

Two Kinds of Indexicality¹

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At a first pass, indexical expressions are usually defined by ostension of the prototypical members of the class: e.g., as "words like *I*, *now*, and *here*." I suppose that's appropriate. But a well-known problem with ostensive definitions is that they leave implicit the essential properties of the class. In the recent literature on indexicality we can discern two distinct understandings of what makes these expressions exceptional, one growing out of linguistic work on quantification and anaphora, the other out of philosophical accounts of reference. And although these writers have generally assumed that they are all talking about the same thing, I want to argue here that what people describe as "indexicality" really involves two different phenomena.

Indexicality and anaphora

Recent theories of anaphora have generally made it an explicit goal to produce unified accounts of the various uses of pronouns and analogous devices.² The object here is to assimilate the deictic uses of pronouns, as in an utterance like (1), to their uses as discourse anaphors and bound variables, as in (2) and (3). (I'll use the symbol "☞" to indicate a demonstrative use of an expression):

- (1) Get a load of ☞ her!
- (2) A woman entered. She sat down.
- (3) Every woman forgot her coat.

To date, discussions of this question have been largely programmatic — much more attention has been given to the anaphoric uses of pronouns than to their deictic uses.³ But the general strategy is clear: we will want to think of the context of utterance on the model of the other contexts that can control anaphors and related expressions; that is, the discourse model and quantifiers.

One ancillary but important consequence of taking this point of view is that it leads us to define the class of indexicals in a broad way. As various people have noted, the patterns of use exhibited by the pronouns in (1)-(3) are also found with temporal and locative items like tenses and the word *there*. And Mitchell (1986) and

¹ Thanks to Cleo Condoravdi, Mary Dalrymple, Mark Gawron, François Recanati, and Annie Zaenen for comments and suggestions.

² Cf., e.g., Kamp (1984:6): "The analysis of pronominal anaphora I shall sketch is informed by the conviction that the mechanisms which govern deictic and anaphoric occurrences of pronouns are basically the same."

³ One exception is Heim (ms), who argues that the theoretical apparatus developed within DRT accounts of anaphora can be invoked to explain some of the apparent semantic paradoxes that arise within direct-reference accounts of demonstratives.

Partee (1989) have noted that we see the same effects with a wide range of open-class items like *local*, *enemy*, *foreign*, *away*, and so on, which behave as if they contained implicit pronoun-like variables. So a sentence like (4) can have three readings, depending on whether the occurrence of *local* is controlled by the utterance context, the subject, or the quantifier — that is, whether the athlete is local relative to the location of the speaker, the *New York Times*, or each of the reporters in question:

- (4) *The New York Times* had every reporter cover a local athlete.

Analogously, the phrase *fifty miles away* in (5) (from Partee) can be construed relative to either the utterance context or the context established by the quantifier:⁴

- (5) Every man who stole a car abandoned it fifty miles away.

Of course not all pronouns and analogous expressions display the same range of behavior as the third-person pronouns in (1)-(3). On the one hand, there are some expressions that can only be controlled by the context of utterance — what we can think of as "dedicated indexicals." Partee gives (6) and (7) as a way of illustrating this point with *I*:

- (6) ??Every speaker_i has trouble stopping when I_i should.
 (7) ??Every person in line_i said that I_i had been waiting for more than an hour.

That is, *I* can't range over different speakers here. And (8) shows the impossibility of using *tomorrow* as a bound variable:

- (8) Whenever Jane and I get into a fight I know she'll call to apologize tomorrow (ok the next day).

⁴ As Partee observes, one important motivation for trying to assimilate these expressions to the uses of pronouns is that both types seem to be subject to the same kinds of syntactic constraints. For example, she points out that the relative acceptability of (i) and (ii) reflects a difference in c-control:

- (i) Every untenured professor_i in the state received a letter from the leader of a local_i union.
 (ii) ?The leader of a local_i union sent a letter to every untenured professor_i in the state.

And Jacobson (this volume) makes the same point with regard to the *i*-within-*i* condition, as demonstrated by (iii)-(vi):

- (iii) the woman_i who married her_i childhood friend
 (iv) *the wife_i of her_i childhood friend
 (v) The man_i who owns a local_i bar can get a drink any time.
 (vi) *The owner_i of a local_i bar can get a drink any time.

The adjectives *current* and *present* show the same distinction. Both words can be used to pick out an interval surrounding the time of utterance, but only *current* can pick out an interval surrounding a reference time supplied by an explicit temporal operator:

- (9) In 1978, the present/current president was a Democrat.

With *present*, (9) says unambiguously that George Bush was a Democrat in 1978; with *current* it allows both that reading and a reading where it says that Jimmy Carter was a Democrat.

At the other end of the scale, there are some anaphoric expressions that can't be controlled by the context of utterance. The best-known instances are third-person reflexives and the various constructions that Sag and Hankamer (1984) have described as "surface anaphors": VP ellipsis, sluicing and slifting, and so forth. But there are also lexical anaphors that are subject to this restriction, for example *the former* and *the latter*. These expressions are used discourse-anaphorically in (10) to mean roughly "the first-mentioned" and "the last-mentioned":

- (10) Flynn came up to bat followed by Jimmy Blake; the former got a hit and the latter bunted safely.

But if you are at a baseball game and somebody asks you who's already batted in the inning, you could not respond with (11):

- (11) A: Who's been up in this inning?
B: ??The former was Flynn and the latter was Blake.

On the basis of observations like these, we must assume, with Partee, that the lexical entries for anaphors and anaphor-like expressions should include a specification of the particular kinds of contexts they can be controlled by. Thus *I* and *present* will be lexically marked as permitting only control by the utterance context; *the former* and *himself* will be marked as permitting control only by discourse anaphors and quantifiers, and *he* and *current* will be marked as permitting control by any kind of context (or what is equivalent, these words will be unmarked with regard to this feature). These control properties are summarized in Table 1:

Table 1: Summary of control properties

	utterance context	discourse or quantifier context
<i>I, tomorrow, here</i>	YES	NO
<i>he, local</i>	YES	YES
<i>the former, himself</i>	NO	YES

On this approach, then, to say that an expression is indexical is simply to say that its interpretation is either an element of the utterance context (e.g., the time of speaking) or something that stands in a specified relation to such an element (e.g., the calendar day that follows the time of speaking). Indexicality is sometimes a property of expression types (as with the word *present*) and sometimes a property of expression uses (as with the uses of the word *current* that are controlled by the context of utterance).

Direct reference accounts

In what follows, I'll use "indexical" in this relatively broad sense, to refer to expressions or uses of expressions whose interpretation is determined relative to elements of the utterance context.⁵ In the direct-reference theories developed by Kaplan, Perry, and others, however, the term has generally been used in a more restricted way. On these accounts, what makes indexicals exceptional is not simply that their linguistic meanings make reference to recurrent features of the context of utterance (or that indexicals are token-reflexive or however this is put), but that these meanings don't figure as part of what is said by the utterances containing occurrences of the expressions. Thus the meanings of words like *I*, *now*, or *here* are functions from contexts (or from tokens or occurrences of expressions) to persons, times, or places; and once this function is evaluated for a particular utterance we throw away the meaning and take the thing it picks out as being the propositional component that corresponds to the expression. That is, indexical utterances express singular propositions. This is what distinguishes indexicals like *I* from the descriptions (eg. "the speaker of the utterance") that paraphrase their

⁵ I say "relatively broad" because terms like *indexical* and *deictic* are sometimes used in a very general way to include any expression whose interpretation is sensitive to features of the context of utterance, including the beliefs or interests of conversational participants. Speaking in this way, one could say for example that the English genitive is indexical, in the sense that we require contextual information to determine whether a phrase like *John's book* refers to the book that John owns, that John has written, and so forth. Of course this is a much broader understanding of the term than it has generally had in the recent philosophical literature (though it is worth noting that Peirce sometimes used the word in a similarly loose way; at one point he suggests that *red* is an indexical since its meaning can only be learned by ostension).

linguistic meanings; hence the difference in truth-value between utterances like (12) and (13):

- (12) I am necessarily a speaker.
 (13) The speaker of this utterance is necessarily a speaker.

For our purposes, it is important to bear in mind that the direct-reference story really involves two claims about indexical reference. The first is that the linguistic meaning of an indexical or the demonstration associated with a demonstrative doesn't figure as part of the content of the utterance. The second is that what an indexical contributes to the utterance content is the very individual that satisfies the linguistic meaning, or the very thing picked out by a demonstration. These claims are in principle distinct. The fact that an occurrence of an expression doesn't contribute the property associated with its linguistic meaning doesn't mean that it can't contribute some other property, after all. And in fact I'll argue in a moment that this sometimes happens. So for the moment I want to characterize the interpretive peculiarities of indexicals just in terms of the first part of the claim, that their meanings aren't part of the utterance content. I'll describe this claim by saying that expressions like *I* and *that* are indicative, rather than descriptive. And I will describe such indexicals as deictics.⁶

Two kinds of indexicality

At this point, then, we will want to compare these two understandings of indexicality, and to ask whether they pick out the same class of expressions or uses of expressions. As we are using the terms here, that is, are all indexicals deictics? This question hasn't been much looked at, for several reasons. On the one hand, as I noted, linguists who have worked on anaphora and related topics haven't examined the indexical uses of pronouns in any detail. On the other hand, the philosophers who have developed the direct-reference approach have tended to concentrate on a handful of dedicated indexicals like *I* and *this*, and haven't been particularly concerned with the linguistic issues that originally motivated the attempts to assimilate the various uses of pronouns. (For example, Kaplan suggests at a couple of points that the demonstrative and anaphoric uses of a form like *he* should be regarded as homonyms, a claim that most linguists would find unpalatable — though I will wind up arguing that it contains a kernel of truth.)⁷

In fact I want to argue here that indexicality involves two distinct phenomena,

⁶ This usage isn't standard, of course. For the most part, the words *indexical* and *deictic* are distinguished by provenance; philosophers tend to use the former, linguists the latter. Beyond that, writers have used both words in a variety of ways, though to my knowledge, no one has used them contrastively before.

⁷ "These words [personal pronouns] have uses different from those in which I am interested (or perhaps, depending on how you individuate words, we should say that they have homonyms in which I am not interested)." (Kaplan 1989:489) "...the fact that demonstrative and anaphoric pronouns are homonyms..." (1989:589)

associated with different classes of expressions and expressions-uses. The first is deixis, which is associated with a particular class of indexicals — for example, words like *I* and *tomorrow* and demonstratives like *this*. As I suggested, deictics are inevitably indicative. The second phenomenon is what we can think of as "contextuality," where an expression permits control by the context of utterance, but where its meaning remains part of the utterance content.⁸

I'll try to make this distinction more precise in a moment, but let me first give some empirical evidence for it. One way to tell deictics from contextuality is to look at how the expressions interact scopally with other operators. It's an important piece of evidence for direct-reference theories that the meanings of words like *I* don't seem to participate in such interactions, since their meanings aren't part of the utterance content. So an utterance of (15) doesn't have the ambiguity associated with an utterance of (14):

- (14) The speaker of this sentence could have been a contender.
 (15) I could have been a contender.

In (15) that is, we can only evaluate the meaning of *I* relative to the actual context of utterance, and once we determine a value it's fixed for all possible circumstances. But note that contextuality like *local* do show such interactions. For example, suppose we're on a trip driving South across Texas, and we've been stopping every evening for Mexican food. At a certain point I say (16) (I'll use the subscript "c" to indicate a use of an expression that's controlled by the utterance context)

- (16) The local_c salsa is getting spicier.

On the most likely reading, (16) means "In each place we stop, the salsa is spicier than it was at the last place." That is, we take *local* as falling within the scope of the progressive. In this regard *local* contrasts with the phrase *around here* in (17):

- (17) The salsa around here is getting spicier.

The only thing (17) can mean is that the salsa at the very place we've stopped is getting spicier — presumably we've been stopping over for a while. That is, the progressive can't take wide scope over the phrase *around here*.⁹

⁸ Clark (1983) uses the term "contextual" in a broader way, to mean, roughly, expressions whose reference depends on the circumstances of utterance. As such, Clark's contextuality includes not only the subclass of indexical expressions I am interested in here, such as *local*, but denominal verbs, noun-noun compounds, and so on.

⁹ Examples like (i) and (ii) make the same point with regard to a modal operator:

- (i) If I'd taken the reassignment, there'd have been a good local_c Chinese restaurant that we could go to tonight.
 (ii) If I'd taken the reassignment, there'd have been a good Chinese restaurant around here that we could go to tonight.

We can make the same point by considering examples of VP ellipsis. Consider the exchange in (18), as spoken over the telephone between people in Palo Alto and Los Angeles:

- (18) A (in Palo Alto): My doctor lives a mile away/a mile from here.
 B (In Los Angeles): Mine does too.

With *a mile away*, B's response can mean that his doctor lives in Los Angeles. That is, the content of *a mile away* can be abstracted and re-evaluated relative to B's place of utterance. But with *a mile from here*, B's utterance can only mean that his doctor lives in Palo Alto, too; the reference of *here* is bound to the location of the context of utterance. And (19) shows that we get the same distinction with *current* but not *present*:

- (19) Bush had been complaining about the current_c (??present) interest rates,
 just as Hoover did.

That is, the content of *current* in the antecedent can be re-evaluated in the target clause relative to Hoover's situation, but the content of *present* cannot be.


Deferred reference

I'll come back to these examples shortly, but now I want to turn to another difference between deictics and contextuials, which involves the phenomenon of deferred reference. Here I have to give a bit of background. I said a moment ago that I wanted to take from the direct-reference account of indexicals as only the claim that deictics are indicative — that is, that their meanings do not figure as part of the utterance content — rather than the further claim that indexical utterances express singular propositions, in which the interpretation that corresponds to a use of an indexical is the very thing its linguistic meaning picks out of the context. My reason for this reservation is that standard accounts of deictic expressions have tended to ignore their use in the processes of deferred reference or deferred ostension. The crucial observation here is that the contextual element picked out by the linguistic meaning of a deictic or by a demonstration often serves as a pointer to the interpretation of the expression, rather than actually being the interpretation. For example, you can point at a newspaper copy and say:


- (20) Murdoch bought  that for \$50 million.

In (i), we can evaluate *local* with regard to other possible circumstances, that is, relative to the reference point that would have been established by my utterance if the conditional were satisfied. Whereas in (ii) the reference of *around here* is permanently fixed relative to the actual point of utterance.

And in this case you are most likely referring to the company that publishes the newspaper, rather than to the copy itself. Or you can point at the couch in John's new office and say (21):


- (21)  That has grown more imposing with each of John's promotions.

The referent of the demonstratives in (21) is a kind-level individual each of whose stages is the unique couch that John has had in his office at any one time. Or take (22), where someone points at a picture of the Pope and says:

- (22)  He is usually an Italian.

Here again, the referent is the kind-level individual each of whose stages is a person who is the Pope at a certain interval.

Now we have to tell a fairly complicated story to explain just what kinds of correspondences can figure in determining the reference of deictics in cases like these. But one point that we should bear in mind is that the interpretations of deictics used in this way needn't necessarily be of the same type as the contextual element that the indexical picks out — in particular, they needn't be individuals. A deictic can contribute a property, as well, provided the property corresponds in some salient way to the demonstratum or the element picked out by the linguistic meaning of the expression. For example, you can point at a sports car and say (23):

- (23)  That is what I've always wanted.

An utterance of (23) needn't entail that the speaker has always wanted the very car he is pointing at; more likely it means that he has always wanted to own some car that has the properties that the demonstratum exemplifies. By the same token, suppose a condemned prisoner utters (24):

- (24) I am traditionally allowed to order whatever I like for my last meal.

It's unlikely that the pronoun here denotes the prisoner himself, since there is not likely to be a tradition that prescribes what that particular person can order for his last meal. Rather, this occurrence of *I* has roughly the same interpretation as the description in a sentence like (25), which contributes the property of being a condemned prisoner:

- (25) The (a) condemned prisoner is traditionally allowed to order whatever he likes for his last meal.

Or consider example (26), as spoken by George Bush:


- (26) The Founders invested me with sole responsibility for appointing Supreme Court justices.

Once again, we interpret the pronoun here as contributing the property of being president of the United States, rather than the individual George Bush. Of course the indexical is still indicative, since the property contributed by the indexical isn't the property associated with its linguistic meaning. That is, (26) doesn't mean the same as (27):

- (27) The Founders invested the speaker of this sentence with sole responsibility for appointing Supreme Court justices.

But at the same time the utterance expresses a general proposition.

Now examples like these are reasonably familiar, but there is a tendency to think of them as involving a kind of derived or secondary reference that arises through a process of conversational implicature. In that case we would say that the indexicals and demonstratives in these examples literally refer to the elements they pick out of the immediate context, and that these elements are then taken as standing in a kind of metonymy for their ultimate referents. But this line is hard to defend, for several reasons. In the first place, note that in deferred reference the inflectional features of the pronoun or demonstrative — number, animacy, gender, and so forth — are determined by the properties of the ultimate referent, not the contextual element or the demonstratum. For example if you want to identify a class of plates by pointing at a single demonstratum you use the plural *those*, as in (28):

- (28)  Those are not in stock.

And by the same token, when you point at a book to identify its author you use *he* or *she*, not *that*. This observation has a further wrinkle in Romance languages, where the gender of a demonstrative is determined by the grammatical gender of the name of the basic-level category that the demonstratum belongs to. If an Italian furrier wants to point at a mink (*il visone*, m.) to identify the furs of the animal, he must use the feminine demonstrative *quella* (pl. *quelle*), since the word for "fur" (*la pelliccia*) is feminine:

- (29) *Quelle si vendono bene.* "Those are selling well."

So it's hard to see how we could assign these utterances a literal meaning where the indexical actually refers to the physical demonstratum; how can *those* denote a single plate, or the feminine plural *quelle* denote a single mink?

An even more immediate reason for rejecting a purely Gricean analysis of these uses is that deferred reference is not possible when a name or referentially used description is substituted for the indexical. For example, suppose the condemned prisoner is called Darnay, and that he also happens to be the man who

is loved by Lucie Manette. Still, (30) can't have an interpretation where the subject contributes the property of being a condemned prisoner:

- (30) Darnay (the who is loved by Lucie Manette) is traditionally allowed to order whatever he likes for his last meal.

By the same token, (26) isn't paraphrased by (31):

- (31) The Founders invested George Bush with sole responsibility for appointing Supreme Court justices.

Both these examples can only have *de re* readings. But if the deferred readings in examples like (25) and (26) are derived pragmatically from a literal reading where the indexical refers directly to its contextual index, then this is puzzling. Whatever process generates the conversational implicature when the deictic is used should also be available to generate it when a name is used in its place. In either case we would be mapping from a singular proposition to a related general proposition.¹⁰

So the deferred use of deictics has to have an explicitly semantic license. And in fact the phenomenon is intimately connected to the indicativeness of these items. Direct-reference theorists are right to say that the function of the meanings of deictics and of demonstrations is to get us to a contextual element that provides the interpretation of an occurrence of the expression. But this element doesn't actually have to be the interpretation. Rather it can be a pointer to the interpretation; that is, an index in the Peircean sense of the term. In this sense the contextual element

¹⁰ It might be argued that the difference between the readings here arises from a conversational implicature occasioned by the use of the proper name — to identify somebody by name, the story would go, is to imply that his personal identity is somehow particularly relevant to the application of the property being predicated. I don't think this argument can be maintained, for two reasons. First, deferred reference is not available with referentially used descriptions, either, even though these function basically as demonstratives do; that is, they pick out something in terms of properties that are simply contextually salient. So suppose we see John Paul II standing in the corner with a martini in his hand. I can say (i) but not (ii):

- (i) He is usually an Italian.
 (ii) ??The man with the martini is usually an Italian.

But it would be hard to argue that the choice of the description *the man with the martini* has any particular relevance to the predication here; I've simply used that description because it is a useful way of picking the referent out of the context. What's more, as we'll see below, deferred reference is not available with the anaphoric uses of pronouns:

- (iii) ??A man came in wearing a red miter and speaking in a Polish accent. He was usually an Italian.

It is hard to see what kind of Gricean explanation could be offered here for the failure of deferred reference. Certainly the maxim of manner can't be invoked, since the mode of presentation of the referent is the same here as in (i); i.e., both use the pronoun *he*.

picked out by a deictic is functionally analogous to the content of a description, rather than to its denotation.¹¹

Deferred reference and contextals

For these reasons, we expect that deferred reference will be possible only with those indexicals that are indicative; i.e., with deictics. And this gives us a second criterion for sorting out deictics and contextals. For example, suppose you are about to go to the south of France, and you want to know where to look for mushrooms. I take you to the bank of a stream in California and say (32):

(32) The best mushrooms are found around here (in this area).

With either *around here* or *in this area*, (32) has a reading where it means something like "the best mushrooms are usually found near the bank of a stream." But this deferred reading isn't available with contextals like *locally* or *nearby*, as in (33):

(33) The best mushrooms are found locally_c (nearby_c).

If *locally* or *nearby* is given an indexical reading in (33) (that is, if the relevant location is fixed by the utterance context), then the utterance can only mean that the best mushrooms are found in the area surrounding the very place of speaking. Examples (34)-(35) make the same point about temporal indexicals.

(34) The crowds in the university bookstore have usually abated by a week from now (by tomorrow).

(35) ??The crowds in the university bookstore have usually abated soon_c (in a while_c).

As uttered on the first day of the quarter, (34) most likely means, "The crowds have usually abated a week after the first day of the quarter"; that is, *now* has a deferred reading, where it contributes a property exemplified by the actual time of speaking. But (35) has no such reading. *Soon* can only be interpreted as referring to a particular time shortly after the moment of speaking, and the reason (35) is odd is that this interpretation is inconsistent with the meaning of *usually*.

Deictics and contextals


Table 2 summarizes the properties that distinguish deictics from contextals:

¹¹ For an extended discussion of this point, see Nunberg (ms).

Table 2: Differences between deictics and contextuials

	deferred interpretations	scopal interactions
contextuials	NO	YES
deictics	YES	NO

At this point the obvious question is whether there is some independent semantic property that enables us to predict which expressions fall into which categories. At a first pass, we might expect that deictics correspond to the class of dedicated indexicals; that is, expressions that are lexically restricted to indexical use. But this hypothesis is both too weak and too strong. It is too weak because we find deferred reference with third-person pronouns, which are the archetypal examples of expressions that can be controlled by all types of contexts. We already noted this in connection with example (22), where somebody points at a picture of the Pope and says *He is usually an Italian*. Or suppose we're at a party and see Ralph in friendly conversation with Clovis, apparently unaware that Clovis has been carrying on a clandestine affair with Ralph's wife. I point at Ralph and say:

(36)  He is always the last one to know.

meaning something like, "The husband is always the last one to know." That is, the pronoun here contributes a property. So if we take the availability of deferred interpretations as criterial for the identification of deictics, and if we further assume that demonstrative and anaphoric uses of third-person pronouns do not involve homonymous forms, then we have to assume that deixis isn't restricted to dedicated indexicals.

But there are some other observations that complicate this picture. As it turns out, the identification of deictic and indexical uses of third-person pronouns is not so straightforward as people generally assume. A crucial feature of the uses of the pronouns in cases like (36) is that they are accompanied by explicit demonstrations. But these pronouns also have nondemonstrative indexical uses, where they refer to a person who is simply salient in a particular background. For example, say we're walking through Versailles and you say:

(37) Gee, he certainly spared no expense.

The obvious reference here is Louis XIV. But Louis XIV isn't demonstrated here, either by the speaker or the context. He's simply salient in the consciousness of the conversational participants. And when pronouns are used in this way — i.e., when they are simple contextuials — they can't have deferred readings. For example, take the situation of the triangle involving Ralph, Clovis, and Ralph's wife. But now,

instead of a situation where I point at Ralph, suppose we happen to be driving past Ralph's house late at night and we see Clovis leaving. I can easily say (38), where the pronoun refers to Ralph himself.

(38) He must be away.

But I can't say (39), using the pronoun to refer to the role Ralph exemplifies:

(39) He is always the last one to know.

That is, the use of *he* in (39) is indexical but not deictic, and hence no deferred interpretation is available. So in cases like (36) the deictic interpretation of the pronoun doesn't follow from its lexical meaning. Rather, it's the result of a kind of operator introduced by the demonstration.

I'll have more to say about this operator in a bit, but first let me mention some of the consequences of this observation. For one thing, if the deictic feature of pronouns is introduced by an explicit demonstration, then we won't expect pronouns to have deferred interpretations when they are used as discourse anaphors or bound variables. And this seems to be right. For example, suppose we go to the opera and hear a mezzo singing a part that is usually sung by a coloratura. I can point at the singer and say:

(40) $\llbracket \text{she} \rrbracket$ She is usually a coloratura.

where the pronoun refers to the role the singer is performing. But the pronoun in (41) can't refer to a role:

(41) ??Every mezzo has difficulty when she [= the role sung by the singer] is usually a coloratura.

Analogously, the anaphorically used pronoun in (42) can't have an interpretation where it contributes the property of being president of the U.S., and the pronoun in (43) can't refer to the Pope as a kind-level individual:

(42) ??George Bush spoke next. He was invested by the Founders with the authority to appoint justices to the Supreme Court.

(43) ??The prelate who is addressing the U.N. is Polish, but he is usually Italian.

On this analysis, we would predict that contextual pronouns — i.e., nondeictic indexical pronouns — can participate in scopal interactions with other operators, the way the word *local* does in an example like (16), *The local_c salsa is getting spicier*. That is, their contexts of evaluation should be able to fall within the scope of other operators (in Kaplan's terms, these operators should be "monsters"). So say A is showing B around a well-appointed campus building that

was donated by the wealthy alumnus Croesus O'Shea. They have the following exchange.


- (44) A: The trustees certainly got a lot of money out of him.
B: They always do.

B's response here may be interpreted strictly (i.e., "The trustees always get a lot of money out of Croesus O'Shea"), but it can also have a sloppy reading, where it means roughly, "The trustees always get a lot of money out of the donors of buildings." In this case we have to be able to treat the relation between the pronoun and the context of utterance of the antecedent clause as available for abstraction and reinterpretation in the target.¹² (Note that this reading is not available if the pronoun is used deictically — for example, if (44) is uttered while demonstrating a statue of the donor. In that case the target clause can have only a strict reading.) Examples like this raise interesting problems for semantic theories of ellipsis, but I won't pursue this here. The point I want to make is simply that while these pronouns are obviously indexical, they aren't directly referential; their interpretations aren't fixed for all possible circumstances.

With pronouns like *he*, then, we want to say that deictic interpretations are introduced by a demonstration associated with a use of the expression, rather than by a lexical feature associated with the lexical entry for the item, or even just with its indexical uses. At the same time, though, this operator can't be introduced freely with all contextual expressions or even with all pronouns. This is clear when we contrast the pronoun *it* with the demonstrative *that*. *It* can be used indexically to refer to some object that is salient in the context, as when you hand me a suitcase and I say:

- (45) Gosh, *it's* heavy.

But *it* can't be used as a demonstrative. For example, you can't point at one of the glasses of wine sitting before you at the table and say:

- (46) ??Now  *it's* what I call a good burgundy.

¹² We can make the same point with examples involving the use of *they* to refer to some vague institutional or social agency that is salient in the context. For example, suppose a Stanford professor and a Berkeley professor are talking about university budget cuts, and they have the exchange in (i):

- (i) Stanford professor: I'm afraid *they're* going to start start cutting funds for RA's.
Berkeley professor: I'm not.

The Berkeley professor's response has a reading where she isn't disagreeing with what the Stanford professor is saying; that is, where she is talking about different university authorities. Once again, then, the interpretation of the pronoun in the antecedent has to be abstracted and reinterpreted relative to the target.

And for just this reason, the pronoun *it* can't generally have a deferred reading. Say you're flipping through the stations on the television and a Giants game appears on the screen. I can say:

(47) Don't switch, it's my favorite team.

But now say that rather than the team itself, we see the face of Giants first baseman Will Clark, dressed in a coat and tie. In this case I can only get to the Giants via deferred reference, but an utterance like (47) with *it* won't permit this process. Instead I have to say (48), using the demonstrative *that*:

(48) Don't switch, that's my favorite team.¹³

(I should note that with forms like *this* and *that* we don't always require an explicit demonstration to get a deictic interpretation, since the deixis is built into the meaning element that distinguishes proximal and distal forms.) These examples show that *it* has to be lexically specified as not permitting deictic use, or in what amounts to more-or-less the same thing, that *he* must be lexically marked as permitting such use.¹⁴ And this is a lexical feature that is independent of control properties of these pronouns, both of which can be either indexicals or anaphors. This is why I said earlier that there was a kernel of truth in Kaplan's contention that the demonstrative and bound-variable uses of *he* were homonyms, except that the distinction should really be drawn between the deictic and nondeictic uses. I'm not saying that these are different forms, but the deictic use of *he* requires an explicit lexical license.

With third-person pronouns and other contextual expressions that have both indexical and nonindexical uses, then, the availability of a deictic interpretation requires an independent lexical specification. But what about the dedicated indexicals? Can we at least say that these are always deictic? It's true most of them are — *I*, *tomorrow*, and so on. But there are some exceptions, which show that this connection too is contingent. For example, the postposition *ago* can only be controlled by the utterance context, as demonstrated by (49):

¹³ Or suppose we drive past a car that has just hit a tree, in circumstances where the accident manifestly has both our attention. I can say (i) but not (ii), where the intended reference is to an accident-type:

- (i) Gosh, it must have happened just a second ago.
- (ii) ??It (ok that) has happened a number of times on this stretch of highway.

¹⁴ Note that the plural *they* permits deictic use when it refers to animates, but not when it refers to inanimates (i.e., when it is the plural of *it*). Examples involving deferred reference make this clear. You can point at a record and say "They are playing a concert next week." But a salesperson in a record shop can't point at a picture of a singer and say, "They are defective," to refer to a shipment of records by that singer, though "Those are defective" works here.

- (49) ??Every writer who visited Paris in the 1930s wished he'd been there ten years ago (ok: before).

But *ago* doesn't license deferred use, as (50) and (51) show:

- (50) When I was a kid, they began to decorate the trees a week before now (before today, etc.).
 (51) ??When I was a kid, they began to decorate the trees a week ago.

In (50), *a week before now* is roughly equivalent to a description like "a week before December 15," or whatever date the sentence is uttered on — that is, the indexical contributes a property that is exemplified by the time of utterance. But in (51), *ago* can't have this reading, which entails that *ago* is not a deictic. So we have to conclude that even where deixis is provided by lexical feature rather than a demonstration, it has to be specified independently of the restrictions on control that limit an item like *ago* to indexical use.

It follows that the lexicon has to make provision for three types of indexical expressions: those that are invariably deictic, like *I*; those that cannot be deictic, like *it*; and those that permit but don't require deictic use, like *he*. This is summarized in Table 3:

Table 3: Lexical specification of deixis

<i>I, tomorrow</i>	+DEICTIC
<i>it, local, ago</i>	-DEICTIC
<i>he</i>	±DEICTIC

In the end, then, the two approaches to indexicality that we began with yield largely disjoint definitions of the phenomenon. I don't think we should find this surprising. No one has ever offered a theoretical reason why there should be an absolute correlation between expressions which have indexical meanings (i.e., which are token-reflexive, controlled by the utterance context, or whatever) and expressions with the particular interpretive properties associated with direct reference (i.e., indicativeness). This was always an unexplained empirical assumption, and it simply turns out to be false.¹⁵

¹⁵ Note that on this account the interpretive properties of deictics are different from those of proper names, though the two are conflated on most direct-reference accounts. I would argue that unlike indexicals, proper names are indicative in virtue of the kinds of linguistic rules that determine their use; i.e., to be a proper name is to directly denote an individual. But proper names are not like deictics in that their conventional denotations can't serve as Peircean indices of their interpretations; that is, they don't permit deferred reference.

Deixis and Interpretation

Let me conclude by saying a bit more about the interpretations of deictics. On the account I'm offering here, deixis involves an operator that is a lot like Kaplan's D that; it takes contexts, tokens, or whatever into elements of the context. The difference is that here we want to make explicit semantic provision here for deferred reference. One way of accommodating this is to have the semantics constrained by a context-sensitive "deference function," which composes with the deixis operator to produce an interpretation. Sag (1981) proposed something along these lines in an effort to formalize some of these observations about deferred reference. But Sag made this function part of the content of the expression, whereas I prefer to think of it as a kind of constraint on the relation between the context and the content. Take for example the case of pointing at a newspaper to identify its publisher. Let δ be the demonstratum, and let F_c be the deference function that is relevant in the context; here, the function from newspaper copies to their publishers. Then we can represent the interpretation of a sentence like *Murdoch bought that* as something like (52):

(52) Bought-for-\$50-million (Murdoch, z), where $z = F_c(\delta)$


Now if deference functions were limited to functions that returned individuals, this wouldn't have any important effect on the direct-reference story, since these utterances would still express singular propositions. But we've seen that deictics can also have other kinds of interpretations. They can contribute kinds, properties, and so forth. And this raises the question of how these interpretations should be represented and what becomes of the direct-reference approach when we extend the account to cover these cases.

Note also that the account of deixis I've offered here doesn't explain why only indexicals should permit deictic readings — why shouldn't deixis (and hence deferred reference) be available with the uses of names and referentially used descriptions as well? In fact there are examples that suggest this is possible. Say we're watching a televised Senate debate; I point at Dan Quayle, the presiding officer, and say:

(i) Dan Quayle over there (the blond featherhead over there) might have been a Democrat.


And (i) has a reading where it means roughly "The presiding officer of the Senate might have been a Democrat"; that is, the proper name contributes a property. This example needs more discussion than I can give it here, but I should make two points. First, there are a number of reasons for believing that the deferred interpretation here, unlike that with deictics like *I*, is derived via a kind of secondary or reference, and needn't be provided for semantically. Second, it is notable that the interpretation here is limited to properties that Dan Quayle saliently exemplifies in the context. The subject of (i) can't have the interpretation, "the chair of the council on competitiveness," say, even though Dan Quayle is known to have that property as well. In effect, the interpretation is limited to properties that can be physically demonstrated. I think this observation is relevant to explaining the general restriction of deixis to indexicals, but I will not pursue this here.


Interestingly, I think the basic insight survives intact. For example, suppose we take an example based on (26). You point at George Bush and you say:

(53)  He was invested by the Founders with the authority to appoint Supreme Court Justices.

The pronoun here contributes something like the property of being the president. But we don't want to mention a particular property in the representation, since it's not clear whether the speaker would produce that very description, or if he even knows exactly what properties are relevant. What (53) says, rather, is something like, "Whoever has the relevant property that the demonstratum corresponds to was invested by the Founders with the authority to appoint Supreme Court Justices."

But it's important to note here that the interpretation in these cases is limited to properties that the demonstratum actually exemplifies. So you could not say (54) or (55) while demonstrating Michael Dukakis:

(54).  He could have been invested by the Founders with the authority to appoint Supreme Court Justices..

(55)  He could have been traditionally the titular head of his party.

That is, we can't evaluate the deference function relative to some other possible context in which Dukakis had been elected president. So while it's true that a utterance like (53) expresses a general proposition, there's still a sense in which the pronoun is "directly referential." We evaluate the deference function relative to the actual context, and once its value has been determined as a particular property, that property is fixed for all circumstances. Accordingly, we could represent the interpretation of the pronoun in (53) using a free property variable, as in (56); here again F_c represents a contextually determined deference function, but in this case one that takes individuals into properties:

(56) $\lambda P [\forall x [\Pi(x) \rightarrow Px], \text{ where } \Pi = F_c(\delta)$

As in example (52), then, the relation between the interpretation and the demonstratum is treated as a constraint that relates the context to utterance content.

The observations I've offered here raise a number of questions for theories of indexicality. For example, how exactly do demonstrations fit into this picture, and how can we assimilate the demonstrative uses of pronouns to the uses of indexicals like *I*? At the same time, we will want to know how to accommodate these observations within standard accounts of anaphor, such as DRT: do they entail that there are really two kinds of "discourse entities" by which indexical expressions can be controlled? I think the answer is yes, but I won't argue the point here. But the first step in answering these questions is to realize that "indexicality" is not in fact a homogeneous phenomenon.

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