ADJUNCT EFFECTS ON ANAPHORA

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Chomsky 1986 notes that the extraction from N complements exhibits a weaker island effect than that from relative clauses.

(1) a. *Which book did John hear [NP a rumor [CP that you had read t]]?
   b. Which book did John meet [NP a child [CP who read t]]?

Within the Barriers framework, CP in 1a is L-marked and it is not a blocking category, while CP in 1b is not L-marked and is therefore a blocking category and transfers its barrierhood to the complex NP. The difference between 1a and 1b is that in 1a CP is a complement of rumor, while in 1b it is an adjunct of child. The leading idea behind this approach is to define maximal projections as barriers relatively in terms of L-marking.

In this squib we will extend the application of L-marking to coreference phenomena. Consider the following contrast, which shows that the asymmetry between complements and adjuncts is not limited to extraction:

(2) a. *The rumor [CP that John had spread the disease], he denied.
   b. The rumor [CP that John had spread], he denied.
(3) a. *Which claim [CP that John had made a mistake] did he deny?
   b. Which claim [CP that John had made] did he deny?

Coreference is permitted in 2b and 3b, where John lies within the adjunct CP, whereas it is blocked in 2a and 3a, where John occurs within the complement CP. It seems, then, that adjuncts function as 'barriers to noncoreference' and they break a noncoreference path between a pronoun and

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its antecedent: if the latter is contained in an adjunct, coreference is permitted. 2 and 3 provide basic data for the generalization that any theory of anaphora must explain.

Keeping in mind the idea that L-marking is relevant to define the notion of complements, we would like to propose 4, followed by the definition of L-marking in Chomsky 1986.1

(4) *[XPi ... [α ... NPi ... ] ... ] ... proi ... ti ...  
where α is L-marked and proi c-commands ti.

(5) α L-marks β it θ-governs along with the specifier and head of β, where there is a Spec-head agreement.

Examples like 6 and 7 buttress 4:

(6) a. *The question (of) [CP whether John should retire] he put to us.
   b. The question [CP which John solved] he put to us.

   b. ?An order [CP for John to follow] he issued.

The following example is of interest in that 4 predicts it is ambiguous with respect to the interpretation of coreference.

(8) Which report [CP that John had stolen] did he submit to the police?

The prediction is borne out: coreference is permitted if stolen is transitive, i.e. CP is a relative clause, whereas it is blocked if the verb is intransitive, i.e. CP is a sentential complement.

In light of the fact that extraction is impossible from a PP adjunct, it is a good heuristic strategy, if 4 is correct, to proceed to a case where an antecedent is located in a PP adjunct.

(9) a. *Which picture of John does he like?
   b. Which picture next to John does he like?

(10) a. *Which review of John’s book did he read?
    b. Which review on John’s desk did he read?

(11) a. *Which teacher of John’s children does he respect?
    b. Which teacher with John’s children does he respect?

The above paradigm shows that adjunct effects are more real than apparent in coreference facts.2

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1 I am indebted to an anonymous referee for the formulation of 4.
2 The following contrast is illustrative in this connection:
   (i) a. *How many pictures of Mary does she want to buy?
       b. How many PRO of Mary’s teachers does she want to meet?
The contrast observed so far is theoretically significant in two points. First, the data given so far are not consistent with the generally held view: the depth of embedding of the antecedent affects coreference possibilities, i.e., the more deeply embedded the antecedent is, the more possibility of coreference there is. It is quite evident that coreference is prohibited in 11a, where the antecedent is as deeply embedded as that in 11b.

Second, a discourse principle proposed by Hornstein (1984, fn. 10: 161–2) is incapable of accounting for the full range of the relevant phenomena.

(12)  
a. *Which picture of John did he buy?  
b. Which picture that John liked did he buy?

He assumes that 12a and 12b are marked as ill-formed by grammar, but that noncoreference is overridden by a discourse principle when an antecedent embedded in S appears to the left of the pronoun. That this misses the important generalization can be seen in 2 and 9, for example: coreference is not allowed in 2a, where the discourse principle is met; noncoreference is overridden in 9b, where the principle is not met.

Before we present a bit more evidence in favor of 4, it is worth while considering the questions which might arise. Why is an adjunct effect absent in 13b and 14b?

(13)  
a. *He denied the claim that John had made a mistake.  
b. *He denied the claim that John had made.

(14)  
a. *He likes the picture of John.  
b. *He likes the picture next to John.

We assume that 15, our formulation of Condition C, is responsible for 13 and 14.

(15) An R-expression must not be bound by a θ-marked NP. ‘Bind’ in 15 means that a θ-marked NP binds an R-expression in terms of the c-command relation or the percolation of θ indexes.³ (See 16 for the percolation of θ indexes.) In 13 and 14, he binds John since the former c-commands the latter.

4 has a considerable advantage in descriptive adequacy over other

³ We employ the definition of c-command in terms of the branching nodes proposed in Reinhart 1976.

( i ) \( \alpha \text{ c-commands } \beta \) iff the first branching node dominating \( \alpha \) dominates \( \beta \) and neither \( \alpha \) nor \( \beta \) dominates each other.

See Chomsky (1986: 8) for the relevance of (i) for Condition C rather than the definition based on maximal projections.
approaches, but it is highly preferable to deduce its effects as a theorem of independently motivated principles. Considering the fact that it is NP, not the head N, that has a potential for reference, it is not unreasonable to assume that binding relations are established between NPs. In addition to this assumption, we incorporate the notion of percolation into our theory: XP transfers its features to its head X at S-structure. With these as background, consider the following subtrees of 2a and 2b, respectively:

\[
\text{(16) a. } \begin{array}{c}
\text{Det} \\
\text{N}_i' \\
\text{NP}_1^1 \\
\text{the} \\
\text{rumor} \\
\text{b. } \begin{array}{c}
\text{Det} \\
\text{N}_i' \\
\text{NP}_1^2 \\
\text{the} \\
\text{John} \\
\text{CP} \\
\end{array}
\end{array}
\]

NP\textsuperscript{1} receives its θ index \(i\) from \textit{denied} and percolates it down to N\(_i\).\(^4\) Suppose that the index \(i\) is assigned to NP\(*\) in 16. Condition C is violated in 16b, but not in 16a, since there is NP, NP\(_2^2\), which c-commands NP\(*\) in 16b, but not in 16a. (Recall that \(\alpha\) does not c-command \(\beta\) if the former dominates the latter.) It follows that \textit{John} does not get the same index \(i\) as \textit{he} has in 16b, which means that \textit{John} is not bound by \textit{he} and coreference is allowed. In 16a, the assignment of the index \(i\) to NP\(*\) does not induce the Condition C violation, which allows NP\(*\) to get the index \(i\) and explains that \textit{John} is bound by \textit{he}. It should be clear that it is from Condition C, especially the c-command requirement, that 4 is derived.

The asymmetry in question is so ubiquitous that one begins to wonder whether anaphors show a similar property. Consider 17 and 18 from Johnson 1987:

\[
\text{(17) a. } [\text{NP, They}] \text{ read [NP, } [\text{N, } \text{proofs}] [\text{CP that [NP pictures of [NP, each other]] had been forged}]].
\text{b. } *[\text{NP, They}] \text{ read [NP, [NP, theorems] [CP that [NP books about [NP, each other]] explained}]].
\]

\[
\text{(18) a. They bought pictures of each other.}
\text{b. ??They bought pictures near each other.}
\]

In 17b, theorems incorrectly binds each other, whereas in 17b, \textit{they} correctly binds each other. Recall that \textit{proofs}, being N, cannot bind the ana-

\(^4\) It may be better to assume that NP\textsuperscript{1} gets the same index \(i\) as \textit{he} since the pronoun c-commands the trace of NP\textsuperscript{1} at S-structure. See 20b for this argument.
If our approach is correct, it predicts that coreference is not possible when an R-expression, however deeply embedded in an adjunct, is contained in a (sentential) complement.

(19) a. ?The rumor [CP that Mary had written the article without discussing it with John], he denied.
   b. The rumor [CP that Mary had spread without talking about it with John], he denied.

The judgement here is very subtle, but this seems to be the case. One might wonder how our approach deals with 20b:

(20) a. *He saw a snake near John.
   b. *[PP, Near [NP, John]], he saw a snake t.

PP, is not a complement of saw but John is L-marked by near, so 4 predicts that 20b is unacceptable. 4 also predicts the coreferentiality in 21:

(21) [PP, Near [NP, the car] [CP which [NP, John] bought]], he, found a snake t.

The adjunct effect can also be seen in the following examples, which are derived by Wh-movement:

(22) a. *A picture of John was easy for him to paint.
   b. A picture near John was easy for him to paint.

(23) a. *It is the picture of John that he bought.
   b. It is the picture near John that he bought.

The last question worth considering is whether 4 can apply to the cases derived by NP movement:

(24) a. This picture of John was given him.
   b. This picture near John was given him.

(25) a. This picture of John seems to him to be a masterpiece.
   b. This picture near John seems to him to be a masterpiece.

Coreference is permitted in 24a and 25a, where John is L-marked by picture and him c-commands the trace of this picture of John. This might be

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5 The i-within-i condition might be sensitive to the contrast between complements and adjuncts:

(i) a. *[NP, a [N, picture] of [NP, it]]
   b. *[NP, [NP, the man] [PP next to [NP, his dog]]]

In (ib), his must not be bound by [NP, the man] in order to satisfy Condition B, so it is assigned the index j. Hence no violation of the i-within-i condition.

6 The same is true of (i) from Guéron (1984: 145):

(i) *An article about a book by John, he read in the Times.
due to the fact that traces left by NP-movement are anaphors and have nothing to do with Condition C.

REFERENCES


GUÉRON, JACQUELINE. 1984. Topicalisation structures and constraints on coreference. Lingua 63.139-74.

