# On Nunberg on indexicality and deixis<sup>\*</sup>

#### MARY LOU GRIMBERG

## Preamble

One of my ultimate aims is to show that any story concerning the semantics of rigid designation is necessarily incoherent. This paper is intended to go some way towards supplying ammunition for such an argument. However, as the concept of rigidity has some intuitive appeal, it may be that it is presupposed (in some ill-defined manner) by the speaker/hearer in certain contexts, such presupposition being mediated by pragmatic forces. Perhaps I'll develop this view elsewhere; for the moment I shall do no more than suggest that such an assumption would itself be directly dependent on cultural considerations, such as the language user's metaphysical beliefs. More precisely, I not only want to argue that the stipulation of the constant identity of individuals across worlds is not a semantic feature of any linguistic expression, I also want to suggest that the content of such a stipulation is not even a predictable pragmatic enrichment of any uses of any class of expression. My argument is that language and metaphysics come apart, and how a language user regards the identity of individuals is never a matter of linguistic fiat.

As is well known, many philosophers, and some linguists, adopt a contrary view. In particular, Recanati (1993, and elsewhere) posits the semantic feature REF, which feature - he claims - is the distinguishing mark of both indexicals and proper names. His claim is that REF marks all such terms as being 'directly referential'. This in turn entails their rigidity.

With regard to the so-called 'indexicals', I have argued elsewhere that REF cannot be a semantic feature marking indexicality, as the semantico-syntactic category of indexicals does not exist. My suggestion is that indexicality is a contextually determined function of certain more general terms. (See note 4, below.) There is nothing new in this suggestion.

If my argument concerning REF holds against Recanati, it might be thought to hold against Kripke (see note 1, below) also. For although Kripke never explicitly posits a semantic feature equivalent to Recanati's REF, such a feature must be presupposed if his model is to work. The argument goes like this:

Kripke identifies two types of rigidity: *de facto* and *de jure*. *De facto* rigidity need not concern us here. It applies exclusively to definite descriptions which necessarily name the same entity in all possible worlds, e.g.: 'the positive square root of 16'. This is not a fact about language; it is a fact about mathematics. *De jure* rigidity, on the other hand, is as much about language as it is about the world; for it is Kripke's expressed claim that a *de jure* rigid term picks out the same entity in all possible worlds by semantic stipulation (i.e. linguistic fiat). I can think of no other

<sup>&</sup>lt;sup>\*</sup>I would like to thank Neil Smith for his help and encouragement. I am also indebted to Robyn Carston and the postgraduates of the semantics/pragmatics reading group for much helpful discussion.

#### 342 Mary Lou Grimberg

interpretation of this claim than that such terms, whatever they are, are marked with the equivalent of Recanati's semantic feature REF.

Now although Kripke bases his argument, in the main, on proper names - and I would not wish to suggest that *this* category of terms does not exist *qua* category - many philosophers have interpreted Kripke's characterisation of such terms as a demonstration of their indexical nature. It might seem, therefore, that as I want to argue that proper names are not rigid designators, then the easy way out for me would be to show that they are indeed indexical, and that indexical terms (usages) cannot be *de jure* rigid for the reasons stated. However, I don't want to do this, because I don't think that it is true. That is, I do not believe that proper names are indexical.

However, although proper names and their purported rigidity are a major target of my argument, my interest in indexicality is equally pressing for several reasons: Firstly, I hope sometime to produce arguments to show that certain classes of nicknames start out as indexical usages. Secondly, it is difficult to argue that proper names are not indexical if I am not clear what indexicality entails. Finally, if I can show definitively that indexicality does not entail rigidity, taking into account its acclaimed status as prototypically rigid, this will presumably hammer a very large nail into the coffin of the direct reference theory. As the burying of that theory is what I want to achieve, this must surely be a Good Thing.

# **1** Introduction

The terms 'indexicality' and 'deixis' are used more or less interchangeably by philosophers and linguists, and the question arises concerning how - and whether - they may be distinguished. It would also be nice to know whether, irrespective of any difference in orientation, the two terms denote the identical range of phenomena. The answers to these questions are elusive. Nunberg's 'Indexicality and Deixis', therefore, seemed - to me at least - long overdue and very welcome. However, for reasons which I hope will become apparent, it fails to live up to the promise of its title, and the distinction which Nunberg purports to identify is unsatisfactory for two reasons:

- 1. His use of both terms is so idiosyncratic that his argument doesn't really address the questions outlined above. That the terms are not extensionally equivalent if one adopts Nunberg's specialised usages is hardly relevant or helpful.
- 2. Even on his own terms, the distinction Nunberg makes is at best incomplete and at worst incoherent.

However, his article, which is otherwise stimulating, challenging and insightful, has helped me to identify the distinction I seek.

The following discussion and development of Nunberg's argument falls into three parts. In the first will be set out, briefly, his aims. In the second, I will discuss the technical apparatus he constructs to implement these aims. With a view to overcoming the difficulties occasioned by his novel and idiosyncratic usages, I will present this part of my discussion in the form of an extended glossary. Finally in conjunction with the discussion of the last item in this glossary, I will offer some solutions of my own.

## 2 Nunberg's aims

Stated very generally, these are 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 interpretive property that is common to all indexical expressions. A secondary goal is to pinpoint the distinction between indexicality and deixis. With respect to his first goal. I find his arguments interesting and ultimately useful. I have already commented of the shortcomings associated with the second.

The standard picture is based on various versions of the **direct reference** theory<sup>1</sup>, which makes two major claims:

1. '...the linguistic meaning of an indexical term doesn't figure as part of what is said by the utterance containing it.' (p 4)<sup>2</sup>. This claim is reducible to the further claim that the linguistic meaning of an indexical term is **indicative** rather than **descriptive**<sup>3</sup>. This characterisation of indexical meaning leads direct reference theorists to assume 2.

<sup>&</sup>lt;sup>1</sup>See Saul Kripke, 1980; David Kaplan, 1989; Francois Recanati, 1993.

<sup>&</sup>lt;sup>2</sup>All page references relate to Nunberg, 1993, unless otherwise stated.

<sup>&</sup>lt;sup>3</sup>See Wilson and Sperber, 1993, for a detailed discussion of this opposition. See also Nathan Salmon, 1982, who writes of a descriptional/non-descriptional opposition, and describes a descriptional term as 'one that denotes by way of properties' (p 15), and nondescriptionality as the 'phenomenon of reference without sense' (p 14).

Recanati, 1993, adds truth-conditional relevance/irrelevance to the distinctions. It is important to note that a term whose meaning is truth-conditionally irrelevant should not be confused with a term which is non-truth-conditional simpliciter. The linguistic meaning of pronouns, for example, is truth-conditionally irrelevant, but pronouns are not non-truth-conditional. According to established theory, they contribute individuals to the propositions in which they occur. According to the theory under discussion, they may also contribute properties. Either way, they contribute to the truth conditions.

#### 344 Mary Lou Grimberg

2. Indexical terms are **directly referential**, that is to say '...they contribute individuals, rather than properties, to the interpretation' (p 5). This is equivalent to the claim that indexicals feature in **singular** rather than **general** propositions.

Although Nunberg clearly accepts 1, this acceptance is not wholly unreserved. He comments:

Indexicals contain additional information about the referent of the expression its animacy, number, gender and so forth - and it is not clear how this information is supposed to be integrated. (p 6).

He never does resolve this particular aspect of the problem of indexical meaning. However, if his theoretical apparatus is sound, it should be possible to integrate this 'additional information' into his model. Later, I will suggest how this might be done. More disturbingly, he ultimately claims to identify terms which 'are not properly indicative' (p 36), but which are nonetheless indexical, while he earlier states unequivocally '...indexicals are indicative...' (p 7).

Clearly, he needs to reconcile these apparently conflicting claims. He suggests that such a reconciliation may be achieved by the positing of two distinct varieties of indexicality; the first bearing indicative meaning, and the second carrying (partially) descriptive meaning. I find this suggestion unsatisfactory.

The question which urgently needs answering is this: Is the possession of the property of indicativeness a necessary condition of indexicality, or is it merely an observed regularity? If the former is the case, then the counter-examples raised by Nunberg simply are *not* examples of indexicality. If the latter is the case, then those same counter-examples might be used to support the argument that indicativeness is not a necessary - or even a very significant - property of indexicality.

Nunberg's response to this would probably be that indicativeness is a necessary property of the first type of indexicality but not of the second. This is fine as far as it goes, but it doesn't go far enough, for Nunberg fails to specify any other property by which we might identify this second type of indexicality as indexical. Context-dependence for the assignment of reference just won't do. 'The cat sat on the mat' depends on a context of utterance for reference assignment, but we surely would not want to say that it is indexical.

However, with a mental note to reassess the situation later, let us agree for the moment that Nunberg does accept 1, at least with respect to mainstream indexicality, and go on to 2. Here his position is unambiguous. 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).

This is not to be confused with the weak claim that terms which have indexical uses may also have other, non-indexical - i.e. non-directly referential - functions, without this functional plurality entailing ambiguity. Pronouns, for example, may function anaphorically, or as bound variables<sup>4</sup>. It is the *strong* 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 may express general propositions.

Nunberg then 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).

He then reiterates his earlier claim:

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

This is the central theme of his paper. His programme is to outline the technical apparatus that makes such generality of interpretation available to indexical utterances. 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 directreference theorists, is that although the linguistic meaning of an indexical term does not describe its referent, it nonetheless picks out its referent directly, in accordance with a linguistic rule embedded in its semantics. That is to say, the semantic rule encoded in 'I', for example, in direct speech invariably picks out the speaker as referent. Similarly, it is assumed that whatever is gestured at, by a rational speaker

<sup>&</sup>lt;sup>4</sup>There is considerable confusion in the literature as to whether there is a defineable category of indexical terms. As it seems probable that *all* terms which have indexical uses have other functions also, the positing of such a category is controversial. For convenience, however, I shall sometimes refer to 'indexicals' and 'indexical expressions', as this is less cumbersome than 'terms which have indexical functions'.

in conjunction with an utterance of a demonstrative term (e.g. 'that'), is the referent of that utterance of that term. To put it another way, it is assumed that if we except all those cases involving performance errors, then whatever is *indicated* by the linguistic meaning of terms such as 'T', or by gestures accompanying demonstratives such as 'that', is always and only the referent.

As Nunberg observes (p 6), this all seems so obviously to be the case that the assumption is rarely if ever defended or challenged. Nonetheless, he does challenge it, and this challenge is the foundation of his thesis.

# **3 Nunberg's terminology**

# 3.1 Index

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).

It might seem as though Nunberg here is using a somewhat arcane method of confirming what I have claimed he is in fact setting out to disprove. But this is not the case. For reasons which will become clear later, he denies that the contextual element picked out in this way is necessarily identical with the referent of the term.

Nunberg concedes that his use of 'index' is quite distinct from the standard usage. Kaplan gives a concise account of what that standard is<sup>5</sup>, according to which an index is a complex of coordinates. These coordinates relate to worlds, times, positions, agents, etc. In a context of utterance, whichever of these coordinates are relevant are assigned values. It is in virtue of such an assignment of values to coordinates that the reference of an indexical expression is determined. The coordinate variable with respect to worlds is only relevant in the interpretation of modal statements, which involve concepts of possibility and necessity, i.e. what might have been the case, or what necessarily is the case.

In Nunberg's usage, an index is not a complex of coordinates, rather it is itself an object, or abstract entity, identifiable in the context of utterance, and not invariably identical to the referent of the indexical term. He justifies this usage as being based on the 'sense in which Peirce originally used the term. It stands in a "relation of

<sup>&</sup>lt;sup>5</sup>See Kaplan, 1989, p 508.

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 was not obvious to me how this notion might be cashed out, I looked to Peirce 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 ... (Pierce, 1958, p 391).

## 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 of a disease<sup>6</sup>.

## And:

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 ...

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 not clear exactly how it works. His claim is that an index is an object (possibly abstract) that signifies, or stands for, another entity. It is this second entity which is the referent of an indexical term.

Nunberg claims that this 'is the characteristic and most remarkable feature of these expressions [indexicals] ... contextual features are made to serve as pointers' (p 20). It is important to note that indices do not *invariably* identify as referent some entity distinct from themselves. Nunberg himself never makes this clear. However, it seems to me that if we are to accept that some semantic property has been identified as characteristic of all indexicality, then it is the *capacity* of the contextual feature picked out by the linguistic meaning of an indexical term to point beyond itself that is the significant feature. It is not essential that this capacity always be apparent. Although Nunberg later gives examples which he claims demonstrate that even 'T' need not pick out the speaker as referent, quite clearly it almost invariably does do so. It is my suggestion that this is achieved by a reflexive function in which the **index** (the speaker) reflexively indicates itself as referent. This should become clearer when the mechanism of deferred reference is described (see below).

<sup>&</sup>lt;sup>6</sup>Cf Grice, 1989, Meaning, p 213: "Those spots mean (meant) measles."

There is, however, a problem associated with this characterisation. Nunberg claims:

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 (p 19).

We are now faced with a difficulty parallel to that which we encountered with respect to the indicativeness of indexicality. For Nunberg is to claim that there are certain terms - 'contextuals' (see below) - which are 'clearly indexical' (p 33), but which fail to pick out any index. We must now ask the question analogous to that asked with respect to indicativeness: Is the operation of this special interpretive property a necessary condition of indexicality? If it is, then supposed counter-examples simply cannot be indexical. If, however, Nunberg relies on the claim that this operation is only a necessary condition for the first type of indexicality, it is hard to see by what criteria he identifies the second type. As we have seen, he has already discounted indicativeness.

I will put this problem on hold until we have the opportunity to examine the actual examples Nunberg adduces as representative of this second type.

# 3.2 Deixis

The precise significance of this term turns out to be of the first importance, as ultimately it becomes apparent that the main thrust of Nunberg's argument relates to this phenomenon rather than to indexicality:

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

It is perhaps misleading to say that Nunberg's argument relates to deixis rather than to indexicality. What I should have said is that he appears to think that it does. But his argument is extremely confused at this point, and it is only in accordance with his own, highly idiosyncratic, use of the terms involved that he can justify the above claim. However, it is clearly important to clarify just what significance Nunberg does attribute to the term 'deixis'. It would also be helpful to compare his usage with that which is standard.

I will try to define the standard usage first. Although Karl Bühler did not coin the term 'deixis' (I believe it was used by Brugmann before him, and presumably by

the Greeks before that), nor was Bühler the first to recognise the range of phenomena it now denotes, he nonetheless provides a convenient starting point for a discussion of its significance in modern linguistic theory<sup>7</sup>.

Bühler identified 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, as well as anticipating the indicative/descriptive opposition. As a corollary of this opposition, he identified two distinct metasemantic fields. The first is the 'symbolic field', which need not bother us further; the other is the 'deictic field'. This he defines in terms of the 'origo' - the point of origin - of the deictic coordinates.

Levinson (1983) discusses the special nature of deictic context-dependence in some detail, and clarifies the concept of the 'origo' - the **deictic centre**. This is the point in 4-dimensional space-time at which the utterance of a deictic expression is uttered, and from which it points at some element in the world. Levinson also posits a set of coordinates, but these differ significantly from those posited by Kaplan:

- (i) the central **person** is the speaker
- (ii) the central **time** is the time of utterance
- (iii) the central **place** is the place of utterance
- (iv) the **discourse** centre is the current location (at the time of utterance) in the ongoing discourse
- (v) the **social** centre is identified with the social status of the speaker

The idea is that a deictic term establishes the precise relationship in terms of time, position, or role, etc, in the speech event, that obtains between the entity 'indicated' and the relevant coordinate of the deictic centre. Thus, whereas a Kaplanesque index is a complex of coordinates, any one of which - when it is assigned a value - may be identical to the intended referent, a Bühler-Levinson 'origo' is also a complex of coordinates which has a somewhat different orientation. Bühler writes that 'three deictic words must be put at the place of 0 [the origo] ... namely ... *here, now,* and *I*. (Bühler, 1982, p 13). 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 is determined in virtue of an object's relationship to the origo.

It may be, however, that the distinction between indexicality and deixis is not that great after all. Perhaps, despite the difference in orientation, the range of phenomena defined by the two systems is extensionally (if not logically) equivalent. However, I do not think that this can be the case. Firstly, in the case of deixis, there

<sup>&</sup>lt;sup>7</sup>See Karl Bühler, 1934, *Sprachtheorie*. Translated excerpts in Jarvella & Klein, 1982.

is no coordinate that relates to worlds. (Perhaps there should be. Should Levinson have added a further coordinate - the **modal** centre - which might be defined as the **world** in which the utterance is uttered?) Secondly, there are partially deictic expressions, such as 'come' and 'go'. Can their interpretation ever be explained in terms of indexicality<sup>8</sup>?

Nunberg purports to define the distinction between terms which are deictic and also indexical and those which are merely indexical. But, as I have already complained, I find his distinction unsatisfactory. This will be discussed in greater detail below, under the heading 'contextuals'.

Interestingly, Nunberg does not invoke the Bühler-Levinson definition of deixis. His idea is that it is the 'deictic component' (see below) of an indexical term that picks out its Peircean index. He further implies that the identifying of this index is the *sole function* of deixis. This will be discussed at greater length below. For the moment, it is sufficient to note that in Nunberg's account, the two terms - 'deixis' and 'indexicality' - are inextricably linked. Can the phenomena they name be separated? Nunberg suggests they can. I'm not so sure. Rather, I do not think they can be *on his terms*. I will suggest, however, that they may be partially separated if we adhere to the more standard characterisation of deixis, while adopting Nunberg's model of indexicality. A description of this separation will also have to wait until the discussion of contextuals.

# 3.3 Participant terms

I assume that these are terms that have a specific role in the speech event. Nunberg refers also to 'analogous' terms. These I assume to be those indexical expressions which are subject to analogous semantic constraints, for example, the non-demonstrative adverbials, such as 'now' and certain uses of 'here', and 'tomorrow', etc. One of the distinguishing features of participant terms is that, in Nunberg's model, they have an explicit **relational component** (see below).

# **3.4 Nonparticipant terms**

Primarily, these are the demonstrative pronouns 'he', 'they', etc. Analogous terms are all the demonstratives. Nunberg's position with respect to whether nonparticipant terms do or do not have a relational component is ambivalent. He vacillates between

<sup>&</sup>lt;sup>8</sup>I shall not attempt to answer these questions here.

saying that they have no relational component whatever, and claiming that their relational component is non-specific:

- *p* 9: '... third-person pronouns, which have no explicit relational component ...'
- *p 25:* '... we should properly say that nonparticipant terms simply have no relational component ...'
- *p* 27: 'The absence of [an] explicit relational component in nonparticipant terms ...'
- *p* 27: '... nonparticipant terms, whose relational component imposes no requirement of identity between index and interpretation ...'

It will become apparent later why I consider this important.

## **3.5 Deferred reference**

**3.5.0** This denotes not only those cases where 'the referent and the index of an expression are distinct', but rather it denotes the mechanism whereby *all* indexical reference functions<sup>9</sup>. In order to demonstrate how it works, Nunberg discusses the semantics of 'we', which in normal, standard uses is not equivalent to plural 'I'. The question is: If 'we' does not refer to joint speakers (or writers), what group *does* exclusive 'we' refer to? Nunberg's reasonable suggestion is that it refers to 'the group of people instantiated by the speaker or speakers of the utterance' (p 7). The precise identity of this group is then pragmatically determined<sup>10</sup>. He writes:

...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).

<sup>&</sup>lt;sup>9</sup>Nunberg comments: 'This doesn't mean that the uses of indexicals to refer to their indices don't constitute an 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 operates within the same two-stage, deferred model (described below). I believe Nunberg is correct to reject a proliferation of linguistic types.

<sup>&</sup>lt;sup>10</sup>How this is achieved is another interesting question which lies outside the scope of this discussion.

## 352 Mary Lou Grimberg

However, underlying these pragmatic processes, there are systematic operations on specific semantic features that make deferred reference possible. The semantic features will be discussed first.

# **3.5.1** The semantic complexity of indexical expressions.

(i) *the deictic component* - the indicator of the **index** 

Nunberg observes that although 'we' and 'I' clearly do not have the same referent, even if spoken by the same individual, they will in such a case have the same index. The index of both terms is almost invariably the speaker<sup>11</sup>.

(ii) *the classificatory component* - in the case of 'we' this comprises the semantic features of plurality and animacy. Gender may also be indicated by the classificatory component, as in 'he' and 'she' and 'it'.

It might be thought that the distinction between the deictic and classificatory components is not clear cut. For example, are the features 'proximal' and 'distal' in 'this' and 'that' classificatory or deictic? The answer is they are deictic. The deictic component is invariably associated with the Peircean index, whereas the classificatory component is always associated with the interpretation (the referent). Nunberg illustrates this point:

(43) These are over at the warehouse, but those I have in stock here (p 24).

It is stipulated that (43)<sup>12</sup> is uttered by a shopkeeper with respect to two distinct items of merchandise (plates). He picks up *one* plate and utters the *plural* 'these', and points to another *single* plate while uttering 'those' (again using the *plural*). Now it is clear that the plates he separately indicates are each singular, and proximal and distal respectively, whereas their corollates - the plates in the warehouse and those in the shop are plural, and distal and proximal respectively. This becomes less bewildering once we accept that the plurality component is associated with the intended *referent* in each case (the plates), and is *classificatory*, while the proximal/distal distinction

<sup>&</sup>lt;sup>11</sup>I follow Nunberg in ignoring special cases such as use of the royal 'we' ('We are a grandmother') and what Zwicky refers to as 'the phoney inclusive' ('How are we feeling today') (cited in Nunberg, p 7, fn 12).

<sup>&</sup>lt;sup>12</sup>Nunberg's numbering of examples is retained throughout.

quite clearly relates to the index of each expression (the *actual* plate which is picked up or pointed at). This latter distinction is, therefore, *deictic*.

(iii) *the relational component* - 'constrains the correspondence that has to hold between the index and interpretation. With *we*, the relational component stipulates that the index must be included in, or more generally, must instantiate the interpretation' (p 9).

Nunberg suggests that the relational component may also be 'morphologically signalled', as it is - for example - by the morpheme 'yester-' in 'yesterday' and 'yesteryear'. In such cases, the **index** (i.e. the temporal unit, day or year, that is coincident with the time of utterance) is identified as being in the relation of immediately succeeding the referent, which is a similar temporal unit. He comments that 'tomorrow' is equally complex semantically, without the equivalent semantic transparency.

With these components identified and in place, it is now possible to describe the second part of Nunberg's analysis.

3.5.2 The process of interpretation. This process has two stages:

- (i) In the first 'we go from the occurrence of the word to the index' (p 8). Nunberg elaborates: 'the hearer has first to resolve the deictic component to determine the index' (p 9).
- (ii) In the second stage '[we go] from the index to the interpretation' (p 8). More specifically, the hearer 'must resolve the relational component to determine the interpretation' (p 9).

Two comments spring to mind. Firstly, no mention is made of the role the classificatory component plays in the interpretation process, and secondly, if nonparticipant terms really are without a relational component, then their interpretation remains unexplained, for Nunberg writes of deferred reference that 'this is the interpretive property that sets off this *entire* [emphasis added] class of expressions, including I and *that*' (p 8).

I think there is a single solution to both these problems, the first step of which is to incorporate the classificatory component into the interpretation process, although it is not yet obvious how this incorporation might work. The second step is to posit that nonparticipant terms *do* have a relational component along the lines: 'The index must stand in some unspecified relation to the interpretation.' To the extent that everything may be said to stand in some relation to everything else, this stipulation might seem to be so vague as to be vacuous. I think there is a solution to this problem also. We need to look at examples.

To recapitulate, Nunberg's claim is that indexical expressions, not excluding 'I' and 'that', are able to express the same range of propositions as do definite descriptions. The easiest way to investigate this claim is to start where Nunberg starts, with 'we', and to work our way back to the more problematic examples.

Nunberg provides examples to illustrate how *indexical* 'we', in addition to being given a straightforward, property contributing (attributive) reading, may be interpreted as denoting a bare plural (a kind term), or even as functioning as a bound variable *while retaining its indexical nature*<sup>13</sup>.

To take the last first, the bound variable interpretation is available in example (11):

(11) Whenever a pianist comes to visit, we play duets (p 12).

The way deferred reference works for 'we' is as follows: The utterance of 'we' picks out, as its index, the speaker of that utterance<sup>14</sup>. The semantics of 'we' (the relational component) stipulates that the referent shall include - or be instantiated by - the index. The context of the utterance determines how this condition may be met. In the bound variable interpretation, the group which includes the index (i.e. the speaker) comprises any visiting pianist and the speaker. (There is another interpretation of (11) in which 'we may denote ... the speaker and some other person who is not explicitly mentioned'.)

The bare plural reading is exemplified in (12):

(12) We are less likely to contract the disease than men are.

Uttered by a woman in an appropriate context, this may be interpreted:

(13) Women are less likely to contract the disease than men are.

The mechanism is the same. 'We' first picks out the index (the female speaker), and then the context determines the group which incorporates that index, or is instantiated by it. In this case it is the natural kind, women.

<sup>&</sup>lt;sup>13</sup>Nunberg constructs examples which illustrate the possibility of even more complex interpretations for 'we'. They will not be discussed here.

<sup>&</sup>lt;sup>14</sup>'Utterance' is used throughout to signify *any* use of a term, written or spoken. 'Speaker' and 'hearer' are analogously used.

A possibly more problematic example is given in (18):

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

Given the context of utterance (Justice O'Connor is predicating the possibility of holding liberal views or of having liberal affiliations of the Supreme Court Justices) there are two possible readings - attributive and referential:

The utterance has one reading on which it says of actual members of the Supreme Court 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 serving on the Court ...

Now although the force of Nunberg's claim that the range of proposition types that indexicals can express is not restricted is beginning to be felt, it might be thought that there is a problem here. According to the theory, utterances of 'we' are standardly interpreted in accordance with deferred reference mechanisms. In (18), therefore, such procedures would yield what I have called the *referential* reading. It might be argued that the attributive reading goes beyond this, and requires some kind of 'second-order' deferral. How can this be triggered?

One obvious answer is that the attributive reading of (18) is 'derived via a pragmatic inference from a literal meaning ... in which *we* refers directly to the justices' (p 14). Such a suggestion, of course, denies the operation of deferred reference absolutely, and this is the position adopted by Recanati, as will be seen below. However, even if deferred reference is accepted as the standard procedure, we still have to account for the two readings.

This problem, if it is a problem, may be readily dissolved if we accept that the speaker belongs to two relevant groups: the first is the group comprising the actual justices; the second comprises *all possible* Supreme Court Justices. Relating the index to the first group will give the referential reading, relating it to the second will yield the attributive. However, we now need to determine whether there is any reason to prefer this analysis to the pragmatic implicature account.

Nunberg suggests that there is. He argues that if the attributive reading is correctly analysed as a pragmatic implicature, then

... we would expect that the same reading would be available ... where the justices are referred to by name, or ... where they are referred to with referentially used definite descriptions.

But this is not the case. (21), for example, has only a *de re* reading.

(21) O'Connor, Rehnquist, Thomas, etc, might have been liberals (p 15).

This argument is not conclusive, but it does suggest that the pragmatic inference explanation is possibly more problematic than Nunberg's semantic analysis. Similar questions arise later concerning other examples, and a rather more persuasive argument is offered by Nunberg in support of his analysis. So for the moment I will put this question to one side.

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 way analogous to 'we'. This is an attractive suggestion. Discussion of plural indexical usages has been largely avoided in the literature, on the grounds that they are too mysterious or problematic. So if singular and plural indexical reference can now be accounted for by a unified semantics this is a significant step forward.

Courageously, Nunberg starts his journey back from 'we' with the toughest indexical of all - 'I':

(32) Condemned prisoner: I am traditionally allowed to order whatever I like for my last meal (p 20).

It is Nunberg's claim that in (32) 'I' 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 exactly how we arrive at this interpretation. Again, he relies on the default argument that pragmatic inference is implausible as it is not available for analogous utterances featuring proper names. However, it seems to me that we might plausibly assume that the relational component of 'I' stipulates that the index (the speaker) and the interpretation must instantiate members of the same set. Indeed, this is apparently borne out. The speaker is a member of the set of condemned prisoners, and the attributive interpretation is *satisfied* by a member of the set of condemned prisoners<sup>15</sup>.

<sup>&</sup>lt;sup>15</sup>This may not be a good example. Perhaps the acceptability of (32) depends on the interpretation given to 'traditionally'. We might want to say that (i) below is also acceptable: (i)

Traditionally [in accordance with tradition], Charles Darnay is allowed to order

Nunberg's example (59) is equally interesting, although possibly more problematic:

(59) Tomorrow is always the biggest party night of the year (p 29).

This sentence appeared in a university newspaper and referred (attributively) to the last Saturday before classes recommenced. Again the possibility of pragmatic inference accounting for the attributive reading is raised. And Nunberg again asks why, if this is the correct explanation, such inferences are not available for all referential terms. 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).

We need to see how the interpretive procedure might go.

First, 'tomorrow' picks out an index - the day of utterance. Then some stipulation regarding the relation between this index and the referent has to be met. Thus, the interpretation of 'tomorrow' may be represented as follows: 'The calendar day (classificatory component) that succeeds (relational component) the time of speaking (deictic component)<sup>16</sup>. This gives us straightforward deferred reference. How do we go from this to the attributive description 'the Saturday before classes begin'?

If I read him correctly, Nunberg never resolves this problem satisfactorily. However, I suggest that a solution may be derived from his more detailed response to certain objections. Both Kaplan (1989) and Recanati (1993) recognise the phenomenon of deferred reference, but both deny it the significance Nunberg attaches to it. Kaplan denigrates it as 'deviant', while for Recanati it is merely derivative:

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

whatever he likes for his last meal.

However, Barwise and Perry (1983, cited in Recanati, 1993) offer a more solid example. The speaker, Jim, introduces himself to Melanie with the words: 'Hi, I'm Jim'. Presumably, he is not asserting his self-identity, and we can explain what is happening here quite nicely by invoking the mechanism of deferred reference. The speaker is a member of the set of speakers, and the interpretation of 'I' is satisfied by a member of this set. This yields the sensible reading: 'Hi, the speaker (the person addressing you) is Jim.'

<sup>&</sup>lt;sup>16</sup>Nunberg gives this formula as a breakdown of the meaning of *yesterday* (p 9, fn 16), but I think this must be an error.

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 great hybridizers" (p 30).

Recanati, on the other hand, and as we have seen, maintains that a correct interpretation of all those instances which Nunberg cites as examples of deferred reference will, in the first instance, be a 'literal' one, in which the term in question picks out (refers directly to) the entity which is indicated by its semantics, and which is determined by the context. He claims that any shifting of reference from this initial 'literal' interpretation is the result of pragmatic inferencing.

In response to Kaplan's objection, Nunberg complains that the dice have been loaded by the choice of a *prima facie* bizarre example. However, he counters this with the observation

... there is no bizarreness in pointing at a painting to identify its creator - "Now *he* knew how to paint goats!" ... (p 31).

He correctly observes that if we wish to exclude Kaplan's flower example from the analysis, then we must also exclude a great many other examples, which are analogous but do not seem in the least deviant, and which do seem to exemplify deferred reference unproblematically. It does seem to be the case that pointing to a picture to refer to the artist is not deviant, but this does not, of itself, show that it is an example of deferred reference. We need to see how it might work.

Let us assume that the artist is Chagall<sup>17</sup>. The utterance, therefore, is a reference to Chagall. If we work through it we get the following schema:

- (i) First, we resolve the deictic component to determine the index. In the case of nonparticipant pronouns, the deictic component may be identified with the accompanying demonstration. In this example, the deictic component is the pointing at the picture. (Remember, the classificatory component, which in this case comprises the semantic features ANIMATE, MALE, SINGULAR, is associated with the *referent*, not the index. That is why it makes sense to point at an inanimate, neutral with respect to gender, object, while uttering 'he'.)
- (ii) Then we must resolve the relational component to determine the interpretation (referent).

<sup>&</sup>lt;sup>17</sup>This suggestion was made by Richard Breheny in general discussion.

But a nonparticipant pronoun has no non-vacuous relational component. Or does it?

With respect to the operation of deferred reference in the interpretation of such terms, Nunberg writes:

... used indexically [nonparticipant terms] can contribute any individual that corresponds to their indices in some salient way (p 25).

There then follows a brief, and extremely general, discussion of what constitutes salience. This generality doesn't matter too much, and I shall assume that salience in a context is a real and defineable property<sup>18</sup>. What I want to suggest is that the identification of the salient element is in part achieved in virtue of the classificatory component, which stipulates the *type* of entity sought.

It seems to me that if we extend Nunberg's two-stage interpretation procedure to incorporate the classificatory component, we will at one stroke resolve two problems. The first has already been mentioned, and is identified by Nunberg:

Indexicals contain additional information about the referent of the expression - its animacy, number, gender and so forth - and it is not clear how this information is supposed to be integrated in the process of interpretation.

The second concerns how deferred reference, with respect to demonstrative (nonparticipant) terms, works. What I suggest is that the description of the process of interpretation should be rewritten as follows:

- (i) First, resolve the deictic component to determine the index.
- (ii) Second, resolve the classificatory component to determine the type (number, gender, animacy) of the referent.
- (iii) Third, resolve the relational component to determine the interpretation.

We can now improve on the hopelessly vague earlier formulation of the relational component with respect to demonstratives. In the case of 'he', for example, we can plausibly posit a relational component that imposes the constraint that the index must stand in some appropriate (relevant) relation to a singular, animate, male

<sup>&</sup>lt;sup>18</sup>Neil Smith (personal communication) asks whether salience in this context is distinct from relevance, in the sense defined by Sperber and Wilson (1986). I think it may be, as perhaps what is most salient is not relevant in the technical sense. I have followed Nunberg's terminology here, but it may be that if we wish to account for the pragmatic function that determines the referent in such a context, we should appeal to Sperber and Wilson's notion of relevance rather than salience. Further discussion of point is beyond the scope of this paper.

entity that is salient in the context of utterance. In the picture example, this cashes out as the stipulation that the painting (the index) must stand in some relevant relation to a singular, animate, male entity.

If the speaker recognises the painting as a Chagall, then despite the fact that reference is deferred, the appropriate interpretation of 'he' will presume a *de re* reading. If, on the other hand, the speaker does not identify the artist, but simply appreciates goat-painting ability when he sees it, then the correct interpretation will be equivalent to Donnellan's attributive reading as it relates to definite descriptions. The utterance may, therefore, be interpreted in two ways. Either it expresses the proposition that Chagall knew how to paint goats; or it expresses the proposition that particular painting knew how to paint goats. The important point is that it is not the case on either reading that the picture (i.e. the object gestured at) is the referent. From all of which it may be concluded that Kaplan's objection poses no serious threat.

Recanati's objection is, *prima facie*, more serious, as it possibly holds against some of Nunberg's examples. However, even if this is the case, it does not follow that Nunberg's position is untenable, or that his thesis is disproved. Anyone invoking Recanati's objection needs to do more than demonstrate that this or that example is inappropriately interpreted. What has to be shown is that the underlying principle is flawed. If it is valid, Recanati's objection must hold against *all* of Nunberg's examples, and I don't think it does. Nunberg does not need to show that there can be *no* figurative readings of indexical usages. The possibility that certain interpretations should be analysed as pragmatic implicatures says nothing about the fundamental semantics of indexicality.

Before discussing Nunberg's response to Recanati, 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).

As a first step, Nunberg refers to an earlier example (the one that we are already having trouble with, see above):

(59) *Tomorrow* is always the biggest party night of the year.

Now, if Recanati is right, 'tomorrow' must literally refer directly to the actual day that succeeds the day of utterance, from which literal interpretation a figurative reading may be derived. Nunberg's response depends on taking on board *all* the entailments

of Recanati's understanding of direct reference. It is, of course, these entailments that are the basis of Recanati's objection. *Ex hypothesi*, a directly referential term designates an *individual*, and an individual can only contribute to singular propositions. According to Recanati's analysis, 'tomorrow' *always and only* designates a specific, singular, unit of time. On the other hand, 'always' as Nunberg observes, 'must be understood as involving quantification over instances' (p 32). And how is this possible if 'tomorrow' is given a directly referential interpretation? The conclusion must be, therefore, that Recanati's objection leads to incoherence.

This response is persuasive. Furthermore, I suggest that it may show the way to the resolution of the problem concerning the interpretation of (59). Nunberg's suggestion is that (59) should be interpreted as:

The Saturday before classes begin is always the biggest party night of the year.

The problem is that his interpretive procedure specifies that:

- (i) 'Tomorrow' picks out an index (the day of utterance), and
- (ii) The relational component stipulates that the referent is the 'calender day that succeeds ... the time of speaking [the index]'.

And that's it. *That* is deferred reference. So how *does* Nunberg account for the step from first-order deferred reference, which seems to go no further than the day itself, to the descriptive reading? It's not clear to me that he does. The referent which is assigned according to simple deferred reference is - not surprisingly - identical to that which Recanati claims for direct reference.

However, as we have seen, *if* we allow that the interpretation of 'tomorrow' in utterances such as (59) is singular, then the proposition expressed is incoherent. More precisely, no proposition can be expressed, because no coherent meaning can be assigned to all the components of the utterance on such an interpretation. My suggestion is that because of this *semantic* incoherence, the primary deictic 'goal' of the index (i.e. the initial deferred referent) is absorbed into that index and itself acts as the 'contextual feature' which serves as a pointer to the intended referent. This interpretation may be justified as being motivated by the semantics of 'always'<sup>19</sup>.

Except in time-travel contexts (see note 19), therefore, it is plausible to conclude that the interpretation of (59) must always be attributive. Referential

<sup>&</sup>lt;sup>19</sup>The referential reading of 'tomorrow' is available and coherent in (59) if we assume a timetravel context in which the speaker refers to travel back and forth through a particular day. I owe this observation to Neil Smith. However, for Recanati's objection to be held to be valid on this account, we would have to assume the time-travel interpretation as invariant in all contexts. This is clearly absurd.

#### 362 Mary Lou Grimberg

readings are necessarily incoherent. This being the case, the second-order deferred reference analysis is more acceptable than Recanati's objection, and it is compatible with Nunberg's model of indexical reference. I therefore suggest that unless more powerful objections can be raised, such an account may well be the best available.

It should be apparent from the above that the mechanics of deferred reference hinge on there being an identifiable Peircean index to anchor the interpretation. For this reason, in the case of nonparticipant terms, deferred reference is only possible if the utterance of such a term is accompanied by a demonstration (explicit or implicit). Such a demonstration is a vital element of the deictic component of demonstratives. In the case of demonstrative third person pronouns, it is, presumably, the *only* element of this component. In the case of other demonstratives, such as 'this' and 'that', the semantically encoded features 'proximal' and 'distal' are also elements of the deictic component. From the fact that it is this component that identifies the index, Nunberg concludes that 'it is deixis, not indexicality, that introduces the particular semantic properties associated with words like *I* and *that*' (p 38). In my view, this conclusion is mistaken, as I hope to show below.

#### **3.6 Contextuals**

This is the category that gives most trouble. One problem is that it does not constitute a homogeneous set. Nunberg claims, however, that contextuals have one feature in common: they are all non-deictic, but nonetheless indexical. However, within this category (if it really is a category) there seem to be two distinct types, although these are not distinguished by Nunberg.

He introduces the first type:

... third person pronouns also have indexical uses that are not demonstrative, as when someone walking through the Taj Mahal says, "He certainly spared no expense"... (p 23).

Initially, it seems as though we must be careful not to confuse this with the goatpainter example, the fundamental difference being that in this case there is no overt ostension of the Taj Mahal. Nor - it is assumed (by Nunberg) - is there an implicit ostension. Shah Jahan is assumed to be the relevant (*de re*) interpretation and 'whoever built this place' the relevant attributive interpretation. But such readings are not achieved by the mechanism of deferred reference - or so Nunberg claims - because there is no explicit (i.e. semantic) deictic component associated with 'he', and in this case, so it is also claimed, there is no gestural deixis either. Therefore the Taj Mahal cannot fill the role of index.

The Taj Mahal example occurs again (p 33) with the comment that such uses of 'he' are 'clearly indexical - there is no linguistic source for the pronoun [i.e. it is not anaphoric] - but [it is] not demonstrative or deictic' either. Nunberg therefore concludes that it 'is simply "contextual" '. This is unsatisfactory for a whole range of reasons.

Firstly, if it is neither deictic (i.e. has no deictic component and no Peircean index) nor demonstrative, by what criteria does Nunberg identify such a usage as 'indexical'? He makes the assumption purely by default, on the basis that 'he' in this example is not anaphoric, therefore it has to be indexical - never mind what indexicality entails.

My objection to this is that it is not clear to me that both a linguistic antecedent and a deictic demonstration are totally absent. It seems to me that one or the other must be implicit, Whichever it is will then determine whether this use of 'he' is anaphoric or deictic (indexical). The problem is not new. A similar example is discussed by Lyons:

... 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-ofutterance 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 although no previous mention has been made of the unfortunate wife, she is 'salient in the universe-of-discourse'. Further, if we define anaphora as requiring an overt antecedent in the text, then "she" is obviously not anaphoric'. He notes that on these grounds, many scholars would opt for the conclusion that 'she' is deictic in such contexts

... on the grounds that it involves pointing to something in the intersubjective experience or common memory of speaker and addressee, rather than something in the external situational context ...

Such a view, he says, would be adopted by Bühler. Lyons himself takes the opposite 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' in (12) is anaphoric (p 673).

It's not immediately obvious who is correct, Lyons or Bühler. But 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 'contextuals' to accommodate such examples. Nunberg's next example is even closer to Lyons:

(62) To my wife, who has just returned from a trip to the zoo with our daughter: You look exhausted, what did she do?

It might be argued that the Taj Mahal example ((61) on p 33) is not an exact parallel. Perhaps it might plausibly be analysed as analogous to the goat-painter case after all, the Taj itself being the index *implicitly* indicated by the very act of *looking at it*. Presumably the speaker is gazing around when he makes his comment. (62), however, is different, and there is no immediately obvious way of choosing between Lyons and Bühler. But there are clues which ultimately lead me to favour the view Lyons attributes to Bühler. These may also be found in Lyons. On anaphora he writes:

... there are ... two different ways of defining the notion of anaphoric reference. We can say ... that the pronoun refers to its antecedent; ... Alternatively, we can say that an anaphoric pronoun refers to what its antecedent refers to (p 660).

This is interesting because if the second option is the correct one, and I suggest it is, then we may conclude that even in their anaphoric uses the reference mechanism of pronouns is indirect or deferred. That is to say, if an anaphoric pronoun does not refer to its antecedent, then we may say that the antecedent plays a role analogous to that of a Peircean index by *showing* what it is that the anaphor does refer to. This seems to be about correct. Anaphors and their antecedents corefer in much the same way as indexical terms and their indices do<sup>20</sup>.

How does this help us? If 'she' in (62) is analysed as deictic, we have to assume that there is as implicit 'pointing to something in the intersubjective experience or common memory of speaker and addressee'. I'm happy to buy that. On the other

<sup>&</sup>lt;sup>20</sup>Conversely, we might start with an account of anaphoric reference that depicts the coreferential function of anaphor and antecedent, and use this as an argument in support of Nunberg's deferred reference model of indexicality.

hand, if we wish to opt for the anaphoric analysis, we have to assume that not only is there some intersubjective knowledge (in this case the knowledge that the wife has just been to the zoo with the daughter), but also that from that knowledge an element is selected to act as antecedent, and that in the role of antecedent this element somehow 'shows' what it is, *other than itself*, that the anaphoric element refers to. It is not at all clear how this could work if there is no linguistically represented antecedent term. The distinction I am chasing here is that whereas deferred (indexical) reference may be *reflexive*, thus permitting index and referent to coincide, this option is not available to anaphora.

So it seems that in (61) 'he' exemplifies the type of deferred reference that is the focus of Nunberg's argument, and that there is - in this instance - no justification for positing a separate category. With respect to (62), the position is possibly different. Although I am happy to accept, for the moment, that 'she' in this context is deictic, we need to investigate the implications of this analysis for Nunberg.

The question we need to answer is this: What does 'deixis' signify in Nunberg's system? His concept of deixis is closely linked to another concept that he introduces, that of 'strong indexicality':

... let me use the term "strong indexicals" to describe expressions like *I*, *we*, *tomorrow*, and the like, which are indicative, and which can be used in deferred reference (p 33).

After considering examples such as (61) and (62) he concludes:

... it seems there are two types of "indexicality." With the first type, an expression picks out a contextual element that serves as a pointer to the interpretation. We've seen that this type is invariably associated with an explicit deictic component, so we can now drop the term "strong indexical" and refer simply to deictics (p 36).

According to Nunberg, with the second type of indexicality, deferred reference is not possible, because there is no index for the deictic component to pick out. From this he concludes that *there is no deictic component*. Further, he concludes that such terms are, therefore, not deictic, although they are - despite the lack of an index - indexical.

It seems to me that these conclusions are the result of confused thinking and give rise to a series of objections. Firstly, from the fact that an expression is not associated with an index for the deictic component to pick out, it does not follow that there is no deictic component. All that can be concluded from this bare fact is that if

there *is* a deictic component it will lack, in such instances, the function of identifying the index. There is no reason as yet (if ever) to assume that deixis has no other function.

Indeed, neither Bühler nor Lyons nor Levinson need appeal to Peircean indices to account for deixis. And maybe Nunberg doesn't either. After all, his notion of an index was introduced to explain the multiple propositional functions of indexicality. It is true that the terms which have been discussed so far, and which appear to have these multiple functions, are prototypically deictic. But they are also indexical. Thus far, no arguments have been advanced to suggest that it is anything other than their *indexical* nature that is responsible for their more complex functions.

It is also true that Nunberg has claimed that the basic interpretive function that underpins the propositional versatility of indexicality is deictic. But a claim is not an argument. The confusion arises because deferred reference depends on there being an index, and this index is 'indicated' by the deictic component. Therefore it is plausible to assume that indexicality depends on deixis in order to function. But it is the *existence* of the index *qua index* to be picked out that is the fundamental property of indexical reference. And from this we might conclude that whereas deixis is an essential element of indexicality, the converse is not the case. That is to say, indexicality (the anchoring of reference to index) is not an essential element of deixis. More precisely, it has not been shown that it is. I'll come back to this later.

The second objection is perhaps even more fundamental, and has already been raised. Nunberg labels instances of his posited second type of indexicality 'contextuals'; and about contextuals he writes:

... the expression may be anchored to an element of the utterance context but that element is not an index in the strong Peircean sense of the term. In fact 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 37).

If these expressions, the 'contextuals' are not fully indicative, and are not 'anchored' to a Peircean index, by what criteria do we recognise them as indexical? What *are* the necessary and sufficient conditions for this second type of indexicality?

As far as I can see, after several careful readings, Nunberg fails to resolve this problem. He seems to rely on some kind of intuitive recognition of just which terms are indexical and belong in this category of 'contextuals' and which are not. These intuitions seem to spring, in large part, from the idiosyncratic behaviour of 'it'. Nunberg writes:

*It* does not permit deictic or demonstrative use. So you cannot point at one of the glasses of wine sitting before you ... and say:

(63) Now *it's* what I call a good burgundy (p 34).

Nonetheless, he notes, 'it' may be used non-anaphorically (and therefore, presumably, indexically) in other contexts:

... as when someone opens a birthday present and says to the giver:

(64) Oh, *it's* beautiful.

Nunberg would therefore classify the use of 'it' in (64) as indexical but not deictic, i.e. as 'contextual'.

There are several observations I would like to make here. Firstly, if (63) is unacceptable, it does not show that 'it' has no deictic uses. All it shows is that it may not be used demonstratively in (63). After all, (64) is an utterance of similar structure, and on Nunberg's own account is acceptable. Perhaps we can modify (63) and (64) so that they resemble each other more closely:

- (63') Now *it's* a good burgundy.
- (64') Oh, *it's* a beautiful trilobite.

(63') is no more acceptable than (63), whereas in the apparently parallel structure in (64') the use of 'it' is acceptable. Even if Nunberg is partially correct, and 'it' may not be used demonstratively in (63), on what grounds does he define 'it' as indexical but non-demonstrative in (64)? Surely, the very act of opening the present, of holding it, and of looking at it, are implicit demonstrations. The unacceptability of (63) and (63') must be given some explanation other than the inability of 'it' to function deictically<sup>21</sup>.

Lastly, a description of the idiosyncratic behaviour of 'it' takes us no further towards a specification of the necessary and sufficient conditions of non-indicative,

<sup>&</sup>lt;sup>21</sup>Such an explanation is available, and has been discussed fairly extensively. Gundel, Hedberg & Zarcharsky, 1993, suggest that there is a 'givenness hierarchy' ranging from 'it' through 'this' and 'that' to 'the', indefinite 'this' and, finally 'a'. 'It' is at the apex of this hierarchy and may be used acceptably only in those contexts where the entity it denotes is 'in focus'. Furthermore, 'it' may not be used emphatically, giving way to 'that' in such uses. According to this hierarchical analysis, 'this' and 'that' also have distributions distinct from each other, but - presumably - no one would wish to suggest, on the strength of these distributional limitations, that either 'this' or 'that' may not be used demonstratively.

non-index-dependent indexicality. It is simply a reason Nunberg advances for believing that there is such a category; it doesn't tell us by what criteria we may recognise it.

The point we have now reached is this: Nunberg has posited a special category of indexicals, which apparently lack all the distinguishing characteristics by which he has, thus far, identified indexicality. This is puzzling. I have been trying to resolve this puzzle by undertaking a closer examination of his examples, and have argued that in (61) 'Gee, *he* certainly spared no expense', 'he' furnishes a relatively straightforward example of deferred reference, in which index and interpretation are distinct, with the Taj Mahal serving as index.

(62) is possibly less straightforward. However, I have suggested that in this case the use of 'she' is deictic, without specifying exactly what notion of deixis I am invoking. Now, I want to leave the way open to argue that deixis is not identical to indexicality. More specifically, I may wish to argue that deixis does not depend on the mediation of an index. However, for methodological reasons, it seems to me unlikely that terms which - according to all the characterisations discussed so far - have both indexical and deictic functions, should separate those functions. That is to say, if a term is capable of both indexicality and deixis, it seems to me unlikely that it would function in some contexts deictically but not indexically. (According to the characterisation of indexicality which I have adopted, it is not possible for a term to function indexically but not deictically. Nunberg says that it is possible, but this is the case only if we change the meaning of 'indexical'.)

My reasons for thinking such a separation unlikely may be best expressed with respect to pronouns:

- (i) Pronouns have several functions anaphoric, bound variable, deictic, indexical, etc<sup>22</sup>.
- (ii) Pronouns are indicative.
- (iii) If we wish to observe Grice's 'modified Occam's Razor<sup>23</sup> (and I think we should), we will need to avoid positing semantic ambiguity for these varied functions if some other explanation, not invoking ambiguity, is available.
- (iv) We therefore need a unified semantics for pronouns.
- (v) The indicative rule which tells us how to identify the referent of a pronoun is part of the semantics of that pronoun.

<sup>&</sup>lt;sup>22</sup>See Evans, 1985.

<sup>&</sup>lt;sup>23</sup>See Grice, 1989, Logic and Conversation, p 47: 'Senses are not to be multiplied beyond necessity.'

- (vi) By (iii) and (iv) a rule that is invariant across functions is to be preferred to variable rules.
- (vii) Nunberg's model of deferred reference suggests the form such a rule might take (very roughly):
  - R: Look for the contextual element that will show the relevant interpretation.

(For the sake of simplicity, I have not incorporated the role of the classificatory component into this very rough approximation.)

As we have already seen, such a rule should apply equally to both anaphoric and indexical uses. I see no reason why it should not apply to bound variable uses also. If this is, in principle, correct, then it seems sensible to conclude that terms which have both deictic and indexical functions cannot separate those functions. If they could , we would need to posit a separate procedural rule for deictic usages, thus falling foul of Grice's modified Occam's Razor by presupposing an ambiguity of such terms as between their indexical and deictic functions. This is clearly otiose. The semantic model suggested, in which the separation of deictic and indexical functions of those terms which have both is prohibited, and which incorporates the deferred reference function and its analogues, not only unifies bound variable, anaphoric, indexical and deictic usages, it also includes plural terms such as 'we' and 'they' as well as 'those', etc. It should be noted, however, that such an analysis does not preclude the possibility of deixis existing independently, as a function of certain terms that do not function indexically.

Where does this leave (62)? I have argued that 'she' in this context should be defined as deictic (following Lyons' terminology). However, 'she' also has indexical uses in Nunberg's 'strong' sense. I therefore conclude that deictic 'she' cannot be separated from indexical 'she'. In which case we should also conclude that 'she' in (62) is indexical, and we may again reject Nunberg's creation of a special category of contextuals.

The next of Nunberg's candidates for the role of contextual is 'it'. Here I have argued that although there are contexts in which the use of demonstrative (indexical) 'it' is unacceptable, this unacceptability is a function of distributional limitations, which apply - to a greater or lesser degree - to *all* demonstratives. (See note 26.)

This brings us to Nunberg's final group of examples, which do seem to constitute a separate category. A consideration of these examples opens the way to some solutions. They will be discussed in the next section.

## **4** Some solutions

Nunberg uses the term 'deixis' in a very special way, to signify 'explicit indication of a feature of the context of utterance' (p 34). By this he means that deixis identifies the index. This deviates from the standard usage, in which deictic reference relates the referent to the relevant coordinate of the deictic origo. Furthermore, it seems to me that properly speaking, it is indexicality which identifies the index. However, as we have seen, Nunberg draws out from his characterisation of deixis the conclusion that without it there can be no deferred reference, and therefore no indexicality in the sense he initially defines. However, he continues:

This predicts that strong indexicality will not be a property of the indexical uses of words like *local*, which have no deictic component and cannot be accompanied by a demonstration (p 35).

To illustrate this, he gives as an example:

(69) The best mushrooms are found locally<sup>i</sup> (nearby<sup>i</sup>, etc).

The superscripts indicate that these are indexical uses of terms which may also be used non-indexically. (This is a little odd, as it is probable that *all* terms which are capable of functioning indexically have non-indexical uses also.) However, the point is, that on what Nunberg characterises as its 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).

He points out that in (70) a deferred reading is possible:

... 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. The crucial factor is that although 'locally' is in some sense 'anchored' to the place of utterance, this anchorage is not tantamount to a Peircean index, for the simple reason that it cannot - in any context of use - direct the referring function of the term 'locally' (or 'local') 'to some other place that corresponds to the location of the utterance' (p 35). And this is precisely what genuine Peircean indices - by definition - must be able to do.

Thus far, with this example at least, it seems to me that Nunberg is correct. He is certainly coherent. The problem arises with the conclusion he draws from this observation. For instead of recognising that what he has identified in terms such as 'local' is pure Bühlerian deixis, in which the deictic centre, or origo, is assumed, and interpretations are defined in relation to that centre, he posits a category of indexless indexicality, which can only be recognised intuitively, and which fails to satisfy any of the necessary conditions of the previously defined indexicality.

It further seems to me that once we recognise that it is not a necessary function of deixis to identify the index of an indexical term, and that Nunberg's 'deictic component' might more felicitously be termed the 'indexical component', the solution to the problem of contextuals is both simple and satisfying.

It will help if we re-examine what is meant by indexicality. It entails all that Nunberg originally claimed for it:

- (i) Indexical terms are indicative.
- (ii) Indexical reference is always mediated by an element of the context of utterance (an index).
- (iii) Indexical reference is always deferred, although sometimes this deferral is reflexive.

Although (i) to (iii) above are necessary conditions of indexicality, they are not sufficient, as if we give a sufficiently broad interpretation to (ii), they apply equally to anaphora, but this may be remedied by the modification of (ii):

(ii') Indexical reference is always mediated by an *exophoric* element of the context of utterance  $(an index)^{24}$ .

From these three conditions a fourth falls out:

<sup>&</sup>lt;sup>24</sup>It might be thought that Lyons' example:

I was born in London and have lived here/there all my life. (Lyons, 1977, p 676). contravenes this claim, as 'here/there' functions both anaphorically and deictically (indexically), with both functions being triggered (apparently) by the *endophoric* antecedent 'London'. However, this is not the case. The index of the indexical use is the entity LONDON, not the linguistic antecedent 'London'.

## 372 Mary Lou Grimberg

(iv) Indexical expressions are always proforms (pro-phrasal). This follows from the fact that fully lexical referring expressions are, by definition, SYMBOLIC and hence *descriptive*.

I would now suggest that *deixis*, on the other hand, might be characterised rather differently. Following Bühler and Levinson we might define it as the function of expressions whose interpretation varies systematically, from utterance to utterance, relative to a contextual origo. We can further state that such expressions do not refer via the mediation of a Peircean index, and have no access to deferred reference. They cannot, therefore, express the full range of proposition types that can be expressed by definite descriptions.

Examples of deictic expressions which are not also indexical are: 'local[ly]', 'on X's left', 'in front of', 'behind', etc. All these expressions also have non-deictic uses. For example 'behind' is deictic in (a), but non-deictic in (b):

- (a) I can't see the cat; [because] she is behind the tree.
- (b) I drove all the way from London to Brighton behind about 500 vintage cars.

In (a) 'behind' indicates (describes?) a position relative to the deictic origo (i.e. the speaker's position), for a tree has no intrinsic front or rear elevation. In (b), on the other hand, 'behind' quite clearly *describes* a position relative to the vintage cars. The really pressing question which now arises concerns whether 'behind', and analogous expressions, are - or can be - *indicative* in their deictic uses.

Perhaps this question can best be understood in terms of truth conditions and truth-conditional irrelevance<sup>25</sup>. It is widely accepted that the *linguistic meaning* of an indexical expression does not enter into the truth conditions of the proposition expressed. That is to say, such meaning is truth-conditionally irrelevant. An appeal to truth-conditional irrelevance is a convenient way to define indicative meaning. The question is: How does this notion of truth-conditional irrelevance apply to what I have termed 'pure Bühlerian' deixis?

Let us first look at the non-deictic use of 'behind'. It is surely part of the truth conditions of (b) above that the speaker was in a certain position relative to 500 vintage cars. If she had driven to Brighton *ahead* of all these vehicles, then an utterance of (b) in such a context would be false.

With respect to (a), however, we are tempted to say that the cat's position vis a vis the tree and the speaker is irrelevant to the truth of a proposition concerning where the cat actually is. Presumably her position could also be identified in terms

<sup>25</sup>See note 3.

of latitudinal, longitudinal and sea-level coordinates. The rather less precise 'behind the tree', might be seen as no more than a convenient way of fixing that position while contributing nothing to the truth conditions of the proposition by its own linguistic meaning. It might be argued that whether the speaker is on the opposite side of the tree to the cat (which is what deictic 'behind' signifies) is irrelevant to any fact of the matter regarding where the cat actually is.

The problem with this interpretation is that if we accept that 'behind' is descriptive in its non-deictic uses (and I think we should), then to posit a different type of meaning (i.e. indicative) for its deictic uses entails positing a concommitant ambiguity<sup>26</sup>. If this were in fact the case, we should not be discussing deictic and non-deictic *uses* at all, as in each case different (albeit homonymous) expressions would be involved. For reasons of parsimony, an account that avoids this appeal to ambiguity is to be preferred.

Such an account would incorporate the assumption that 'pure' (i.e. nonindexical) deictic uses of terms retain their descriptive meanings. Such an assumption is controversial as it is generally accepted that both indexical and deictic meaning is indicative; indeed indicativeness is the most prominent feature of Bühler's characterisation of deixis. Nonetheless, I believe the assumption is correct and can be defended.

It seems to me that if the speaker and the cat are not understood to be on opposite sides of the tree, and if this is not a part of what is literally said, then there are difficulties in accounting for the causal relation that holds between the two parts of (a). We might try to argue that we can infer that the tree intervenes between speaker and cat from the given fact that the speaker can't see the cat. But this won't do. This interpretation is equivalent to the supposition that the cat *must* be behind the tree because the speaker can't see her. But this isn't what (a) means. The speaker of (a) *knows* that the cat is behind the tree, and offers this fact as an explanation, not as a deduction. And this, I suggest, is truth-conditionally equivalent to the claim that the speaker can't see the cat *because* the tree is between the cat and the speaker. The proposition expressed by an utterance of (a) 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 hallmark of expressions such as 'behind', 'to the right of' etc, is not indicativeness, but relativisation to a deictic origo. If this is correct, then my use of the term 'pure deixis' may be justified, because - as we have seen - pro-phrasal,

<sup>&</sup>lt;sup>26</sup>Nunberg suggests a type of hybrid meaning, describing such terms as 'not entirely indicative'. This is unsatisfactory as it implies a partial truth-conditional irrelevance. This seems to me more or less on a par with being a little bit pregnant.

#### 374 Mary Lou Grimberg

indicative deixis is not true deixis at all, as it functions according to the rules of indexicality. This is a controversial claim, as terms such as 'he', 'this', 'now', 'today', etc, are all regarded as prototypically deictic. In a sense, of course, we may still regard them as deictic, as regardless of *how* the mechanisms of reference operate, the relativisation to the deictic centre is still salient. The 'impurity' arises from the admixture of indexicality.

In the case of pure deictic uses, however, relativisation to the origo is what *implements* the determination of reference. By itself this should not be considered controversial; what may be harder to accept is the suggestion that the speaker is drawn into the truth conditions of this relativisation. The question we must ask is: Does this analysis make the correct predictions with respect to other terms which I want to label 'purely deictic'? Consider (c):

(c) Boris is to the left of Olga.

If 'to the left of X' is used deictically, how relevant (truth-conditionally) is the speaker's position? Intuitively, we want to say that it is quite irrelevant where the speaker is situated if we are interested in the truth or falsity of the proposition expressed concerning the relative positions of Boris and Olga. It is either true that they are in a certain relation, and that Boris is on the very spot indicated by that relation, or it is false, regardless of where the speaker is. But this response simply begs the question. The question is this: Are purely deictic utterances, despite what we have been taught to believe (and our own intuitions), as much about the speaker as they are about the objectual interpretation of the deictic term?

I, somewhat tentatively, conclude that purely deictic usages do express propositions about the speaker. Thus when Charlie says to Monique that Boris is to the left of Olga, if Monique gives this utterance a deictic interpretation, what she understands is this:

(c') Relative to Charlie, Boris is on Olga's left.

And *this* is the proposition that is literally expressed by Charlie's utterance of (c).

This seems about right. After all, Sam might tell Ingrid that relative to Charlie, Boris is to the left of Olga. In this case Charlie's position is clearly truth-conditionally relevant (although not deictically expressed)<sup>27</sup>.

<sup>&</sup>lt;sup>27</sup>On second thoughts, perhaps it is an example of what Lyons labels 'deictic projection'. See Lyons, 1977, pp 579 & 822; also Levinson, 1983, pp 64 & 73-4.

If this is correct, we can now summarise the distinction between indexicality and pure deixis:

- (i) Indexically used terms are indicative. Pure deictic terms are descriptive.
- (ii) Indexical reference is always mediated by an element of the context of utterance (an index). Pure deictic reference is never mediated by an index.
- (iii) All indexically used terms are pro-phrasal. Purely deictic terms are always fully lexical.
- (iv) The linguistic meaning of terms which have indexical uses is always indicative. The linguistic meaning of terms which have pure deictic uses is always descriptive.

Finally, it was Nunberg's discussion of 'local[ly]' which led me to identify a class of pure deictic usages which subsumes at least some of Nunberg's 'contextuals'. Perhaps we can now have a better informed look at some of the possibilities of 'local':

- (d) Zorba went to Spain and the local food made him ill. (anaphoric)
- (e) The local scenery is pretty. (deictic)
- (f) ?The local scenery is getting prettier.

I have no (serious) problems with (d) and (e). In accordance with the argument as its stands, I must hold that in (e) the speaker's position is a part of the proposition expressed. As has been pointed out already, this may seem counter-intuitive. The scenery either is or is not pretty. And this is the case regardless of the speaker's position. This is correct. Nonetheless, the speaker has expressed a proposition which is in part concerned with her position relative to the scenery. I suggest that if the 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*. If she wishes to avoid talking about herself, then she must avoid deixis.

This argument is lent plausibility when we consider (g):

(g) Poor Zorba, whenever he travels the local food makes him ill.

It is plausible to suggest that in uttering (g), Mischa may say to Harry that the food local to Zorba makes Zorba ill. It is also plausible to suggest that Zorba's position relative to the food is a part of the truth conditions of the utterance. It seems to me

#### 376 Mary Lou Grimberg

that the descriptive meaning of 'local' entails the spatial relativisation of *two* contextually determined entities. Unless we are prepared to accept different types of meaning (i.e. ambiguity) for different types of usage, perhaps we must just accept that the speaker of (e) is indeed included in the truth conditions  $also^{28}$ .

Finally, Nunberg suggests that (f) may be uttered indexically (contextually) by someone sitting on a moving train to refer to a series of slices, or chunks, of scenery. I have trouble with this, because I don't think it is acceptable in my idiolect. On the other hand, I might say while journeying across Mongolia:

(h) The local customs are getting more interesting.

(h) clearly has (at least) two readings: one in which the speaker is remaining in one place, and the customs in *that* locality are becoming more interesting. (This could be separated out further, but it is enough for present purposes.) There is another reading in which the customs in each of a succession of localities are more interesting than those in preceding localities. Nunberg suggests that in the first reading 'local' takes wide scope over the progressive, whereas in the second reading the progressive takes wide scope. He observes that the capacity to enter into scope relations is a property of descriptive meaning not attributable to indicative meaning.

If this is correct, and if the two readings are correctly attributed to scope interactions, then this is yet another argument in support of the claim, already made, concerning the descriptive nature of purely deictic meaning.

Therefore, it really does seem plausible to suggest that pure deixis is always descriptive, and further that Nunberg's confused (and confusing) category of indexless indexicality, may now be redefined *as* pure deixis. If this leads to some counter-

- (ii) Mary said *frankly* to Peter that she couldn't help him.
- (manner and truth conditional)

<sup>&</sup>lt;sup>28</sup>This is not quite the end of the story. Wilson and Sperber (1993), suggest that terms having *descriptive* (conceptual) meaning may - without varying this meaning - vary in truth-conditional status. That is to say, a descriptive term (i.e. one which encodes a concept rather than a procedure) may in some contexts of use contribute to truth conditions while in other contexts it does not do so. However, the only examples they raise to illustrate this phenomenon relate to adverbs which vary across illocutionary and manner functions:

<sup>(</sup>i) *Frankly*, I can't help you.

<sup>(</sup>illocutionary and non-truth-conditional)

<sup>(</sup>Examples taken from Wilson and Sperber, p 17.)

In both (i) and (ii) 'frankly' retains the same *type* of meaning: descriptive. It is the contribution to truth conditions that varies. However, it seems to me that no one would wish to suggest that descriptive elements (such as 'local') of NPs (such as 'local scenery') are non-truth-conditional - once it has been established that they *are* descriptive - as this would leave them with no role at all in such contexts; they are clearly not illocutionary.

intuitive conclusions, perhaps we just have to live with this. Intuitions are not Holy Writ.

From all of which, it would seem that we are now in a position to conclude that whether a particular class of terms refers according to the mechanisms of indexicality or those of deixis, such terms may contribute both properties and relations to the propositions in which they occur. As this conclusion defies the theory of direct reference, what might be entailed when (or if) they contribute individuals is clearly a matter that will also need investigating. However, such an investigation is beyond the scope of the present discussion.

In closing I want to emphasise that however incoherent I feel Nunberg's final distinctions are, my own analysis is heavily dependent on his insights and on his introduction of the Peircean index into the picture. If I am anywhere near correct, I am much indebted.

## References

- Barwise, J. and J. Perry (1983) *Situations and Attitudes*. MIT Press/Bradford Books, Cambridge, Mass.
- Bühler, Karl. (1982) translated excerpts in Jarvella and Klein (eds), *Speech, place, & action: studies in deixis and related topics*. John Wiley & Sons Ltd, Chichester.
- Evans, Gareth (1985) Pronouns, in Collected Papers. Clarendon Press, Oxford.
- Grice, Paul (1989) Meaning, in *Studies in the Way of Words*. Harvard University Press, Cambridge, Mass.
- Grice, Paul (1989) Logic and Conversation, in *Studies in the Way of Words*. Harvard University Press, Cambridge, Mass.
- Gundel, Jeanette K., Nancy Hedberg and Ron Zarcharski (1993) Cognitive Status and the Form of Referring Expressions in Discourse, in *Language*, Vol 69, 2, 274-307.
- Kaplan, David (1989) Demonstratives, in Almog, Perry and Wettstein (eds) *Themes from Kaplan*. OUP, New York.
- Kripke, Saul (1980) Naming and Necessity. Basil Blackwell, Oxford.
- Levinson, Stephen C. (1983) Pragmatics. CUP, Cambridge.
- Lyons, John (1977) Semantics: 2. CUP, Cambridge.
- Nunberg, Geoffrey (1993) Indexicality and Deixis, in *Linguistics and Philosophy* 16, 1-43.
- Peirce, Charles S. (1958) Letters to Lady Welby, in Philip P. Wiener (ed) *Charles S. Peirce: Selected Writings*. Dover Publications, New York.
- Recanati, Francois (1993) *Direct Reference: From Language to Thought*. Blackwell, Oxford.
- Salmon, Nathan U. (1982) Reference & Essence. Basil Blackwell, Oxford.
- Sperber, Dan and Deirdre Wilson (1986) *Relevance: Communication and Cognition*. Basil Blackwell, Oxford.
- Wilson Deirdre and Sperber, Dan (1993) Linguistic form and relevance, in *Lingua* 90, 1-25.
- Zwicky, A. (1977) Hierarchiess of Person, in Beach, Fox & Philosoph (eds), *Papers* from the Thirteenth Regional Meeting, Chicago Linguistics Society. Chicago Linguistics Society, Chicago.