A Note on Anaphora and Double Objects
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Squibs and Discussion

A Note on Anaphora and Double Objects

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This squib is concerned with English V NP_1 NP_2 (double-object) constructions, as in (1), and in particular with the implications of such constructions for phrase structure principles governing certain anaphoric relations:

(1) a. I gave John a book.
b. I denied Fred his pay.

We will present several phenomena demonstrating an asymmetrical relation between NP_1 and NP_2 (some of which have been noted before, some of which we believe are noted here for the first time). In each case it will be seen that NP_2 is in some sense in the domain of NP_1, but NP_1 is not in the domain of NP_2.

1. The Binding Principles

As is well known, in the sequence [V NP_1 NP_2] NP_1 can bind NP_2, but not conversely (see Kuno (forthcoming)):

(2) I showed $\left\{\begin{matrix}\text{John}\\ \text{him}\end{matrix}\right\}$ himself (in the mirror).

(3) *I showed himself John (in the mirror).

These examples constitute two independent pieces of evidence for our claim. Condition A of the binding theory (Chomsky (1981)) is presumably satisfied by (2), showing that the first NP binds the second. Further, conditions B and C are evidently *not* violated in (2). Hence, the second NP does not bind the first. (3), on the other hand, evidently violates both condition A and condition C. The condition A contrast in (4) and (5) seems to replicate that in (2) and (3):

(4) I showed the professors each other's students.
(5) *I showed each other's students the professors.

We wish to acknowledge the helpful suggestions of Luigi Rizzi and two anonymous *Linguistic Inquiry* reviewers.

2. QNP-Pronoun Relations

Ignoring some complex cases that we abstract away from,[1] in order for a pronoun to be related to a quantificational NP (QNP) as a variable, it must be in the structural domain of the QNP at S-Structure.[2] As (6) and (7) show, there is an asymmetry consistent with that seen in section 1:

(6) a. I denied each worker his paycheck.
b. I showed every friend of mine his photograph.
(7) a. I denied its owner each paycheck.
b. I showed its trainer every lion.

In (6a–b), but not (7a–b), the pronoun can be a bound variable.

3. *Wh* Movement and Weak Crossover

Cases that are parallel to (7), except that they involve moved *wh*-phrases in place of the quantifier, exhibit weak crossover; cases like (6) do not:[3]

(8) a. Which worker$_i$ did you deny his$_i$ paycheck?
b. Who$_i$ did you show his$_i$ reflection in the mirror?
(9) a. *Which paycheck$_i$ did you deny it$_i$s owner?
b. *Which lion$_i$ did you show it$_i$s trainer?

4. Superiority

In a double-object verb phrase, both NPs may be (separately) extracted:

(10) a. Who did you give a book?
b. Which book did you give John?
((10a) is somewhat awkward; see footnote 3)

[1] Specifically, donkey-sentence anaphora and inversely linked quantifiers. See Haïk (1984), Higginbotham (1983), May (1977; 1985), and the references cited there for much discussion.

[2] Relations between quantifiers and pronouns are treated in the literature in a number of ways. Our observation is independent of any particular treatment of this relation. A number of authors assimilate the failure of QNP-pronoun anaphora to weak crossover; the next section points out a weak crossover asymmetry in double-object verb phrases.

[3] Sentences (8a) and (8b), like (10a), are less than fully grammatical. They illustrate the general fact that the center NP in such verb phrases weakly resists extraction (see Jackendoff and Culicover (1970)). Though we have no explanation for this, we emphasize that it has nothing to do with the quantifier–bound pronoun relations in (8). What is relevant to our discussion is the strong contrast between (8) and (9). Furthermore, the difference can be repeated with *wh*-in-situ questions, which do not exhibit this weak extraction constraint:

(8′) Which woman gave [which man]$_i$ [his$_i$ paychecks]?
(9′) *Which woman gave [it$_i$s author] [which book]$_i$?

However, if the two NPs are *both wh*-phrases, the second one must not move overtly:

(11) a. Who did you give which book?
b. *Which book did you give who?
((11b) is grammatical only on the echoic reading)

The Superiority Condition of Chomsky (1973) requires, roughly, that given any two *wh*-phrases, the structurally higher ("superior") one must move, if either does.[4] Many Superiority effects, for example (12), have been subsumed under the Empty Category Principle (ECP) in more recent work (Chomsky (1981), Lasnik and Saito (1984)):

(12) *[$_{S'}$ What$_i$ [$_S$ did who see e_i]]?

However, as Pesetsky (1982) and Hendrick and Rochemont (1982) note, some Superiority violations in other constructions are not reducible to the ECP.[5] (13) is such a case:

(13) *What did you [$_{VP}$ persuade whom [$_{S'}$[$_S$ PRO to buy t]]]?

(13) is not ruled out by the ECP, since each *wh*-phrase is a direct object and each trace will therefore be lexically governed. Note that the ungrammaticality of (11b), like that of (13), is apparently not attributable to the ECP, since (10) indicates that both objects are properly governed. But if Superiority is to handle (11b), then the first object must be superior to the second.

5. The *each . . . the other* Construction

Consider the following:

(14) I gave each man the other's watch.
(15) *I gave the other's trainer each lion.

It is not clear to us what the structural requirements for this relation are, but a plausible candidate is to suppose that the

[4] The Superiority Condition is stated as follows (p. 246):

No rule can involve X, Y in the structure

$\ldots X \ldots [_\alpha \ldots Z \ldots - WYV \ldots] \ldots$

where the rule applies ambiguously to Z and Y and Z is superior to Y

. . . the category A is "superior" to the category B in the phrase marker if every major category dominating A dominates B as well but not conversely.[27]

[27] We use the term "major category" in the sense of Chomsky (1965, p. 74), that is, N, V, A and the categories that dominate them.

[5] See Pesetsky (1982), which collapses the ECP, the Superiority Condition, and several other conditions into one general constraint on extraction.

minimal NP in which *each* appears must have *the other* in its domain; the failure of this relation in (15) would account for its ungrammaticality.

6. Polarity *Any*

Our final phenomenon involves polarity *any*, which is only licensed in the scope of negation, modals, yes/no questions, and other scope-bearing elements (Klima (1964), Lasnik (1972), Horn (1972), Kroch (1974), Linebarger (1980)):

(16) I didn't see anyone.
(17) *I saw anyone.

We note that there is a sharp distinction between (18) and (19):

(18) I gave no one anything.
(19) *I gave anyone nothing.

This distinction is reminiscent of those discussed above.

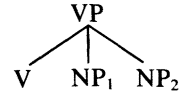
7. Discussion

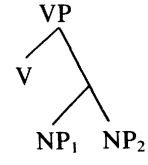
To sum up the data, we have noted a number of anaphoric relations that distinguish the two NPs in a V NP NP sequence, each indicating that the second NP is in the domain of the first, but not vice versa.

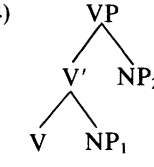
We now must seek a more formal characterization of this asymmetry in "domain." The standard notion of "domain" in the Extended Standard Theory is *c-command*; two definitions are commonly utilized in variants of the theory:

(20) X c-commands Y iff every maximal projection that dominates X also dominates Y. (Aoun and Sportiche (1981))
(21) X c-commands Y iff the first branching node dominating X dominates Y. (Reinhart (1976))[6]

The problem now is to determine how it is that the first NP in a double-object VP asymmetrically c-commands the second NP, and this requires discussion of the phrase structure of these VPs. Consider the possibilities ((23) is from Kayne (1981); (24) is from Chomsky and Lasnik (1977)):[7]

(22)


(23)


(24)


(22) and (23) must be rejected immediately, since in these structures the hierarchical relation between the two NPs is utterly

[6] This is actually just one of several definitions of c-command that Reinhart considers.

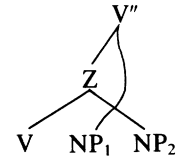
[7] Stowell (1981) presents an analysis of double-object construc-

symmetrical. This holds true regardless of which definition of c-command is chosen. The third structure, the left-branching (24), is even worse, making backward predictions with respect to domains if we choose definition (21): the *first* NP will be in the domain of the *second*, and not conversely. If we choose definition (20), then again the two NPs are symmetrical with respect to domain, contrary to what the evidence suggests.

These are the most obvious ways to assign structure to the V NP NP sequence without a discontinuous constituent.[8]

With a discontinuous constituent, asymmetric c-command of the required sort between the two NPs could be obtained with a structure something like (25):

(25)



(25) is not permitted within the theory of phrase structure ad-

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tions that involves a word formation rule adjoining NP_1 to the verb. Stowell gives two possible structures:

(i) $[_{V'}[_{V}\ V\ NP_1]\ NP_2]$
(ii) $[_{V'}[_{V}\ V\ NP_1]\ NP_2\ e_1]$

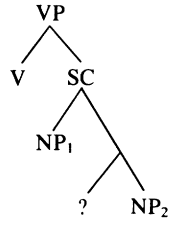
The first, geometrically similar to (24), has the same problem noted for that structure. In the second, which Stowell analogizes to cliticization, the crucial relation is that between NP_2 and the empty category, and once again symmetry obtains. A *Linguistic Inquiry* reviewer observes that if *e* is actually outside V′, as in (iii), it will asymmetrically c-command the second object under definition (21):

(iii) $[_{V'}[_{V'}[_{V}\ V\ NP_1]\ NP_2]\ e_1]$

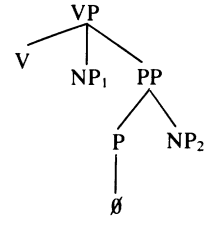
However, note that the second object (NP_2) will asymmetrically c-command the "clitic" NP_1 and, of course, everything within the clitic. Examples such as our (3), (5), (7), (9), (15), (19) are thus still problematic.

[8] There are other structures that might be assigned without discontinuous constituents, for example (i) or (ii):

(i)



(ii)



(i) would be an elaboration of Kayne's proposed structure (23), with the node ? a null preposition or Infl, or, as Kayne suggests, a null *have* or *be*. These would allow the representation of asymmetrical c-command of NP_2 by NP_1, as required. Further research is needed to determine whether it is appropriate to postulate such structures. One concern with the null verb or preposition proposal is that a range of such verbs and prepositions would presumably be required. In (2), for example, *have* and *be* would be inappropriate.

vanced in Chomsky (1955) and somewhat revised in Lasnik and Kupin (1977); in that theory it is axiomatic that for any nodes X and Y, either one precedes the other or one dominates the other. In (25) the node Z (which dominates V and NP_2) neither dominates nor is dominated by NP_1. Since NP_1 neither precedes nor is preceded by Z, structure (25) is not permitted.

The less restrictive conceptions of phrase structure advanced by McCawley (1982) and Higginbotham (1983), on the other hand, *do* permit such a structure as (25) to occur; in these theories precedence and dominance relations are separated, permitting discontinuous constituents.

There is another possibility. Suppose that one of the structures rejected earlier is correct, and that the two NPs do in fact mutually c-command. The problem then would be to distinguish the domain of NP_1 from that of NP_2 in terms of something other than c-command. Linear precedence is the obvious candidate.[9]

Consider the following definition of *domain of*:

(26) Y is in the domain of X iff X c-commands Y and X precedes Y.

The various anaphora conditions (binding principles A, B, and C, the scope condition on polarity *any*, etc.) might be reformulated in terms of this definition: for example, "X binds Y iff Y is in the domain of X and X and Y are coindexed." This will properly distinguish all of the grammatical and ungrammatical pairs given above.

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[9] In including linear as well as hierarchical information, (26) is reminiscent both of the early anaphora proposal of Langacker (1969) and of the modification presented in Lasnik (1976).

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Indefinite Object Drop

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The purpose of this squib is to show that "indefinite direct objects" may be dropped in Spanish and that the empty element occupying the argument position of the verb functions as a variable.[1] I will show that the empty element is the trace of the operator OP suggested in Chomsky (1982) and further developed by Huang (1982) and Raposo (1984).

A verb like *comprar* 'to buy' subcategorizes for an NP, as the examples in (1) show:

(1) a. Compré un/el libro.
'I bought a/the book.'
b. Lo compré.
it I bought
'I bought it.'
c. *Compré.
'I bought.'

The verb *comprar* always needs to appear followed by an object NP, so as to satisfy the Projection Principle posited by Chomsky (1981). In (1a) the lexical NP *un/el libro* satisfies the argument structure of *comprar*. Following Chomsky (1982), I will assume that construction (1b) contains a *pro* in the direct object position of the verb so as to satisfy the Projection Principle. (1c), on the other hand, would be ruled out, since *comprar* appears without an object NP.

Sentence (1c), however, is grammatical if used in a context where the object of *comprar* is interpreted as indefinite:

(2) a. Compraste café?
'Did you buy coffee?'
b. Sí, compré.
'Yes, I bought (some).'

[1] This phenomenon refers to direct objects that appear with no specifiers. If a quantifier appears with the direct object, the quantifier cannot be omitted:

(i) a. Compraste regalos?
'Did you buy presents?'
b. Sí, compré e.
'Yes, I bought (some).'
(ii) a. Compraste algunos regalos?
'Did you buy some presents?'
b. *Sí, compré e.
'Yes, I bought (some).'
c. Sí, compré algunos.
'Yes, I bought some.'