times, May 3 1996.)

Nunberg comments that an utterance of 'me' in his example has 'more or less the same interpretation' as the definite description in [36], where - he claims - 'the president' is used attributively.

[36] The founders invested the president with the sole responsibility for appointing Supreme Court Justices.

However, it may be that describing this usage as attributive is too simplistic. Although the occurrence of 'the president' in this example is clearly not referential in Donnellan's sense, this may not justify the assumption that it must, therefore, be attributive. Partee (1987) identifies yet a third type of description, most frequently referred to as the functional use, which differs in certain significant
respects from both the referential and the attributive uses. An example similar to Nunberg's [36] is discussed by ter Meulen:

(19) The president is elected every four years.  
(from ter Meulen, 1995, p 339.)

She claims that although the functional use 'lacks the existential presupposition characteristic of the referential use', it is nonetheless referential in that it behaves like a proper name and refers - rigidly - not to the president himself but to the presidential 'role or function'. (p 340).

As the use of 'the president' in [36] seems to be analogous to that in (19), ter Meulen's comments may initially seem less than helpful to Nunberg (or to me). However, on reconsideration it might be argued that they do, after all, further our claims.

Nunberg's argument focuses on the use of 'me' in [33], while his interest in 'the president' is only secondary. The significant point is that according to the most natural reading of [33] 'me' does not refer - directly, rigidly, or otherwise - to the speaker. However, the direct reference thesis requires that it should. If, therefore, 'me' in [33] is most accurately interpreted as the equivalent of a functionally used definite description this must surely support Nunberg's claim that indexical terms and definite descriptions express the same range of proposition types.

Conversely, if no examples were to be found in which the interpretation of an indexical term is equivalent to a functionally used description this lack might be taken as evidence against Nunberg's thesis. Moreover, ter Meulen's claim that functionally used definite descriptions are rigid designators need not alarm us unduly. They can only be such if the combined theses of direct reference and rigid designation are correct, and the fact that 'me' in [33] may be equated with the functional use of a definite description rather than being straightforwardly directly

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31 See also Doron (1988) for further discussion of the different uses of definite descriptions.
referential in its own right is presented here as evidence in the case against those theses. Furthermore, it is difficult to see how a definite description such as 'the president' can be *de jure* rigid. In which component part of 'the president', is the semantic stipulation concerning such rigidity supposed to lie?

Another significant problem is that even if we were to ascertain where such a stipulation is encoded, and even if we were prepared to accept the concomitant lexical ambiguity for either 'the' or 'president' that such encoding entails, it is difficult to see how it could be further stipulated that the entity thus rigidly designated is the *function* of being president rather than the president himself. If ter Meulen would wish to argue that rigid designation does *not* depend on the presence of REF or anything like REF but simply occurs spontaneously, and as appropriate, the question must surely be; How can she be so sure? If 'the president' in (19) really is rigidly designating, then it must rigidly designate for all competent language users. And if some of us feel that the property of being president is a very flexible property indeed and might vary tremendously from world to world, who is to say that we are wrong?

Of course it may be that ter Meulen simply intends to assert that functionally used descriptions are *de facto* rigid. If this is the case, then this is a contentious metaphysical claim that possibly reduces the thesis of rigidity to vacuity.

Finally, the interpretation of 'me' in [33] may be broken down as follows:

1. The deictic component indicates the speaker, who happens to be the president, as index.
2. The classificatory component contributes the features ANIMATE and SINGULAR to the interpretation.
3a. NRC is compatible with an attributive reading of 'me'/'the president', as the attributive description 'the president' is satisfied by the speaker. Hence it might be said that in such a case the index instantiates the interpretation. However, it might be argued that NRC is *not* compatible with a functional
reading of 'me'/the president', according to which the thing referred to is a role or function.

The difficulty is that the index of 'me' is the individual speaker, it is not some property that might correctly be predicated of that individual, although the index might in some sense point to such a property. Now an individual may satisfy a description that predicates a function. It might therefore be said that where the interpretation of an indexical term is an attributive description that is in fact satisfied by the index, that interpretation is instantiated by that index. However, the question here concerns whether it can be said that an individual, qua individual, can instantiate a function. It seems to me that it cannot. If this is correct, then a model of the semantics of indexicality that includes NRC fails to explain how a functional reading is achieved.

3b. GRC' does not require that the index instantiate the interpretation. It is, therefore, compatible with both an attributive and a functional reading of 'me' in [33].

It is beginning to seem that GRC' does have more descriptive authority than NRC.

3.4.4.1 Who am I?

Further examples of the descriptive use of 'I' are discussed by Recanati. In (20) below, the speaker, Jim, introduces himself to Melanie.

(20) Hi, I'm Jim.

(This example comes originally from Barwise and Perry, 1983, and is quoted in Recanati, 1993, p 301.)

Presumably, Jim is not here proclaiming his self-identity, and once again we can explain what is happening by invoking the mechanism of deferred reference,
according to which the generalised - and sensible - interpretation given in (20) may be inferred.

(21) Hi, the speaker (the person addressing you) is Jim.

But how, exactly does this work? In the first instance 'I' must pick out the speaker as index. The next step is for this index to point beyond itself to some individual or property to which it is related in some contextually salient way. The classificatory component contributes the information that the interpretation must be, or must be satisfiable by, some singular, animate entity. In this example the salient relation appears to be that the index, as the speaker, is related to the group of all speakers. However, the classificatory component indicates a single individual, not a group. Therefore, although in (20) the index (i.e., Jim) does, in some sense reflexively indicate itself (himself), what is revealed by this brief analysis - if it is (very approximately) correct - is that the index points to itself as being a member of the set of all speakers. That is to say the referent - although identical to the index-speaker - is selected in virtue of having a particular property, not in virtue of some 'identity function'.

This is interesting. Thus interpreted the speaker's reference to himself involves no deep, introspective consciousness of self or of identity. His intention may be interpreted as communicative and informative rather than philosophical. Intuitively, this seems to be true of most utterances involving T. It is surely plausible to suggest that when a speaker uses the pronoun T to refer to himself, his intention is to communicate an objective fact of presumed interest to the hearer, not a subjective one that is of little or no interest to anyone but himself, and which is, moreover, conceptually inaccessible to anyone but himself. Furthermore, it may be assumed that such a speaker intends - and expects - his hearer to be able to interpret such a communication. If this is correct, then philosophical concern over the meaning of T is misplaced. Why should a speaker use a term that he cannot realistically expect his hearer to understand?
Of course, a speaker may invest 'T' with philosophical import, as in (22) below, when uttered introspectively.

(22) Who am I?

We might say that 'T' here picks out the speaker as a physical, identifiable, talking entity as index, and that this entity points beyond itself to some mysterious essential 'self' cognitively accessible (if at all) only to the speaker. However, the complex philosophical problem, described by Anscombe (see note 21) and based on the mistaken assumption that 'T' always self-consciously refers to the speaker, concerns how a thought about such a self and triggered by the use of 'T' may be defined without circularity.

My complaint is that if there is a problem then it can only be a philosophical one concerning consciousness of self, not a linguistic one concerning the meaning of words. The hard-to-define elusive self-awareness just is not encoded as the meaning of a pronoun. This should become apparent when it is realised that there are other possible interpretations of (22). In another context, an attributive interpretation may be equally appropriate (as it is with respect to (20)).

For example, a speaker may tap herself on the chest while uttering (22) to a small child, and grin with inane delight when that child responds 'Mummy'. Quite clearly such a speaker is not asking her child a recondite metaphysical question, as is apparently required by what I shall call 'the philosophical thesis', but something more nearly glossed as (23).

(23) Who is this person talking to you?

The use of the demonstrative 'this' in the gloss is justified by the fact that the speaker of (22) indicates herself gesturally. It seems to me that in the context

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32 For a classic discussion of the problems associated with this elusive property see Hume (1739), Book I, Part IV, Section VI.
stipulated such a gesture does not contribute emphasis but is genuinely ostensive. If this is correct, then 'T' may join the ranks of pro-terms that have both demonstrative and non-demonstrative uses. That is to say 'T' may be yet another term which functions as both a participant term and as a non-participant term. However, Nunberg insists that all participant terms have an encoded relational component (NRC) and all nonparticipant terms are without such a component. If this is correct, then we shall just have to accept that 'T' is lexically ambiguous as between its demonstrative and non-demonstrative uses. This throws further doubt on the plausibility of NRC.

Before leaving the semantics of 'T', I would like to discuss one final example that originated with Nunberg and is also quoted in Recanati (1993). It is reproduced below as (24).

(24) You should be careful. I might have been a communist.

The circumstances in which (24) is uttered are described as being such that had the speaker indeed been a communist he would probably have killed his interlocutor who is making enquiries concerning a certain arms shipment. Nunberg's comment is that

The content of I ... is 'the person to whom you are addressing these questions (whoever that may be)'. (Nunberg, 1990, quoted in Recanati, 1993, p 301).

On this interpretation, the salient property of the index of 'T' is not that of being the speaker, as is the usual case, but that of being the addressee of a previous utterance. Nonetheless, it will, of course, always turn out that the addressee of the previous utterance thus determined will be the speaker. However, the 'content of I' in (24) is, in fact, indeterminate as between two readings. The first reading is that described above, but the reading according to which the speaker really does
intend to communicate the proposition that had things been different he, himself, might have been a communist is also possible.

If this second reading is to be achieved then the property of being the speaker must be seen as not merely the property that defines the index but also as the contextually salient property possessed by that index, and contributing towards some contextually determinable relation between index and interpretation. I therefore suggest that when a speaker does refer to himself in this, more or less, standard way, the 'referring function' is one of semiotic reflexivity, not of identity. If this is correct it may again be plausibly suggested that no philosophical implications concerning the identity of the speaker, or any deep awareness of 'self', are a part either of the intended communication, or of any mysterious incommunicable part either.

Finally, the possibility of there being two readings of (24), although it may be used as an argument against both the direct reference thesis and the 'philosophical thesis', is uninformatively compatible with both NRC and GRC'. It may, however, be objected that irrespective of whether NRC or GRC' is to be preferred, all the examples considered to date fail, either jointly or severally, to provide convincing evidence in favour of the thesis of deferred reference. Perhaps the issue should be approached from another direction. If objections to the thesis turn out to be substantially less convincing than the thesis itself, this might be taken as further evidence in favour of that thesis. Furthermore, a consideration of the objections leads to evidence that, I suggest, decides the question concerning the choice between NRC and GRC'.

4. Objections and responses

Both Kaplan (1989a) and Recanati (1993) recognise, with respect to the more obvious examples, the phenomenon which Nunberg calls 'deferred reference'. However, both deny or dispute the significance that Nunberg attaches to it.
Kaplan denigrates it as 'deviant', while for Recanati it is merely derivative. Other writers, such as Green, dismiss such utterances as metaphorical.\textsuperscript{33}

4.1 Kaplan's objection

In response to Kaplan Nunberg comments:

Kaplan discusses the case of someone pointing to a flower and saying "He has been following me around all day," and observes in passing that a "background story can be provided that will make pointing at a flower a contextually appropriate, though deviant, way of pointing at a man; for example, if we are talking about a great hybridizer." (p 30).

He complains that Kaplan has loaded the dice by his choice of what is, \textit{prima facie}, a bizarre example. However, Nunberg counters this with the observation that although it may seem odd to point to a flower while uttering 'he', 'there is no bizarreness in pointing at a painting' and uttering (8) (reproduced again below for convenience) with the intention of referring to the artist.

(8) \textit{Now he knew how to paint goats.}

Nunberg further - and correctly - observes that if we wish to exclude Kaplan's flower example from the analysis of indexicals on the grounds that it is deviant, then we must also exclude a great many other, apparently acceptable, analogous examples, such as those already discussed above. One further example, much discussed in the literature, is that of the enormous footprint in the sand at which the speaker points while uttering (25).

(25) \textit{He must be a giant.}

(This example is taken from Schiffer, 1981, p 49.\textsuperscript{34})

\textsuperscript{33} See Green (1989), p 24.
\textsuperscript{34} See also Loar (1976), p 357.
It does, indeed, seem to be the case that pointing to a footprint to refer to the owner of the foot or to a picture to refer to the artist - or possibly even to the subject - of the painting is far from deviant, but this does not, of itself, show that these are examples of deferred reference. Once again, some further investigation of how such reference actually works seems called for.

With respect to (8), according to the account developed above, we get the following schema:

(i) First, the deictic component must be resolved in order to determine the index. In the case of nonparticipant pronouns such as 'he' the deictic component may be identified with the accompanying demonstration. Thus, in this example, the deictic component is the gestural ostension and the index determined by this gesture - the demonstratum - is the picture.

(ii) The classificatory component must next be resolved. In this case it comprises the semantic features ANIMATE, MALE, SINGULAR. It is associated with the interpretation or referent, and does not relate to the index. This is why it makes sense to point to an inanimate, gender-neutral, object such as a painting while uttering 'he'.

(iii) Finally, as 'he' is a nonparticipant term not subject to the constraints of NRC, we must resolve GRC' to determine the interpretation. GRC' stipulates that the index of any utterance of 'he' must stand in some contextually salient relation to a singular, male, entity, and that that entity - if it exists and is determinable - will be the referent of the utterance of 'he'. Alternatively, if no such entity exists or can be determined, then the relevant description that would be satisfied by such an entity, if it exists, will be the interpretation of that utterance.
This is still broadly in accordance with Nunberg's own suggestion, for with respect to the operation of deferred reference in the interpretation of nonparticipant terms he writes:

... used indexically [nonparticipant terms] can contribute any individual that corresponds to their indices in some salient way. (p 25).

The notion of salience remains regrettably vague, and once again I fall back on the assumption that salience, or possibly relevance, in a context may be defined in terms of pragmatic, or even cognitive, principles. However, as has already been noted, a discussion of what those principles might be, or of mental models of the utterance situation, is well beyond the scope of this investigation.

Now Kaplan's complaint is that in obvious cases of deferred reference, such as the flower example, the semantic features of the classificatory component do not describe the demonstratum. He sees such a mismatch of features as deviant. However, as we have seen, indexical utterances in which the semantic features of the classificatory component do not describe the entity ostended are extremely common and are readily accommodated within Nunberg's model of deferred reference. Indeed, they may even constitute its motivating force. It may, therefore, be concluded that Kaplan's objection poses no very serious threat.

4.1.1 Cross-sortal mismatches
Interestingly, Nunberg sees in these mismatches of features evidence of a distinction between participant and nonparticipant terms which he believes further supports his postulation of NRC:

Inasmuch as the indices of nonparticipant terms need not instantiate their interpretations, the two objects [i.e., index and referent] will often differ with respect to the properties associated with the classificatory component of the expressions, ... (p 25).
The absence of [an] explicit relational component in nonparticipant terms makes it possible to exploit ... these extravagantly cross-sortal referents and indices, ... (p 27).

To put it another way, Nunberg appears to assume that it is the presence of an 'explicit relational component' (NRC) that prevents such mismatches in the interpretation of participant terms. However, it seems to me that there is another more obvious and simpler explanation of this apparently invariant concordance.

A nonparticipant term such as 'he' has no linguistically encoded deictic component whatever. The sortal features of the index of an utterance of 'he' are, therefore, totally unspecified. Even in the case of the nonparticipant terms 'this' and 'that' where proximality and distality are encoded in the deictic component, these properties are not sortal features. However, all indexical terms - both participant and nonparticipant - have an encoded classificatory component which does specify sortal features, and these always relate to the referent or interpretation, whether or not they truly describe the index. Therefore, in the case of nonparticipant terms where there is no linguistic constraint concerning the sortal features of the index, no semantic or logical contradiction or linguistic infelicity is entailed if the features which that index turns out to have are non-cotenable with the linguistically determined features of the interpretation.

Conversely, the deictic component of a participant term, by definition, encodes sufficient information for successful determination of that index to occur. It is this that obviates the need for an accompanying demonstration. Moreover, it still remains the case that the classificatory component stipulates the sortal features that define, or help to determine, the referent. It would, therefore - at the very least - be linguistically infelicitous for such a term to stipulate through the agency of encoded features that the index, say, shall be feminine (female) while the referent must be masculine (male). How, for example - without apparent
contradiction - might the features MALE and FEMALE or ANIMATE and INANIMATE be conjoined in the same term?

I suggest that this need for semantic coherence might prevent cross-sortal relations from holding between index and referent - if indeed such relations really are prevented - in the case of participant terms. There is no need to posit a specific relational component to explain this postulated effect.

However, it is not clear to me that such mismatches do not occur in the case of participant terms also. Consider example (18) again.

(18) In a couple of years we'll probably all be women.

The index in this example is singular and male. The interpretation is plural and female. Yet 'we' is a participant term.

In fact 'we' presents further problems that might seem to contradict my claim that a term cannot felicitously encode mutually exclusive features. The index of exclusive 'we' is always the speaker, and hence - presumably - singular, whereas the classificatory component encodes the feature PLURAL. Furthermore, 'we' is a participant term and the information that identifies the singular index is also encoded. Does not this indication of both singularity and plurality within a single term amount to semantic infelicity?

I don't think so, because it seems to me that singularity is not encoded in the deictic component of 'we'. That is to say, although it very frequently turns out that the index of 'we' is just the speaker, and hence singular, it is not semantically required that this should be so. In cases of joint authorship and choral recitations or singing, the index of 'we' turns out to be plural. Therefore, I suggest that the deictic component of 'we' is silent as to number, and that the singularity or plurality of the index is pragmatically, not semantically, determined. If this is correct, no logical contradiction or semantic infelicity will arise in connection
with those cases where the index of 'we' is singular while the interpretation expresses plurality. Nunberg is, therefore, mistaken to claim that such mismatches only occur in the case of nonparticipant terms, and the erroneously postulated asymmetry cannot be used as an argument in favour of NRC.

4.2 Recanati's objection

My final argument in favour of GRC arises in connection with Nunberg's response to this objection. If the arguments in chapter two are, for the moment, discounted, Recanati's objection is - prima facie - more serious than Kaplan's. However, before discussing Nunberg's response, it might be helpful to restate the objection:

On Recanati's view, there is a coherent level at which indexicals like I can be given a "literal" interpretation where they refer directly to their indices, with their descriptive interpretation arising as a kind of implicature. (p 32).

4.2.1 The semantics of 'tomorrow'

In his response to Recanati, Nunberg advances two apparently distinct arguments, both of which may most readily be discussed with respect to his example [59], which is reproduced below:

[59] Tomorrow is always the biggest party night of the year. (p 29).

This sentence appeared in a university newspaper and in that context referred (attributively) to the last Saturday before classes recommenced, and may be glossed as in (26).

(26) The Saturday immediately before classes begin is always the biggest party night of the year.
The justification for using this example as a test case rather than one featuring 'I' is this: Unless Recanati wishes to posit two distinct types of indexical reference, the pragmatic implicature account must work for all those instances where what is claimed to be a directly referential indexical term has an apparently descriptive reading. That is to say, it must work for all those utterances where an indexical term apparently contributes descriptions rather than individuals to the truth conditions of the utterance in which it occurs. Therefore, if it can be conclusively demonstrated that Recanati's account is flawed with respect to any one of such utterances, there is a strong presumption that it will be flawed with respect to them all.

Before discussing Nunberg's response, however, his analysis of the semantic structure of 'tomorrow', which is set out below, should be taken into consideration.

**Tomorrow: the calendar day (classificatory component) that succeeds (relational component) the time of speaking (deictic component).**

(Nunberg, in fact, gives this precise formulation as a breakdown of the semantics of 'yesterday', but this must surely be an error.)

Concerning [59], Nunberg first asks why, if Recanati's pragmatic implicature explanation is the correct one, such inferences are not available to all referential expressions, i.e., proper names and referentially used descriptions - which they clearly are not. See, for example, the anomalous [60]:

[60] Saturday, September 14, 1991 (the date of the 12th football meeting between Arizona and ASC) is always the biggest party night of the year. (p 30).

There is clearly something wrong with this; just what this is becomes apparent when Nunberg's second, and more devastating response to Recanati is taken into

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account. He points out that if we allow that the literal direct reference interpretation of 'tomorrow' in [59] is the actual day that follows the day of utterance, then the literal proposition expressed by [59] is incoherent. More precisely, if 'tomorrow' in [59] is semantically constrained to refer to one single identified day and no other, then no proposition can be expressed because, on such an interpretation of 'tomorrow', no coherent meaning can be determined for all the component parts of the utterance. Nunberg correctly points out that 'always' 'must be understood as involving quantification over instances' (p 32), and if 'tomorrow' receives the 'literal' interpretation suggested by Recanati, there just are no instances to quantify over.

Similarly, 'Saturday, September 14, 1991' does not provide any instances over which 'always' may be quantified. This same argument may be applied equally to 'usually' and 'T in [32]', which is reproduced again, below.

[32'] Condemned prisoner: I am usually allowed to order whatever I like for my last meal.

Example (9) also demonstrates the same phenomenon.

(9) Patient, on sitting down in dentist's chair: It is usually around now that the toothache disappears.

It has been pointed out to me by Neil Smith that strictly speaking the referential readings of 'tomorrow', 'T', and 'now' are available and coherent if time-travel contexts, in which the speaker travels back and forth through the same temporal segment, are assumed. However, for Recanati's objection to be validated on this account we would have to assume a time-travel context as invariant with respect to such utterances, and this is clearly not the case.
The true significance of Nunberg's response, however, is not merely that with respect to [59], [32'] and (9) it constitutes a convincing refutation of the direct reference theory, but that it lends support to the claim that even according to the deferred reference account no proposition is - nor in this case can be - expressed until the inferencing process is complete. There quite simply can be no question of there being an initial 'literal' interpretation on which further implicatures giving the descriptive interpretation are based.

This is the final - and perhaps the most convincing - argument that will be presented in favour of replacing NRC with GRC'. To put it another way, 'tomorrow', T, and 'now' are non-demonstrative indexicals. T and also (presumably) 'now' are supposed to be subject to the stringent constraints imposed by NRC, while 'tomorrow' - as we have seen - is said to be subject to rather different, but equally stringent, relational conditions. However, if these constraints are maintained [59], [32'], and (9) are all - apparently - incoherent and uninterpretable. With respect to [32'] and (9), if NRC is replaced by GRC' then coherent interpretation should proceed unimpeded. The situation with respect to [59] is somewhat different.

The problem is that the breakdown Nunberg gives of the semantics of 'tomorrow' describes straightforward deferred reference, and according to this interpretation the referent of 'tomorrow' is the day after the day of utterance. The question that still has to be answered concerns how, in the interpretation of [59], we go from this apparently contextually incoherent interpretation to the attributive description 'the Saturday before classes begin'.

If I read him correctly, Nunberg never does give a satisfactory answer to this question. The problem is that his interpretative procedure specifies that:

(i) 'Tomorrow' picks out an index (the day of utterance).
(ii) The classificatory component stipulates that the referent shall be a calendar day.

(iii) The relational component, stipulates that the referent shall be the calendar day that succeeds the index.

And that's it. That, according to Nunberg, is the interpretative procedure of 'tomorrow', which leads to the deferred interpretation of 'tomorrow' as being the day after the day of utterance. But we need rather more than this. We need to go from this initial deferred interpretation, which ends in incoherence, to an attributive reading.

I suggest that the problem lies in Nunberg's analysis of the semantic structure of 'tomorrow'. For his purposes the breakdown of 'tomorrow' into three distinct, but interdependent, semantic components is very attractive. It sets out with great clarity the characteristic roles of deixis, classification, and relation. He further suggests that 'today', 'tomorrow', and 'yesterday' form a triad of related terms, the members of which have precisely analogous semantic structures. In each case the index is the day of utterance, the classificatory component stipulates that the referent shall be a calendar day, and the relational component specifies the relation that the one shall bear to the other. This analysis is extremely neat and pleasing. Furthermore, intuitively, it seems to be the case that the semantic structure of 'tomorrow', say, really is transparently displayed in just such an interlocking pattern. Nonetheless, I believe that this analysis is wrong.

The central tenet of Nunberg's alternative account of indexicality is that the direct reference theorists tend to confuse index with referent, and that what is transparently pointed at by an indexical term is invariably its index, not its referent, although it may turn out to be the referent also. Now, it seems to me that nothing could be more clearly indicated by an utterance of 'tomorrow' than the day following that utterance. That clearly indicated day, therefore, just is the index. The relativisation of the thing indicated (i.e. the calendar day) to the origo
(i.e. the day of utterance), which Nunberg claims is an operation of the relational component, is - after all - paradigmatically deictic, and it is in virtue of this paradigmatically deictic procedure that the day after the day of utterance is selected as the index of 'tomorrow'. Analogous arguments might then be pursued with respect to 'today' and 'yesterday'. In other words, the index of 'today' is the day of utterance, and the index of 'yesterday' is the day preceding the day of utterance.

This analysis may lack the elegance of that proposed by Nunberg, but it is more convincing. The thing pointed at by an utterance of 'tomorrow', is - when all is said and done - tomorrow. The speaker just is not indicating the day of utterance when she utters 'tomorrow'; she is indicating the day after the day of utterance. And the thing indicated is invariably the index.

If this is correct, the highly specialised relational components which Nunberg posits with respect to these three terms simply disappear, as all relativisation to the time of utterance has now been transferred to the deictic component. This is surely as it should be. The time of utterance is the NOW of the deictic origo, and relativisation to any element of that origo must surely be a function of the deictic component.

4.2.2 The pragmatics of 'tomorrow'

The question now is: Does this revised analysis of the semantics of 'tomorrow' help with the interpretation of [59]?

I think it does. The problem, or at least a closely related one, has already been discussed with respect to attributive readings of 'we' and, if we allow that the revised analysis of the semantic structure of 'tomorrow' is correct, then a solution analogous to that posited with respect to 'we' should be available. It will be recalled that the solution with respect to 'we' also requires that NRC should be abandoned, because if it is not abandoned, the relational requirement that the
interpretation of 'we' should be instantiated by the index blocks the necessary further inferencing.

The position with respect to 'tomorrow' is even more difficult, because if further inferencing is similarly blocked by the relation component, as it would be if the relational component is as Nunberg says it is, then the only option left is to assume a 'literal' reading overlaid by a Gricean implicature. But this is not possible either, as no 'literal' interpretation is available. If we retain Nunberg's analysis of 'tomorrow', therefore, and with it the stringent relational component, [59] remains theoretically uninterpretable, whereas, in fact, it is not uninterpretable at all. Therefore, we must abandon the relational component. q.e.d.

With respect to the interpretation of [59] the hearer first identifies the actual day after the day of utterance as index. The classificatory component then indicates that the interpretation or referent must be a calendar day. Finally, by applying GRC, which requires that some salient relation be identified as holding between the index and the interpretation, the hearer may then inference more or less freely to a relevant conclusion. The salient relation is, of course, that the day after the day of utterance is the Saturday before classes begin, and the interpretation relates to any number of such calendar days - as prescribed by the classificatory component - that satisfy that description. Therefore the relation is one of membership of the same set.

We may assume, firstly, that the hearer continues the inferencing process from index to interpretation until a satisfactory (relevant) interpretation is achieved. Secondly, it may also be assumed that none of the stages passed through in this inferencing process constitute 'literal' interpretations, as the interpretation adopted is the first coherent proposition inferred.

What is pleasing about this conclusion is that we can now say that with respect to [32'], (9), and [59] the 'relevant' interpretations - i.e., the attributive readings - are
relevant in the technical sense defined by relevance theory. That is to say, they are not only the readings that are intended by the speaker, they are also the first coherent propositions accessed by the hearer.

To put it another way, with respect to these three examples at least, there are compelling logical arguments to support the claim that their coherent interpretation entails the positing of relevance theoretic explicatures rather than the Gricean-type implicatures apparently - and rather surprisingly - posited by Recanati. Recanati is, of course, in a difficult position himself. As a general principle he favours an inferential approach to language interpretation\textsuperscript{37}, but on the other hand he is also deeply committed to the theses of direct reference and rigid designation, and it seems to me that these two approaches to the analysis of language in use are incompatible.

Now although the larger issue of how - or where - the line between implicatures and explicatures in general should be drawn is well beyond the scope of this discussion,\textsuperscript{38} it seems to me that the conclusions arrived at above are significant and open up new lines of inquiry. Furthermore, the argument is not limited to these three examples. Indeed, example (8), reproduced yet again below, should also be reconsidered.

(8) Now he knew how to paint goats.

The thing ostended in this case is the painting, and it is scarcely more coherent to suggest that a painting knows how to paint than it is to try to quantify over a single instance. Therefore, in this case also there is no question of the final interpretation being no more than a Gricean implicature based on an earlier 'literal' interpretation. There simply is no earlier literal interpretation on which to ground such an implicature.

\textsuperscript{37} See, in particular Recanati (1995).

\textsuperscript{38} But see Carston (1988), and Recanati's (1989b) response to Carston. For a development of the Gricean approach see Levinson (1987) and Horn (1988). See Carston (1990) for a discussion of Levinson and Horn
Furthermore, a little thought will reveal that analogous difficulties will be encountered with respect to all those examples that feature cross-sortal relations between index and interpretation. What, for example, can be the 'literal' meaning or interpretation of 'these' and 'those' in a context where the demonstratum of each term is singular, as is the case in [43]?

[43] These are over at the warehouse, but these I have in stock here.

Once again, it seems that there just is no literal interpretation available prior to the intended descriptive message glossed in (27) below.

(27) The plates similar to this one are over at the warehouse, but the plates similar to that one I have in stock here.

5. The status of GRC’

Before I close this chapter, a final word needs to be said concerning this controversial 'component'. Nunberg posits NRC as a semantically encoded element in the meaning of all participant terms. If we were to set aside all the difficulties discussed above this might be a plausible suggestion - at least with respect to such terms as 'we' and 'I'. Initially, it does indeed seem that any utterance of 'we' must always refer to a group of which the speaker is herself a member. However, once the problems are taken into account, this is seen to be as illusory as the direct referentialist's belief that whatever is pointed at by a speaker uttering 'that', say, is always the referent.

Furthermore, if we replace NRC with GRC' the picture becomes significantly different, for whereas there is clear evidence to support the claim that both deictic and classificatory features are encoded as part of the linguistic meaning of indexical expressions, there is no evidence to suggest that GRC' is an encoded part of the meaning of either participant or nonparticipant terms. Indeed, it is far
more plausible to suppose that so complex and disjunctive a directive is not an encoded feature of any pro-term. Nonetheless, GRC' does have explanatory power. Therefore, if it correctly replaces NRC I suggest that it does so as a part of the pragmatic competence of language users, rather than as a semantic component of language.

How language users acquire such competence is another question that cannot be investigated here.
chapter four

Indexicality and deixis

1. Introduction

In this chapter, I hope to show how indexicality might be distinguished from deixis, and for reasons which I hope will become apparent a usage distinct in certain important respects from that adopted by Nunberg will be suggested. I shall also argue that deictic expressions, or expressions used deictically, are no more directly referential or rigidly designating than are expressions used indexically. The problems associated with a further, much debated distinction, that between deixis and anaphora, will also be briefly reviewed. However, a more detailed discussion of this issue will not be undertaken until chapter five.

The first stage in this programme may most readily be undertaken by reviewing in greater detail Nunberg's second, and highly problematic, category of indexicals - the contextuels - which was mentioned very briefly in chapter three. It seems to me that the positing of this category constitutes the weakest part of Nunberg's analysis. Nonetheless, it is by considering certain of the examples that he raises in support of what appears to be a somewhat controversial claim that I hope to be able to identify and define a useful distinction between deixis and indexicality.

2. Contextuels

The first problem associated with this group of putative indexicals is that it does not constitute a homogeneous set. Within this category - if it really is a category - there appear to be at least three quite distinct types:

(i) (apparently) non-demonstrative but nonetheless indexical uses of third-person pronouns such as 'he' and 'she', etc.; (ii) indexical uses of non-indicative terms, i.e. terms with descriptive meanings, such as 'locally' and 'nearby'; and (iii) post-positions such as 'ago'.
The distinction between these types is not, however, discussed by Nunberg. He is concerned rather to note similarities, or postulate shared defining features.

The most significant of these defining features, or so he claims, is the negative one that whereas all such terms *are* indexical they are nonetheless non-deictic. By this he means that they have no deictic component, either linguistically encoded or gestural, by which to pick out an index. This leads to the further, highly significant, claim that as the interpretation of such terms is not mediated by an index it cannot be deferred:

In the absence of deixis, deferred interpretation is not possible. (p 35).

Now, according to Nunberg, deferred ostension is the mechanism which implements the extended range of interpretations available to what I have called 'mainstream' and which he prefers to call 'strong' indexicality and which has been described in chapter three. There is therefore a strong presumption that as contextual interpretation is not mediated by an index, and is not deferred, contexturals will not have access to an equivalent range of interpretations.

If this is correct, I hope to show that it follows that type (i) should not, after all, be considered contextual and that the examples Nunberg raises to demonstrate this posited type of contextual reference might better be analysed as being straightforwardly indexical. It turns out, however, that the discussion of this first class of 'contexturals' does *not* throw any light on the other troublesome distinction - that between deixis and indexicality. That distinction will, however, become clearer with the investigation of the second type.

### 2.1 Non-demonstrative 'he'

Nunberg introduces type (i) with the unexpected claim:

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1 As was the case in chapter three, all page references are to Nunberg (1993) unless otherwise indicated.
... third person pronouns have indexical uses that are not demonstrative, as when someone walking through the Taj Mahal says, "He certainly spared no expense" ... (p 23).

And on the same topic he later comments:

... not all expressions that can be used indexically have the interpretative properties that make for strong indexicality. Consider the use of pronouns with no accompanying demonstration to refer to a person who is simply salient in the context or in the consciousness of the participants:

(61) **We are walking through the Taj Mahal:** Gee, he certainly spared no expense. (p 33).

(62) **To my wife, who has just returned from a trip to the zoo with our daughter:** You look exhausted; what did she do?

What is surprising here is that the received wisdom is that third person pronouns such as 'he' and 'she' are either demonstrative - and hence indexical (i.e. deictic) - or non-demonstrative and therefore - in some sense - anaphoric, and that there is no third option. Admittedly, problems do arise in the attempt to distinguish between these two usages, although Nunberg - apparently - does not recognise the difficulties. He concludes that 'he' in [61] and 'she' in [62]\(^2\) cannot be anaphoric simply on the grounds that in each case 'there is no linguistic source for the reference of the pronoun', apparently accepting it as axiomatic that an overt linguistic antecedent is an essential element of anaphora. In fact, it has been argued that neither overt linguistic antecedents nor overt subsequent dependent expressions are necessary constituents of anaphoric phenomena\(^3\). Therefore,

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\(^2\) In order to facilitate reference to Nunberg's text, I am continuing the practice, established in chapter three, of retaining his original numbering of his own examples. However, all numbering other than my own, when occurring in the main text, will be placed within square brackets.

\(^3\) For arguments concerning the existence and nature of exophora see Hankamer & Sag ('pragmatically controlled' anaphora) (1976), Lyons (1977), (1991), Yule (1979), Tamowski &
even if Nunberg is correct to claim that 'he' and 'she' in [61] and [62] respectively are not demonstrative, he fails to show that they are not anaphoric, and his conclusion that they must be some type of non-demonstrative indexical is not demonstrated.

The problems raised in the attempt to define the distinction between anaphora and deixis are not new, and it might now be helpful to return to an example raised by Lyons, and already discussed briefly in chapter two:

... examples can be produced ... which show that a potential referent is salient in the universe-of-discourse, even though it is not present in the situation-of-utterance and has not been mentioned previously by either the speaker or the addressee. For example, I might offer my condolences to a friend whose wife has just been killed in a car-crash, by saying:

(12) I was terribly upset to hear the news. I only saw her last week.

(Lyons, 1977, p 672).

Lyons observes that though no previous mention has been made of the unfortunate wife, she is 'salient in the universe-of-discourse' and therefore readily identifiable as the referent of 'her'. However correct this conclusion may be, the question nonetheless remains: Is reference determined deictically or anaphorically? This will, presumably, depend on how we define the distinction. Should we, like Zribi-Hertz, maintain that 'anaphora is a relation between two linguistic expressions within a discourse'? Or should we adhere to the given-new distinction, already discussed in chapter three, as defined by Ehlich? This view is summarised by Cornish:

Deixis ... serves prototypically to shift the addressee's attention focus from an existing object of discourse to a new one derived via the situational context of utterance. Anaphora, on the other hand, is a signal to continue the existing attention focus already established. (Cornish, 1996, p 22).

And, finally, does it really matter, or is the debate reducible to little more than a terminological dispute?

I shall ultimately argue that, once it is understood that the interpretation of anaphora is subject to the same semantic constraints and is implemented by the same two-stage inferencing procedures as is the interpretation of indexicality, as described in chapter three, then the distinction between the two phenomena does not, in fact, matter quite as much as the extensive literature on the subject would lead one to suppose. This has not, however, as yet been demonstrated, and the situation is further complicated by the fact that indexicality is here being equated with deixis, and regarding these latter two phenomena I shall later argue that the distinction is linguistically and interpretatively significant.

For the moment, however, we must advance slowly and assume that the distinction between deixis and anaphora is sufficiently significant to warrant further discussion, and that the terms 'deixis' and 'deictic' may still be used interchangeably with 'indexicality' and 'indexical'.

Lyons notes that many scholars would opt for the conclusion that in the context of his example 'her' is deictic:

... on the grounds that there is no antecedent and that, although it does not point to anything in the external situational context, it does point to something in the intersubjective experience or common memory of speaker and addressee. (Lyons, 1991, p 177).
With respect to the absence of an antecedent expression, this would seem to be Nunberg's position. Lyons also suggests that such a view would be adopted by Bühler, although it is difficult to see how an absent entity might be 'pointed at' - however notionally. With some justification, therefore, Lyons takes a contrary view:

... not all of the intersubjective knowledge that is exploited in the interpretation of texts derives from what has been previously mentioned; and in the last resort, there would seem to be no reason to deny that the reference of 'she' [sic] in (12) is anaphoric. (Lyons, 1977, p 673).

Support for this view is supplied by Yule:

... one of the basic features of pragmatically controlled anaphora could be described as the use of a pro-form as a referring expression by a speaker who, without mentioning or having mentioned, a co-referring linguistic full-form, assumes his hearer can identify the referent. (Yule, 1979, p 128).

He continues:

In the examples considered by Hankamer and Sag [see note 2], this type of anaphora is restricted to situations where the referent is extremely obvious to both speaker and hearer.

Yule also suggests how such usages may be readily distinguished from deixis, claiming that a distinctive feature of deixis is 'paralinguistic modulation'. The argument is that where the pronoun is unstressed, irrespective of whether there is or is not a linguistic antecedent, such an utterance should be considered anaphoric. This would apparently reflect Ehlich's view that the fundamental distinction between anaphora and deixis is tied to the distinction between the given and the new.
It should now be evident, therefore, that continuing 'the attention focus already established' should not be taken to entail previous mention. In demonstration of this point, Yule raises the following example:

(1) [A large dog approaches A and B. A says to B:]
   I hope it's friendly.

He comments:

The success of the communication is dependent, not on the hearer finding a preceding linguistic referring expression, but on his identifying the appropriate physical referent. (Yule, 1979, pp 127-128).

In discussing this example and arguing that 'it' is indeed anaphoric, Cornish (1996) notes that it displays what might be considered to be three defining characteristics of antecedentless, or pragmatically controlled, anaphora:

1. Such expressions have no textual antecedent.
2. The intended referent is present in the situational context of the utterance.
3. The anaphoric expression itself is unstressed, low-pitched and is uttered with no accompanying demonstration.

He further comments:

The second characteristic (the presence of the referent within the situational context) is indeed elevated into a criterion for the very existence of exophora, or pragmatically-controlled anaphora by Tasmowski-de Ryck & Verluyten.\(^5\)

If the second characteristic is indeed criterial, then the analysis Lyons offers of his own example [12] would appear to be mistaken. More to the point, Nunberg would appear to be correct - although for the wrong reason - when he claims that 'he' in his example [61] is not anaphoric. However, Cornish also notes that Kleiber argues that 'the referent's physical co-presence is by no means a necessary condition for the independent [i.e. antecedentless] occurrence of an anaphor'. (Cornish, 1996, p 27). He continues:

What is required, on the contrary - and this requirement is the direct reflection of the cognitive underpinning of anaphora - as well as deixis - is the saliency in memory of the referent, not alone, but, as Kleiber argues, as a prominent part of an entire situation, which the speaker is assuming is highly accessible to his/her interlocutor(s). In addition, the referent of the anaphor ... will be involved in the situation in question as a central participant.

This, again, would seem to reinforce Lyons' position - and undermine Nunberg's. But in fairness it should be noted that Cornish also cites Reboul (1994) as presenting the argument that all exophora is prototypically deictic.

What all this serves to show is that the issue of how to distinguish between anaphora and deixis is a living one and that it is not safe to assume, without argument, that an expression cannot be anaphoric simply on the grounds that it has no linguistic antecedent. With respect to Lyons' problem utterance, on the other hand - and by extension to Nunberg's [61] and [62] - it is not very helpful and it is not immediately obvious who is correct - Lyons or Bühler as Lyons interprets him. Nonetheless, it seems to me that one of them probably is, and that there is no need to invent a new, and somewhat mysterious, category of non-demonstrative 'contextuals' to accommodate such examples.

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7 See also Kleiber (1990).
Interestingly, Nunberg himself earlier observes:

The word *he* can be used demonstratively, anaphorically, or as a bound variable,... (p 3).

Now, if the fact that a bound variable is referentially dependent on its antecedent quantifier expression is taken into account, it will be seen that such terms are unquestionably anaphoric, as are E-type pronouns as defined by Evans. It is only when there is no linguistic antecedent that the problems discussed above arise. Furthermore, as has already been noted, there is in general no assumption that there is yet a third option, nor does Nunberg in this earlier passage suggest that there is. Nonetheless, this is what he now asserts.

So there are now at least four problems facing Nunberg. Firstly, if he wishes to argue that 'he' in [61] and 'she' in [62] are contextual, he must first show that they are not anaphoric. It is notable that he claims that these pronouns succeed in referring because their referents are 'simply salient in the context or in the consciousness of the participants', but such salience is precisely what is claimed, by both Cornish and Lyons, to be a sufficient precondition of anaphora. Secondly, if Nunberg succeeds in showing that the pronouns in question are *not* anaphoric, he must then show that they cannot be indexical in the strong sense. Thirdly, if he can show that they do indeed fail to pick out an index and are therefore not strongly indexical he must show by what alternative criteria such indexless indexicality is to be recognised as indexicality at all. Finally, if he can do all this, he must still show exactly how such terms, occurring in the contexts stipulated, can - if they are not strongly indexical - contribute the interpretations they do (or might) contribute to the propositions in which they are embedded. He does none of this.

With respect to the first problem, for the moment let it just be assumed that Lyons is mistaken to identify such examples as anaphoric, and that on this point Nunberg is correct. The trouble is, that if these pronouns are indeed non-anaphoric, then

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8 See Evans (1980).
there must be a strong presumption that they are demonstrative, but Nunberg
denies this also. That is precisely why he finds it necessary to posit a new
category.

Ideally, therefore, the investigation should start from the neutral position that the
example pronominal utterances are not presumed to be either anaphoric or
demonstrative. The problem is that this neutrality is difficult to maintain. For if
we assume that they are indeed non-anaphoric there is no obvious way to
distinguish 'he' in the Taj Mahal examples from 'he' in the goat-painter example
cited in chapter three. (See chapter three, example 8.)

The fundamental difference claimed by Nunberg is that in the former there is no
overt ostension. That is to say, the speaker does not point at, or in any way
gesturally indicate, the Taj Mahal, whereas in the example raised earlier the
speaker does gesture towards the painting. Furthermore, it is assumed by Nunberg
- possibly even stipulated by him - that with respect to [61] there is no implicit
ostension either. But it is difficult to see how he can reconcile such a stipulation
with the fact that such an utterance has both 'referential' and 'attributive'
interpretations. That is to say the speaker may be understood to refer to Shah
Jahan, but equally she might intend to communicate no more than the assertion
that 'whoever built this place' spared no expense.

Now, as Nunberg claims that such attributive interpretations of pro-terms are a
function of deferred reference, and as he further claims that deferred reference is
a function of 'strong' indexicality and not a function of 'contextuals', this second,
attributive, reading must either be denied or explained in some other way.
Nunberg fails to address this point and does neither.

It seems to me that by far the simplest solution is to abandon neutrality and to
assume that Nunberg's [61] is comparable to the goat-painter example after all
and is straightforwardly and 'strongly' indexical, with the Taj itself being the index
implicitly indicated by the speaker's very act of looking at it. Presumably, the
speaker is gazing around her when she makes her comment. The classificatory component of 'he' will then stipulate that the referent shall be, or the interpretation shall relate to, some singular, male, animate, entity.

Now, the Taj itself, the implicit demonstratum or index picked out by this directing intention, is neither animate nor male, but this is not a problem. It is one of the most striking features of indexical interpretation and deferred reference that demonstratum and interpretation may differ with respect to any or all, of the sortal, or quasi-sortal, distinctions represented by gender, number, or animacy. As we have seen, they may also differ with respect to the deictic distinctions of proximality and distality. (See Nunberg's example [43], in chapter three, above.)

Finally, the pragmatically controlled GRC determines the interpretation by identifying what entity or class of entity, salient in the context and bearing some unspecified contextually relevant relation to the demonstratum, also satisfies the requirements of the classificatory component.

The question now is, can Lyons' [12] and Nunberg's [61] be analysed in an analogous fashion? It seems to me that they can.

It might help if Lyons' example is modified a little. Let A be the bereaved husband and B and C the conversationalists. Then, as A comes into view, B may say to C:

(2) What a tragedy that was. I only saw her last week.

I suggest that this also may be seen as a comparatively uncontroversial example of indexically deferred reference, in which the husband is himself the index and the interpretation, mediated via this index, is the deceased wife. That is to say, the deictic component of the utterance of 'her', i.e., the accompanying demonstration, even if it is no more than a direction of gaze or an inclination of the head, picks out the husband as the index. If the husband is not thus indicated, that is to say if the speaker does not, in some way, register awareness of the husband, and does not communicate this awareness to the hearer, then the

utterance - although comprehensible as a sentence of English - remains uninterpretable.

The classificatory component requires that the interpretation should relate to a singular, animate, female, entity; and the pragmatically controlled GRC' determines the salient individual relative to the index, which in this case turns out to be the deceased wife.

It seems to me that a parallel situation obtains in Lyons' [12]. What I shall ultimately suggest is that the fact that an index needs to be picked out at all is signalled by the very use of the pronoun 'her'. That is to say, I shall argue in chapter five that the determination of an index is an invariant step in the interpretation of all pronouns, anaphoric as well as indexical.

If this is correct, then whenever a pronoun is uttered the hearer will inevitably endeavour to identify the index. In most cases such identification is swift and effortless. With respect to those occurrences of pronouns which Nunberg has dubbed 'contextuals' where there is no overt demonstration, identification of the index may entail slightly greater processing effort on the hearer's part. However, if interpretation of a pronominal utterance always requires that an index be identified, it is an effort that the hearer will automatically make.

Before the argument concerning the inevitability of the search for an index can have any weight, however, it must first be shown that Nunberg really is mistaken to suggest that there is a category of non-anaphoric, non-demonstrative pronouns that do not pick out indices at all. Furthermore, this inevitability cannot - without circularity - be used to further the argument that Nunberg is, indeed, mistaken. If it can be independently demonstrated, however, that the postulation of the category of contextuals is not required to explain how the interpretation of Nunberg's examples is achieved, then such a category might well be considered redundant. The argument that the hearer will always seek an index in the interpretation of any pro-form in any context could then go forward. The question of whether Lyons's example [12] may be analysed and interpreted in the same way as (2) is, therefore, of considerable significance.
What I suggest is that the bereaved husband, the addressee of the utterance, is again the index, in this case picked out not by gesture but simply in virtue of being the addressee. It is not, after all, necessary to utter 'you' in order to address someone. The classificatory component again prescribes the gender, number and animacy of the interpretation, and \textit{GRC}' determines the individual that meets the requirements of the classificatory component and bears the most salient relation in the context to the index. Again, this turns out to be the deceased wife. Nunberg's [62] may be analogously analysed.

Even if this reanalysis is correct, however, it is not the end of the story. Nunberg raises further examples and presents some slightly different arguments to support his claim that examples of non-demonstrative, yet nonetheless indexical, utterances of 'he' (and 'she') do occur. These will be discussed immediately below.

\subsection{Extended inferencing}

He asks us to contrast two situations:

In the first, we are at a party and see Ralph in friendly conversation with Clovis, apparently unaware that Clovis has been carrying on a clandestine affair with his wife. I point to Ralph and say:

(68) It's like they say: he is always the last to know. (p 34)

Nunberg's point is that in uttering [68] his intention is to communicate the general proposition that in cases of a wife's infidelity the husband is always the last to know. In other words, 'he' in [68] is strongly indexical and consequently can express anything that can be expressed by a definite description.

He then asks us to consider a slightly different situation in which Clovis is seen leaving Ralph's house late at night. Ralph himself is nowhere in sight. The cynical Nunberg can then, apparently, utter (3) intending to refer to Ralph:
(3) He must be away.

But, he claims that in these altered conditions:

... I can't say "He is always the last to know," to refer to the role Ralph exemplifies. (p 34).

From this he concludes that 'deferred reference is possible only when the pronoun is accompanied by a demonstration'. His point, presumably, is that 'He' in (3) - being as he claims non-demonstrative - succeeds in referring, not in virtue of the mechanisms of deferred reference, but rather more directly in virtue of the salience of the intended referent. He further claims that the general proposition that the husband is always the last to know cannot be expressed here by the use of non-demonstrative 'he' as non-demonstrative indexical 'he' does not pick out an index and therefore does not have access to the mechanisms of deferred reference.

There are at least three objections to this argument. Firstly, with respect to (3), if 'He' is indeed contextual in Nunberg's sense, then reference to Ralph is achieved simply in virtue of his being 'salient in the context'. But when we consider how the interpretation relying on this salience might be achieved it is not at all clear how the process differs from deferred reference, if indeed it does.

It might plausibly be assumed that it is the sight of Clovis leaving Ralph's house that prompts the utterance of (3), and it is equally plausible to assume that something leads the speaker to suppose that the hearer is also aware of Clovis's departure and aware that it is Ralph's house that he is leaving. If he did not make these assumptions he could not reasonably expect the hearer to understand what he is talking about. Now, why does he make them, or how can he justify them?

It seems to me that one way he can reasonably do this is by directing the hearer's attention to Clovis by some slight sign - direction of gaze, or head movement, or
whatever - or by noting some action of the hearer's which indicates that he has, indeed, spotted Clovis. The interpretation of 'He', therefore, might be explained as follows. Clovis is first, in some way, indicated (or accepted) as a focus of attention (or index). However, the speaker then says 'He must be away', which cannot refer to Clovis, who is manifestly present. The hearer must then go through the, by now, familiar inferencing process.

Firstly, he will be informed by the semantics of 'He' (the classificatory component) that some singular, male, animate entity is the intended referent. Then he will consider elements of the context of utterance combined with his knowledge of the world to infer who that singular, male, animate - and absent - entity might be. Furthermore, his attention has, one way or another, been focused on the departure of Clovis from the vicinity of Ralph's house and Ralph's wife. Ralph is, therefore, highly salient in the context, but he is salient in virtue of the relation that holds between himself and Clovis (as predicted by GRC'). That is to say, he is salient as a deceived husband, a relation he bears to Clovis, one of the parties to the deception.

There is, however, another possibility. Perhaps Ralph's house is assumed by either speaker or hearer, or both, to be the focal point - i.e., the index - and Clovis's departure from it is no more than a feature of the utterance context which nonetheless contributes significant and relevant information to the inferencing process for the interpretation of the complete utterance. That is to say, it is possible to indicate a house by direction of gaze, or nod, or whatever, while uttering 'he', and intend this utterance to refer to the owner of the house, in much the same way as it is possible to indicate a painting and utter 'he' to refer to the artist.

There are thus two possibilities. In the first, attention is focused, in some undescribed way, on Clovis leaving in the dark and the speaker concludes from this that some husband must be away and wishes to communicate this conclusion, while Ralph's house in the background constitutes contextually relevant
information concerning the identity of that absent husband. With respect to the 
second, the speaker's (and hearer's) attention is focused on Ralph's house, and 
Clovis's presence in the vicinity of this house is secondary to the interpretation of 
'He'. On the other hand, that presence is highly relevant to the assumption that the 
husband, who has already been identified as Ralph, must be away.

From Nunberg's very brief description of the context it is impossible to know 
which of these two interpretative routes is the correct one. However, I suggest 
that one of them must be as, without a focusing of attention on either the house or 
on Clovis, interpretation of the utterance simply won't get off the ground.

The second objection is rather more fundamental. Nunberg makes much of the 
fact that with Ralph as the explicitly demonstrated index of 'he' in [68], it is 
possible to interpret the utterance as expressing the general proposition glossed in 
(4) below:

(4) The deceived husband is always the last person to know of his wife's 
infidelity.

On the other hand, he claims that this same general proposition is not a possible 
interpretation of (5) if it is uttered by someone on seeing Clovis leave Ralph's 
house late at night.

(5) He is always the last to know.

What Nunberg fails to note is that the significant distinction between [68] and (5) 
is not that in [68] the utterance of 'he' is accompanied by a demonstration whereas 
- ex hypothesi - no such demonstration accompanies the utterance of 'He' in (5), 
but that in [68] the speaker points to Ralph himself, while in (5) the individual 
entity focused on is either Clovis or Ralph's house.
Nunberg consequently also fails to note that to infer from Ralph himself as the index to some property that Ralph instantiates is but a single step, while to infer from the sight of Clovis or Ralph's house to Ralph and then from Ralph to some salient, or relevant, property that he, Ralph, instantiates is clearly a more complex procedure, involving what might be called 'double' or 'multiple' deferral.

Now, it has been argued in chapter three that such extended inferencing can, and does, take place, where the final inference, however far down the line it occurs, should be treated as a part of the proposition expressed, and not as a Gricean implicature. However, such sequential inferencing has to be triggered by the hearer's failure to derive an acceptable interpretation from earlier, simpler inferences. That the hearer fails to undertake such extended inferencing in the interpretation of (5) may simply be due to the fact that an acceptable interpretation is achieved before the additional inferencing can be undertaken.

In practice (as well as in theory) what this amounts to is that the hearer will stop trying to infer the meaning of an utterance just as soon as he reaches an interpretation that seems satisfactory, or relevant. Now, relevance in a context has been defined, by Sperber and Wilson, as a balanced trade-off between processing effort and contextual effect. Carston (1993) explains:

An utterance, on a given interpretation, is optimally relevant iff:
(a) it achieves enough effects to be worth the hearer's attention;
(b) it puts the hearer to no gratuitous effort in achieving those effects.
(Carston, 1993a, p 28, attributed by her to a (then) forthcoming paper by Wilson and Sperber). 11

I am assuming that something along these lines is correct. Of course, contextual effects also need to be defined, and indeed they have been by Sperber and
Wilson, but it should suffice here to say that they may be measured in terms of how much information an interpretation offers and whether this information interacts in any significant way with what the speaker already knows or believes. The point is that it is here suggested that the hearer does not continue searching for possible meanings once he has achieved what seems to him to be an adequately significant interpretation.

If we accept this as a plausible description of how utterances are indeed interpreted, then it could be argued that if Nunberg were to utter (5) in the context described, his hearer might well conclude that Clovis is the latest in a long string of lovers and that the unfortunate Ralph - although he always finds out in the end - is always the last to do so. Such a hearer may feel that he does not need to continue inferencing any further. It must also be noted that this simpler interpretation is also a possibility with respect to [68]. Indeed, if the generalised interpretation glossed in (4) is to be accessed, in any context whatever, something in that context - perhaps a knowledge that Ralph's wife is a not an unduly friendly girl - must ensure that the particularised interpretation is not accepted. Also, it is significant that [68] is prefaced by the give-away clause 'It's like they say'. This gives a clear indication that a generalised dictum, rather than an observation about individuals, is to follow.

Therefore, even if Nunberg is correct to conclude that (4) is not a possible interpretation of (5), by itself this does not justify the claim that the indexical use of 'He' in (5) is quite distinct from the indexical use of 'he' in [68].

Finally - and this is the third objection - once we have got this far it begins to seem that with a little modification (5) could, after all, be given the generalised interpretation. Let it be assumed that both speaker and hearer know that this dalliance with Clovis is the only affair that Ralph's wife has ever had, so that the more straightforward, easily inferred, interpretation is simply not acceptable. It

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seems to me that in such a context the general proposition might, after all, be derived. This will be even more likely if (5) also is prefaced by 'It's like they say'.

Furthermore, (3) might also be modified slightly to allow for a different interpretation. Let it be assumed that Clovis is seen to leave a house late at night by a speaker, A, who knows of the woman who lives in that house no more than that she is the woman who lives there. Nor does A have any knowledge concerning the identity of the woman's husband, other than that Clovis is not he. However, A knows Clovis both by sight and by repute, and without actually pointing at anyone or anything, he utters (3). It seems to me that in such a case, the proposition expressed by A's utterance might be interpreted as glossed in (6).

(6) The husband of the woman who lives in that house must be away.

Now, the circumstances under which A utters (3) seem, in all relevant respects, to match those described by Nunberg with respect to his own, putative, utterance of (3). Nunberg claims that in such a context, 'He' in (3) is contextual. That is to say, it is non-anaphoric and non-demonstrative, and consequently does not pick out an index and does not have access to the interpretative mechanism of deferred reference. This being so, we again need to know how this type of contextual indexical, without the mediation of deferred ostension, can yield an interpretation as general as that glossed in (6). Nunberg offers no explanation.

From all of which it seems that he has failed to demonstrate that third person pronouns have a third function in addition to those of anaphora and strong indexicality.

There remain, however, the second and third categories of contextuels as yet undiscussed and, with respect to type (ii) at least, Nunberg is on much firmer ground.

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2.2 Non-indicative terms

Although Nunberg is on firmer ground, his argument is based solely on a discussion of the related terms 'local' and 'locally', with passing reference to 'nearby'. However, as it is by investigating this second category of postulated contextuals that I hope to be able to uncover a useful distinction between indexicality and deixis I shall suggest further examples.

As we have seen, Nunberg himself uses the term 'deixis' in a rather special way, to signify 'explicit indication of a feature of the context of utterance' (p 34). By this he means that it is deictic processes that pick out an index. There is an implication that this is all they do, or can do, and this is a significantly narrower usage than the standard, in which deictic reference relates some entity to the relevant co-ordinate of the deictic origo as defined by Bühler. It is not required that the entity determined in this way should be an index which in turn stands in some relation to something else or in a reflexive relation to itself. What I hope to do is reinstate this earlier usage of the term 'deictic' with respect to Nunberg's second category of contextuals.

Nunberg opens the discussion of this category or type with example [69], below.

[69] The best mushrooms are found locally\(^1\) (nearby\(^1\), etc.).

The superscripts indicate that these are indexical uses of terms which may also be used non-indexically, and with respect to this indexical reading, 'locally' may be interpreted along the lines 'in the vicinity of the place of utterance'.

Now, Nunberg wishes to demonstrate a very real difference that exists between terms such as 'local[ly]' and other expressions which on some readings are approximately the same in meaning. For example:

[70] The best mushrooms are found around here (in this area).

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\(^{1}\)See also Fillmore, (1975) and Klein (1982).
He points out that [70] may express a general proposition:

... suppose the speaker is standing by the bank of a stream then he may mean something like “The best mushrooms are found around the banks of a stream.” That is you could utter (70) in California to tell somebody how to find mushrooms in Italy. (p 35).

Interestingly, such a reading is not available in the case of 'locally' and 'nearby'. The explanation that Nunberg offers appeals in a very satisfying way to his existing model of indexical interpretation. The crucial factor is that although 'locally' is in some sense 'anchored' to the place of utterance, the interpretation of 'locally' cannot relate 'to some other place that corresponds to the location of the utterance' (p 35). That is to say, this anchorage is not the equivalent of a Peircean index, in that it cannot indicate an interpretation beyond itself. If the 'anchorage' were equivalent to a Peircean index, then [70] also could be uttered in California 'to tell somebody how to find mushrooms in Italy'.

Therefore, it seems that Nunberg is correct. 'Locally' quite clearly is not strongly indexical as he defines it, and yet it does, in some sense, appear to be indexical. The most available - perhaps the only available - interpretation of [69] is that according to which the meaning of 'locally' is determined by the place of utterance and will vary as that place of utterance varies. This is what Nunberg intends to convey when he marks the usage as indexical. This usage may be contrasted with that in (7), below, for which the most natural reading quite clearly is not contextually controlled in this way, even though a contextually controlled (i.e. indexical) reading is possible.

(7) Parents across the country are being encouraged by the minister to send their children to school locally.
According to the most natural reading of (7), 'locally' is not controlled by the context, but falls within the scope of the subject term. That is to say, according to the most natural reading the use of 'locally' in (7) is not indexical. Another possible, but unlikely, reading would be for the adverb to fall within the scope of 'the minister'. An equally interesting example, featuring the semantically related term 'local', where all three possible readings are plausible, is given by Nunberg:

[3] The Times had every reporter cover a local athlete.

He comments that this sentence is three-ways ambiguous, with readings varying according to whether 'local' is 'controlled by the subject, the quantifier, or the context of utterance.' What he wishes to demonstrate is that if 'local' is controlled by the subject, then it is an example of discourse anaphora, in that its interpretation depends on the antecedent expression 'The Times'. According to such a reading the reporters had to investigate athletes in the vicinity of the newspaper's offices. If, however, it is controlled by the quantifier, then 'local' behaves like a bound variable or, as Nunberg remarks, as if it contains an 'implicit pronoun-like' variable. According to this reading every reporter had to write up an athlete in the vicinity of himself. It is only when it is controlled by the context of utterance that Nunberg considers it to be indexical.

The point that he is making is an interesting one: 'Local' can enter into different scope relations with various operators within the sentence. It turns out that this is a very significant property, which becomes even more significant when there are only two possible readings both of which are contextually controlled in the sense described above. Indeed, it leads Nunberg to conclude that

... contextual expressions are often not properly indicative, in that even when their values are determined by the utterance context, their meanings may figure in the utterance content. (p 36).
This is a surprising claim, because he has earlier identified indicative meaning as a defining mark of indexicality and he claims that contextuels are a type of indexical. However, he continues:

There are various ways of showing this. For example, inasmuch as the content of a deictic expression isn't part of the utterance content, it can't exhibit scope interactions with other operators.

This is a little confusing. Firstly, Nunberg's use of 'deictic' is highly idiosyncratic. What he means by it is 'strongly indexical'. Having concluded that only those indexical expressions which have a deictic component and thereby pick out an index are strongly indexical, for convenience he decides to call all such expressions 'deics' and all other indexical expressions - i.e. those which do not have a deictic component - 'contextuels'. As I said, this is confusing.

A second confusion centres on his use of the word 'content'. Clearly Nunberg is not here using 'content' in Kaplan's sense. For, following Kaplan's usage, the content of an indexical or demonstrative expression (Nunberg's 'deictic') is a part of the utterance content. Furthermore, it enters into the truth conditions of the proposition expressed by that utterance. I can only assume that what Nunberg here intends to convey is that the character - as defined by Kaplan as a function from contexts to content - of an indexical is not a part of the proposition expressed by an utterance in which that indexical is embedded and therefore an indexical term cannot 'exhibit scope interactions with other operators'.

Put more simply, what Nunberg is saying is that as the linguistic meaning of indexical expressions is indicative, and therefore truth-conditionally irrelevant, it is not possible for such terms to enter into interactions of a kind which by definition affect truth conditions. However, he notes that contextuels such as 'local' exhibit just such interactions. In support of this claim he asks us to consider examples [79] and [80].
The landscape around here is getting prettier.

The local\textsuperscript{1} landscape is getting prettier.

He stipulates that both are spoken by a passenger on a train and notes that an utterance of [79] can only mean that the landscape that is in the vicinity of the speaker is getting prettier. Perhaps the speaker has been in the same location for a long time and has watched trees growing taller and more impressive and flowers spreading over previously barren land. Nunberg improbably suggests that the train may have been stalled while all this happened. More probably, the speaker may be assumed to be familiar with a particular locality, viewed from the moving train, and is simply remarking on an improvement in that locality since he last saw it.

However, Nunberg notes that [80] could mean that 'the landscape round the point of utterance is prettier than the landscape that surrounded the place where the speaker was a half-hour ago' (pp 36-37). In other words, 'local\textsuperscript{1}' may fall within the scope of 'getting prettier' or it may take wider scope than the progressive. When 'local\textsuperscript{1}' takes wide scope the reading will be equivalent to that appropriate to [79], but when 'local\textsuperscript{1}' is given a narrow scope reading, later sections of landscape are compared favourably with earlier sections. As the superscript indicates, both readings are indexical.

Nunberg has now claimed, therefore, that 'local\textsuperscript{1}' - although it is some kind of indexical - not only does not pick out an index, but also has descriptive meaning, i.e. is not indicative. These turn out to be two highly significant properties, although the second is somewhat weakened by the fact that the meaning of 'local' is, at least partially, indicative. Nunberg correctly observes that its value, that is to say the actual location that the term is used to identify, is determined with reference to the utterance context, not by the meaning of the term itself. That is to say the actual location is picked out indicatively, it is not a denotation that
satisfies some description. Nonetheless, for the reasons discussed above, the linguistically encoded meaning of 'local' is also, at least in part, descriptive.

2.2.1 Indexicality and 'pure' deixis

It might now be instructive to recall what is entailed by (strong) indexicality as it is described in chapter three. The following three conditions appear to be necessary. I say that they appear to be necessary rather than that they are necessary because I shall later suggest that terms used indexically, or indeed pro-terms in general, are not after all entirely indicative. For the moment, however, the following conditions are provisionally identified as being necessary conditions of indexicality:

1. Indexical terms are indicative.
2. Indexical interpretation is always mediated by an element of the context of utterance (an index).
3. Indexical interpretation is always deferred, although sometimes this deferral is reflexive.

Although 1 to 3 may be provisionally accepted as being necessary conditions of strong indexicality, they are not sufficient. Indeed, I shall argue in chapter five that they apply equally to anaphoric pro-terms, although not to anaphora in general, as anaphora does not always involve non-descriptive terms. However, if we adopt what might be called a 'naive' view of anaphora and assume that anaphoric reference always presupposes an overt linguistic antecedent, this may be remedied by a modification of 2:

2'. Indexical reference is always mediated by an exophoric element of the utterance context (an index).

From these conditions a fourth falls out:

4. Indexical utterances are also pro-formal.
This is because, by definition, a fully lexical term has descriptive, not indicative, meaning.

'Local' apparently meets none of these conditions absolutely although, as already noted, its meaning may be partially indicative. However, it does not meet conditions 2', 3 or 4. Nonetheless, Nunberg wishes to classify 'local' as indexical. The question must be asked: By what criteria should it be thus defined? Partial indicativeness is surely not sufficient.

On the other hand, it does seems that Nunberg is correct to deny that terms such as 'local' and 'locally' are strongly indexical. The problem does not in this case lie in that denial, but rather in the conclusion that Nunberg draws from it. He has labelled 'strongly' indexical terms 'deictics', and having done this has assumed, without argument, that if a term is not strongly indexical it will follow that it is not deictic either. But picking out an index may not be the only function of deixis. Therefore, it need not follow that a term - such as 'local' - that does not pick out an index is not deictic.

How, in fact, should deixis be defined?

Following Bühler and Levinson we might - briefly - describe deixis as a function of expressions whose interpretation varies systematically, from utterance to utterance, relative to a contextual origo. Indeed, Frawley (1992) writes that deixis is 'the way an expression is anchored to some essential point in context' (p 274). But isn't this what Nunberg says of contextuals? He writes:

So it seems that there are really two types of "indexicality." With the first type, an expression picks out a contextual element that serves as a pointer to the interpretation. ... With the second type, the contextuals, the expression may be anchored to an element of the utterance context, but that element is not an index in the strong (Peircean) sense ... (p 36).
Now, it has been argued that Nunberg's type (i) contextuals are more appropriately analysed as being straightforwardly and strongly indexical. If this is correct then it is not necessary to invent a new category to accommodate them. However, the position with regard to Nunberg's type (ii) contextuals is rather different. These do not fit into the mould of strong indexicality. On the other hand, it does seem that they might be better described as examples of 'pure' Bühlerian deixis and that it is not necessary to invent a new category to accommodate them either.

There really is no reason to suppose that the determining of an index is the sole function of deixis, or that deixis is inextricably linked to indexicality. Indeed, it should be possible to distinguish indexicality from deixis in terms of the provisionally identified features of indexicality already listed and, for convenience, reproduced again below:

1. Indexical terms are indicative.
2'. Indexical interpretation is always mediated by an exophoric index.
3. Indexical interpretation is always deferred.
4. Indexical terms are always pro-phrasal.

Let us assume for the moment that type (ii) contextuals are indeed 'pure' deictics, and that the examples raised by Nunberg may be taken as prototypes. How might the distinction between such expressions and Nunberg's strong indexicals be defined with respect to points 1 to 4? Interestingly, it turns out to be a matter of direct contrast on all four points:

D1. Pure deictics are descriptive.
D2. Pure deictic interpretation is not mediated by an index.
D3. Pure deictic interpretation is not deferred.
D4. Pure deictic expressions are always lexical items (i.e. not pro-forms).

Condition D1 is based on the assumption that 'local' is purely deictic, and as we have seen Nunberg has demonstrated that the meaning of 'local' is descriptive
although, as has been commented above he also notes, correctly, that it has an indicative element. Perhaps, therefore, condition D1 should be rewritten:

D1a. The linguistically encoded meaning of pure deictics is primarily descriptive.
D1b. There may be an indicative element in the linguistically encoded meaning of pure deictics.

Condition D2, on the other hand, is based on rather more than Nunberg's discussion of type (ii) contextuals, although with respect to such terms he has, indeed, argued that reference is not deferred. Nonetheless, this second condition is much more broadly based on evidence drawn from indexicality itself. The deictic component of an indexical term, whether or not that component is linguistically encoded, picks out the demonstratum, or index, by ostension, or by identifying description (as in the case of 'T'), or by a combination of description and ostension (as in the case of 'this' and 'that'); it does not pick out the index by deferred ostension. Indeed such a suggestion would presuppose an infinite regress. D2, therefore, can be derived from Nunberg's discussion of strong indexicality and does not depend on the behaviour of 'local'.

Condition D3 follows from condition D2.

Condition D4 follows from condition D1a.

In the present context condition D1a is highly significant for the following reasons. My arguments in the last two chapters have been directed against the theses of rigid designation and direct reference as they apply to indexically used pro-terms. Now, even if it has been successfully demonstrated by these arguments that indexically used expressions cannot be either directly referential or rigidly designating, if it should turn out that deictic expressions are directly referential and therefore rigidly designating my global argument against the thesis of rigidity would fail.
Descriptive terms, however, cannot - by definition - be directly referential, as the denotation of a descriptive term must satisfy that description. As Kaplan explains, directly referential terms refer 'without the mediation of a Fregean Sinn' (Kaplan, 1989b, p 568). That is to say, they do not refer in virtue of meeting any descriptive criteria. One way, therefore - there may be others - to demonstrate that pure deixis does not entail either direct referentiality or the de jure rigidity associated with it would be to show that deictic terms have descriptive meanings. It is not necessary to show that such meanings are exclusively descriptive.

Unfortunately, an obvious weakness in the formulation of conditions D1 to D4, which apparently do show just that, is that D1 and D4 rest on scant evidence. That they are true of 'local' and 'locally' is not sufficient justification for the assumption that they are true of all deictics. I shall later try to remedy this fault.

As indexical expressions have a deictic component, a further difficulty might be thought to lie in the apparently contradictory claims that indexical expressions refer through the mediation of an index whereas deictic expressions do not. However, a little thought should reveal that this is not a problem.

Indexicality as defined above subsumes deixis. That is to say, every indexical term has a deictic component that identifies the index as being in some way related to the deictic origo. But the index itself, which is identified deictically, is not picked out through the operation of deferred ostension. This has already been remarked on with respect to D2. In other words, although indexicality subsumes deixis the converse is not the case. Deixis does not subsume indexicality, and purely deictic terms, such as 'local', have no indexical element. Indeed, it is for this reason that I designate such terms 'purely' deictic. This may be expressed more clearly as follows:

\[
D \quad \text{deixis} =_{df} \text{a function from the deictic origo to an interpretation.}
\]
Indexicality is defined as a function from a deictically determined referent to an interpretation. It will be noted here that whereas in D deixis is defined as a function to an interpretation, in I it is identified as a function to a referent. This is because when deixis occurs as a component feature of indexicality it always does, in fact, pick out an entity - a referent, or index. This does not, of course, imply that the deictic referent is the interpretation. On the other hand, purely deictic expressions, such as 'local' or 'locally' do not pick out entities. It should be clear from this that what is identified as 'pure' deixis is thus identified because it stands alone and is not associated with indexicality.

Finally, it should also be noted that it is only with respect to D that these definitions differ from Nunberg's usages, as he does not - apparently - allow that deixis may exist independently of indexicality. It may be, however, that the distinction is fundamentally a terminological one, in that Nunberg's type (ii) contextuals appear to be straightforward examples of pure deixis. The distinction which he makes between expressions which are strongly indexical and type (ii) contextuals is a valid one and we might want to say that the confusion lies solely in his nomenclature. However, this is not quite right either - although it clearly is confusing to call indexicals 'deictics' and deictics 'contextuals' - the dispute is not entirely terminological. Nunberg also wishes to include type (i), and type (iii), contextuals in the overall category and, with respect to type (i) at least, it has been argued that this is a mistake.

2.2.2 Deixis

If the above arguments are correct, then it should be possible to discover other expressions which are deictic but not indexical. It might seem that the simplest way to do this would be to look for terms which meet conditions D1 to D4. However, on closer examination it turns out that these conditions, although they are necessary conditions of pure, independent deixis, are very far from being
sufficient. They are also unhelpful in that expressions with descriptive meaning whose interpretation is not mediated by deferred ostension probably constitute the major part of the lexicon. That is to say D1 to D4 mark the distinction between indexicality and deixis concisely, but they do not mark the distinction between deixis and the rest of language.

How, then, are further examples of expressions which could reasonably be fitted into the set of type (ii) contextuals to be identified? In addition to the conditions listed above as D1 to D4 the most notable characteristic of pure deixis which might be added to this list is presented as D5 below:

D5. Pure deictics are anchored to an element of the utterance context.

However, this does not quite resolve the difficulty concerning how to identify further purely deictic expressions. The problem is that D5 is both too strong and too vague. It is too strong in that it does not exclude anaphora, and too vague in that it does not make clear what is entailed by 'anchored'. Both these faults are remedied in D5' below.

D5'. Pure deictics always express a relation to some element of the deictic origo.

It may indeed turn out that D1 and D5' are all that are needed to describe and identify deictic expressions, D2 to D4 simply serving to highlight the distinction between pure deixis and indexicality. However, this suggestion can only be confirmed if D1 and D5' do indeed serve to identify further examples.

2.2.3 The truth-conditional involvement of the speaker

Expressions which spring to mind as candidates for inclusion in the class of pure deictics are: 'in front of ...', 'behind ...', 'to the left of ...', 'on X's right', etc. Such expressions clearly do have context dependent readings and intuitively it seems probable that their linguistic meanings are descriptive rather than indicative,
although intuitions are not arguments. Furthermore, an obvious difference between these expressions and 'local', 'locally' and 'nearby' is that the latter are all either adjectival or de-adjectivally adverbial, whereas the former are all prepositions, although they do contribute to adverbial phrases. Therefore, the match between the two sets cannot be expected to be exact in all respects. Nonetheless, it is reasonable to suppose that the category of deictic usages includes more than a single syntactic type.

The questions to be answered, therefore, concern whether 'in front of' and 'behind' and 'to the left of', etc., do have usages for which the interpretation is determined as a relation to an element of the deictic origo, and whether the meanings of expressions so used are descriptive.

Consider (8) to (10) below:

(8) The cat is behind the tree.

(9) The cat is behind the car.
    (from Levinson, 1983, p 82.)

(10) Max drove all the way from London to Brighton behind about 500 vintage cars.

How should these utterances be interpreted? And how should we distinguish between the various occurrences of 'behind'?

Perhaps a brief discussion of how spatial concepts are represented in language might help. Frawley (1992) observes that space is a 'relational concept'. He further comments:

Location is the relative spatial fixedness of entities; we want to identify the universal places and positions that language allows its speakers to
represent. We see that there are two types of locations: *topological* and *projective*, respectively, spatial positions independent of the viewer and those dependent on the viewer. (Frawley, 1992, p 250).

And later on, he writes:

Topological relations are constant regardless of how they are seen by the viewer, but such constancy is not possible with other spatial relations, which rely on a framework *projected by the viewer.* (p 262).

If we adopt Frawley's terminology, it would seem that with respect to 'behind' in (8), only the projective reading is possible; whereas in (9), either the topological or the projective reading would be both possible and appropriate, and in (10), although the projective reading is (remotely) possible, the topological reading of 'behind' is the most natural. Perhaps this needs clarifying.

Cars have what Levinson calls 'an intrinsic orientation'. That is to say they have an intrinsic front and an intrinsic rear and - as Frawley observes - the location of other entities may be fixed as a relation to this intrinsic orientation 'independent[ly] of the viewer' (or speaker). Trees, on the other hand, do not have an intrinsic front-rear orientation and the horizontal location of other entities cannot, in general, be fixed as a relation to any particular tree independently of the speaker. As a first approximation, let it be said that projective locations are fixed as a relation to the speaker's position at the time of utterance, and the speaker's location at the time of utterance may be identified with the spatial element - the 'here' - of the deictic origo. In other words, projective locations are expressed deictically. Topological locations, on the other hand, are not fixed as a relation to the speaker's position and are expressed non-deictically.

It is worth noting, however, that the alternative readings available to both (9) and (10) are not dependent on scope ambiguities. Nor are the alternative readings both deictic. This contrasts significantly with the readings available to 'local' in
Nunberg's [80]. The point is that the question that has to be addressed is whether expressions which have purely deictic uses have descriptive or indicative meanings. As I have already mentioned, if such expressions have indicative meanings, it might be argued that they are also directly referential and hence rigidly designating. Now, Nunberg uses the evidence of scope ambiguities to demonstrate the descriptive meaning of 'local', but the same argument is not available with respect to 'behind', as analogous scope ambiguities just do not occur.

How, therefore, should the linguistic meaning of 'behind' in (8) be defined? As a tree does not have an intrinsic rear, it has already been remarked that the deictic reading is the only one possible. Now, let it for the moment be assumed that the meaning of deictic 'behind' is, indeed, indicative. In Recanati's terms this entails that such meaning is truth-conditionally irrelevant. This, in turn would seem to entail that the 'meaning' of the deictic phrase 'behind the tree' does not contribute to the truth conditions of the proposition expressed by an utterance of (8). That is to say such an utterance is true just in case the cat in question is in a certain location, which just happens to be identified by the phrase 'behind the tree'. This location could equally well be determined as the intersection of latitudinal and longitudinal co-ordinates at a certain elevation.

Perhaps this is a plausible analysis; we might indeed be tempted to say that the cat's position vis a vis the tree and the speaker is irrelevant to the truth of any proposition concerning where the cat actually is. It is also an interpretation that would probably be favoured by most direct reference theorists. Furthermore, indicativeness is perhaps the most prominent distinguishing feature of Bühler's characterisation of deixis. He observes:

At crossroads, or in foreign terrain, an 'arm' or 'arrow' visible at a considerable distance is sometimes erected, an arm or arrow which normally bears a place name. It will do the traveller good service, if all

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goes well, for which it is first necessary that the signpost stand correctly in its *deictic field*. ... Deictic words like *here* or *there* function in a very similar way.

He continues:

... all phenomena of verbal deixis hang together, because they receive their fullness and precision of meaning not in the symbolic field of language, but in the deictic field.

Finally:

... only Wegener and Brugmann appropriately described the function of deictic words under the most perceptive viewpoint of their being *signals*. (Bühler, 1982, p 11).

However, if it is correct to conclude that in its deictic use 'behind' is indicative, how should the linguistic meaning of 'behind' in (10) be defined? Now, whatever is the case with respect to (8), it is surely a part of the truth-conditions of (10) that Max was in a certain position relative to those vintage vehicles and it is this spatial relation that is expressed by the linguistically encoded meaning of 'behind'. Had Max driven to Brighton *ahead* of all five hundred, then an utterance of (10) in such a context would simply be false. Therefore, it would seem that the relation expressed by 'behind' does not simply function as a method of locating an object in space, but is itself part of the truth-conditional proposition expressed. However, as indicative meaning is - by definition - not truth-conditionally relevant it must be concluded that the function and meaning of 'behind' in (10) is descriptive.

Furthermore, it has been suggested by Fillmore that the primary, or fundamental, use of expressions such as 'behind' and 'in front of' is non-deictic:
... the vocabulary appropriate to the spatial coordinate systems up/down, front/back and left/right is basically non-deictic, even though we find many deictic uses of the words and categories that make up the system ...

The anchoring of the front/back axis for a locating expression is established in the first instance with reference to the intrinsic orientation of an assumed reference object. Expressions like (7) and (8) assume, in their prototypic use, that buildings and horses have designated fronts and backs and that it is in terms of these designations that locational information is being presented:

(7) The children are in front of the building.
(8) It's not safe to stand behind the horse.

(Fillmore, 1982, p 39).

Clearly, with respect to truth conditions and descriptive meaning, the same might be said of 'behind' in Fillmore's [8] as has already been said of 'behind' in (10). The speaker is not suggesting that it is unsafe to stand on some spot which just happens to be identifiable as being 'behind the horse'. What the speaker's warning amounts to is that wherever the horse is standing it is dangerous to stand behind him. In other words it is a part of the truth conditions of the proposition expressed that it is dangerous to put oneself in a certain spatial relation with the horse. This is the case quite independently of where the speaker is standing. The spatial relation expressed is topological, non-deictic and truth-conditionally relevant. That is to say, the linguistically encoded meaning of 'behind' itself enters into the truth conditions of the proposition expressed. If such meaning were indicative it would not do so. Again it would seem that the linguistically encoded meaning of non-deictic 'behind' must be descriptive.

The problem now is that if we accept that 'behind' has a truth-conditionally relevant, descriptive, meaning in its non-deictic use (and I think we must), then to posit a different type of meaning, i.e. a truth-conditionally irrelevant, indicative meaning for its deictic use, although it would mark definitively the distinction
between deictic and non-deictic utterances, entails the positing of a semantic ambiguity. If this is, in fact, the case, then the debate is not about the deictic and non-deictic uses of a single term, but relates rather to two distinct (albeit homonymous) lexemes.

If only for reasons of parsimony, such an account might be viewed with some misgiving. The trouble is, of course, that there is a sense in which 'behind' does appear to be ambiguous. When it is used non-deictically it locates one entity in relation to the intrinsic rear of another. That is to say, it expresses a two-place relation between what Herskovits (1986) has called the 'located object' and the 'reference object', whereas deictic 'behind' appears to express a three-place relation between a located object, a reference object and a speaker situated at the deictic origo. Sinha and Thorseng (1995) discuss similar relations between what they call the 'trajector' and the 'landmark'. They borrow these terms from Langacker (1987) to develop their own elaborate coding system for spatial relations as expressed by language. However, as used by Langacker the terms have a much wider application which is not restricted to spatial relations in general or to deixis in particular. Therefore, the simpler terms introduced by Herskovits will be retained here.

The difficulty, however, remains: should 'be behind...' be regarded as being both a two-place and a three-place predicate, depending upon whether it occurs deictically or non-deictically? And if it should, is 'behind' lexically ambiguous?

As it turns out, this may be a pseudo-problem created by an erroneous analysis of the way the relations are expressed. Frawley, suggests that even in their deictic uses expressions such as 'in front of' and 'behind' express a two-place relation. Commenting on 'in front of', he writes:

There are two frames of reference: that inherent to the reference object and that inherent to the viewer... . Each frame of reference is a function of outward projection, from the "face", front, or central point of the viewer or
the reference object ... The difference between the two frames of reference can be seen in the interpretations of the following:

24. The ball is in front of the chair. (Frawley, 1992, p 263).

According to the non-deictic reading, 'the inherent frame of reference of the chair determines the spatial relation', whereas on the deictic reading the frame of reference 'inherent to the viewer determines the meaning of in front of'. That Frawley does not see this as a three-place relation becomes even clearer a little later:

Anteriority obtains if a located object occupies the ideal space projected in front of the reference object. Crucial to this ideal meaning is the interpretation of front.

As we have seen in (24), ... the front is determinable either by intrinsic properties of the reference object or by the frame of reference of the viewer. (p 267).

What this seems to mean is that the relation expressed by 'in front of' is always between an reference object and a located object. The distinction between deictic and non-deictic uses lies in the way the reference point is determined - either topologically or projectively - not in the number of arguments the relation has. If this is correct, then there is no reason to suppose that expressions such as 'behind' and 'in front of' are homonymously ambiguous. However, as will become apparent, there are other difficulties.

If we now return to (8), the question may be asked again: how should (8) be interpreted if the meaning of 'behind' is univocal and descriptive and expresses a two-place relation? That there is a problem will be more apparent if (8) is modified slightly, as in (11).

(11) I can't see the cat; because she is behind the tree.
With respect to (11) the spatial relation that obtains between cat, tree and speaker seems to be as truth-conditionally relevant as that between Max and the cars. If the speaker and the cat are not understood to be on opposite sides of the tree, and if this spatial relation is not a part of the proposition expressed, then difficulties arise in accounting for the explicit causal relation that holds between the two clauses of (11).

It cannot be argued that all that is truth-conditionally relevant is that the speaker cannot see the cat and that the cat is in a particular location (which just happens to be describable as a relation to the tree), and that any causal connection between these two givens is simply derived as an implicature, for the simple reason that the causal relation has been made explicit by the inclusion of 'because' in the utterance. If the explicit assertion of such a causal connection between the two states of affairs described is to be coherent then there must be something about being 'behind the tree' that explicitly justifies the use of 'because'.

To put it another way: it may be correct to say that what is implied rather than said is that because the cat is on one side of the tree and the speaker is on the other the speaker's line of vision is obstructed, but it is surely equally correct to assert that what is said rather than implied is that the cat and speaker are on opposite sides of the tree. In order to communicate the facts of the causal relation that holds between the position of the cat and the speaker's inability to see her, the speaker must also communicate some specific information concerning her own position vis a vis the cat. The proposition expressed by (11) is, I suggest, as much about the position of the speaker relative to the tree and the cat as it is about the cat. (It is also a proposition about the tree.) The difference between the position of the speaker and that of the cat vis a vis this utterance is one of focus, not of truth-conditional relevance.

If this is correct, must it be concluded that, deictic 'behind' does, after all - despite what has been argued with respect to 'in front of' - express a three-place relation?
And if it does, is 'behind', therefore, homonymously ambiguous as between its deictic and non-deictic uses? This is the difficulty.

It seems to me that the solution may again be found in Frawley's concept of frame of reference. With respect to 'behind' he comments:

Posteriority may ... be defined in a manner analogous to that for anteriority: The located object occupies the ideal space projected from the rear of the reference object. ... First, there is a clear effect for projection, depending on where the frame of reference is located. (Frawley, op cit, p 269).

That is to say with respect to utterances such as (12) below, where the reference object does have an intrinsic orientation there are two possibilities.

(12) Bob is behind the house.
(from Frawley, op cit, p 269.)

The interpretation of 'behind' in (12) may be either 'viewer-centered' or 'reference-object-centered'. Frawley explains that if it is the former

the situation may be such that Bob is anywhere in relation to the house, just as long as he is not visible to the viewer. With the frame of reference thus projected from the viewer, posteriority is associated with lack of visibility of the located object.

In fact, I do not think this is quite right. Bob might be deictically described as being behind a greenhouse, or some fruit-netting or chicken-wire fencing, and in each case be clearly visible to the speaker. Indeed, a situation can be imagined in which the speaker, A, is to one side of a house and Bob has disappeared round the far corner. On being asked where Bob is, A might reply as in (13).
Oh, it's all right, he is behind the house; I can see him through the windows.

Nonetheless, Frawley's intention is clear: It is a part of the message communicated by deictic 'behind' that the reference object intervenes between the speaker and the located object. That is to say, the rear of the reference object is identified as projecting away from the speaker. With the rear thus defined, the relation marked by deictic 'behind' is still the two-place relation between the located object and the reference object. Anteriority may receive an analogous treatment. Only in this case the front of the reference object will be identified as projecting towards the speaker. If this is correct, we can then say that utterances of the form 'X is behind/in front of Y', whether interpreted deictically or non-deictically, always express a two-place relation between a located object and a reference object and that this relation is always truth-conditionally relevant.

The question now is, how exactly does this affect the truth conditions of (8)? Should we still say that the proposition expressed places the speaker in a certain position relative to the tree and the cat? That is to say, can we have it both ways? Can we say that:

(i) 'behind' always expresses a two-place relation; and
(ii) with respect to deictic utterances of 'behind', 'in front of', 'to the left of', etc., the speaker's position vis a vis the reference object and the located object is also truth-conditionally relevant and a part of the proposition expressed?

(i) is needed if the argument that terms such as 'behind' and 'in front of ' are not homonymously ambiguous is to be sustained, and (ii) is needed if the explicit assertion that a causal relation obtains between the two clauses of (8) is to be coherent and justifiable.

I think we can have it both ways. Although it is inherent in the semantics of expressions such as 'behind', 'in front of', 'on X's left', etc., that they define a two
place relation between a located object and a reference object, it is also inherent in the semantics of such expressions that a frame of reference must be established and a rear, or forward, or lateral projection identified. Such a projection will either be identified as an inherent aspect of the reference object itself in virtue of that object's intrinsic orientation, or it will identified as a projection away from, or towards, or to the right, or to the left of the speaker.

What I am suggesting is that the *actual* frame of reference is not made explicit by the linguistic meaning of these terms. What is made explicit by the encoded meaning of spatial terms such as 'behind' and 'in front of' is that there is a frame of reference to be identified and that the two-place relation that each of these terms expresses can only be interpreted with respect to that frame of reference. If this is correct then the relation expressed by a deictic use of any of these expressions is no more a three-place relation between a reference object, a located object and the object that defines the frame of reference (i.e. the speaker) than the non-deictic relation expressed by any one of these terms is a three-place relation between a reference object a located object and the object that defines the frame of reference (i.e. the reference object itself).

Nonetheless, in each case something over and above the fact that a relation between two objects has been expressed enters into the truth-condition of the proposition. In the case of deictic uses the extra information is that the frame of reference is established with respect to a speaker, and in the case of non-deictic uses the extra information is that the frame of reference is established with respect to the reference object's intrinsic orientation.

This might seem a little mysterious. How does this extra something enter into the truth conditions of the propositions expressed as required if it is not a part of the descriptive meaning of the spatial terms embedded in those propositions? The apparent mystery may originate in an unexpressed (and erroneous) assumption that indicative meaning has no bearing at all on truth conditions. It is not always the case that everything that enters into the truth conditions of the
proposition expressed by an utterance is 'decoded' from the linguistic meaning of
the compositional parts of that utterance. Some part of those truth conditions may
be inferred. To put it in Gricean terms, not everything that is 'said' is decoded.
Grice himself concedes that the assignment of reference to pronouns and the
disambiguation of either structural or lexical ambiguities - both achieved through
inferential processes - are a part of what is 'said' and should not be considered
implicatures.

That is to say, a term or complex expression may have an indicative meaning
which does not itself contribute to the truth conditions of the proposition in which
it is embedded but nonetheless it may contribute to that proposition an inferred
interpretation which is a part of those truth conditions. Wilson and Sperber
(1993a) claim that pronouns are prime examples of such terms.

What is being suggested here is that the truth-conditionally relevant two-place
relation expressed by spatial terms such as 'behind' and 'in front of' does not
exhaust the encoded, context-independent meaning of such terms, and that there
is also a second, truth-conditionally irrelevant (i.e. indicative) element in their
meanings. This second element indicates that there is a frame of reference to be
identified. This indication, however, is clearly no part of the proposition
expressed, although from it is inferred a description of the contextually
appropriate frame of reference, and this - I suggest - is a truth-conditionally
relevant component of that proposition. In Gricean terms - except of course that
Grice makes no provision for this particular type of 'truth-functional' inferencing -
it is a part of what is said. In relevance theoretic terms, it is an explicature.
Finally, I want to suggest that the hallmark of pure deixis is not, as Bühler suggested, indicativeness, but relativisation to an origo. Of course, Bühler suggested this also. It can now be said that expressions such as 'behind' and 'in front of', etc., as well as 'local' and 'locally' are all examples of pure deixis. But where does this leave 'here' and 'now' and 'T, the prototypical deictic expressions which indeed mark the deictic origo? It must be concluded that although such terms do, indeed, contain a deictic element - Nunberg's deictic component - they are in fact indexical expressions, whose interpretation is mediated via an index, and they are not, after all, examples of pure deixis.

An equally controversial, or at least counter-intuitive element in the above analysis is the suggestion that the speaker herself is always drawn into the truth conditions of purely deictic utterances. However, it does seem to me that if a speaker chooses to express herself deictically, then she cannot avoid expressing a proposition that is, in part, about herself. That is the nature of pure deixis. The speaker who wishes to avoid talking about herself must, therefore, avoid deixis.

2.2.4 Deictic shift and deictic projection

For the sake of completeness, and to prevent confusion, it might be as well to distinguish these two phenomena from that introduced in the previous section concerning the deictically projected frame of reference. The first, deictic shift, has been widely discussed, largely with respect to fiction and narrative texts in which the deictic centre is not located with the narrator but with some protagonist, time, or place, within the text. This is quite distinct from the phenomenon discussed in the previous section, and need not concern us here. Furthermore, the phenomenon of deictic shift does not simply involve pure deixis, the reference point for the narrative use of indexicals is equally affected.

The term 'deictic projection', on the other hand, was introduced by Lyons to describe a related, but distinct, phenomenon which may occur in isolated non-narrative utterances of direct speech:

For example, if we are in London, speaking ... to someone in New York, we can say, appropriately, either *We are going to New York next week* or *We are coming to New York next week*. We can also say *We are going there next week*, and even *We are coming there next week* (where the deictic adverb 'there' refers to New York). What we cannot say without violating the rules which govern the use of 'here' is *We are coming here next week* (with 'here' referring to New York). ... The use of 'come' unlike the use of 'here', allows the speaker to project himself into a deictic context centred on the addressee. (Lyons, 1977, p 579).

Although it would be straying too far afield to discuss this phenomenon here, it does seem that deictic projection - unlike deictic shift - relates solely to pure deixis. As Lyons notes the descriptive (and hence deictic) term 'come' may be projected, but the indicative (and therefore indexical) term 'here' may not. A further point worth mentioning is that even 'come', when it occurs in an utterance, has an indexical element. That is to say, tense morphemes are indicative, not descriptive. However, it may be observed that in Lyons' example it is not the tense of 'will come' that is projected. That is still related to the actual speech time of the utterance, i.e. to the temporal component - the NOW - of the deictic centre. This is as it should be and is predicted by the hypothesis that only deictic elements can be projected.

However, neither of these phenomena should be identified with what is happening in the deictic use of the prepositional phrases discussed above. In the latter case, although the frame of reference is projected from the deictic centre (i.e. the speaker's viewpoint), that deictic centre, itself, remains unmoved. The frame of reference is fixed relative to the speaker or the deictic origo. It is not the origo itself that is projected.
This temporal adverb, or postposition, is discussed extremely briefly by Nunberg in a footnote on page 38, and all the quoted material comes from this footnote unless otherwise indicated. I shall also be brief, although perhaps not as brief as Nunberg. This is not because the semantics of 'ago' are not interesting - they are - but because the extremely complex problems presented by 'ago' and other temporal adverbials are not strictly relevant to the present inquiry.

Nunberg claims firstly, that 'ago' is a 'dedicated indexical'. That is to say, it never occurs non-indexically (or perhaps it would be more accurate to say non-deictically). Nunberg prefers to say that it has 'only contextual uses' (p 38), as he demonstrates below:

In (i), *ago* cannot be controlled by the quantifier, as *before* can in (ii):

(i) ??Every writer who visited Paris in the 1930s wished he had been there ten years ago.

(ii) Every writer who visited Paris in the 1930s wished he had been there ten years before.

Nunberg's point is that 'ago' has no non-deictic uses, and cannot be controlled by anything other than the context of utterance. If this is correct then it would seem to mark what is possibly a significant distinction between 'ago' and those other examples of pure deixis already identified. As has been demonstrated, non-deictic 'local' may be controlled by a quantifier, as also may non-deictic readings of the prepositional phrases 'to the right of' and 'behind', etc. See examples (14) and (15), below.

(14) Boris is sitting to the right of some men wearing solar topees.

(15) Zelda is behind just about everyone.
However, it is not altogether certain that Nunberg is correct. There is considerable variation between idiolects concerning what is, or is not, acceptable. Smith (1978) notes that the following example may be considered by some speakers to be ambiguous:

(16) Sally told me on Tuesday that Bill had arrived three weeks ago.
    (from Smith, 1978, p 60.)

She further comments:

There appears to be some difference among anchored adverbials, and among speakers, as to whether the adverbials are flexible in orientation. For some speakers these adverbials ['ago' and 'last week'] are inflexible, and can be anchored only to [the speaking time]; ¹⁶...

Presumably Nunberg is one such speaker, and I am inclined to agree with him but, as Smith points out, for some speakers 'ago' is less inflexibly anchored to the speaking time (the deictic origo) than are other temporal adverbials:

A number of people find that some adverbials are more tightly anchored than others: yesterday, for instance, is for many less flexible that a week ago; tomorrow is less flexible than in a week.

Furthermore, even if Nunberg is correct concerning the inflexibility of the anchorage of 'ago' to the speaking time, it is not clear that this in any way damages its status as a pure deictic. In fact, Nunberg is not attempting to do such damage. His concern is to show not only that 'ago' is, in general, somewhat anomalous, but that, in particular, it is not strongly indexical.

¹⁶ Cf Reichenbach (1947).
With this end in mind, he provides examples to illustrate his claim that 'ago' 'does not license' the deferred use that is the hallmark of strong indexicality. These examples are reproduced below as (17) and (18):

(17) When I was a kid, they began to decorate the trees a week before now.

(18) ??When I was a kid, they began to decorate the trees a week ago.

Finally, he notes that adverbial phrases featuring 'ago' may serve as the antecedent of VP ellipsis. This would not be possible if the meaning of 'ago' were truth-conditionally irrelevant. That is to say, if the meaning of 'ago' were not truth-conditionally relevant, and did not enter into the proposition expressed by the utterance in which it is embedded, then it would not be 'available for abstraction', i.e., elliptical repetition. From this Nunberg concludes, correctly in my view, that the semantically encoded or linguistic meaning of 'ago', like that of 'local', is descriptive. The example Nunberg uses to illustrate this point is reproduced below as (19):

    B: So did I.

As Nunberg comments:

The only plausible reading of B's response is one where he stopped stuttering in the second of his own sentences before his own present utterance.

This must surely be correct. Finding a category into which to slot 'ago' is not, therefore, as problematic as Nunberg appears to believe. Once again, there is no need to invent, or appeal to a newly invented, grab-bag category of 'contextuals'. If the identifying characteristics, or necessary conditions, of pure deixis are
reviewed, it seems to me that there is no reason why 'ago' should not also be identified as purely deictic.

3. The distinction between indexicality and deixis

The two most significant conditions of deixis listed above are:

D1a. The linguistically encoded meaning of pure deictics is primarily descriptive.
D1b. There may be an indicative element in the linguistically encoded meaning of pure deictics.
D5'. Pure deictics always express a relation to some element of the deictic origo.

It has been suggested that D1 and D5' represent the necessary and sufficient conditions of deixis. I suggest that 'ago' meets these conditions.

With respect to the necessary and sufficient conditions of indexicality, there is a problem which was hinted at earlier. It seems to me that the linguistic meaning of the classificatory component of indexicals does, after all, enter into the truth conditions of the proposition expressed. This can best be demonstrated by example. When a shopkeeper picks up a single plate and utters Nunberg's [43] below, I suggest that the semantic feature PLURAL does contribute its significance to the proposition expressed and does enter into the truth conditions of that proposition.

[43] These are over at the warehouse, but those I have in stock here.

If the shopkeeper has only one plate in the warehouse and only one in the shop, then I suggest that that utterance of [43] is just false. The formal semanticist or logician might here wish to object that 'these' means 'some of these' and that 'some of these' may be reduced to 'at least one of these', and that therefore if there is at least one plate in each of the specified locations an utterance of [43] is, in fact,
true. However, this won't do, as will become apparent if it is further stipulated that the shopkeeper, as well as having only one plate in the warehouse and one in the shop, has several dozen of each at home in his garage. It must surely be concluded that in such a context an utterance of [43] is indeed false.

It might now be objected that 'These' and 'those' in [43] should, in fact be interpreted as 'all of these' and 'all of those', which would be true even if there were only one plate in each location, providing there were no other plates of those patterns anywhere else. Therefore, it might be argued, the semantic feature PLURAL does not enter into the truth conditions of the proposition expressed by an utterance of [43]. But this won't do either. Firstly, all of the plates of the first pattern cannot be at the warehouse because the speaker points to one that isn't. Secondly, it seems to me that an utterance of [43] will be true just in case there is a reasonable stock of each pattern in the locations specified, regardless of whether there are further plates of those patterns in other locations also. That is to say, if there are two dozen plates, say, of each pattern in the respectively designated locations, then an utterance of [43] will be true even if there are a further four dozen plates of each pattern stored in the shopkeeper's garage.

Therefore, it seems that 'These' and 'those' in [43] cannot be equated with 'at least one of these' or 'at least one of those', nor can they be equated with 'all of these' or 'all of those'. The most that can be said is that they indicate plurality to some fairly vague and unspecified extent. But this is what we should expect from the semantic feature PLURAL, and it is this unspecified-as-to-extent notion of plurality that enters into the truth conditions of the proposition expressed by an utterance of [43].

It should be obvious from the above, however, that the linguistic meaning of the semantically encoded deictic component, does not enter into the truth conditions of the proposition expressed and is, indeed, indicative. That is to say it is no part of the truth conditions of [43] that the first set of plates should be proximal, as
indicated by 'these', nor is it required that the second set of plates be distal as indicated by 'those'.

It might then be asked how it is that demonstrative 'he', say, is indicative at all, if the classificatory component enters into the truth conditions and there is no linguistically encoded deictic component. The answer to this must surely be that although the semantic features SINGULAR, ANIMATE, MALE, do contribute to the proposition expressed and enter into the truth conditions of that proposition, the interpretation of an indexical is not exhausted by these semantic features. The interpretation is primarily accessed via the index, and these classificatory features simply contribute sortal information to the final interpretation.

Therefore, with respect to indexicality, condition 1 should perhaps be rewritten as:

1a. The linguistically encoded meaning of an indexical term is primarily indicative.

and

1b. The linguistically encoded descriptive meaning of an indexical term never exhausts the interpretation of that term.

The fact that the linguistic meaning of an indexically used term turns out to be, in part, descriptive is not a problem, at least not for me. On the other hand it must surely be a problem for the direct referentialists. If the interpretation of an expression is to any extent whatever the satisfaction of some description then that interpretation just is not achieved by direct reference.

Finally, I would like to return to the suggestion that purely deictic reference, although fundamentally descriptive, has an indicative element. There are indications that this is the case across the board. It has, for example, already been
noted that it is no part of the encoded meaning of 'local' that the speaker of an utterance of the term is wherever she happens to be at the time of that utterance. That is to say, the speaker passing through Provence in a train who utters Nunberg's [80], reproduced again below for convenience, refers to the landscape in Provence, but it is no part of the meaning of 'local' that she does so.

[80] The local landscape is getting prettier.

Similar, although not precisely analogous, arguments have also been presented with respect to expressions such as 'behind', and 'in front of'.

This does not, however, undermine the argument that expressions used deictically are not directly referential. I have already argued that direct referentiality is precluded for any term whose meaning is even partially descriptive. What it does do, however, is further demonstrate the homogeneity with respect to meaning type within the set of pure deictics. Equally significantly, it serves to show that indexicality and deixis share this distinguishing feature. Both types of expression have linguistically encoded meanings that are both descriptive and indicative.

However, I suggest that Fillmore is correct to assert that spatial expressions are fundamentally non-deictic and this would seem to entail that the descriptive element in the linguistic meaning of such terms is paramount. I suggest that this balance in focus between the descriptive and indicative extends also to temporal expressions such as 'later' in 'later than one o'clock' and its deictic counterpart in 'see you later'. Clearly the derivational root of 'later' - 'late' - is entirely descriptive. Analogous arguments might also be used with respect to 'away' as in 'five miles away from Cambridge' and its deictic counterpart in 'go away'. Finally, similar arguments might be advanced with respect to 'ago'.

It is, therefore, plausible to conclude that although the linguistically encoded meaning of deictically used expressions has both descriptive and indicative components the descriptive element is dominant. I suggest that the converse is
the case with respect to indexically used expressions. The single fact that such expressions are pro-formal would by itself suggest that they are used to indicate something beyond themselves, and the mechanics of deferred reference confirm that this is the case.

It does seem, therefore, that the set of pure deictics is defined by conditions D1a and b and D5', and that this set comprises Nunberg's type (ii) and type (iii) contextuals, and possibly some others as yet unidentified, but excludes Nunberg's type (i).

4. Conclusion

In this chapter I have set out to achieve two goals. The first is to define the distinction between indexicality and deixis; the second is to show that deictic expressions are no more directly referential or rigidly designating than are indexicals.

If it is accepted that the examples raised to illustrate the operation of pure deixis are truly representative - although it is not suggested that they exhaust the category - then the achievement of the first goal is realised by the two sets of necessary and sufficient conditions, set out and renumbered below, together with definitions I and D. The second is achieved by the demonstration that pure deictics have descriptive meanings.

**Necessary and sufficient conditions of indexicality**

1a. The linguistically encoded meaning of an indexically used expression is partially indicative.

1b. The linguistically encoded descriptive meaning of an indexically used expression never exhausts its interpretation.

2. Indexical reference is always mediated by an exophoric element of the utterance context (an index).
3. Indexical interpretation is always deferred, although sometimes the deferral is reflexive.

*Necessary and sufficient conditions of pure deixis*

1a. The linguistically encoded meaning of pure deictics is fundamentally descriptive.

1b. The linguistically encoded meaning of pure deictics may have an indicative element.

2. The interpretation of a deictic expression stands in a determinate relation to an element of the deictic origo.

3. Pure deictic interpretation is never mediated by an index.

4. Pure deictic interpretation is never deferred.

*Definitions of deixis and indexicality*

\[\text{deixis} \equiv df \text{ a function from the deictic origo to an interpretation.}\]

\[\text{indexicality} \equiv df \text{ a function from a deictically determined referent to an interpretation.}\]
1. Extending Nunberg's model

Nunberg suggests that indexically used expressions may be divided into two main categories, 'strong' indexicals and 'contextuals', and about the former category he writes:

... let me use the term "strong indexical" to describe expressions ... which are indicative and which can be used in deferred reference.

That is to say, strongly indexical expressions pick out an index. He continues:

... pronouns like he have strong indexical uses, but have no explicit deictic component, and may also be used as bound variables and anaphors. Unless we are willing to suppose that the indexical and anaphoric uses of third-person pronouns involve homonyms, then, we have to allow that strong indexicality is sometimes a property of the uses of expressions, rather than of the expressions themselves. (Nunberg, 1993, p 33).

And a little later he writes:

... even items that are usually strongly indexical, such as demonstratives, cannot have deferred readings when they are controlled by contexts other than the context of utterance. (Nunberg, 1993, p 35).

To illustrate and support this claim he adduces the following example:
Melissa made herself a mask and cape; that will be her costume.¹

Nunberg's point is that when 'that' is used indexically, it does not invariably refer to the demonstratum. The thing, or person, pointed at may be taken as representative of something else. He comments that it is possible to point to a baseball player, say, while uttering 'that' and make some comment on baseball, rather than on the player himself:

That's what we should play at recess.

He claims, however, that anaphoric 'that' does not pick out an index and therefore the relation between index, interpretation and classificatory component is not available for exploitation. He further claims that in consequence anaphoric 'that' cannot express propositions analogous to that expressed by indexical 'that' in [73]. This claim is apparently borne out in [75].

??Every girl who brought a picture of her favorite athlete wanted to play that [= the athlete's sport] at recess.

Now, two quite separate, but somewhat confusing, claims are made in the extracts quoted above which - if I read Nunberg correctly - may be reduced as follows:

(i) When a pro-term (i.e. an indicative term or expression) is used non-indexically (i.e., anaphorically), it does not pick out an index.

(ii) The picking out of an index is a pragmatically determined function of indexically used third person pronouns; that is to say, with respect to pro-terms that do not have an intrinsic deictic component, the picking out of an index is not semantically constrained.

¹ I am continuing the practice of retaining Nunberg's own numbering, placed in square brackets to distinguish it from my own.
It is these conclusions concerning the use of pro-terms - both those that do and those that do not have an intrinsic deictic component - that I want to investigate in this chapter. Indeed, there is something slightly odd about these claims, because if a deictic component is an encoded semantic feature of expressions such as 'that', say - and Nunberg claims that it is - and if the function of a deictic component is to pick out an index - and this also is Nunberg's claim - then it is hard to see how, or why, it fails to pick out an index in examples such as [71] above. Alternatively, if the deictic component of any such term does fail to pick out an index in anaphoric contexts, then some explanation of what function this component does serve in such contexts is needed.

Finally, if it should turn out that the deictic component of terms such as 'that' does, after all, select an index in its anaphoric use, then there should be no reason to suppose that third person pronouns do not do so also. Strong indexicality may therefore - contra Nunberg - turn out to be a constant property of the relevant expressions themselves, rather than being no more than a property of one particular use. I shall, however, approach the question from the other direction, and first argue that third person pronouns do indeed select indices in their anaphoric uses. From this it might plausibly be concluded that all other anaphorically occurring pro-terms, including 'that', do the same.

Now whether or not Nunberg is intending to highlight the semantics/pragmatics distinction when he asserts that 'strong indexicality is sometimes a property of the uses of expressions rather than of the expressions themselves' is not clear, because even if it can be shown that 'he', say, invariably picks out an index, this might still turn out to be a pragmatically, rather than a semantically, constrained operation.

Indeed, I shall argue that although Nunberg is mistaken with respect to (i) he is probably correct - albeit for the wrong reasons - with respect to (ii). I shall discuss (ii) first.
1.1 Semantics or pragmatics?

With respect to point (ii), even if I am able to demonstrate that anaphorically occurring third person pronouns do indeed pick out indices, by itself this will not constitute adequate evidence to support a claim that the selection of such an index is semantically constrained for all pro-terms, even those that do not have a semantically encoded deictic element. It is clearly a possibility that picking out an index is just what all pro-terms, including third person pronouns, invariably do. There is no obvious reason to suppose that such an operation should be semantically - or perhaps metasemantically - indicated.

In addition to this rather general argument, there is a far more compelling reason for supposing that the requirement that a third person pronoun should pick out an index is not a part of that pronoun's semantic structure. For the purposes of this argument, however, let it be assumed that such a requirement is a semantically encoded feature of all such pronouns. What exactly does this entail?

It seems that whereas Recanati claims that all singular expressions incorporate the semantic feature REF, it is now being suggested that every pro-term that does not have a linguistically encoded deictic component incorporates a semantic feature - let's call it 'IND' - that identifies it as an index-seeking term. On one dimension this is a much broader claim than that made by Recanati with respect to REF, as it applies across the board to all the functions of the relevant terms, although there may not be many such. It is not, therefore, vulnerable to the same objections as those raised against REF in chapter two as the question of cross-functional ambiguity does not arise. Nonetheless, intuitively the suggestion seems hardly more attractive than Recanati's suggestion. Furthermore, it is not unproblematic. Incomplete, or improper, definite descriptions² may also function anaphorically, as is demonstrated in (1) below, and it is difficult to see how such expressions could incorporate the semantic/metasegmental feature IND or anything resembling it.

(1) I hope [the plumber]$_m$ remembers to bring the new taps; [the wretched man]$_m$ is so forgetful.

The question is this: Into which of the three lexical items that comprise the anaphoric description 'the wretched man' would the semantic feature IND be incorporated? The simple and obvious difficulty is that if it were incorporated into any one of them that particular item would necessarily be homonymously ambiguous.

Nonetheless, in (1), the incomplete or improper description 'the wretched man' is referentially dependent on the antecedent description 'the plumber', but the anaphoric description does not refer to this antecedent, rather it denotes whatever 'the plumber' denotes. That is to say, its interpretation is mediated via this antecedent, and the mechanism of deferred reference, or interpretation, would seem to be in operation.

Furthermore, bare plurals - or rather plurals lacking a determiner - and other plural descriptions also frequently occur anaphorically. As Cumming and Ono point out, such a usage is particularly prevalent in reports directed at the consumer. This they illustrate in example (2), which is extracted from an article headed 'Clothes Dryers'.

(2) In general, [top-of-the-line dryers]$_j$ (and [some mid-priced models]$_j$) have a larger drum and provide additional options not found on [inexpensive machines]$_j$.

(adapted from Cumming and Ono, 1996, p 73.)

Now, the NPs 'some mid-priced models' and 'inexpensive machines' are, in this context, as descriptively inadequate as are the descriptions 'the plumber' or 'the wretched man'. If there is more information to be derived, the reader will want to have access to it. That is to say, if the reader wants answers to the questions 'mid-
priced models of what? or 'what type of inexpensive machines?', he will have to refer back to the antecedent phrase 'top-of-the-line dryers'. However 'top-of-the-line dryers' denotes top-of-the-line dryers, and in normal circumstances the reader will assume that 'mid-priced models' and 'inexpensive machines' are not, in fact, top of the line. Therefore, these anaphoric phrases cannot denote - or refer to - whatever their antecedent phrase denotes or refers to. And Lyons says that they should.

I suggest, however, that this is not a problem. It has been argued with respect to indexical usages that the hearer will continue the inferencing process until an acceptable (relevant) interpretation is achieved. Frequently such an interpretation is achieved early on in that process. However, if it is not the hearer will continue to derive further inferences until an acceptable interpretation is reached. This does not, of course, mean that the process might last indefinitely. If a coherent and relevant interpretation is not achieved reasonably quickly, the hearer (or reader) will simply consider the utterance uninterpretable. It seems to me that the same line of reasoning should apply equally to anaphoric interpretation. Thus, with respect to (2), the reader should derive from 'some mid-priced models' and 'inexpensive machines' the interpretations 'some mid-priced clothes dryers' and 'inexpensive clothes dryers' respectively.

It might here be objected that 'top-of-line dryers' is itself anaphorically, and therefore interpretatively, dependent on 'Clothes Dryers'. In fact, it probably is. The significant point is that the information that 'top-of-the-line dryers' refers to clothes dryers is accessible to the reader and this knowledge will be a factor in the inferencing process that implements the interpretation of the two anaphoric expressions.

It might further be objected that the use of plurals in (2) is not prototypically anaphoric, in that these plurals are not pro-terms but are simply more general categories of which clothes dryers are a sub-type. This is correct. Nonetheless, these plurals are interpretatively dependent on an endophoric antecedent (i.e., they
are anaphoric), and the antecedent expression is not itself the interpretation (i.e., this is an example of deferred reference).

Finally, it is just as implausible to suggest that bare, or incomplete, plurals incorporate the semantic feature IND as it is to suggest that improper descriptions do. If, therefore, improper descriptions, both singular and plural, and incomplete plurals may occur anaphorically and be interpreted according to the mechanics of deferred reference, without any semantic feature decreeing that this should be so, it is difficult to justify the positing of so arcane, but apparently inessential, a feature as IND as an element in the semantic structure of third person pronouns. I shall, therefore, assume that if it is accepted that third person pronouns, say, always do pick out indices even in their anaphoric uses, such invariance may be deemed to be a pragmatically determined aspect of the interpretation of such terms, not a semantically ordained operation.

1.2 Indices and anaphora

With respect to (i) I suggest that Nunberg seriously underestimates the power of his theory.

If the linguistic meaning of pro-terms is constant - as is required by the univocality thesis - then it should be possible to construct a unitary account of how any pro-term is interpreted in any context. Even if individual parameters are differently set with respect to the various functions available to such terms, one would expect to be able to identify fundamental interpretative principles that remain constant across those functions. I suggest that one such underlying principle is the mediation of the interpretation of any pro-term in any context by an index. Parametric variation might then relate to the type of entity that serves as that index.

If this prediction is supported by the evidence, and a workable model of anaphoric and deictic (indexical) reference can be built, then this in turn will contribute to
the credibility of the theory of indexical interpretation developed in chapters two
and three.

It should perhaps be mentioned that the notion of principles and parametric
variation exploited here applies, in the present context, language internally and is
not, therefore, intended as a comment either on cross-language parametric
variation or on the process of first language acquisition. Rather, it is regarded as
a useful tool in the analysis of a specific area of semantic/pragmatic organisation
within a single language.

In order to test the hypothesis that the selection of an index constitutes just such
an underlying, or 'universal', principle we need to ascertain whether there is any
evidence to suggest that anaphorically occurring pro-terms do indeed pick out
indices. Before this question is discussed, however, it should be remembered that
the term 'anaphorically' is here being used very broadly to relate to any term that is
in some sense referentially dependent on an endophoric antecedent. Bound
variables, intra- and inter-sentential 'discourse' anaphora, and E-type pronouns all
fall within this category.

It may be that I am here positing too many categories and that all anaphoric
occurrences of pronouns that are not reciprocals or reflexives or bound variables
should be categorised as E-type. Stephen Neale seems to suggest that this is the
case (although I may have misread him). He then further suggests that all E-type
pronouns are in fact D-type - a term originally introduced by Fred Sommers. However, it should not be necessary to unravel these complexities here and to
attempt to do so would be straying too far afield. It is sufficient to note that I am
using the terms 'anaphora' and 'anaphoric' to cover a very wide range of
phenomena.

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3 Cf Chomsky (1981), and for a recent update on principles and parameters see Chomsky and
4 See Evans (1980). See also Cooper (1979).
5 See Neale (1990), See also Heim (1990).
6 See Sommers (1982)
The further question concerning whether anaphora is always endophoric, or whether 'antecedentless' exophoric anaphora also occurs, will not be discussed until later. For the moment the discussion will be limited to those instances of anaphora where both antecedent and anaphoric term are linguistically represented. For simplicity, the third person pronoun 'he' will be assumed to be a paradigm example of an anaphorically dependent term, and initially the discussion will be limited to straightforward examples of intra-sentential discourse (i.e. non-reflexive, non-reciprocal, and unbound), pronominal anaphora.

Concerning the interpretation of anaphoric pronouns of this type Lyons writes:

> [T]here are ... two different ways of defining the notion of anaphoric reference. We can say ... that the pronoun refers to its antecedent; and this is perhaps the more traditional formulation ... Alternatively, we can say that an anaphoric pronoun refers to what its antecedent refers to. (Lyons, 1977, p 660).

It is generally considered that the second alternative is (more or less) the correct one, although I shall argue that even this needs some modification. According to this alternative an anaphoric pronoun is referentially dependent on some linguistically represented antecedent which itself denotes - or refers to - some entity other than itself. This account seems, in all relevant respects, to be closely analogous to that according to which an \emph{indexical} occurrence of a token of the same pronoun type picks out an index, which then indicates an interpretation beyond itself. This analogy is demonstrated in examples (3) and (4) below. With respect to (3), let it be stipulated that the speaker points to a picture of Rudolph Carnap:

(3) He was the greatest philosopher of the twentieth century.

(from Nunberg, 1993, p 31.).
Nunberg says of the author of *Meaning and Necessity* that he was the greatest philosopher of the twentieth century.

With respect to both (3) and (4) there is a reading according to which the referent of 'he' is Carnap himself. In (3) this interpretation is mediated by the index, which in this case is a picture of the philosopher, and in (4) the interpretation is mediated by the antecedent definite description, 'the author of *Meaning and Necessity*'. However, 'he' has no encoded deictic component, and in its anaphoric use it is not accompanied by a demonstrative gesture either. Furthermore, I have argued against the likelihood of third person pronouns incorporating an index-seeking feature into their semantic structure. So we cannot, apparently, say that it is the deictic component of 'he' that picks out the index 'the author of *Meaning and Necessity*'. Yet this description clearly does mediate the interpretation.

I suggest that this may be explained in terms of the language-user's pragmatic competence. In the case of the interpretation of pro-terms, a part of this competence will be an awareness that such terms - whether or not they encode specific deictic components - must always be interpreted through the mediation of some appropriate entity that is salient in the context of utterance. When a gesture accompanies the utterance of a third person pronoun, this will raise the salience of the demonstratum and that object will then be selected as index. When there is no gesture, the hearer will have to infer from other aspects of the context what the index might be. The text itself is highly salient in the context, and if it offers an appropriate and relevant antecedent, then that antecedent will be selected as the index. As the result of this particular aspect of pragmatic competence is to ensure that indices are selected by pro-terms in all contexts, I shall call it the 'pragmatically controlled deictic component' (PDC).

If the context is appropriately modified, then the pronoun as it occurs in both (3) and (4) may also have attributive readings. Let it be stipulated, for example, that the speaker of (3) knows nothing whatever about Carnap, is unaware that he wrote *Meaning and Necessity*, and does not recognise his picture, but has been told - by
Nunberg perhaps - that the man shown in that picture was the greatest philosopher of the twentieth century. The speaker then passes on this information, in the manner in which he received it, by indicating the picture while uttering (3). With respect to a context such as that described, the attributive readings of (3) and (4) might then be glossed as in (5) and (6) respectively.

(5) The man represented in this picture, whoever he is/was, was the greatest philosopher of the twentieth century.

(6) Nunberg says of the author of *Meaning and Necessity*, whoever he is/was, that he was the greatest philosopher of the twentieth century.

Michael Lockwood points out that being able to add the phrase 'whoever he is' (or 'was') to a definite description 'is only a necessary, not a sufficient condition of a term's being used attributively'. He correctly observes:

If one espies a stranger in one's favorite bar, then it will be entirely appropriate to say (nodding in his direction) "The tall man by the door, whoever, he may be ...," even though "the tall man by the door" is intended referentially. (Michael Lockwood, 1975, p 483, fn 16).

Nonetheless, I suggest that the addition of this clause is indicative of an attributive reading in the present context. Furthermore, it seems to me that the attributive reading represents the fundamental interpretation of both (3) and (4), and indeed of all definite descriptions, the so-called 'referential' reading being simply an effect of the 'centrality' - i.e. easy accessibility - of the uniquely identified individual, whoever that may be, who satisfies the description. However, I shall not pursue this issue further.

On the other hand, I do wish to stress the fact that attributive, or general - as opposed to singular - readings are indeed available to both indexical and anaphoric 'he'. Furthermore, Nunberg has shown that, with respect to indexical
usages at least, such readings are made possible by means of deferred ostension. It seems to me that a similar situation obtains with respect to the anaphoric use of 'he' in (4). That is to say, with respect to (4) the interpretation of 'he' is determined by reference to whatever interpretation - or interpretations - are accessible to the antecedent description.

Further examples demonstrating this point may be readily adduced. Consider (7) and (8) below. Let it be understood that while uttering (7) the speaker indicates a copy of *The Seven Pillars of Wisdom*.

(7) He died in mysterious circumstances.

(8) [The British officer who led the Arabs against the Turks] was a tragic figure and he died in a motor-cycle accident.

With respect to each of these examples also, two readings are available. Again I suggest that the fundamental interpretation in each case is general and attributive, and that the more specific reading according to which Lawrence of Arabia is the referent is no more than an effect of centrality. The significant point also remains the same, as in the case of (7) the interpretation is mediated via an index, which is the book indicated by the speaker, and in the case of (8) the interpretation is mediated by the antecedent definite description, which I suggest is analogous to mediation by an ostended index. It seems, therefore, that parametric variation may be demonstrated by the difference in the type of entity picked out to serve as the index.

In examples (3) and (7), where there is overt gestural demonstration, the index is in each case an *exophoric* entity. In (4) and (8), on the other hand, where 'he' occurs non-demonstratively, the index is an *endophoric* antecedent.

The rules governing the parametric variation of interpretatively mediating indices may not, however, be quite as simple or as straightforward as this implies. When there is overt, gestural, demonstration, then the non-linguistic entity thus ostended
is invariably the index. However, there is considerable disagreement concerning what may fill the role of the antecedent (index) in all occurrences of anaphora. If exophoric, or 'unheralded', anaphora is possible, for example, what type of entity must the 'antecedent' of such an apparently antecedentless term be? In fact, as was seen in chapter four, some writers argue that in such cases the role of antecedent may also be filled by a salient, and possibly physically present, exophoric entity. It may, indeed, turn out that with respect to indices the parametric variation between different types of anaphora is more clearcut than is that between certain anaphoric and demonstrative uses.

For the moment, however, it is sufficient to note that examples such as (3) and (4) and (7) and (8) present prima facie evidence that anaphoric interpretation is also deferred, and that it is deferred in a manner analogous to the deferred interpretation of indexicals.

2. Terminology in the extended model

In chapter four, I made certain stipulations concerning nomenclature, but unfortunately there exists considerable terminological confusion in the literature in general, beyond that discussed with respect to Nunberg's usage, and for the sake of clarity revisions will now have to be made to my own usage. Furthermore, with respect to indexicality and anaphora, the confusion is not entirely terminological, but also encompasses matters of fact concerning how these two functions should be distinguished from each other. An extreme view concerning not only the necessary conditions of anaphora but also its distribution is described by Reboul:

The referential account of pronouns makes a strong distinction between first and second person pronouns and the third person pronouns (he/she), the first two being seen as deictic, while the last is seen as anaphoric. The anaphoric/deictic distinction amounts to this: deictic pronouns determine

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7 See Greene, Gerrig, McKoon, and Ratcliff (1994).
their referents directly in the situation of discourse ... while anaphoric pronouns determine their referents indirectly through an antecedent, that is through a linguistic expression which has occurred previously. (Reboul, 1992, p 169).

With respect to anaphora, the position here described seems to be that third person pronouns are always anaphoric and that anaphora always requires the presence of a co-textual linguistic antecedent. It is interesting to note that Reboul comments on the deferred nature of anaphoric interpretation without, however, being aware of its full significance as she denies such deferred interpretation to deictic (indexical) uses.

In response to various aspects and versions of the extreme view described above, Cornish writes:

... I would like to show... that, contra Reboul ... and others, 'EXOPHORA' falls under the heading of anaphora proper and not prototypical deixis...

(Cornish, 1996, p 20).

That is to say, Cornish denies that a co-textually present linguistic antecedent is a necessary feature of the anaphoric relation. He also, quite properly in my view, rejects the suggestion - also expressed by Mühlhäusler and Harré (1990) - that third person pronouns can only be anaphoric:

I would take issue with Mühlhäusler & Harré, however, in not viewing only first and second pronouns as indexical ...

This is surely correct. Indeed, it is somewhat surprising that anyone should think otherwise. However, my main purpose in quoting these particular extracts is to demonstrate that terminologically there is still a lot to sort out. Both Reboul and Cornish use the term 'deictic' or 'deixis' to mark those usages which I have defined as indexical in chapter four, although - somewhat confusingly - in the final
extract quoted above Cornish appears to use 'indexical' in much the same way as I have used it. However, there is yet another complication. As will become apparent from the next extract, Cornish's usage of the terms 'indexical' and 'indexicality' does, in fact, differ somewhat from my own, and from that of Kaplan, Recanati, and Nunberg, on whose usage mine is based:

... it is clear that anaphors of all kinds have the property of indexicality, of signifying and referring in terms of some earlier or later sense and/or reference made available via the context. (Cornish, 1996, p 23).

Thus, for Cornish, anaphoricity is seen as a sub-type of indexicality rather than as a distinct and separate function. Clearly, this does not conform to Nunberg's usage. This is demonstrated in a passage already quoted above, and reproduced again for ease of reference:

Unless we are prepared to suppose that the indexical and anaphoric uses of third-person pronouns involve homonyms, then we have to allow that strong indexicality is sometimes a property of the uses of expressions, rather than of the expressions themselves. (Nunberg, 1993, p 33).

From this it is clear that Nunberg regards indexicality and anaphoricity as being the defining properties of two distinct, non-overlapping, categories. Cornish, on the other hand - if I read him correctly - uses the term 'indexical' to describe all those expressions whose semantic values must be contextually determined, whether this be anaphorically or demonstratively or any other way. Furthermore, it seems to me quite proper that he should do so. Indexicality does, indeed, imply the assignment of contextually determined values to expressions. This being the case, it is unfortunate that Cornish's usage clashes with my own. Nonetheless, the usage I have adopted may also be defended. Demonstrative occurrences of pronouns such as 'he', which Cornish would call 'deictic', are such that their interpretation requires the picking out of an index and it does, indeed, seem sensible on the one hand to call an expression that picks out an index an
'indexical', and on the other to withhold the description 'indexical' from all those expressions which do not pick out indices.

However, it has been suggested above that the interpretation of anaphorically occurring pronouns is also implemented via the identification of an index. If this is correct, then there remains no reason why they also should not be categorised as indexical. The difficulty now concerns how the distinction between anaphoric and non-anaphoric uses of the same pronoun type may be marked if the term 'indexical' refers to both.

The obvious solution is to revert to the use of 'deictic' to describe demonstrative uses of 'he' as well as all non-anaphoric uses of 'pure' indexicals such as 'here' and 'I' and 'tomorrow', etc. Such usage is, moreover, widespread - perhaps almost universal - in the linguistic, as opposed to the philosophical, literature. It might, therefore, be sensible to defer to it and call all Nunberg's 'strong' indexicals 'deictics'. This suggestion is, in fact, made by Nunberg himself, but it was not adopted earlier because it is closely associated with his unsatisfactory arguments concerning the postulated category of contextuals. It was for the non-index-seeking members of this latter category, redefined, that I wished to reserve the description 'deictic' or 'purely deictic'.

Indeed, the distinction between Nunberg's strong indexicality and pure deixis remains an important one, and in order to preserve this distinction I shall redesignate the former function 'deferred deixis'. This is the term that will be used from now on, and for convenience it will be reduced to 'd-deixis', and 'pure deixis' will become 'p-deixis'. With respect to the latter function the question now arises concerning whether p-deictics are also indexical in the sense used by Cornish. I shall designate this general type of indexicality 'indexicality₂' to distinguish it from Nunberg's strong indexicality, which may be thought of as 'indexicality₁', although I shall not use this term again.
Initially it might seem that indexicality, that is to say the function of determining a semantic value in a context, is intimately linked to indicative meaning. It has, for example, been argued that it is with respect to the indicative element in the meaning of d-deictics and p-deictics that the semantic value of such expressions is contextually assigned. In direct contrast to this the linguistically encoded descriptive meaning of an expression may be assigned a value independently of context, provided that meaning is complete. 'Cat', for example, may be assigned the context-free value CAT. That is to say 'cat' denotes the property CAT. However, 'the cat' cannot be assigned the value of a particular unique cat until the identity of that cat is determined by the context. I would not, however, want to say that the meaning of 'the cat' is indicative, as the problem lies not in the type of meaning, but in the quantity. 'The cat' simply fails to give sufficient information. Therefore, we might say that 'the cat' is indexical.

The availability or lack of availability of context-free semantic values may, therefore, be taken as diagnostic of the distinction between (complete) descriptive meaning and indicative meaning. I suggest that this is implied by Recanati's distinction between truth-conditional relevance and irrelevance, although clearly the two oppositions are not equivalent, as according to the above criteria truth-conditionally relevant meaning may also be descriptively incomplete, and descriptive incompleteness is also a precondition of indexicality. This being the case, a great deal of language use may turn out to be indexical.

Finally, this notion of descriptive incompleteness also applies to d-deictics and p-deictics, both of which have partially descriptive meanings, but in neither case is that descriptive meaning sufficient to implement context-free semantic value assignment. I conclude, therefore, that p-deictics are indexical.

It now seems that there are at least three (there may be more) well-defined classes or areas of indexicality: deferred deixis; pure deixis; and anaphora. It should also be clear that the distinction between indexicality and pure deixis defined in chapter four is, in fact, that between d-deixis and p-deixis, while indexicality
subsumes both functions. Furthermore, it should also be apparent that strong indexicality, which I shall now call S-indexicality to distinguish it from Nunberg's more limited use, subsumes both anaphora and d-deixis, but excludes p-deixis. These relations are shown in table I.

<table>
<thead>
<tr>
<th>INDEXICALITY_2</th>
<th>S-INDEXICALITY</th>
</tr>
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<tbody>
<tr>
<td>ANAPHORA</td>
<td>D-DEIXIS</td>
</tr>
<tr>
<td></td>
<td>P-DEIXIS</td>
</tr>
<tr>
<td></td>
<td>DEIXIS</td>
</tr>
</tbody>
</table>

The definitions of pure deixis (PD) and indexicality (I) presented earlier may now, therefore, be re-written as:

**PD**  pure deixis (p-deixis) =_df a function from the deictic origo to an interpretation

**DD**  deferred deixis (d-deixis) =_df a function from a p-deictically determined referent to an interpretation

The problem with **DD** is that it fails to indicate that d-deixis is, in fact, a two-tiered function. However, when definition **PD** is also taken into account, the first tier of the function of d-deixis becomes apparent. That is to say, the deictic component of d-deictic expressions is, itself, p-deictic. The second tier is expressly defined.

A provisional definition of indexicality_2 might be:

**Prov.I_2**  indexicality_2 =_df a function from truth-conditionally irrelevant meaning to an interpretation
However, this is not quite right as it excludes anaphorically occurring improper definite descriptions, which appear to be not only indexical in Cornish's sense, but also - in virtue of the fact that they pick out indices and their interpretation is deferred - strongly indexical in Nunberg's. Indeed, irrespective of their anaphoric function, Stephen Schiffer includes improper descriptions in the category of indexicals, although which level of indexicality Schiffer is referring to is uncertain:

... I am content to construe the class [of indexicals] broadly, so that it includes "improper" definite descriptions, ... as well as pronouns, demonstratives pronouns and phrases, and substantives such as 'today' and 'yesterday'. (Schiffer, 1981, p 43).

How, therefore, might the definition of indexicality be rewritten so as to include such descriptions and certain anaphorically occurring plurals? It seems to me that as all the indexically functioning expression types so far identified have some element of descriptive meaning, the reference to truth-conditional irrelevance may be dropped and be replaced by reference to the more comprehensive notion of descriptive incompleteness. I therefore suggest:

$$I_2 \quad \text{indexicality}_2 =_{df} \text{a function from descriptively incomplete meaning to an interpretation}$$

This assigns to 'indexicality' scope over an extremely broad domain, but I do not see this as an undesirable consequence, as it conforms with much of the thinking prevalent in current research in linguistic communication. There remains one further operation, or function, to be defined - anaphora. A frequently suggested distinction between anaphora and d-deixis is that anaphora always has an endophoric antecedent, or index, whereas d-deixis never does. That is to say, the distinction might be claimed to lie in the type of index selected. However, there

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is considerable opposition to this view, which has already been briefly discussed in chapter four, so although it still seems to me that a distinction based on index type might be a useful one to exploit, it might be widely resisted as a definition of anaphora.

Another apparent distinction between d-deixis and anaphora is that the interpretation of an anaphorically used expression does not rely on relativisation to an element in the deictic origo, whereas - not surprisingly - the interpretation of both types of deictic usage does. As a first approximation, therefore, anaphora might be defined as:

\[ \text{Prov.A} \quad \text{anaphora} =_{df} \text{a function from a contextually determined entity to an interpretation} \]

This omits all reference to the deictic origo, which is as is required, but it is hopelessly vague and far from satisfactory. Firstly, it fails to indicate that anaphora is essentially a relation between a descriptively incomplete term and some kind of contextually salient antecedent. Secondly, it fails to indicate that anaphora is a function not only from but also to a contextually determined entity. That is to say, Prov.A fails to indicate that anaphora is a two tiered function. As Prov.A is analogous to DD, it might be thought that if DD is acceptable then so should Prov.A be. However, whereas with respect to DD ignoring the tiered structure of deferred reference is arguably acceptable, because PD defines the first step, the same cannot be said with respect to the definition of anaphora, and the first stage must, therefore, be included in the definition. I therefore suggest:

\[ \text{A} \quad \text{anaphora} =_{df} \text{a function from a descriptively incomplete expression to a contextually determined entity and from there to an interpretation} \]

Ultimately, definition A will be further modified. However, this cannot be done until after further discussion. Indeed, it may be that all of the above definitions would benefit from some revision. However, their purpose is to show how, if the
model of indexical (d-deictic) interpretation developed in chapter three is adopted, that model might be extended to accommodate all the functions of pro-terms. They are also intended to clarify the revised nomenclature. I suggest that in their present form they satisfy both these requirements, and - with the exception of definition A - further revisions will not, therefore, be attempted.

Finally, S-indexicality may be described as an operation rather than defined as a function:

\[ S-I : \text{the mediation of the interpretation of an indexical expression by an index} \]

3. Deixis and anaphora

Although the definitions in the previous section purport to distinguish the various functions of indexicality, it should be noted that definition A does not, in fact, exclude d-deixis. However, this may be as it should be. D-deixis and anaphora may turn out to be closely integrated, overlapping, functions, and the best way to investigate this possibility would be to work through the interpretation of one or two anaphorically occurring demonstrative or pro-locative expressions.

3.1 Deixis in anaphora

Pro-locatives and demonstratives, both pronominal and adjectival, have linguistically encoded deictic components. Such components will, of course, contribute to the selection of the appropriate index in a context. Thus, the deictic component of 'this', say, indicates proximality. However, in certain contexts, some additional, non-linguistic, gesture may also be required to demonstrate just which proximal entity is to be selected as index. When 'this' occurs anaphorically, however, as it does in Maes and Noordman's example presented below as (9), no such gesture is either required or possible.
Once upon a time there was a prince. This prince/That prince ... (from Maes and Noordman, 1995, p 255.)

How might the interpretative procedure of 'This prince' / 'That prince' be analysed? I have argued that, in principle, the interpretation of anaphorically occurring expressions must follow the interpretative procedure of d-deixis. Thus, as a first step, the deictic component of 'That prince', say, must pick out an index. As there is no accompanying gesture, and indeed no physically present and salient prince to be gestured at, the hearer will presumably seek the index in the accompanying text, and 'a prince' in the antecedent clause will be selected. I shall make no attempt to describe the cognitive processes that determine the hearer's selection; it is sufficient for current purposes to assume that such a selection is made. That is to say, my purpose here is to describe the procedures of anaphoric interpretation, not to describe the cognitive processes that implement the establishment of the anaphoric relation.

Somewhat confusingly, and despite the anaphoric use, the deictic component of 'that' still indicates distality. This is inevitable, as DISTAL is, after all, a semantic feature of 'that'. We do not yet know, however, what is being described as being distal from what. Let it be assumed for the moment that in its demonstrative use the deictic component of 'that' establishes a relation of distality between the spatial, or temporal, component of the deictic origo, i.e. the place or time of utterance, and the demonstratum - the index. (I shall later modify this view.) Is this also true of the anaphoric use?

Now, if we assume, as I think we should, that anaphoric interpretation is precisely analogous to d-deictic interpretation, then we must also assume that it is the distality of the antecedent - the index - that is marked as it relates to some element in the deictic origo. In the case of a spoken text, it seems likely that that element will be the temporal component of that origo. That is to say, if (9) is spoken, then the utterance of 'a prince' recedes in time not in space. In the case of a written text, we might want to say that the relation is a spatial one, although it
might also be argued that consideration of the time taken in writing or reading the text will justify the interpretation of the relation as being a temporal one. These suggestions will also be modified later.

Of course, the speaker might, as acceptably, have chosen to use the anaphoric 'This prince', thereby indicating the proximity of the antecedent-index 'a prince'. But this is a subjective decision, which is also a reflection of demonstrative uses, where either 'this' or 'that' may be used to denote objects that are relatively proximal in space. However, once an object is beyond a certain subjectively determined distance most speakers will find that 'this' ceases to be an acceptable option and 'that' is preferred. A similar phenomenon may be observed in anaphoric uses of inherently deictic expressions. If 'a prince' is uttered at the start of a long discourse and the anaphoric reference occurs towards the end of that discourse, the preference of 'this prince' over 'that prince' becomes less likely, although - depending on idiolect - not impossible.

Finally, according to this analysis it is not the distality of the interpretation, or referent - the prince himself - that is indicated. Only the classificatory component of an S-indexical expression, whether it occurs anaphorically or d-deictically, predicates properties of the referent. The deictic component relates exclusively to the index. Therefore, there is no sense in which the prince of the story is himself indicated as being either distal or proximal, although the classificatory component of 'This prince'/That prince' does relate to the interpretation. It indicates that the referent must be singular, animate, and a prince.

This seems to make good sense, as becomes apparent if Maes and Noordman's example is modified as in (10).

(10) Over a thousand years ago, there was a prince. This prince/That prince ...
Now, 'This' is still acceptable in such an utterance, yet the prince is clearly not proximal. Nor can it plausibly be claimed that 'This' does indicate the proximality of the prince in virtue of deictic shift (see chapter four), as by stressing the extent of time that has elapsed between the telling of the story and the events about to be recounted the speaker clearly intends to keep - with respect to this utterance at least - the deictic centre in the here and now.

Finally, if anaphora and d-deixis are truly analogous, then GRC' will probably also operate, although as it is a pragmatically determined 'component' this might not be the case. However, as the interpretation procedures of anaphora and d-deixis appear to be closely analogous, I shall assume that they are analogous in this respect also. In this case GRC' will require that some singular, animate, prince shall stand in some contextually salient relation to a proximal/distal index. The most salient relation in this case is that of being the denotation of that index.

If this analysis is correct, it would seem that deictic elements may indeed be present in the interpretation of anaphora. Furthermore, although the deictic component of any pro-term is p-deictic, it contributes to d-deictic expressions by selecting an index which in some sense represents, or leads to, the interpretation. It seems to me that this also describes the function of p-deixis when it occurs in anaphora. If this is the case, then the anaphoric occurrence of 'This prince' 'That prince' in Maes and Noordman's example is operationally indistinguishable from d-deixis. Indeed, we may say that in this operational sense it is d-deictic. Furthermore, it seems to me that the two functions cannot be definitively separated. This finding is, in fact, predicted by definition A, which fails to exclude d-deixis.

It is also anticipated by Cornish:

... it would seem bizarre, at the very least, that the complementary and inter-defining procedures of deixis and anaphora should be conceived as operating within such different, and apparently incompatible parameters:
deixis breaking out of language-in-use (i.e. the text) and connecting it with situationally-derived entities ... and anaphora confined within it and involving a purely linguistically-defined relation. (Cornish, 1996, p 21).

Clearly, in (9) the relation expressed by 'That prince' is not 'confined' within the text but reaches beyond it to the 'situationally-derived' deictic origo. The point that Cornish wishes to make, however, relates to the antecedent rather than to the anaphoric term itself. He wishes to argue that the antecedent of an anaphoric term need not be confined within the text either, and that 'exophoric anaphora' is 'a more central manifestation of anaphora than is the endophoric variety' (p 20). I am not yet convinced that so strong a claim is justified, nor is it immediately clear quite what is implied by Cornish's claim, and I shall return to this later. Nonetheless, it is interesting that approaching the issue from a rather different perspective we find some instances of the anaphoric term itself stretching back into extra-linguistic reality before it ever locates its co-textual linguistic antecedent. There is also an interesting corollary. If we look at definition DD again it will now be apparent that this does not exclude anaphora for, as has just been shown, certain anaphoric expressions also relate the index to the deictic origo.

Must it then be concluded that anaphora and d-deixis are indistinguishable? I don't think so. Firstly, although it is by no means generally accepted that the presence of an endophoric antecedent is a necessary condition of anaphora, it is certainly a sufficient one, whereas it is neither a necessary nor a sufficient condition of d-deixis. Secondly, although 'This prince'/ 'That prince' are d-deictic in (9), they are not demonstrative. Thirdly, if 'this prince'/ 'that prince' are uttered with an accompanying demonstration but without an endophoric antecedent they are d-deictic, but they are not anaphoric. Furthermore, although there now appear to be two non-demonstrative uses of 'this' and 'that', an anaphoric use and a non-demonstrative d-deictic use, these two uses invariably coincide. In other words, non-demonstrative d-deictic uses cannot occur unless they are also anaphoric and the non-demonstrative d-deictic use is always subsumed by the anaphoric use.
Therefore, it can be concluded that 'This prince' / 'That prince' in (9) are primarily anaphoric. There are also two d-deictic uses of these same two terms - demonstrative and non-demonstrative, but these never coincide. However, they may occur simultaneously as will be shown in the discussion of (11) below.

3.2 The semantics of distality and proximality

It might be thought that 'here' and 'there' would pattern similarly to 'this' and 'that'. However, it is not clear that they do and I am not out of the woods yet. In chapter two I used an example from Lyons, reproduced again below as (11).

(11) I was born in London, and I have lived here, / there, all my life.
(from Lyons, 1977, p 676.)

Lyons claims that 'here' / 'there' are 'simultaneously deictic and anaphoric':

... since the selection of one expression rather than the other is determined, under normal conditions of utterance, by whether the speaker is in London or not at the time. (p 676).

Although this suggestion was legitimately supportable within the theoretical framework that was assumed in chapter two, as the index-seeking nature of anaphora and d-deixis had not yet been introduced, and the distinction between deictic and classificatory components had not been identified or defined, I suggest that it is no longer wholly acceptable. If the analysis of deferred interpretation, which has now been proposed is invoked, the problems may readily be illustrated.

Irrespective of context or function, the deictic component of both 'here' and 'there' indicates that a certain relation must exist between the deictic origo and a contextually determined index. In the case of demonstrative d-deixis, this index is the demonstratum; in the case of anaphora it is the antecedent. Now 'here' and 'there' differ from 'this' and 'that' in that they have autonomous non-demonstrative uses which function quite independently of anaphora. More accurately, 'here'
most certainly has an independent non-demonstrative d-deictic use, although the position may be less clearcut with respect to 'there'. Kryk explains:

The speaker can employ demonstratives by pointing to an entity not necessarily present at the moment of utterance. Bühler labelled this instance *deixis am phantasme* and it can be compared with Fillmore's symbolic use ... (Kryk, 1987, pp 59-60).  

Kryk gives the following example, originating with Fillmore, of symbolic 'there' occurring in a telephone conversation.

(12) Is Jimmy there?

Well, perhaps this is a demonstrative use, although it seems to me that it does no more than indicate, non-demonstratively, some place that is marked as being other than the place of utterance, and that contextual factors help to identify that place as being wherever the hearer is. However, I won't pursue this point. Whichever way it is decided, it is plausible to argue that 'there' in (11) indicates that the linguistic antecedent 'London' is distal with respect to the deictic origo. This must be the case if 'there' is indeed anaphoric. The fact that 'there' presupposes spatial, rather than temporal, distality is not a problem as the spatial element of 'there' is a feature of its *classificatory* component, while all that the deictic component, which relates to the index, indicates is distality.

In fact, I now wish to abandon the attempt to ascertain whether anaphorically related distality and proximality is spatially or temporally determined. This is because although the understanding that 'there' relates to a distal *location* is implemented by the semantic structure of this pro-locative term, that structure is complex and comprises two distinct morphemes, one denoting distality, the other denoting location. Further information, concerning the distality of what with

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9 See Bühler (1934) and (1982), and Fillmore (1975).
respect to what and the determination of the location, is then inferred from the context.

As it is only the deictic component (the distality morpheme) that relates to the antecedent-index, the speaker's intention may well be to convey no more than a sense of undetermined distality relative to the combined space-time element of the deictic origo. The classificatory component will then indicate that it is a location that features in the interpretation.

Now, with respect to those utterances in the interpretation of which the index and referent do coincide - as they do when the index reflexively indicates itself - distality and location come together, and 'there' may be glossed as 'at some distal location', but this combined sense is not the 'meaning' of 'there'. Indeed, I suggest that the separate elements of the encoded meaning of all pro-terms is, in fact, disjoint and that when index and interpretation do not coincide there is no grammatical or semantic reason to suppose that a distality morpheme, say, should be infected with the properties of a location morpheme.

Analogously, the proximality and distality morphemes in 'these' and 'those' respectively are not infected with the semantic properties of the plurality morphemes which they also incorporate. This is illustrated in Nunberg's [43]:

[43] These are over at the warehouse, but those I have in stock here.

Conversely, the plurality morpheme in 'these' and 'those' in [43] is not infected with the semantic properties of the proximality and distality morphemes. This is why it makes sense to indicate a single proximal or distal plate with a plural term, and also makes sense to refer to proximal or distal plates with terms that indicate distality and proximality respectively. For this reason, I suggest that with respect to the occurrence of 'there' in (11) it is only in some indeterminate sense that distality is predicated of the antecedent term 'London'. That is to say, it is not specified whether the distality is spatial or temporal.
Finally, GRC will indicate that there is some salient relation between the distal antecedent-index and some entity that satisfies the classificatory component. As the antecedent-index is 'London' and the classificatory component indicates that the interpretation must feature a location, the relation between 'London' and LONDON, which is its denotation, will be highly salient in that context. London will, therefore, be selected as the interpretation of 'there' in (11). This conclusion should not, however, be confused with the direct referentialist claim that objects are entered into propositions - a suggestion which I find unintelligible - rather it signifies that 'there' in (11) refers to LONDON the exophoric, extra-linguistic object and not to the endophoric, linguistic object 'London', and that it does so through the operation of deferred reference.

3.3 Coincident and simultaneous functions

Interestingly, according to such an analysis 'there' in (11) is, indeed, simultaneously, or as I prefer to express it, coincidentally d-deictic and anaphoric, in the sense described with respect to 'That prince' in Maes and Noordman's example, but this is not the sense intended by Lyons. Is it also deictic in Lyons' sense? That is to say, does 'there' in (11) indicate that LONDON itself is distal as well as indicating that the antecedent-index 'London' is? It seems probable that it does, as by the use of 'there' the speaker does, indeed, indicate that she is not in London at the time of the utterance. However, if this is the case, then London itself must be the index reflexively indicating itself, and this can only be explained if it is argued that London is first 'raised to salience', as described by Lewis\(^{10}\) (see chapter two), by the utterance of 'London' in the first clause. The objections that were raised against Lewis's notion of raising to salience in chapter two do not hold here, as I am not suggesting that 'there' is directly referential.

If this is the case, then 'there' in this example is doubly deictic. That is to say it is both anaphorically (coincidentally) and independently (simultaneously) d-deictic,
with both deictic 'pointings' originating in the same deictic origo. I don't think this is a problem, because it seems to me that in interpreting an utterance such as (11), the hearer does have a fleeting sense of doing two things at once, or of being directed in two directions simultaneously. He is certainly aware that he must seek the interpretation of 'there' in the antecedent clause. He is also probably aware - again in some very fleeting sense - that in addition to making this textual association, the speaker has also stepped outside the text to place herself at a distance from the actual place LONDON, and this, I suggest, is accurately reflected in the duality of the interpretation procedure.

On the other hand, whatever is the fact of the matter with respect to 'there', it is difficult to see how 'here' can express any relation at all between the antecedent term and the deictic origo. It is not disputed that d-deictic 'here' has both a demonstrative and a non-demonstrative use. When it is used non-demonstratively, the proximality expressed by the deictic component is taken to be absolute, and the index will, therefore, always include the deictic origo. However, pragmatic factors will determine how large, or small, an entity that origo-containing index is. It may indeed extend indefinitely.

Thus, non-demonstrative 'here' may select the speaker's own physical presence as the index, or it may select the room, the house, the town, the country, or even the universe in which the speaker is located at the time of utterance. When it is used demonstratively, on the other hand, 'here' may select as its index any ostended object, and that object, which may be as small as a dot on a map, or considerably larger, will not include the speaker. Notice that in this case also the suggestion is that 'here' selects an object, not a location, as its index. The sense of location is introduced by the classificatory component. What I am suggesting is that the function of the linguistic, or encoded, meanings of pro-terms - even though these terms are themselves represented as being complex semantic structures - is essentially extremely simple, with the bulk of the work being done by pragmatics.
Now, anaphoric utterances are, by definition, non-demonstrative. Therefore, anaphoric 'here' can only select as index some entity that is situated at the space-time-person origo, which is centred on the actual utterance of 'here'. In other words, the selected antecedent, in this case presumed to be 'London', must be in a relation of absolute proximality with that origo. The antecedent-index might, of course, be extended to include the entire origo-containing utterance, but then that entire utterance would be the index, and this is not what we want. Indeed, it is difficult to see how, if 'London' is to be selected as index, those parts of the utterance that intervene between 'London' and non-demonstrative 'here' can be excluded. In fact, I don't believe that they can be. This being so, it seems that if the analysis of d-deixis and anaphora that has been suggested is correct, then 'London' cannot be selected as the index and 'here' in (11) cannot be anaphoric.

I suggest that there is a spatial coincidence, not amounting to either an anaphoric or a deictic relation, obtaining between the place denoted by 'London' and the location of the speaker at the time of utterance. This coincidence is not, however, fortuitous. The speaker, having mentioned that she was born in London decides to add the further information that London is where she still lives. The method she chooses to convey this information is by uttering the non-demonstrative, d-deictic 'here'.

If the hearer knows that the speaker is located in London at the time of the utterance, then the association between 'London' and 'here' is obvious and no further inferencing is required. If, on the other hand, the hearer does not know where the speaker is, perhaps the conversation is conducted over the telephone, or the hearer does not know which town he himself is in then, by invoking Gricean assumptions of co-operation or by assuming that the second clause of the speaker's utterance is relevant, he will probably infer that those two clauses are not unrelated and that 'here' must, indeed, refer to London. I further suggest that with respect to this utterance the cohesive discourse relation that obtains between 'London' and 'here' is one of non-anaphoric reiteration.\textsuperscript{11}

\textsuperscript{11} Cf Halliday and Hassan (1976), chapter 6.
3.4 Anaphora or deixis?

There are, however, problems associated with the above analysis of 'here' / 'there' in (11). In any normal utterance of this sentence 'here' / 'there' would, presumably, be unstressed, and many researchers tend to regard lack of stress as an indication that the unstressed pro-term is not deictic and therefore must be anaphoric. But I have suggested that 'there' in this utterance is doubly deictic - both anaphorically and independently - and that 'here' is exclusively d-deictic and not anaphoric at all. The problem has its roots in the fact that different criteria may be employed to make the distinction between deixis and anaphora. My fundamental criterion for identifying deixis is relativisation to the deictic origo. If such relativisation occurs, then I conclude that the expression is deictic, regardless of whether it is stressed or unstressed.

Unfortunately, this diagnostic may be turned around, and someone might wish to argue that if an expression is not stressed then it just does not mark a relation to the deictic origo. However, not only is such a conclusion distinctly counter-intuitive with respect to the interpretation of 'here' and 'there' in (11), it also ignores the fact that these pro-locatives are intrinsically deictic. That is to say, unless the ambiguity thesis is to be reinstated, it must be accepted that the semantic structure of 'here' and 'there' is constant across functions, and it is surely correct to assume that that structure indicates proximality/distality to the deictic origo.

With respect to anaphora, if the presence of an endophoric antecedent is not to be accepted as a necessary condition, it is possibly even more difficult to determine what might be an identifying criterion. For the reasons outlined above, prosodic features, such as stress, do not seem to me to be a reliable indication of the distinction between anaphora and d-deixis. I therefore tentatively offer the pro-tem default diagnostic that, with respect to the antecedentless occurrences of pro-

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12 See, for example, Yule (1979), and Cornish (1996). For an extended discussion of the distinction between anaphora and deixis see Bosch (1983).
terms, if there is no relativisation to a deictic origo, then any such pro-term is not functioning deictically and may be presumed to be anaphoric. Of course, the problem with this is that with respect to terms such as 'he' and 'she', which have no encoded deictic component, relativisation to the deictic origo may be difficult to establish. Nonetheless, the above default definition would effectively prevent any utterance featuring an antecedentless occurrence of a demonstrative such as 'that', say, from being included in the category of anaphoric utterances.

Before closing this section, I would like to reconsider Nunberg's examples [71], [73] and [75], which were introduced at the start of this chapter, and which are produced again below for convenient reference.

[71] Melissa made herself a mask and cape; that will be her costume.

[73] That's what we should play at recess.

(The speaker is pointing to a picture of a baseball player.)

[75] ??Every girl who brought a picture of her favorite athlete to school wanted to play that [= the athlete's sport] at recess.

Nunberg's claim is that 'demonstratives cannot have deferred readings when they are controlled by contexts other than the context of utterance'. (Nunberg, 1993, p 35). However, I have argued that on this point he is simply mistaken. Furthermore, it has been argued that even when 'that' is used anaphorically it does not lose its d-deictic character, although it ceases to be demonstrative.

Example [71], therefore, presents no problems; [75], on the other hand, is more troublesome. However, the fact that 'that' in Nunberg's [75] cannot felicitously be used to denote a sport, (indeed [75] cannot be uttered felicitously at all) is not because it does not pick out an index, but because the overall interpretation of any utterance of [75] is distinctly odd. This needs some clarification. With respect to anaphora as with d-deixis, the index is not itself the interpretation, but merely
indicates what that interpretation might be. With respect to an utterance of [75], therefore, the denotation of 'a picture of her favorite athlete' is the first possible deferred interpretation accessed. The hearer is then confronted with the putative proposition that that, i.e. whatever is denoted by 'a picture of her favorite athlete' is what every girl wanted to play.

It is hardly to be wondered at if he is stopped dead in his tracks and fails to continue the inferencing process. It is, of course, theoretically possible for the inferencing process to be continued until a coherent interpretation is achieved, and such extended inferencing is, indeed, predicted by the theory of S-indexical interpretation that I have been developing. This is why [75] appears to be semantically anomalous rather than totally ungrammatical. With respect to [73], on the other hand, the index is the picture itself, not a description of the picture, and the interpretation of 'that' in [73] is whatever is represented by that picture. And this readily leads to a coherent interpretation.

3.5 Donkey anaphora and parametric variation

Finally, very briefly, I would like to consider the possibility that a rather more complex variety of pronominal reference - donkey anaphora - might also be fitted into the model of S-indexical interpretation that is being developed here. I shall not attempt to unravel the complexities endemic to this type of anaphora, but will simply assume that the interpretation offered by Neale is the correct one. He suggests that although 'donkey' pronouns must always take their syntactic number from their quantifier antecedents, they are semantically numberless. More precisely, he suggests that such a pronoun stands proxy for a numberless, Russellian, definite description which denotes the 'maximal collection of individuals' which satisfy that description. The notion of 'maximal collection' remains undefined and problematic, and that is the way I shall leave it. My

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15 Cf Sommers (1982): 'wild and indifferent quantity'.
16 But see Lappin and Francez (1994) for a formal semantic solution.
purpose is not to grapple with the problems of donkey anaphora, but rather to argue that - however these problems are in fact resolved - the underlying interpretative procedure for S-indexical utterances is unaltered.

My suggestion is that the syntactic structure indicates that a particular anaphoric pronoun is, in fact, an example of this type of anaphora and that this is sufficient to trigger the accessing of the interpretation that is so very inadequately described above. The entire 'donkey' antecedent clause is selected as the antecedent-index, as it is from this clause that the numberless description is constructed. The 'maximal collection of individuals' are, of course, of the sort that is indicated by the anaphoric pronoun's classificatory component and GRC\(^*\) indicates that some relation must hold between index and sort. Indeed, a highly complex relation does hold between this sort and the antecedent clause. However, the clue to its resolution is to be found in the syntactic structure of the sentence as a whole, not in the semantics of the pronoun. All that is required of that pronoun is that it should select the appropriate index and contribute the appropriate sortal (and quasi-sortal) information. Therefore, even if Neale's solution is not the correct one, the interpretative principle will remain the same. Analogous arguments might be constructed to account for the interpretation of reciprocals, reflexives and bound variables.

If this is correct, then it illustrates the claim made earlier that deferred interpretation may be viewed within a principles and parameters framework. The parameter that varies is the index-type, and in the case of anaphora this type is always syntactically determined. That is to say, whether the antecedent-index turns out to be a simple NP, a QP, or an entire clause, is a function of the syntactic structure of the entire anaphoric utterance. It is not a function of the anaphoric pronoun's semantics.

3.6 The anaphora-deixis continuum

Some pronominal utterances are unmistakably anaphoric. For example, when both an endophoric antecedent and an anaphorically dependent expression are co-
textually present, if that anaphoric term has no linguistically encoded deictic component, then this uncontroversially is an instance of pure, unmixed anaphora. At the other extreme, if a demonstrative, such as 'that', is accompanied by a gesture that indicates a demonstratum and if no possible endophoric antecedent is apparent in the text, then this, equally uncontroversially, is an example of unmixed d-deixis. However, there is a spreading middle ground where the two functions elide and even overlap. This also is remarked on by Cornish:

Evidently, there is a continuum between the two 'poles' of anaphoricity and deicticity on which different indexical expressions can be plotted ... (Cornish, 1996, p 24).

And:

There is not a single dichotomy between two types of pronoun use, but a cline, the crucial factor differentiating each position on the cline being the degree to which the pronoun's discourse referent or its intention is presupposed by the speaker. (Cornish, 1987, p 233).

My criteria for plotting the pro-terms on that cline are significantly distinct from those proposed by Cornish who - in his own words - has a 'more cognitively-oriented conception' than mine of the 'distinction between the operations of deixis and anaphora'. In his description of anaphora he invokes psychological factors such as memory organisation and attention focus, which I have tended to ignore. Nonetheless his approach to the interpretation of anaphoric utterances, in many respects, anticipates the analysis I have just proposed. This approach will, therefore, be discussed - very briefly - in the next section.

4. Pragmatically controlled anaphora

Yule comments:
When Hankamer and Sag 17... used the idea of pragmatic control on anaphoric pro-forms ... they did not investigate the phenomenon of pragmatic control itself in any detail. (Yule, 1979, p 127).

Yule therefore endeavours to fill this gap:

... a distinction should be maintained between what could be termed strict contextual *deictic use* of a pro-form - with paralinguistic modulation - and the *anaphoric use* of a pro-form ... where there is no paralinguistic modulation and the pro-form is one of the least stressed elements in the utterance. (p 128).

He concludes:

Thus, one of the basic features of pragmatically controlled anaphora could be described as the use of a pro-form as a referring expression by a speaker who, without mentioning ... a co-referring linguistic full-form, assumes his hearer can identify the referent. (ibid.)

These and similar criteria for identifying the phenomenon of pragmatically controlled anaphora recur throughout the literature. However, it is not at all clear to me that the absence of paralinguistic modulation to volume, pitch, or stress, is a reliable indication of the absence of deixis. I have, for example, argued that 'here', and 'there' in Lyons' example, reproduced as (11) above, are both deictic (d-deictic) despite the low stress. Furthermore, it still seems to me that identification of pro-term function by index type is a far more reliable diagnostic procedure than is a reliance on pitch, volume or stress. That is to say, I should like to be able to claim that if the index is endophoric, then the pro-form is anaphoric, and if it isn't, then it isn't. This view also has its defenders. Rinck and Bower, for example, write:

17 See Hankamer and Sag (1976) and (1977).
A major linguistic device for establishing coherence in discourse is *anaphora*, which comprises a collection of linguistic forms for referring to concepts introduced earlier in the discourse. (Rinck and Bower, 1995, p 110).

In chapter four, I argued that Nunberg's examples of 'contextual' pronouns' are, in fact, d-deictic, on the basis that an index was selected by some form of minimal, or notional ostension. I made no appeal to prosodic features, and if I had, I maintain they would have been inconclusive. The problem, I suggest, is rooted in a misunderstanding of the process of S-indexical interpretation in general and d-deixis in particular. If it is believed, as it very widely is, that - despite all the evidence to the contrary - in the case of d-deictic utterances the demonstratum is always identical with the referent, then it is easy to understand how - and why - problems arise.

This may be demonstrated with reference to Nunberg's unnumbered example, produced below as (13).

(13) He must be away.

It has been stipulated that this is uttered, late at night outside Ralph's house, when Clovis is seen leaving. The intended referent is Ralph, who is neither ostended nor even present. In chapter four, I argued that either the house or Clovis is notionally ostended and is therefore the index, and that 'He' in (13) not only is indexical (d-deictic) but also refers to Ralph. However, such an analysis is totally unacceptable to anyone who adheres to the traditional view that the thing referred to is identical to the thing ostended, or to anyone who subscribes to the newer thesis of direct reference. Anyone holding such views, who tries to analyse the interpretative function of pronouns in contexts analogous to that of 'He' in (13) is more or less forced to conclude that they are anaphoric, as - according to the theories held - they cannot be deictic.
However, there are problems with the anaphoric analysis also. How can a pro-term be anaphoric when there is no endophoric antecedent for it to be anaphorically dependent on? It is at this point that notions of salience and common memory are introduced and invoked. Finally, in an attempt to refine the distinction between pragmatically controlled anaphora and deixis, appeal is made to prosodic features such as pitch, volume and stress. Indeed, even when pointing gestures are used, if the pitch and stress are low, the utterance is said to be anaphoric. Thus, Cornish is able to assert:

Unstressed third person pronouns, uttered with low pitch, are anaphoric ... they are always accompanied by their user's presupposition that their referent is highly salient (i.e. accessible to the addressee) at the point where they are used. (Cornish, 1996, p 38).

He continues:

The saliency of the referent ... may have been induced by explicit prior mention in the co-text, by an inference triggered by a given mention, or by inference from, or direct mutual perception of, a feature of the shared situational or wider cultural context. Minimally, a gesture (including gaze direction) towards a physically-present feature of the situational context is enough to make that feature salient ... (ibid.).

If these criteria are applied to specific instances of pro-formal use some disquieting results are achieved. Consider again Nunberg's unnumbered goat-painter example, reproduced below as (14).

(14) He certainly knew how to paint goats.

Let us assume that this is uttered by one art critic to another. In Cornish's terms, the referent may, therefore, be presumed to be highly salient to both speaker and
hearer. The speaker is pointing at a painting by Chagall and lays heavy stress on 'goats'. The other critic points to another painting and responds with (15).

(15)  *He didn't know how to paint anything.*

According to the conditions listed by Cornish, 'He' in (14) must be anaphoric whereas, because of the heavy stress with which it is uttered, 'He' in (15) cannot be, and must therefore be deictic. 'He' in (13) will also turn out to be anaphoric. These conclusions seem to me to be somewhat arbitrary. Furthermore, the untalented artist referred to in (15) is not present and it is the painting not the painter that is demonstrated, so reference in this example is deferred, not direct. Therefore the theorist who adopts the criteria described above as definitive of anaphora cannot insist that deictic reference must be direct. Perhaps he doesn't want to. But if he doesn't, why should he want to say that the pronouns in (13) and (14) must be anaphoric, even though they have no endophoric antecedent and the theory of deferred reference supplies a coherent alternative solution?

The point I am trying to make is that a theory of reference must be compatible with other related theories of reference, if the correctness of those other theories is presupposed. Such theories stand or fall together. It is for this reason that I am endeavouring to construct a unitary account of the semantics and pragmatics of pro-formal reference.

4.1 Unheralded pronouns

Greene et al. open their account of such pronouns with an extract from William Faulkner's *The Sound and the Fury*. They explain that the librarian in the text is showing a photograph to Dilsey:

'It's Caddy!' the librarian said. 'It is! Dilsey! Dilsey!'

'What did he say?' the old Negress [Dilsey] said. And the librarian knew whom she meant by 'he', nor did the librarian marvel not only that the old Negress would know that she (the librarian) would know whom she meant
by 'he', but that the old Negress would know at once that she had already shown the picture to Jason. (Greene et al., 1994, p 511-526).

The question is: is 'he' in the above extract anaphoric or d-deictic? The answer to me seems clear. The photograph of Caddy is the index, and 'he' is d-deictic. However, assuming that 'he' is unstressed, if we adopt the criteria suggested by Cornish and Yule, then we must allow that it is anaphoric. It is significant that the salience of the referent, or of some aspect of the context that will in turn increase the salience of the referent, is a feature of Cornish's account. The relevant passage is repeated below:

The saliency of the referent ... may have been induced ... by inference from ... a feature of the shared situational or wider cultural context ...

Therefore, whichever way the decision goes, the practical outcome is the same. A feature of the context, in this case the photograph, 'induces' the saliency of the referent, Jason. That is to say, whether 'he' in the above extract is anaphoric or d-deictic, it turns out that the interpretative procedure is the same. It seems to me that the dispute is now reduced to mere terminological wrangling, and I am more than ever tempted to adopt index type as the definitive criterion for distinguishing between anaphora and d-deixis. This is a particularly attractive suggestion as it has already been argued that index type is criterial in distinguishing between pronominal anaphora, donkey anaphora and bound variable anaphora.

5. Cornish's antecedent-trigger

I noted earlier that Cornish asserts that 'exophora is in fact a more central manifestation of anaphora than is the endophoric variety' and I expressed my own reservations with respect to this claim. However, his conception of exophora is broad and somewhat special. Initially, he discusses examples such as (16) below, a variant of which was discussed in chapter four:
A and B turn a corner and suddenly find themselves face to face with a rather large dog.

A: Do you think it's friendly?

(adapted from Cornish, 1996, p 19.)

Quite clearly 'it' in (16) has no antecedent. If it is anaphoric, as Cornish says it is, then it is an extreme case of exophora. However, Cornish is not, in fact, claiming that it is this type of utterance that is prototypical of anaphora in general. His claim concerning the centrality of exophora (antecedentless anaphora) is based on a rather particular conception of what counts as an antecedent, or conversely, what counts as being antecedentless.

It turns out that the majority of the examples in Cornish's range of antecedentless types are by no means 'unheralded' in the sense that the example from Greene et al. is. His examples most notably include instantiations of (i) 'associative anaphora',\(^\text{18}\) or 'bridging',\(^\text{19}\) (ii) 'anaphoric peninsulars'; and (iii) semantic-syntactic mismatches.\(^\text{20}\)

Type (i) is illustrated in (17) below; type (ii) in (18)) and type (iii) in (19).

(17) We came to a village. The church was pure Romanesque.

(18) George is a flautist, though he doesn't actually own one.

(19) Le ministre de l'Education est en vacances. Elle séjournera deux semaines au bord de la mer. (Kleiber, 1994)

The Education minister (masc.) is on holiday. She (fem.) will spend two weeks at the seaside.

\(^{18}\) Cf Hawkins (1978).

\(^{19}\) Cf Clark (1977) and Matsui (1993) and (1995).

\(^{20}\) Cf Corbett (1979).
(17) and (18) are from Cornish, 1996, p 23; (19) is from p 25.

Cornish argues that the only possible antecedents of the anaphoric expressions in these examples are not genuine antecedents at all. Of (17) and (18), he comments that they illustrate

... well-known types of instance in which the apparent antecedent is not what is providing the means for the interpretation of an anaphor (though it is laying down the parameters, as it were, in terms of which this can be achieved) ... (Cornish, 1996, p 23).

Of (19) he writes that it

... clearly shows that the anaphor is referring via a mental representation induced by its antecedent, rather than by linking up directly with that expression per se ... (p 25).

The problem that he perceives is that the antecedent expression 'Le ministre de l'Education' has grammatical masculine gender, whereas the anaphoric pronoun, 'Elle', is feminine. (Similar examples are raised in chapter two to illustrate the agreement hierarchy posited by Corbett.) In seeking to resolve this difficulty, Cornish does not exploit the semantic and/or pragmatic distinctions that Nunberg draws between deictic, classificatory and relational components, which - I suggest - supply a complete solution to such apparent problems; he prefers to express his solution in terms of mental models. Nonetheless, as I indicated above, his solution anticipates the model of anaphoric interpretation that is developed here from Nunberg's analysis of indexicality.

Cornish suggests that the antecedent of an anaphoric expression should be seen as having two parts: an antecedent-trigger; and an antecedent. The antecedent-trigger is the co-textual 'apparent' antecedent and the antecedent itself is 'the anaphor's full, contextually-determined interpretation, and not a textually-
occurring form'. (p 25). In other words, the antecedent-trigger is the equivalent of Nunberg's index, and the antecedent is the equivalent of Nunberg's interpretation.

It should be noted, however, that this is not quite the way Cornish sees it. That is to say, he does not consider that the anaphoric term selects, or picks out, the antecedent-trigger as its index. Indeed, he asserts that the 'relation between antecedent-trigger and anaphor is indirect'. His suggestion is that the antecedent-trigger simply creates an appropriate cognitive environment - 'a referential space' - and that the pro-term then 'carves out a referent for itself'. Nonetheless, it seems to me that Cornish's suggestion is fundamentally compatible with the model of indexical interpretation that I have been constructing and indeed potentially enriches it by indicating how a further cognitive dimension might be added.

Finally, as indicated above, the majority of Cornish's examples of 'antecedentless' anaphora are not, according to any criteria that I would apply, antecedentless at all. In fact, they supply interesting examples of antecedent-indices that indicate interpretations quite distinct from themselves, thus strengthening the analogy with d-deixis. I have no reservations about allowing that they are, indeed, anaphoric. It seems to me therefore, that as the concept of a Peircean index has proved to be so useful and so versatile, we might indeed do worse than to use this same concept in the final task of distinguishing between anaphora and deixis. I shall therefore succumb to the temptation and rewrite A as AA, with the additional A indicating that the nature of the antecedent is also defined:

\[
	ext{AA } \text{anaphora} =_{df} \text{a function from a descriptively incomplete expression to an endophoric antecedent to an interpretation}
\]

6. Semantic solutions to syntactic problems
At the beginning of this chapter I suggested that if the model of indexicality constructed in chapters three and four is correct, it should be possible to develop from it a model of anaphoric interpretation also. Up to this point, my main
concern has been to demonstrate that it is indeed possible to do this. However, if a model is to be of any use it must be applicable to specific problems within the domain for which it was constructed. If it can contribute nothing towards the resolution of such problems, then it is probably a seriously flawed model.

Cornish suggests that the model is useful in this way, or rather he suggests that his very similar analysis resolves certain problems in the interpretation of anaphora. And this is encouraging. However, there are further unresolved classic difficulties, centering on a mixed set of problem utterances, and it would be instructive to find out if any of these difficulties might now be resolved. The discussions will, however, be very brief.

6.1 Paycheck sentences

(20) The man who gave his paycheck to his wife was wiser than the man who gave it to his mistress.


This sentence, quoted by Neale, but originating with Karttunen, presents a complex problem in variable binding, which I shall not attempt to resolve at that level. I am simply interested in why it is that sentences, such as (20), which defy the interpretations required by their syntactic structure, should be so widely acceptable in certain dialects (or idiolects). (They are not acceptable in mine.) To put it another way, I would like to know how the intended interpretation is accessed.

The difficulty is that the antecedent of 'it' is 'his paycheck' and the 'his' in this antecedent is bound by an NP that denotes a man who is distinct from the man who gave a paycheck to his mistress. The question is: whose paycheck did the man denoted in the second clause give to the woman denoted in that same clause?

If I follow the dictates of my own idiolect, I am forced to conclude that the second man gave the first man's paycheck to his (the second man's) mistress, even though the first man had already given that very paycheck to his own wife. Even I, with my pedantic grammar, can see that this is nonsense. Furthermore, I can interpret the sentence, as it is intended to be interpreted, without difficulty. As a first approximation of how this is done it might be suggested that I, and speaker/hearers like me, reject that first interpretation and continue inferencing until something more acceptable is inferred; and when we reach such an interpretation, we stop. This explanation, however, is too convenient and too general and totally unfalsifiable.

If, however, it is accepted that anaphoric interpretation really is analogous to d-deictic interpretation, then there is another explanation that is more satisfying. According to the model of S-indexical reference that has been developed here, although such reference is always deferred it may be reflexive. Indeed, in the case of d-deictic expressions, it frequently is. That is to say, in the case of d-deictic utterances, it frequently turns out that index and interpretation are identical. However, it has thus far been assumed that in the case of anaphoric utterances index and interpretation are never identical, and it would be more satisfying if it should turn out that this asymmetry between the two referential systems did not obtain.

Now, it seems to me that this gap in the paradigm is indeed filled, not only by paycheck sentences, such as (20) above, but by all utterances of 'pronouns of laziness' or 'sloppy' anaphora.

In (20), for example, the antecedent-index of 'it' is the NP 'his paycheck'. If, rather than observing complex syntactic constraints involving c-command and variable binding, the speaker focuses instead on the semantics of anaphora, she

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22 See Geach (1968).
23 See Reinhart (1983)
might then observe the rule that permits an index of an S-indexical pronoun to indicate itself reflexively. Indeed, it seems to me that this is precisely what happens and that the interpretation implemented by this reflexive function turns out to be a repetition of the index itself. If this is correct, the apparently muddled relations in (20) are not the product of random or unmotivated error, rather they result from the intuitive following of a semantic rule when the syntactic going gets rough.

6.2 Pronominal contradiction

(21) A: The psychologist we met at Macys yesterday just phoned.
    B: He's not a psychologist, he's a psychiatrist.
    (from Neale, 1990, p 201.)

'The psychologist we met at Macys' is the antecedent-index of both 'He' and 'he' in B's utterance, but how can it be interpreted? The standard deferred interpretation of anaphora does not give the desired result in this case, as the gloss (also supplied by Neale) in (22) demonstrates.

(22) The psychologist we met in Macys yesterday is not a psychologist, ...

The best way to resolve this problem is to work through it. As a first step, 'He' selects the antecedent description as index. However, the most likely, first inference, i.e. that the interpretation of 'He' is the denotation of the antecedent-index, is immediately found to be unsatisfactory, as it leads to a logical absurdity. The hearer will, therefore, continue the inferencing. He is assured, in virtue of the information contributed by the classificatory component, that the referent is singular, male and animate. He also infers, in virtue of GRC¹ that the singular, male, animate entity stands in some definable relation to the description 'The psychologist we met at Macys yesterday.' The context then gives him the further information that the singular, male, animate entity that is the referent of 'He' is not a psychologist. This information is not contradictory; it is simply a combination
of classificatory and contextual information. So, now A knows that the referent is a singular, male, animate, non-psychologist entity that stands in some relation to the description 'The psychologist we met at Macys yesterday'.

Now, nothing has been said about this singular, male, animate, non-psychologist not being met at Macys yesterday, so the speaker will infer that nothing need be said. He will therefore conclude that the relation between the antecedent index and the interpretation is that one is the denotation of the other, but he can add to this the enrichment of the classificatory component, which tells him that whatever is denoted by the index is not a psychologist. The interpretation then will come out simply as in (23).

(23) The psychologist [singular, male, animate, not-a-psychologist entity] we met at Macys yesterday is not a psychologist.

The two occurrences of 'psychologist' - one with a positive value, the other with a negative value - cancel each other out, so that we are left with:

(24) The man we met at Macys yesterday is not a psychologist, he's a psychiatrist.

In fact, it's a little more complex than this, as the fact the animate male is both human and adult has to be derived from the context: psychiatrists and psychologists usually are human and adult.

There is nothing particularly unusual or ad hoc about this interpretation, as a consideration of (25) below should demonstrate.

(25) The man we met in Macys gave me his address.

Now possessive, anaphoric pronouns do not have possessive antecedents. The interpretation of 'his' in (25) is not, therefore, simply the denotation of 'The man
we met in Macys'. In this case, the information given by the classificatory component comprises the following features: SINGULAR, MALE, ANIMATE, POSSESSIVE. Therefore, some singular, male, animate, entity, in the genitive case must stand in some contextually salient relation to the antecedent-index 'The man we met in Macys'. The most salient relation is that one is the denotation of the other. However, change in case must also be incorporated into the interpretation, which may be glossed as in (26).

(26) The man we met in Macys gave me [[\text{NP The man we met in Macys}] + nominative case, -nominative case, + genitive (possessive) case] address.

The two values of the nominative case cancel each other, and the final interpretation of (25) comes out as in (27).

(27) The man we met in Macys gave me the address of the man we met in Macys.

It seems to me that adding the information that the referent is not a psychologist in the interpretation of (21) is an analogous procedure to that of adding the information that the referent is not in the nominative case in the analysis of (25). Again, the appropriate interpretation is implemented by a straightforward interpretative procedure which is governed by semantic rules.

6.3 Possessive quantifiers

(28) Everyone's mother thinks he's a genius.

(from Reinhart, 1987, p 177.)

The problem is that in this sentence it is the entire QP that c-commands the anaphor, not the quantifier itself. This should mean that 'Everyone' and 'he' cannot be coindexed:
Quantified NPs and wh-traces can have anaphoric relations only with pronouns in their c-command domain. (Reinhart, op cit., p 137).

What worries Reinhart is that violations of this type are systematic. She assumes, therefore, that they are governed by some syntactic principle as yet to be discovered. The systematicity is evidenced by the fact that speakers for whom (28) is acceptable, are also able to access the 'sloppy identity interpretation' in utterances such as (29).

(29) Felix's mother thinks he's a genius and so does Siegfried's mother.

That is to say, speakers who accept the coindexing in (28) are also able to interpret (29) as meaning that Siegfried's mother thinks that Siegfried is a genius. Reinhart suggests that the only way to resolve the problem posed by this systematicity is to modify the c-command constraint so that it permits the determiner 'of possessive NPs to c-command whatever the NP c-commands'. She concedes that this solution is ad hoc, but feels that some principled explanation must be given of a syntactic violation that is both systematic and widespread.

It seems to me, however, that this is another case of the speaker by-passing a complex syntactic situation by opting for exclusively semantic regulation. Again, the only way to see whether this supposition might be correct is to work through it.

If we assume that 'Everyone's mother' is selected as antecedent how might the interpretation work? The hearer has to find a salient relation between this QP and a singular, male, entity. This relation will then help to define the interpretation. The obvious relation obtaining between everyone's mother and some singular, male, animate entity is that of mother and son. That is to say, the interpretation of 'he' will come out as 'everyone's mother's son' and (28) may be glossed as in (30).
Everyone's mother thinks that [everyone's mother's son], is a genius.

Intuitively, this has the right 'feel' to it. That is to say, I suggest that this is not just an approximate and clumsy gloss, but that it does indeed grasp the sense of the communicated message. If this is correct, then there should be a semantic explanation to account for (29) also. I assume that it would involve some form of reflexive reference as was the case with the paycheck sentence.

What is nice about the analysis of (28) is that the antecedent denotes a universally quantified mother and the interpretation denotes a universally quantified son. That is to say, a pronoun with masculine gender selects as its index an antecedent which has feminine gender. Furthermore, this is not simply a matter of grammatical gender being at variance with natural gender, as is the case with the examples raised by both Corbett and Cornish. In this case it is the natural gender of the index that is distinct from the natural gender of the interpretation. It seems to me that this is precisely analogous in the relevant features to Nunberg's example:

You can point at a girl child to identify her father ("He is in real estate").
(Nunberg, 1993, p 26).

The global analogy between anaphora and d-deixis, therefore, really does seem to be complete.

7. Conclusion
In this closing chapter I have set out to demonstrate that if the model developed from Nunberg's analysis of indexical interpretation is adopted as a starting point a unitary semantics for all the functions of pro-terms might also be posited. Conversely, I suggested that if a unified model could be constructed this would substantially add to the credibility of the conclusions I had reached in chapters three and four. I have also argued that if the deferred interpretation analysis of demonstratives and other indexical expressions (in Kaplan's sense) is correct,
then these expressions cannot be directly referential; and if they are not directly referential, they are not rigidly designating either. Finally, if indexical expressions, in particular those involving pronouns, are neither directly referential nor rigidly designating, then this bodes ill for the theses of direct reference and rigidity. This is because pronouns are widely assumed to be the natural language analogue of the variables of logic, and the free variables of logic are claimed to be paradigmatically rigid.

Despite this, it is of course possible that even though demonstrative uses of pronouns and other indexically occurring expressions are neither directly referential nor rigidly designating, that proper names - which is where I started from - are. Clearly, I cannot pursue that question here, but it seems reasonable to suggest that if my analysis of S-indexicality is correct then the 'picture' of proper names as drawn by Kripke should also be re-examined.

I would also like to point out that the solutions offered to the puzzles in section 6 are all compatible with the model of S-indexicality that has been developed over the last three chapters, and no *ad hoc* modification has been required.

It might be objected here that a very substantial modification is made to that model in the interpretation of (20) - the paycheck sentence and (28) - the possessive quantifier puzzle. That is to say, it may be objected that I claimed earlier that the distinction between anaphoric types may be defined in terms of the antecedent-index, that the index itself is defined by the syntax and that the index thereby influences the interpretation of the anaphoric term in accordance with its type. However, with respect to examples (20) and (28) this is precisely what the index fails to do. That is the problem.

This is correct; I did make such a claim, and the conditions entailed by that claim *are* violated in (20) and (28). However, it seems to me that these conditions have been breached at the level of the syntax in these examples, in that it is the syntax that has failed to impress its character on the relevant antecedent-indices. The
semantic interpretation has then gone forward following the procedural rules described for S-indexical interpretation, but it has done so without the benefit of specialised syntactic input, and the default assumption that the index is in its simplest form is made. This simplest of antecedent-indices is that which is paired with an anaphoric term that is neither a 'donkey' pronoun nor c-commanded by its antecedent.

Finally, although the difficulties considered in section 6 are few and the discussion brief, I suggest that the results are encouraging. The strength of a theory lies in its efficacy in resolving problems, and this strength has to be demonstrated.

I suggest that a start has been made.

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