Demonstrative Pronouns in Natural Discourse

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Abstract

We examine demonstrative pronouns in a portion of the Santa Barbara Corpus of American English and propose a coding scheme that classifies pronouns with nominal as well as non-nominal antecedents into direct and indirect, depending on whether their referent is the same as the referent/denotation of the antecedent. In agreement with previous studies, we find that demonstratives more often have non-NP antecedents than NP-antecedents, the opposite pattern from that of the personal pronouns. Since anaphoric relationships involving non=NP antecedents are more frequently indirect, our scheme allows for a principled explanation for the difference in distribution patterns of demonstratives compared with personal pronouns. We propose that the indirect anaphoric cases are more accessible to reference with demonstratives because, demonstratives only require the referent to be activated, not necessarily in focus.

1. Introduction and Background

The purpose of this paper is to test and refine hypotheses concerning pronominal anaphors without NP 'antecedents'.[1] We extend the work in Gundel, Hedberg, and Zacharski (forthcoming), which examined personal pronoun reference in the Santa Barbara Corpus of American English (Dubois, et al. 2000) with regard to the ability to refer to entities such as events, propositions, facts, etc. when these are introduced into the discourse by non-nominal constituents. In the present paper we report on a study of demonstrative pronouns in the same corpus segments and contrast their ability to refer to such entities with that of the personal pronoun *it*. We thus examine demonstrative pronoun use in a corpus of spontaneous American English speech.

Gundel, Hedberg and Zacharski (1993) propose that the personal pronoun *it*, like other unstressed personal pronouns, explicitly signals the cognitive status 'in focus', i.e. its referent is assumed to be in the addressee's focus of attention. Demonstrative pronouns, on the other hand, only signal activation. Their referents are assumed to be in the addressee's current awareness/working memory, but do not necessarily have to be in focus. Since demonstrative pronouns are unspecified for the status 'in focus' (anything in focus is by definition also activated, but not vice-versa) their distribution is also less restricted. As exemplified in (1) and (2) (from Gundel, et al. 1993) both demonstratives and *it* can occur when the referent is in focus. But when the referent is merely activated, but not in focus, a demonstrative must be used.

(1) a. My neighbor's Bull Mastiff bit a girl on a bike.
    b. That's/It's the same dog that bit Mary Ben last summer.

(2) a. Sears delivered new siding to my neighbors with the Bull Mastiff.

    b. That's /#It's the same dog that bit Mary Ben last summer.

In (1), the Bull Mastiff is in focus at the end of (1a) since it has been introduced in a syntactically prominent (subject) position. The dog can therefore be referred to with either *it* or *that* in the subsequent sentence. But in (2), where the Bull Mastiff has been introduced in an oblique position, only reference with *that* is acceptable.

The distinction between the cognitive statuses signaled by demonstratives and unstressed personal pronouns can also provide a principled explanation for why the pronoun *it*, in contrast to demonstrative pronouns, often cannot be used to reference 'higher order' entities such as facts and propositions when these are introduced by non-nominal constituents, given the assumption that such entities are less likely to be in focus than those introduced by a syntactically prominent NP. In (3), for example, the demonstrative pronoun *that* in Karen's second utterance can refer either to the in focus library or to the activated, but not in focus fact that the library won't be developed on film, with a preference for the latter interpretation.[2]

(3) Karen: You know I've tried several times to take take pictures of the library in Linden hills. I, sometimes I think it must be haunted or something, because it won't uh ... develop on some film.
    Neil: Weird . . . I took in the=
    Karen: = Isn't that supposed to be symbolic of something?
    (Frederickson tapes, cited in Hedberg 2000, p. 897)

Replacing *that* with *it*, however, as in (3'), forces the library interpretation.

(3') Karen: You know I've tried several times to take take pictures of the library in Linden hills. I, sometimes I think it must be haunted

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[1] We use the term 'antecedent' here to refer to the linguistic expression (e.g. a noun phrase or clause) whose reference/denotation the interpretation of an anaphoric expression depends on. This is to be distinguished from the 'referent', which is the non-linguistic entity that an expression refers to.

[2] This preference may be due to a scalar implicature. Since anything in focus is also activated, use of a demonstrative often implicates that the referent is not in focus. See Gundel et al. 1993 for more discussion.

or something, because it won't uh ... develop on some film.

Neil: Weird . . . I took in the=

Karen: = Isn't it supposed to be symbolic of something?

2. What brings an entity into focus? Previous work

Building on the proposals outlined above, a series of studies by Gundel, Borthen and Fretheim 1999, Hegarty, Gundel and Borthen 2002, and Gundel, Hegarty and Borthen 2003 further explored the use of demonstratives vs. personal pronouns in referring to entities evoked by constituents other than an NP/DP and the semantic, syntactic, and information structural properties that contribute to bringing such entities into focus of attention, thus making them accessible to reference with *it*. These studies point out that clauses and verb phrases denote and therefore directly introduce entities with relatively high world immanence (see Asher 1993), i.e. events, situations, states and activities. Facts and propositions inferred from or associated with such entities are not likely to be in focus since they involve reconceptualization and additional processing; they are therefore less accessible to reference with a personal pronoun. For example, in (4), where the pronoun refers to the event of John insulting the ambassador that is denoted by the first sentence, the personal and demonstrative pronouns are equally acceptable. But in (5), where the referent of the pronoun is not the event itself but the situation resulting from it, the personal pronoun is less acceptable, because the situation, unlike the event, is not directly introduced and therefore not brought into focus by the first sentence.

(4)   John insulted the ambassador. That/this/it happened at noon.

(5)   John insulted the ambassador. That/this/??it was intolerable to the embassy.

Similarly in (3) above, the statement *it won't develop on some film* directly evokes the particular situation of that library not developing on film, but the entity referred to by the pronoun refers to a more general situation of things not developing on film. Since this situation can only be indirectly inferred from the denotation of the antecedent clause, it is less likely to be in focus and therefore is more accessible to reference with a demonstrative pronoun, than with the personal pronoun *it*.

Gundel et al. 2003 also note that the speech act performed by an utterance is activated but never brought into focus since the focus of attention will be on some aspect of the content of the utterance, not the act itself. This is illustrated by facts like the following (from Gundel, et al. 2003).

(6) A.   I just ate three pieces of cake.
    B.   Can you repeat that.
    B'.   ? Can you repeat it.

The demonstrative pronoun *that* in (6)B is ambiguous between an interpretation where the speaker is being asked to repeat the statement in A and one where she is being asked to repeat the act of eating three pieces of cake. But (6B'), if it is acceptable at all, can only be interpreted as a request to repeat the act of eating the cake; it cannot be interpreted as a request to repeat the act of saying that she ate three pieces of cake. Similar observations apply to metalinguistic reference in general, as will be shown below.

The works cited above, as well as other works that have noted the stronger tendency of demonstratives to refer to entities introduced by non-nominal antecedents (e.g. Webber 1988, 1991) were based primarily on planned written discourse, supplemented by constructed examples. In Gundel et al. (forthcoming) we examined 2006 personal pronouns in the Santa Barbara corpus, finding that 83.5% of these had coreferential NP antecedents. Only 110 of the personal pronouns had a non-nominal antecedent (5% of the total). Of these, only 16 (0.8% of the total number of personal pronouns) were coded as referring to facts, propositions, etc. that were related to a previously introduced event or state of affairs/situation; and none of those were clear cases. This further supports our proposal that personal pronouns refer only to entities that are likely to be in focus because they have been directly introduced and this is why such pronouns, unlike their demonstrative counterparts, typically have coreferential NP antecedents. Referents of pronouns with non-nominal antecedents are frequently not in focus since they are not identical to the entities introduced by the antecedent; they are thus relatively inaccessible to subsequent reference with the personal pronoun *it*.

By contrast, a preliminary analysis of demonstrative pronouns in the data revealed that 433 out of 601 of these (72%) lacked coreferential NP antecedents. In the present paper we report on a more in depth analysis of these demonstrative pronouns, which tests the hypothesis that they are used in referring to entities such as facts and propositions that must be inferred from entities directly evoked by non-nominal constituents as well as other entities that are activated, but cannot be expected to be in focus.

3. The current study

In the present paper, we compare the use of personal pronouns in the Santa Barbara Corpus with demonstrative pronouns in that same corpus to determine the type of referents, testing our hypothesis that a greater percentage of demonstrative pronouns than personal pronouns will refer to entities with non-nominal antecedents as well as other entities that are arguably activated, but not likely to be in focus. We also examine in more depth the relation between the referent of the pronoun and the entity introduced by the non-nominal constituent or constituents and address some methodological problems associated with identifying the semantic type of such entities.

3.1. Methodology

3.1.1. Data

We analyzed the first 24-30 examples of demonstrative pronouns in each of 4 transcripts (transcripts 3, 7, 10, and 12) from the Santa Barbara Corpus of Spoken English Part-1 (DuBois, et al. 2000). This was a subset of the data analyzed in Gundel et al. (forthcoming) for personal pronoun use. Each transcript was analyzed by three coders (the authors). The reason for

beginning with only a small subset of the data was that we wanted to address methodological problems encountered in the earlier study, with the goal of developing a more reliable coding scheme.

3.1.2. Coding System

As noted above, we assume that facts and propositions referred to by a pronoun are less likely to be in focus than individuals, events, or activities not because of some inherent property of such entities but because the clauses or sequence of clauses that serve as antecedents for facts and propositions do not introduce them directly, as they denote more world immanent entities such as events and states of affairs. Thus, to test our hypothesis that the difference in distribution between personal pronouns and demonstratives is attributable to the cognitive status of their referents, it is necessary to determine the semantic type of the entity referred to by the pronoun as well as that of its non-NP antecedent.

In the case of the antecedent, this is relatively straightforward. It is generally assumed that the number of possible candidates is small, two each for clauses and VPs. Thus, in Gundel et al. (forthcoming) we assumed that clauses denote eventualities, either events or states of affairs/situations, depending on whether the predicate was active or stative, and VPs denote either activities or states. (see Byron 2002). Determination of semantic type is more complicated, however, for the referent of the pronoun. Some cases are relatively easy to determine based on semantic restrictions of the predicate. For example, in (7), it is clear that the pronoun *that* in Alice's statement *And he doesn't realize that* refers to the fact that all those bitches and complaints he has are about her lifestyle, inferrable from the situation asserted to hold in her previous statement.

(7) ALICE: ... And all those bitches and complaints that he has, they're about my lifestyle.
     MARY: ... Mhm,
     ALICE: And he doesn't realize that.
                        (5.123-83-131.58)

Similarly, in (8) all three coders agreed that the demonstrative *this* refers to the activity of trying to breed the 40 foot long tube chicken.

(8) ROY: .. They're trying to breed like a forty foot long tube chicken?
     MARILYN: You mean so that they can go right from that to Chicken McNuggets?
     …
     MARILYN: Who's doing this,
                        (3. 297.88-313.97)

However, for most cases, determining the semantic type of the pronoun referent was more difficult, because the predicate did not force a single interpretation, because there didn't seem to be a single word that would accurately describe the type, or simply because the referent was too vague. The problem was no doubt partly due to the fact that the Santa Barbara data is the hardest type of data to code reliably as it is multi-party, unplanned, spontaneous, casual speech, filled with false

starts, ungrammatical sentences, imprecise language, and extra-linguistic reference.

The difficulty of reliably coding for semantic type of referents with non-nominal antecedents was already noticed in Gundel et al (forthcoming), but the problem did not significantly affect the investigation there since the number of personal pronouns with non-nominal antecedents was so small and there were no clear cases that could even plausibly refer to a fact or proposition. But a sample coding of 25 examples of demonstrative pronouns for the current study revealed that some alternative coding scheme would have to be developed in order for the coding to be reliable.

We divided pronouns with NP antecedents as well as those with non-NP antecedents into two types – direct and indirect (cf. indirect anaphors, Erkü and Gundel 1987). An anaphoric pronoun was coded as direct if the referent was the same as the referent/denotation of the antecedent. It was coded as indirect if the interpretation of the pronoun depended on that of the antecedent but they were not coreferential. For pronouns with NP antecedents, the direct cases would be prototypical coreferential pronoun–antecedent examples and the indirect cases would be ones that were coded as inferrable (Prince 1981) in Gundel et al. (forthcoming). For pronouns with non-NP antecedents, the direct cases would be ones where the referent of the pronoun is the same as the denotation of a clausal or VP antecedent and the indirect cases would be ones where the reference/denotation of the two is not the same.

This coding scheme has two major advantages. First, it makes it unnecessary to identify the exact semantic type of the pronoun referent. It is only necessary to determine whether the pronoun referent is the same as the referent/denotation of the antecedent. Second, it allows for a more uniform treatment of pronouns with NP and non-NP antecedents and more clearly captures the distinctions that are crucial in determining reference with a personal pronoun or a demonstrative in both cases. An example of each type is provided below.

NP-antecedent, direct.
(9) MARILYN: ... Well actually I have Trader Joe's, whipped ... garlic bread .. spread.
     ...
     ROY: So, we can dispense with the garlic and the butter.
     PETE: Right.
     MARILYN: Right. It's all --
     PETE: That goes right along with the- --the Cajun .. spice [mix,
                        (3.227.95-240.51)

The referent of *that* here is Trader Joe's whipped garlic bread spread, which has just been mentioned.

NP-antecedent, indirect
(10) LYNNE: ... I don't know what her plans really are. But I think pretty much just go out and take care of em and then, maybe go to that ... seasonal dance, or whatever it is.
     ...
     LYNNE: ... You know, he said there was four guys doing that?
                        (1.1048.35-1067.23)

In (10) a bridging inference (Clark & Haviland 1977), making use of the information that dance events involve dancing activities links the referent of *that*, the activity of doing the seasonal dance, to the event of the seasonal dance directly evoked by the antecedent "trigger" (Cornish 1999), the noun phrase *that seasonal dance* in the previous sentence.

non-NP antecedent, direct
(11)LYNNE: ... And, those guys are so used to it,
                        that they do it all day long. you
                        know.
      LENORE: Mhm.
      LYNNE: And that doesn't bother em a bit,
                        to just go out there and, .. trim and
                        trim and trim.
                                        (1.868.75-877.75)

In (11), the pronoun *that* can be analyzed as referring to the event type of their doing it (= trimming) all day long, which was directly denoted by the previous sentence.

non-NP antecedent indirect
(12)ALICE: ... And the only way it's gonna work,
                        is if we have respect for one another.
      MARY: That's right.
                                        (5.137.08-142.18)

In (12), the pronoun *that* refers to Alice's statement/assertion that the only way it's going to work is if they have respect for each other. Since the clause that serves as the antecedent for *that* denotes a situation or state of affairs and not an assertion or statement, this example is indirect. Note that the predicate *right* can only take an assertion or statement as its subject. Situations, states of affairs and events can't be right or not right.[3]

The other two categories were 'pleonastic' and 'other'. The 'other' category consists of extra-linguistically introduced referents, idiomatic usage, and cases where the referent was unclear from the transcript.

3.2. Results and Discussion

Of the 99 examples analyzed, all three coders agreed on the classification for 56, a little over one half. Lack of agreement in a number of the remaining cases is due to the fact that some examples were ambiguous, allowing for more than one interpretation, but this was not noted consistently by any of the coders. Agreement would have been higher if it had been.

In some of the ambiguous cases, the referent of the demonstrative pronoun is present in the extralinguistic context, but it was also mentioned earlier. It is not clear in these cases whether the speaker is referring directly to the object in the extralinguistic environment or whether the pronoun is anaphoric, i.e. with an NP antecedent. An example is given in (13). Here the referent of *these* is the beans which were mentioned several seconds before, but

which were also present in the extralingusitic environment. Thus, this example could have been coded as having an NP antecedent or Other, i.e. extralinguistic.

(13)MARILYN: Would [2you like to2] ... string the
                        beans?
      PETE: [2What can I do2]. Sure.
      ...
      PETE: These aren't particularly stringy.
                                        (3.16.52-32.06)

We will examine the results of this preliminary study in order to refine our coding guidelines, so that we can improve reliability of coding the remainder of the data set.

Here we discuss only the cases where all three coders agreed. As Table 1 shows, even considering only these, we have 24 examples of demonstrative pronouns with non-nominal indirect antecedents (out of 56), or 42.9%, which is more than two and half times the percentage of all non-NP antecedent cases of personal pronouns in the whole data set (Gundel et al. forthcoming). This is consistent with previous findings that demonstrative pronouns have a much higher frequency of non-NP antecedents and shows that this generalization also applies to unplanned casual conversation. As Table 1 shows, the examples with non-NP antecedents were all indirect, thus strongly supporting our hypothesis that the reason demonstratives are much more likely to have non-NP antecedents is that, unlike the personal pronoun *it*, they do not require their referent to be in focus.

	N	%
NP direct	19	33.9
NP indirect	2	3.6
Non-nominal direct	0	0
Non-nominal indirect	24	42.9
Pleonastic	0	0
Other	11	19.6
Total	56	100

Table 1: Demonstrative pronouns in a portion of the Santa Barbara Corpus

NP antecedent, direct
As noted above, most personal pronouns have direct (coreferential) NP antecedents. In the data examined in Gundel et al. (forthcoming), this category accounts for 83% of all personal pronouns. By contrast, our preliminary study of demonstratives in the same data finds that only about one-third have direct NP antecedents. One reason for this difference is that more demonstrative than personal pronouns are used for reference to entities evoked indirectly by non-nominal antecedents and for reference to extralinguistically evoked entities. We have proposed that such entities are typically not available for reference with personal pronouns because they are not in focus. A second reason might be that people cannot generally be referred to with a demonstrative pronoun; a stressed personal pronoun must be used when a human referent is activated but not in focus.

NP-antecedent, indirect
The percentage of pronouns with indirect NP antecedents (the 'inferrable' category in Gundel et al

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[3] Byron (2002) assumes that *right* and *correct* take a proposition as argument. We disagree, for reasons that we cannot go into here due to lack of space. But note that in either case the example in (12) would be classified as indirect since the clausal antecedent can only denote an event or situation/state of affairs.

forthcoming) is very small for both personal and demonstratives pronouns. Inferrables account for only 4.4% of the personal pronouns in our investigation (Gundel et al forthcoming) and only 3.6 percent of the demonstratives pronouns in Table 1. This is what we would predict since processing the referent of an NP does not automatically activate all entities that might be inferrable from or associated with it. (See Erkü and Gundel 1987, Gundel et al. 1993, Gundel et. al. 2000, (forthcoming).)

This category also includes examples where there is an NP antecedent, but reference is to the linguistic expression constituting this antecedent rather than the entity denoted by the antecedent. An example is shown in (14).

(14)LYNNE: Maybe go to that ... seasonal dance, or whatever it is. ... Is that what it's called?
(1.1052.77-1059.23)

Note that *it* cannot felicitously replace *that* here because, as in the case of reference to speech acts (cf. example (6) above), the linguistic expression is activated by the antecedent but is not placed in focus.

Non-nominal antecedent
As noted above, the percentage of references with non-nominal antecedents is much higher for demonstrative pronouns than for personal pronouns. Only 5.5% of personal pronouns (110 out of 2006) investigated in Gundel et al (forthcoming) were in this category. This compares to 24 out of the 56 demonstrative pronouns analyzed in the current study (42.9%). Furthermore, it is noteworthy that all 24 examples of demonstratives with non-nominal antecedent were of the indirect type. We believe that direct pronominal references with non-nominal antecedents are infrequent for two reasons. First, the semantic type of the pronoun referent in such cases must match the semantic type of the antecedent, and is thus restricted to events, situations, activities or states. It does not include reference to facts, propositions or speech acts, as these are not denoted, hence not directly introduced by non-nominal antecedents. Second, the referent of the pronominal is more likely to be in focus in the direct cases, thus licensing use of the personal pronoun *it*. In the indirect cases, however, additional inferencing/processing is required to compute the reference of the pronoun. The referents are thus activated but not in focus, necessitating use of a demonstrative rather than a personal pronoun. Some examples of indirect pronominal references with non-nominal antecedents are provided below.

In (15), the situation or state-of-affairs that it's double jeopardy for Chicanos is denoted by the antecedent sentence. The referent of the demonstrative pronoun (the fact that this is the case) has to be inferred; thus the reference to the fact is indirect.

(15)MONTOYA: ... So, ... for us, as Chicanos it's a double jeopardy. ... That's another point I wanna underscore.
(12.1110.29-1116.73)

As we predict, the personal pronoun *it* would not be felicitous here, because the referent was not directly

introduced by the antecedent, and is thus only activated and not in focus.

In (16), Rachel's sentence denotes the situation or state-of-affairs that they have more power now. As complement of the verb *say,* the pronoun *that* refers to the statement that this is the case, and the relationship between the antecedent and the anaphor is thus indirect.

(16)RACHEL: .. Now? ... They have more power now.
MONTOYA: ... They have more power? Why do you say that.
(10.431.20-437.10)

Once again, the personal pronoun *it* would be infelicitous, because the statement is merely activated and not in focus.

The category 'Non-NP Antecedent, Indirect' also includes examples where the pronoun refers to a complex fact, situation, event, etc., inferred from the conjunction of two or more previous sentences. Such examples favor the use of a demonstrative pronoun (Webber 1991, Hegarty et al 2001, Gundel et al 2003). For example in (17), the pronoun *this* in Ron's final sentence refers to the complex situation/state of affairs derived from conjunction of the preceding two sentences, the first of which denotes an activity/event and the second of which denotes a situation/state of affairs.

(17)ROY: Like they're, they're trying to breed, ho ho, .. they're trying to breed like a forty foot long tube chicken?
…
ROY: It has no, basically no body bones except a spine,
…
ROY: to convey the nerves, from one end to another.
…
ROY: This is like some kind of horrific nightmare.
(3.294.65-316.29)

Notice that the personal pronoun *it* could felicitously replace the demonstrative in this example. However, there is a slight preference for interpreting *it* as referring only to the situation described by the immediately preceding sentence (i.e. the situation of a chicken having no body bones…is some kind of nightmare).

Pleonastic
The 2006 personal pronouns analyzed in Gundel et al (forthcoming) included 92 (4.6%) that were pleonastic. Of the constructions that have been analyzed as having pleonastic subjects, only clefts and extraposition sentences admit demonstratives, and these are much less common than pleonastic *it*. It is therefore not surprising that none of the 56 demonstratives we examined were pleonastic. We did find two examples of apparent extraposition sentences with demonstrative subjects in the preliminary sample of 25 demonstrative pronouns that we examined in order to arrive at our coding scheme. One of these is shown in (18).

(18)LYNNE: ... She had a brother that died from asthma too.   ... Seem like a lot of people.

... I mean that's weird, that I would know two people that died from asthma.
(1.1260.51-1272.40)

This example can perhaps be analyzed as a right dislocation, however, with the demonstrative pronoun referring to the fact denoted by the dislocated clausal subject. This double analysis parallels the findings of Gundel, et al. (forthcoming) with respect to personal pronouns. The other example is shown in (11).

Other
The 'other' category includes a relatively large percentage for demonstrative pronouns because there is a greater proportion of references to extra-linguistically introduced entities with the demonstratives. The Givenness Hierarchy framework of Gundel et al. 1993 predicts correctly that both demonstrative and unstressed personal pronouns can be used for extralinguistic (sometimes termed 'deictic') reference, assuming that necessary cognitive status conditions are met. The reason why personal pronouns are less frequently used for non-linguistically evoked entities is that the latter are usually not in focus, and sometimes not even activated. When a demonstrative is used for extralinguistic reference there is typically an accompanying non-linguistic gesture, hand gesture or eye gaze, that sets up preconditions for using a demonstrative pronoun (i.e. it activates the referent).

4. Conclusion

The classification scheme developed here, which distinguishes direct and indirect relations between anaphor and antecedent for pronouns with NP antecedents as well as those with non-nominal antecedents, allows us to more reliably determine whether the referent of a particular pronoun is likely to be in focus or not without first determining its exact semantic type. We only need to determine whether its type is the same as that of the denotation of the clausal antecedent. It also allows for a more uniform treatment of anaphoric pronouns with NP and non-NP antecedents and thus provides more insights into ways in which they are alike and ways in which they differ. Finally since the majority of anaphors with NP antecedents are direct, while the majority of anaphors with non-NP antecedents are indirect, we can explain why personal pronouns, which require the referent to be in focus, typically have NP antecedents while demonstratives, which require only activation, typically do not have NP antecedents.
The next step in this research is to discuss the cases where the three coders did not agree and come up with a consensus coding. We will refine our coding definitions based on this discussion, and do a reliability study on a new subset of data before coding the remaining examples of demonstrative pronouns from our corpus sample.

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