Demonstrative Pronouns, Binding Theory, and Identity*

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1 Introduction

Standard Binding Theory assigns distinct binding conditions to three classes of nominal expressions, anaphors, pronominals, and R-expressions, implying that BT-relevant categories are sufficiently defined and unproblematically recognized by language users. Pronominals, for example, are understood as nominal expressions whose content is exhausted by grammatical features. This paper compares two Hebrew pronominal classes, personal pronouns and demonstrative-pronouns (henceforth d-pronouns), given in (1) and (2):

- (1) a. hu avad H-m.s worked-3.m.s He / it worked
- (2) a. ha-hu avad the-H-m.s worked-3.m.s That one worked
 - c. ze avad Z-m.s worked-3.m.s This one worked
- b. hi avda H-f.s worked-3.f.s She / it worked
- b. ha-hi avda the-H-f.s worked-3.f.s That one worked
- d. zot avda Z-f.s worked-3.f.s This one worked

The pronouns in (1) are third person pronouns, masculine and feminine singular; the two sets in (2) correspond to distal and proximate demonstratives. The ha- morpheme associated with the pronouns in (2a) and (2b) is identical to the definite morpheme attaching to lexical nouns:

(3) a. ha-yeled; ha-yalda
the boy the girl
b. yeled yalda
a boy a girl

The personal pronouns in (1) and the d-pronouns in (2) encode only grammatical information, yet exhibit distinct binding properties; the former obey Principle B, the latter Principle C. It is argued therefore that a finer grained characterization of the notion of 'pronominal' relevant to BT is re-

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quired, and an analysis in terms of particular phi-features is proposed, in which 'pronominals' encode person features, and R-expressions necessarily encode definiteness features.

Binding Theory by itself, however, fails to capture the full range of anaphoric properties associated with d-pronouns. In section 3 it is shown that independent of c-command, d-pronouns impose severe restrictions on the type of nominal expressions with which they may be covalued, excluding names and descriptions as possible antecedents. The pattern suggests that intuitively, d-pronouns are 'deictic' and it is the purpose of this section to propose a formal account of that pattern. Adopting the framework developed in Fiengo and May (1994, 1998), it is argued that restrictions on possible antecedents are best captured at the level of indexation, in particular, that d-pronouns may not be coindexed with names and descriptions.

2 Binding Theory and Pronouns

2.1 Personal Pronouns and Binding

Personal pronouns, as expected, obey Principle B of the BT. They cannot be bound within their governing category, but may be covalued with a clause external noun phrase, as in (4b):

- (4) a. Dani_i ohev oto_{k/*i} dani likes him
 - b. Dani_i xaSav Se-hu_i/_k yacbi'a le-bibi dani thought that he would vote for-bibi

In addition, Hebrew personal pronouns can function as bound variables and resumptive pronouns, as in (5):

- (5) a. kol student_i xoSev Se-hu_{i/k} yacbi'a le-bibi every student thinks that he will-vote for-bibi Every student thinks he will vote for Bibi
 - ha-sefer Se-kiviti Se-hu ye'anyen oti the-book that-hoped-I it interest me The book that I hoped would interest me

2.2 D-Pronouns and Binding

Demonstrative-pronouns, in contrast, are subject to Principle C. They may not be bound external to their governing category, as in (6b) and (6c). The

contrast between personal and demonstrative pronouns is repeated in (7):

- (6) a. *hi_i ohevet et zot_i / ha-hi_i H-f,s loves Z-f,s / the-H-f,s
 - b. *hi_i xoSevet Se-zot_i / ha-hi_i tacbi'a le-barak
 H-f,s thinks that-Z-f,s / the-H-f,s will-vote for-barak
 - *hi_i ohevet et ima Sel zot_i / ha-hi_i
 H-f.s loves Et mother of Z-f,s
- (7) a. hi_i xoSevet Se-hi_i tacbi'a le-barak H-f,s thinks that-H-f,s will-vote for-barak She thinks that she will vote for Barak
 - *hi_i xoSevet Se-zot_i / ha-hi_i tacbi'a le-barak
 H-f,s thinks that-Z-f,s / the-H-f,s will-vote for-barak

Clear Principle C effects are observed in the absence of c-command. When a covalued personal pronoun is embedded within a relative clause, for example, the result is grammatical:

- (8) a. anaSim Se-mekirim ota; tov ohavim et zot; / ha-hi; people that-know her well like Et Z-f,s / the-H-f,s People who know her well like this one / that one
 - anaSim Se-mekirim et zot_i / ha-hi_i tov ohavim ota_i people that-know Et Z-f,s / the-H-f,s well like her People who know this one / that one well like her
- (6) and (8) show that both types of d-pronoun, the distal ha-H and the proximate Z, are R-expressions subject to Principle C. Another property distinguishing them from personal pronouns is that they may not function as bound variable (9a) or resumptive pronoun (9b):
- (9) a. *kol studendit_i xoSevet Se-zot_i/ ha-hi_i tacbi'a le-barak every student-f,s thinks that-Z-f,s /the-H-f,s will-vote for-barak
 - *ha-hacaga; Se-kiviti Se-zot; / ha-hi; te'anyen otax the-play that I hoped that-Z-f.s / the-H-f.s would interest you

The contrast between personal pronouns and d-pronouns seen in (8) points to the inadequacy of the BT category [± pronominal], as both personal and d-pronouns are pronominal in an intuitive sense, lacking descriptive content. (5) vs. (9) raises a similar question regarding the proper definition of 'pronominal' for the purpose of quantificational binding, or A-bar binding more generally. Before turning to an analysis it is important to determine

whether A and A-bar binding contrasts constitute one fact or two. If the former, a single property distinguishes personal and d-pronouns from which both contrasts derive; if the latter, personal and d-pronouns are distinguished on two counts, one yielding A-binding contrasts and the other quantificational contrasts.

The distribution of French ce discussed in Authier and Reed 1997 suggests that A and A-bar binding do not, in fact, form a single phenomenon. On the one hand, ce is subject to Principle C. It may not be covalued with a c-commanding name, but may when the name is embedded within a relative clause, in (10). On the other hand, it may covary with a quantifier or function as resumptive pronoun (in colloquial French) as in $(11)^1$:

- (10) a. *Yannick_i est convaincu que c_i'est un genie Yannick is convinced that CE is a genius
 - b. Le vieux pecheur qui a eleve Yannick_i est convaincu que c_i'est un genie
 The old fisherman who raised Yannick is convinced that CE is a

genius

- (11)a. Quand un chercheur_I pretend / regrette qu'on trouve que c_I'est un genie, il est atteint de megalomanie

 When a researcher contends / regrets that people think CE is a genius, he exhibits megalomanic behavior
 - b. Voila **un prisonnier** $_{i}$ que tout le monde il sait bien que c_{i} 'est un cas perdu

Here is a prisoner that everyone knows is a lost cause

Thus the distribution of *ce* only partially overlaps with Hebrew d-pronouns, from which it can be concluded that the inability of d-pronouns to be A-bar bound should not be directly related to their BT status as R-expressions. More directly to the point, one distinctive feature discriminates a class of expressions which can be A-bar bound, i.e. personal pronouns, and another discriminates the class which cannot be A-bound, d-pronouns.

2.3 Analysis

While one could, conceivably, claim that Binding Theory is parametrized such that 'pronominals' sometimes obey Principle C, the present proposal

¹ The double clause boundary intervening between quantifier and *ce* in (11a) is representative of the facts; bound variable *ce* cannot be 'too locally' bound. For present purposes I take this to be orthogonal to the main point that A-bar binding is possible.

assumes that BT itself is universal, and a more fine-grained definition of nominal expressions is required. A similar question has been raised regarding the characterization of Romance/Germanic SE pronominals, which are anaphors for BT, and how they are to be properly distinguished from morphologically similar BT pronominal forms (Burzio 1991, Reuland and Reinhart 1995, Kayne 1998). Different in detail, the consensus reached by these analyses is that SE anaphors are subject to Principle A because they lack some phi feature(s) included in 'true' pronominals subject to Principle B. In the spirit of that work it will be proposed that phi-feature inventory is also relevant to definitions of 'pronominal' and 'R-expression'.

Restricting attention to A-binding and BT proper, a minimal assumption I adopt is that a single criterion determines membership in one class, and the other class is defined by default. The question then is whether pronominals are defined as possessing some feature, and R-expressions as a default residual class, or the other way around. If the latter, and R-expressions are defined positively, is it by lexical content or some phi-feature?²

I assume that third person standard pronouns, being personal pronouns, do encode person features. Regarding d-pronouns, the distal *ha-H* variety transparently encodes a morpho-syntactic definiteness feature, absent in personal pronouns, which I assume is likewise encoded in the proximate Z variety. Following Ritter (1995) and Shlonsky (1997), I assume a basic complementarity between [person] and [definiteness]. A nominal head is morpho-syntactically specified for [definiteness] (lexical nominals and d-pronouns) or [person] (personal pronouns and anaphors), but not both. With these assumptions in place, the question is whether [person] subjects personal pronouns to Principle B, or [definiteness] subjects d-pronouns to Principle C. Evidence from Lebanese Arabic suggests that [person] is not relevant to BT status. In this language, as discussed in Aoun and Choueiri 1996,

² Though I am not aware of any direct claim that R-expressions are defined by lexical content, it is often assumed. The intuitive definition of pronominal as lacking descriptive content makes this assumption, as does the analysis of French *ce* given in Authier and Reed 1997, according to which *ce* may shed its R-expression status (in A-binding) and shift to pronominal (for A-bar binding) precisely because it lacks lexical content.

 $^{^3}$ See Sichel 2000 for a detailed argument that Z d-pronouns do encode morphosyntactic definiteness, represented in the morphological base rather than in the form of a prefix.

⁴ Unlike those analyses, which locate these features in D^o and argue that the 3rd person morpheme is null, the present proposal makes no particular claims regarding the DP-internal location of nominals, but is compatible with the idea that a DP containing a 3rd person pronoun is [person] specified, overt vs. null morphology aside.

an anaphoric epithet may function in some contexts as bound variable if a [person] feature (represented by ha-) is prefixed:

- (12)a. I-walad yalli zeena SahaTit (*ha-)I-mazduub men I-madrase harab the-boy that Zeina kicked 3rd-the-idiot from the-school ran away The boy that Zeina kicked the idiot out of school ran away
 - b. l-m?allme ma ba?atit wala walad ?end l-mudiira ?abl ma tnabbih (*ha-)l-maS?uum ?an l-?aSaaS the-teacher neg sent no boy to the-principal before neg warn 3rd-the-unlucky about the-punishment The teacher didn't send any boy to the principal before warning the unlucky one about the punishment

Anaphoric epithets, being R-expressions, are subject to Principle C. The addition of [person], however, has no BT relevant effect, and prefixed epithets remain subject to Principle C:

(13)*Layla fakkarit ?enno ha-l-mazduube rahtes?ut Laila thought that 3rd-the-idiot will-fail

From (12) and (13) it can be concluded that [person] has no A-binding effect, since the addition of this feature fails to subject the nominal expression it is associated with to Principle B. By the same token, it cannot be the inclusion of [person] which subjects pronominals to Principle B, though [person] does seem relevant to A-bar binding. Rather, lack of [definiteness] disqualifies pronominals from Principle C.⁵ In other words, pronominals form a default BT class.⁶ [person], on the other hand, seems relevant to A-bar binding, distinguishing anaphors/pronouns from d-pronouns/lexical nominals.

We have seen to far that the definition of R-expression, like the definition of anaphor, makes reference to a grammatical feature. Names, descriptions, and d-pronouns are subject to Principle C by virtue of a [definiteness]

⁶ See also Hoji 1995 for the claim that pronominals are defined by default.

⁵ [definiteness] is intended as a formal feature whose relation to semantic definiteness is far from clear. The present proposal does not deny the semantic definiteness of personal pronouns, and there seems to be no sense at all in which d-pronouns are more definite, semantically, than non bound variable uses of personal pronouns. One possibility to pursue, though way beyond the scope of this paper, would be within a Diesing-type approach to quantificational strength as determined by structural position, personal pronouns being interpreted as definite because they necessarily raise from the domain of existential closure. See Condoravdi 1989 for an analysis of generic and existential indefinite pronouns along these lines.

feature they are associated with. The behavior of Thai epithets, as discussed in Lasnik (1989), allows further clarification of the default status of pronominals and Principle B generally. Compatible with the claim that [definiteness] subjects nominals to Principle C, Thai epithets show that inclusion of [definiteness] does not preclude a nominal from obeying, Principle B as well. Principle C effects are observable in Thai with pronominal antecedents only, revealing a distinction masked in most languages. Anaphoric epithets are subject to Principle B, hence may be bound external to their GC, as in (14c); they are also subject to Principle C, effective with a pronominal antecedent, in which case binding from outside their GC is impossible (in 15):

- (14) a.* coon choop khaw John likes him
 - b.* coon choop ?aybaa John likes the nut
 - c. coon khit waa ?aybaa chalaat
 John thinks that the nut is smart
- (15) * khaw khit waa ?aybaa chalaat He thinks that the nut is smart

While Principle B effects of R-expressions are usually subsumed under Principle C, the contrast between (14) and (15) suggests at the very least that some [definite] expressions are also subject to Principle B, whether or not Thai epithets are representative of R-expressions generally. [definiteness] does not prevent a nominal from obeying a Principle other than C. This directly relates to the conclusion that pronominals are undefined for BT category, now generalized to the class of expressions falling under Principle B. Nothing defines this class beyond their display of 'non-impoverished' phifeature inventory. In other words, nominal expressions are subject to Principle B unless they must be locally bound, and in addition, [definiteness] subjects a nominal to Principle C.

3 D-pronouns and Identity

 $^{^7}$ Abstracting away from the location of its overt realization, on N°, as in Hebrew and perhaps Scandinavian (see Borer 1989, Siloni 1994 for Hebrew), or on D° as in English.

3.1 D-pronouns and Covaluation⁸

Principle C on its own, however, fails to fully capture the anaphoric distribution of demonstrative pronouns. Independent of binding status and c-command, d-pronouns place substantial restrictions on the type of nominal expression they can be covalued with. In the previous section it was shown that d-pronouns are possible with covalued personal pronouns in the absence of c-command. In that structural configuration d-pronouns with names and descriptions are impossible:

- (16) a. ha-anaSim Se-mekirim et rina; tov ohavim ota; /*et zot;/*hahi the-people that-know Et rina well like her / Et Z-f,s / the-H-f,s

 The people who know Rina well like her
 - b. ha-anaSim Se-mekirim ota; /*et zot; /*ha-hi; ohavim et Rina; the-people that-know her / Et Z-f,s / the-H-f,s love Et rina The people who know her well like Rina
- (17) a. ha-anaSim Se-mekirim et ba'alat ha-bayit; tov ohavim ota; /*et zot; /* ha-hi₁ the-people that-know Et the landlady well like her/Et Z-f,s/the-H-f,s The people who know the landlady well like her
 - b. ha-anaSim Se-mekirim ota; /*et zot; /*ha-hi; ohavim et ba'alat ha-bayit; the-people that-know her / Et Z-f,s / the-H-f,s love Et the landlady The people who know her well like the landlady

An embedded name or description is incompatible with a covalued d-pronoun, as in (16a) and (17a), and an embedded d-pronoun is likewise incompatible with a name or description, as in (16b) and (17b). This suggests that the notion 'antecedent' is not directly relevant; rather, a d-pronoun and name or description cannot be covalued. The incompatibility of d-pronouns with names and descriptions extends across sentences as well, showing that the source of this restriction is independent of sentence grammar:

(18)a. pagaSnu etmol et rina; hi; /*zot; / *ha-hi; gara axSav be-xeyfa. met-we yesterday Et rina. She/Z-f,s/the-H-f,s now lives now in Haifa.

Yesterday we met Rina. She now lives in Haifa

⁸ The term 'covaluation' is used here as a descriptive term, equivalent to 'coreference'.

b. pagaSnu etmol et ba'alat ha-bayit_i. hi_i/*zot_i /*ha-hi_i gara axSav bexeyfa.

met-we yesterday Et the landlady. She/Z-f,s/the-H-f,s lives now in Haifa.

Yesterday we met the landlady. She now lives in Haifa

Reflexives, on the other hand, are compatible with covalued d-pronouns, subject to Principle A, just like personal pronouns are, subject to Principle B, as in (19) and (20):

- (19) a. zot₁ / ha-hi₁ ohevet rak et acma₁
 Z-f,s / the-H-f,s likes only Et herself
 This one / That one loves only herself
 - b. dibarti im zot₁/ ha-hi₁ al acma1
 spoke-I with Z-f,s about herself
 I spoke with this one / that one about herself
- (20) a. **zot**₁ xoSevet Se-**hi**₁ tacbi'a le-bibi

 Z-f,s thinks that-she will-vote for-bibi

 This one thinks she will vote for Bibi
 - ha-hi₁ xoSevet Se-hi₁ tacbi'a le-bibi the-H-f,s thinks that-she will-vote for-bibi That one thinks she will vote for Bibi

Thus, independent of c-command or binding restrictions, names and descriptions are incompatible with a covalued d-pronoun, and reflexives and personal pronouns are. This is summarized in (21), order irrelevant:

(21) I. *d-pronoun name *d-pronoun description II. d-pronoun anaphor d-pronoun pronoun

The distribution of facts in (21) corresponds, roughly, to the intuition that d-pronouns, in the examples discussed, are restricted to deictic use. Anaphors and pronouns—used anaphorically—may pick up the reference of a d-pronoun, but d-pronouns may not be so used to pick up the reference of a previously mentioned name or description. The question is whether this intuition and the classification in (21) can be captured theoretically, to which we turn next.

3.2 D-pronouns and Indices

It is clear that the classification in (21) does not reduce to BT category, reflexives and pronouns belonging to distinct classes. Neither does (I) reduce to the ability of d-pronouns to independently refer, since personal pronouns may also be used to independently refer. Another possibility is that (II) is related to the ability of anaphors and pronouns to function as bound variables. It can be shown, however, that an explanation along these lines is incorrect. If it were, a d-pronoun would *require* a covalued pronoun to function as bound variable. The distribution of sloppy identity in VP-ellipsis-type contexts such as the following show that this prediction is not borne out:

- (22) a. dina; ohevet et ima Sela; ve-gam rinak ohevet dina loves Et mother of-her and-also rina loves Dina loves her mother and Rina does too Rina loves Dina's mother(strict); Rina loves Rina's mother(sloppy)
 - kol exad_i ohev et ima Selo_i ve-gam dani_k ohev every one loves Et mother of-his and-also dani loves Everyone loves his mother and Dani does too Dani loves Dani's mother (sloppy only)

As in English VP-ellipsis, the interpretation of the ellided VP in the conjoined clause is strict or sloppy with referential subjects, and sloppy only with quantificational subjects. The construction in (22) provides a good test for the behavior of pronouns covalued with d-pronouns: if they are necessarily bound variables, only sloppy interpretations are expected. In fact, both strict and sloppy interpretations are available, whether the d-pronoun is subject of the full or ellided clause:

- (23) a. zot_i ohevet et ima Sela_i ve-gam rina_k ohevet Z-f,s loves Et mother of-her and-also rina loves This one loves her mother and Rina does too Rina loves this one's mother; Rina loves Rina's mother
 - rina_i ohevet et ima Sela_i ve-gam zot_k ohevet
 rina loves et mother of-her and-also Z-f,s loves
 Rina loves her mother and this one does too
 This one loves Rina's mother; This one loves this one's mother

⁹ Unlike English, the construction includes a lexical verb in the second conjunct. Following Doron (1990), I assume that VP-ellipsis is involved, though the argument to be made does not depend on any particular analysis.

The ability of reflexives and pronouns to be interpreted as bound variables is not a particularly revealing property if d-pronouns do not impose this interpretation. Hence, a different explanation of the pattern in (21) is required, and I propose that these restrictions be captured at the level of indexation. D-pronouns cannot be covalued in the examples above with names and descriptions, even across sentences, because they cannot bear the same index as a name or description. They can be covalued with pronouns and reflexives, because the latter may bear the same index as a d-pronoun. Following Fiengo and May (1994, 1998), coindexation represents covaluation determined by grammar: two or more expressions are coindexed if they are occurrences of the same expression. In other words, sameness of index represents grammatically relevant aspects of expression identity, and expressions may have various occurrences. Conditions on identity are given by grammar and include the following (from Fiengo and May 1998):

(24) Two or more phrase-markers are occurrences of the same expression iff:

- i. they have the same phonetic matrix
- ii. one is a pronominalization of the other

D-pronouns cannot be coindexed with names and expressions because they do not have the same phonetics as any name or expression; neither are they pronominalizations in the relevant sense. ¹⁰ A pronoun or reflexive, on the other hand, may represent an occurrence of a d-pronoun, in which case it is coindexed with that d-pronoun by virtue of (24ii).

Nothing in the framework of Fiengo and May adopted here precludes covaluation in the absence of coindexation. In addition to grammar, covaluation may be determined extra-grammatically, by world knowledge or knowledge of discourse strategy. D-pronouns are no exception, covaluation with names and descriptions indeed being possible in certain discourse-defined contexts. The present analysis claims that such uses necessarily involve a non-coindexed d-pronoun, hence require particular presuppostions or discourse configurations in order to be interpreted. The present analysis claims that such uses necessarily involve a non-coindexed d-pronoun, hence require particular presuppostions or discourse configurations in order to be interpreted.

Again, 'pronominalization' requires further elaboration if it is to discriminate personal from d-pronouns. If the term implies bound variable interpretation [person] may be relevant.

¹¹ See Sichel 2000 for discussion and analysis of so-called anaphoric uses of d-pronouns.

¹² See Ariel 1990 and Reinhart 1995 for discussion of anaphoric d-pronouns and the view that these are on a par with pronominal coreference.

4 Conclusions

D-pronouns look superficially like pronouns yet more closely resemble lexical DPs in anaphoric properties. They obey Principle C, do not tolerate A-bar binding, and are not 'identical' to lexical DPs. Comparison of true pronouns with these 'borderline' pronominals is therefore useful for a better delineation of the class of pronouns, and at the same time sheds light on the nature of R-expressions and the class of nominals subject to Principle B. It has been proposed that R-expressions are nominals associated with [definite] and that unless feature impoverished, DPs generally are subject to Principle B.

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