Reconstruction and (Free) Relatives[*]

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1 Introduction

Free relative clauses, exemplified in (1–2), have been given two very different accounts in the generative literature, referred to in the literature as the Comp Account and the Head Account.

(1) John buys what(ever) Bill is willing to sell.
(2) John buys what(ever) books Bill is willing to sell.

The crucial difference between the two kinds of accounts lies in the position of the wh-phrase. On the Comp Account, the wh-phrase is in [Spec,CP] and the head of the free relative is occupied by an empty pronominal element, most typically a *pro* (Groos and van Riemsdijk 1981, Suñer 1984, Grosu and Landman 1998, among others), (3). On the opposing view, the Head Account, the wh-phrase occupies the head position and the [Spec, CP] is either nonprojected or empty (Bresnan and Grimshaw 1978, Larson 1987, 1998, Bury and Neeleman 1999), (4).

(3) $[_{DP} pro [_{CP} whatever books [_{IP} John reads \_]]$ *Comp Account*
(4) $[_{DP} whatever books [_{CP/IP} John reads \_]]$ *Head Account*

Standard arguments adduced in favor of one structure over the other concern matching effects, extraposition facts, and parallels between wh-questions and free relatives on the one hand, and free relatives and headed relatives on the other hand.

In this paper, I examine another set of facts bearing on the choice between the two structures, namely reconstruction effects. On the Comp Account, free relatives are predicted to pattern with wh-questions with respect to reconstruction, since the wh-phrase in a free relative occupies the same position as the wh-phrase in a wh-question. By contrast, on the Head Account, free relatives are predicted to pattern with headed relatives, since the

wh-phrase in a free relative occupies the same position as the nominal head in a headed relative.[2]

2 Reconstruction in the Minimalist Program

On current assumptions, syntactic reconstruction is necessary in order to establish the right operator-variable structure at LF. For example, the LF representation given in (5b) is not convergent; the quantifier *which* has no variable to bind, since the only available variable is a PP trace. The only convergent LF representations are the ones in (5c) and (5d); both involve extraction of the operator *which* from the fronted wh-phrase, but only (5d) involves full reconstruction, i.e. interpreting (the restriction of) the fronted wh-phrase in its pre-movement position.

(5) a.   In which house does John live?   (Chomsky 1995)
    b. LF^1: *[in which house] [John lives in x]
    c. LF^2: [which x] [x a house] [John lives in x]
    d. LF^3: [which x] [John lives in x house]

Both (5c) and (5d) are convergent LF representations, however. Chomsky (1995) assumes a preference principle for reconstruction, given in (6), which favors the LF representation in (5d), where the restriction of a wh-phrase is interpreted in the position of the trace.

(6) Preference Principle   (Chomsky 1995:209)
    Try to minimize the restriction in the operator position.

In addition to the Preference Principle, we have clear empirical evidence in favor of interpreting Ā-moved elements in reconstructed positions. Principle A effects (7a), variable binding (7b), Principle C (7c) and idiom chunks (7d) show that at LF—the only level of representation relevant for interpre-

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[2]This is compatible with the Head Promotion accounts of headed relatives (Brame 1968, Vergnaud 1974) on which the head of the relative undergoes movement from the relative clause internal position. In Kayne's (1994) implementation of the Head Promotion account, however, the landing site for the moved head is the same as the landing site for a moved wh- phrase, namely [Spec, C], and what distinguishes relatives from questions is the movement of the nominal head to the specifier of the wh-phrase:
(i) the $[_{CP}$ [$[_{DP}$ picture$_i$ [which e$_i$]] [C^0 . . .   (Kayne 1994:90)

tation on minimalist assumptions—the restriction of the fronted wh-phrase has to be interpreted in the position of the trace.

(7) a. Which picture of himself$_i$ did John$_i$ see t ?   Principle A
     b. Which picture of him did everyone see t?   variable binding
     c. *Which picture of Bill$_i$ did he$_i$ see t?   Principle C
     d. Which picture did John take t?   idiom interpretation

This shows that reconstruction is possible; there is still a question as to whether it is obligatory. On a descriptive level, there appears to be a contrast between Principle A and Principle C reconstruction. This is illustrated in (8) (from Chomsky 1995):

(8) a. John$_i$ wondered which pictures of himself$_{i/j}$ Bill$_j$ saw.
     b. John$_i$ wondered which pictures of Bill$_j$ he$_{i/*j}$ saw.

In (8a) the anaphor himself can be bound by either the matrix subject *John* or the subordinate subject *Bill*. In (8b), by contrast, *he* can only be coreferential with the matrix subject *John*. The lack of coreference between *Bill* and *he* receives a straightforward explanation on an analysis in which at LF the lower copy of the moved wh-phrase *which pictures of Bill* is interpreted and the upper copy gets deleted (9). This is a somewhat simplified representation, since only the restriction of the fronted wh-phrase is interpreted in the reconstructed position. The resulting structure violates Principle C; the pronoun *he* c-commands *Bill*.

(9) *John wondered [$_{CP}$ which ~~pictures of Bill~~$_i$ [$_{IP}$ he$_i$ saw ~~which~~ pictures of Bill$_i$]]

In order to account for the contrast between (8a) and (8b), and still maintain the assumption that reconstruction in Ā-chains is obligatory, Chomsky (1995) derives the apparent optionality of Principle A reconstruction from an independent mechanism, namely LF cliticization of the reflexive morpheme to Tense. For the discussion that follows, the exact mechanism of Principle A reconstruction is not important; what is crucial is the descriptive generalization that reconstruction in Ā-chains is obligatory.

3 Reconstruction Effects in Free Relatives

The Comp Account for free relatives, repeated below in (10), makes a clear
prediction concerning LF reconstruction.

(10) [$_{DP}$ *pro* [$_{CP}$ *whatever books* [$_{IP}$ John reads _]]   *Comp Account*

Since a wh-phrase in a free relative occupies the same position as a wh-
phrase in a wh-question, namely [Spec,CP] position, it should exhibit the
same behavior with respect to reconstruction. Thus, the prediction is that in a
free relative construction the restriction of the wh-phrase should be inter-
preted in the position of the clause-internal trace (11b).

(11) a.   Mary reads whatever books John reads t.
     b.   Mary reads [$_{DP}$ *pro* [$_{CP}$ whatever ~~books~~ John reads ~~whatever~~ books]]

Thus, the configuration schematized in (12), in which the fronted wh-phrase
pied-pipes a name, should result in a Principle C violation. After reconstruc-
tion, the name, being interpreted the position of the trace, ends up being c-
commanded by the coindexed pronoun (12b).

(12) a.   [$_{DP}$*pro*[$_{CP}$ [$_{wh}$ ...name$_i$...]$_j$ [$_{IP}$ **pronoun$_i$** ... [$_{wh}$ ...~~name$_i$~~....]$_j$]]]
     b.   [$_{DP}$*pro*[$_{CP}$ [$_{wh}$ ...~~name$_i$~~...]$_j$ [$_{IP}$ **pronoun$_i$** ... [$_{wh}$ ...name$_i$ ....]$_j$]]]

Consider in this light the free relative given in (13a). Since it involves the
configuration schematized in (12), the prediction is that the sentence should
be ungrammatical. This prediction, however, is not borne out; (13a) is fully
acceptable on the coindexed reading.

(13) a.   I will buy [whichever pictures of **Bill$_i$**]$_j$ **he$_i$** is willing to sell t$_j$.
     b.   I will buy [whichever ~~pictures of Bill$_i$~~]$_j$ **he$_i$** is willing to sell [~~which-
          ever~~ pictures of **Bill$_i$**]

We have seen above that an analogous configuration in a wh-question results
in ungrammaticality.

(14) * I wonder [which pictures of **Bill**$_i$]$_j$ he$_i$ is willing to sell t$_j$.[3]

The ungrammatical status of (14) is expected on current assumptions. It is the grammaticality of (13) that is puzzling. One way to account for its grammaticality is to assume that reconstruction is blocked, and a wh-phrase in a free relative has to be interpreted in its Spell-Out position. To say that free relatives differ from wh-questions in that Principle C reconstruction is obligatory in questions but forbidden in free relatives would be pure stipulation, since the wh-phrase occupies the same position in both.

A much more promising alternative would be to derive the contrast between questions and free relatives from a difference in the structural position of the wh-phrase. And this is precisely the option that the alternative view of free relatives, the Head Account, allows for. On the Head Account, the structure of the free relative given in (13a) above is as follows.

(15) [$_{DP}$ whichever pictures of Bill [$_{CP}$ he is willing to sell _]]

Crucially, the name embedded inside the wh-phrase occupies the CP external position, which is the same as the position of the head in a headed relative.

(16) [$_{DP}$ [$_{HEAD}$ ... R-expression$_i$ ...] [$_{CP}$ ... he$_i$ ... e]

Thus, the Head Account makes the prediction that free relatives should pattern with headed relatives rather than with wh-questions with respect to reconstruction phenomena. This is precisely what we find, as shown in (17).

(17) a. I buy whichever pictures of Bill$_i$ he$_i$ is willing to sell t.
     b. I buy the pictures of Bill$_i$ (that) he$_i$ is willing to sell t.

The parallelism between headed relatives and free relatives with respect to Principle C reconstruction cannot be captured in a straightforward way on the Comp Account.

The data in (13–14) involving Principle C reconstruction effects argue in favor of the Head Account. The facts, however, are somewhat more complex with respect to Principle A effects (18a), variable binding (18b), and idiom chunk interpretation (18c).

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[3] I use an embedded question here to make the two structures more parallel. With respect to Principle C reconstruction, embedded and matrix questions behave in the same way.

(18) a.   I will buy whatever picture of himself$_i$ John$_i$ is willing to sell t.

    b.   I read whatever books about his childhood every French novelist writes t.

    c.   They praise whatever headway John makes t.

In these cases, the restriction of the wh-phrase behaves as if it were interpreted in its reconstructed, relative clause internal position. This shows that reconstruction in free relatives at least has to be an option. In this respect, free relatives also parallel headed relatives, as shown in (19).

(19) a.   I will buy the picture of himself that John$_i$ is willing to sell.

    b.   I read the books about his childhood every French novelist writes.

    c.   They praise the headway John makes.

To summarize the discussion so far, we have seen that free relatives exhibit both reconstruction and anti-reconstruction effects. We have also seen that they pattern with headed relatives rather than wh-questions with respect to reconstruction effects. In the next section, we will see how this puzzling behavior of free relatives follows from their structure.

4 Towards an Analysis

A natural question to ask at this point is whether we can account for the lack of Principle C effects in headed and free relatives in a unified manner. In this section, I show that this is indeed possible on the assumption that the wh-phrase in a free relative occupies the head position, parallel to the position of the head in a headed relative.

Munn (1994) provides an interesting account of the lack of Principle C effects in headed relatives.[4] He adopts a version of the Head Promotion analysis (following Brame 1968, Vergnaud 1974, Kayne 1994, among others), on which the head of the relative first undergoes raising to [Spec,CP] position and subsequently to the CP external nominal position. The result is a three-member chain, where the external head *the picture of Bill*, the operator

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[4]Reasons of space prevent me from discussing alternative accounts, such as Safir's (1999) Vehicle Change account. For arguments against accounting for the lack of Principle C effects in headed (and free) relatives in terms of Vehicle Change, see Citko (in preparation).

in [Spec,CP] and its copy in the base position are all members of the same candidate set.[5]

(20) [$_{DP}$ [the picture of Bill]$_i$] [$_{CP}$ [which picture of Bill]$_i$ that [$_{IP}$ he likes [which picture of Bill]$_i$]]

This movement appears to create an improper chain, since the head moves first to an Ā-position and subsequently to an A-position.[6] To avoid this potential complication, I suggest a slight modification to this structure, given in (21).

(21) [$_{DP}$ the picture of Bill] [$_{CP}$ [which picture of Bill]$_i$ that [$_{IP}$ he likes [which picture of Bill]$_i$]]

In (21) the head *picture of Bill* is generated in its Spell-Out position, and what moves from the clause internal position is the unpronounced wh-copy of the head. This movement is essentially equivalent to the movement of an empty operator.

Munn maintains the assumption that reconstruction in Ā-chains is obligatory; thus the lower copy of the wh-phrase *which picture of Bill* is the one entering the interpretation. The result is a familiar configuration violating Principle C:

(22) [$_{DP}$ the picture of Bill$_i$] [$_{CP}$ which ~~picture of Bill~~ that [$_{IP}$he$_i$ likes ~~which~~ picture of Bill$_i$]]

The solution Munn develops to explain why, in spite of this configuration, we do not get Principle C effects is quite ingenious. He proposes that headed relatives differ from wh-questions, in that in addition to deleting the wh-copy in [Spec,CP], it is possible to delete the lower copy. The option of deleting the offending copy is what amends the violation of Principle C. Crucially, this deletion does not violate Full Interpretation, since the content of the de-

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[5]On Munn's assumptions, since the operator has to marked for +WH feature, *which* constitutes simply the +WH spell-out of definite determiner *the*. An alternative is to assume that the nominal *pictures of Bill* undergoes extraction from [Spec,CP] and subsequent merger with the determiner *the*. This is the view taken by Hornstein (to appear).

[6]This potential problem can be circumvented on the assumption that the head position is also an Ā-position.

leted copy is recoverable from the head of the relative. The structure at LF is (23) rather than (22).

(23) [$_{DP}$ the picture of Bill$_i$] [$_{CP}$ which ~~picture of Bill~~ that [$_{IP}$ he$_i$ likes ~~which picture of Bill$_i$~~]]

Implicit in Munn's analysis is the claim that deletion of the lowest copy is optional. This is necessary in order to account for why the lowest copy is the one that undergoes interpretation in cases involving Principle A effects, variable binding and idiom chunk interpretation (cf. the examples given in (19) above)).

The insights behind Munn's account extend straightforwardly to free relatives on the assumption that the head position is occupied by a contentful wh-phrase, rather than *pro*. One way to implement this is to assume that the derivation of a free relative involves movement of the wh-phrase first to [Spec,CP] and subsequently to the CP external head position (24).

(24) [$_{DP}$ [whichever picture of Bill]$_i$ [$_{CP}$ [~~whichever picture of Bill~~]$_i$ [$_{IP}$ he likes [~~whichever picture of Bill~~]$_i$]]

Another possibility is to assume base generation of the head and movement of an empty operator to [Spec,CP], which on current assumptions is simply an unpronounced copy of the wh-phrase in the head position. This is schematized in (25).

(25) [$_{DP}$ [whichever picture of Bill] [$_{CP}$ [~~whichever picture of Bill~~]$_i$ [$_{IP}$ he likes [~~whichever picture of Bill~~]$_i$]]

Since Ā-reconstruction is obligatory, the copy in [Spec,CP] gets deleted and the lower copy enters the interpretation.

(26) [$_{DP}$ whichever picture of Bill$_i$ [$_{CP}$ ~~whichever picture of Bill$_i$~~ [$_{IP}$ he$_i$ likes whichever picture of Bill$_i$]]

The result is a violation of Principle C. However, since the lower trace is recoverable from the CP-external head, it can undergo deletion without violating Full Interpretation, thus voiding a Principle C violation. The resulting configuration is thus (27) rather than (26).

(27) [$_{DP}$ whichever picture of Bill$_i$ [$_{CP}$ ~~whichever picture of Bill~~$_i$ [$_{IP}$ he$_i$ likes ~~whichever picture of Bill~~$_i$]]

The representation given in (27) does not violate Condition C, which is precisely the result we want in order to account for the grammaticality of (13a), repeated below.

(28) I will buy whichever pictures of Bill$_i$ he$_i$ is willing to sell.

To conclude briefly, I have presented a new argument against the Comp Account of free relatives. I have shown a unified a account of the lack of Principle C effects in headed and headless relatives is possible on the assumption that a wh-phrase in a free relative construction occupies the CP external position, analogous to the position of a head in a headed relative. I have also shown that on an analysis in which the head of a free relative is occupied by an empty pronominal element, the lack of Principle C effects in free relatives remains unaccounted for, and an important generalization is lost.

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