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Relative Clauses Without Wh-Movement*

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0. Overview

Relative clauses are standardly assumed to include some form of wh-movement (either movement of a covert wh-operator (1) or overt movement of the RC head (2)):

(1) The book Op that I read t

(2) The book_i that I read t_i

However, there are a number of contexts, for the most part previously unobserved, in which some relative clauses show structures incompatible with wh-movement. This suggests that wh-movement does not take place in these contexts. Rather, I will argue that RCs lacking relative pronouns contain a covert indefinite pronoun that is bound by the RC head, which is base-generated to the left of the complementizer position.. RCs with wh-relative pronouns are instantiations of wh-movement, as standardly assumed.

This paper is organized as follows. In part 1, I will show some contexts that show constructions incompatible with wh-movement inside relative clauses. In part 2, I will show some differences between relatives with and without relative pronouns. In part 3, I will propose a basic structure for RCs without wh-movement, and show how it accounts for the behavior of RCs lacking relative pronouns. In part 4, I will present additional evidence supporting this analysis.

1. Evidence Against Wh-Movement in Certain Relatives

1.1. Absence of *That*-Trace Effects

One piece of evidence that some relative clauses may not contain wh-words is the fact that English subject RCs with *that* are immune from *that*-trace effects:

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- (3) The man that t loves children.
 (4) *Who did you say t that t loves children?

This anomalous pattern has been examined by Pesetsky (1979, 1982), who proposes a rule of "COMP contraction": the covert wh-operator passes its index to the complementizer before being deleted, thus allowing the complementizer to govern the subject wh-trace. Crucially for his analysis, wh-traces cannot do this, thus accounting for the ungrammaticality of structures such as (4).

1.2. Nonverbal Predicates and Wh-Movement

Another context where relative clauses allow structures normally blocked by wh-movement is that of relatives containing nonverbal predicates. A number of languages allow nonverbal predicates either before or after the copula, but disallow wh-movement across fronted predicates. Examples (5)-(7) show this pattern in English (den Dikken 1995):

- (5) I consider [John (to be) the best candidate]
 (6) I consider [the best candidate *(to be) John]
 (7) *Who do you consider the best candidate to be?"

Examples (8) through (10) show this pattern in Italian (data from Moro 1993):

- (8) Una foto del muro fu la causa della rivolta
 A picture of.the wall was the cause of.the riot
 (9) La causa della rivolta fu una foto del muro
 The cause of.the riot was a picture of.the wall)
 (10) *Quale foto del muro pensi [che la causa della rivolta fu t]?

A similar pattern also occurs in Maori (de Lacy, 1999). Maori is a predicate-initial language; non-verbal predicates appear before subjects. Wh-movement past non-verbal predicates, however, is disallowed:

- (11) He mahita a Hera
 D teacher D Hera
 "Hera is a teacher"
 (12) *He aha he whero
 D who D red.one
 "What is red?"

Another language that shows this pattern is San Lucas Quiaviní Zapotec, an indigenous language of Mexico. It is a VSO language, but nonverbal predicates most commonly appear before the copula (though they may also appear after it.) In wh-questions, however, nonverbal predicates may only appear after the copula (Lee 1999):

(13) Campesye'nn nnàa Gye'eihlly
Farmer neut-be Mike
"Mike is a farmer"

(14) Nnàa Gye'eihlly campesye'nn
Neut-be Mike farmer
"Mike is a farmer"

(15) Tu nnàa campesye'nn?
Who neut-be farmer
"Who is a farmer?"

(16) *Tu campesye'nn nnàa?
Who farmer neut-be
"Who is a farmer?"

However, nonverbal predicates may precede the copula inside relative clauses (which obligatorily contain the complementizer *nih*):

(17) A bùunny nih campesye'nn nnàa nu'uh rèè'
Top person comp farmer neut-be neut-exist here
"The man who is a farmer is here."

This is problematic for standard accounts of relative clauses: if relative clauses necessarily contain instantiations of wh-movement, then structures such as (3) and (17) should be disallowed.

2. Some Differences Between *that*-RCs and *wh*-RCs

Further evidence that some types of relative clauses lack wh-movement comes from syntactic and semantic differences between RCs with and without relative pronouns. These differences suggest that RCs with relative pronouns (which I will call *wh*-RCs) do behave as instantiations of wh-movement, while those without relative pronouns (which I will call *that*-RCs) do not.

2.1 Definiteness effects and English *wh*-RCs

Wh-RCs and *that*-RCs differ in their ability to host existential *there*: Existential *there* may appear as the subject of *that*-RCs and those lacking relative markers, but not *wh*-RCs.

(18) The few salespeople [that there were] did nothing to help us.

(19) The few salespeople [there were] did nothing to help us.

(20) *The few salespeople [who there were] did nothing to help us.

Existential *there* only appears in constructions with indefinite arguments, as seen in (21):

(21) There are three/some/*the people waiting outside.

The fact that existential *there* may appear in *that*-relatives and null relatives but not *wh*-relatives suggests that the gapped argument in *that*-relatives is necessarily indefinite, while that of *wh*-relatives are not. This is consistent with the argument that the gapped position in *that*-RCs is occupied by a phonologically null indefinite pronoun.

The compatibility of RCs with existential *there* and definite determiners (18) can be accounted for by Kayne's (1994) proposal that determiners are generated externally to the RC, and do not form a constituent with the RC head:

(22)

$$\begin{array}{c}
 \text{DP} \\
 \diagdown \quad \diagup \\
 \quad \text{D}' \\
 \diagup \quad \diagdown \\
 \text{D} \quad \text{CP} \\
 \text{the} \quad \text{few people that there were}
 \end{array}$$

These data also provide evidence against *wh*-movement in *that*-relatives: Moro (1993) proposes that existential *there* (and its counterparts crosslinguistically) are fronted locative predicates. If *there* is a predicate, then its inability to appear in *wh*-relatives is consistent with the generalization that *wh*-movement is blocked across fronted nonverbal predicates (consistent with (20)).

Conversely, its ability to appear in *that*-relatives suggests that no *wh*-movement takes place in these structures.

2.2. The Interpretation of Object QPs in *that*-relatives and *wh*-relatives

While I will argue that the dependency between the gapped argument and its antecedent in *that*-RCs does involve A' binding, there is evidence that this A'-dependency does not involve *wh*-movement. There is independent evidence that not all A' dependencies behave identically: for instance, while (most) quantified arguments may freely take scope over each other at LF, object quantifiers cannot take scope over *wh*-subjects, as noted by May (1985):

(23) Who bought everything for Max? *wh*> every, *every> *wh*

Thus, there are contexts in which *wh*-movement and quantifier movement show different constraints. This type of interpretive and syntactic difference can be used as a diagnostic for the presence (or absence) of *wh*-movement in RC constructions.

For instance, consider the following example of a *wh*-relative with both a quantified subject and object:

- (24) We're looking for [someone who knows every application]
(some > every, *every > some)

In the *wh*-relative, there is only one possible reading: we're looking for a single person who knows every application. The object QP cannot take scope over the RC head. This is consistent with May's (1985) observation that *wh*-subjects always take scope over QP objects, as seen in (23). The absence of a possible inverse scope reading in (24) is thus consistent with the presence of *wh*-movement in *wh*-relatives.

That-RCs, on the other hand, show a different pattern:

- (25) We're looking for [someone that knows every application]
(some > every, every > some)

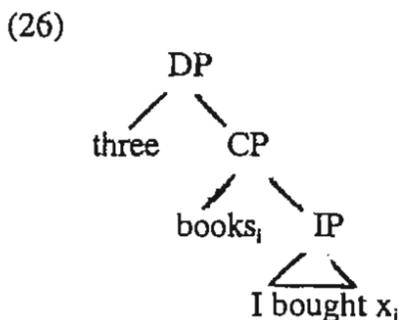
The *that*-relative allows the object QP to take scope over the subject: that is, we could be looking for a different person for every application. This suggests the absence of subject *wh*-movement.

This is consistent with the idea that the gapped argument in *that*-RCs is a phonologically null indefinite pronoun, rather than a raised *wh*-word: indefinite pronoun subjects, unlike *wh*-subjects, allow quantified objects to take inverse scope.

To sum up my arguments so far, I have shown *that*-RCs without relative pronouns allow structures incompatible with *wh*-movement: they are immune to *that*-trace effects and allow fronted predicate nominals (in some languages). They also allow inverse scope readings of object quantifiers, which is blocked by *wh*-movement. In addition, *that*-RCs may host existential *there* constructions, while *wh*-relatives may not. This suggests a fundamental structural and semantic difference between these two types of relatives. In the next section, I will propose a structure for *that*-RCs, and show how this structure can account for the data just shown.

3. The Structure of RCs without Relative Pronouns

The null pronoun in RCs without relative pronouns receives an indefinite interpretation. Following Heim's (1982) analysis of indefinites, I will treat the null pronoun as a variable that gets its restriction from the head noun of the relative clause. Further quantificational readings it may receive are contributed by determiners generated above the head noun:



4. Evidence for Different Structures for *wh*-RCs and *that*-RCs

In this section, I will show additional evidence motivating the structure for *that*-RCs proposed in Section 3. Besides the absence of *wh*-movement, this structure also proposed that the RC head in *that*-RCs (the antecedent of the null pronominal inside the RC is base-generated outside the RC. I assume that *wh*-relatives do involve overt movement of the RC head from the inside the RC to its surface position.

4.1. Definite Pronouns and Existential *there* in *that*-RCs

One piece of evidence for this analysis is the fact that definite pronouns such as *everyone* and *everything* may head *that*-RCs containing existential *there*:

(30) We bought [everything (that) there was t at the market]

However, definites such as *everything* are inconsistent with existential *there* :

(31) *There was everything at the market.

Thus, a structure such as (31) cannot be taken as a possible base structure for the RC in (30). The grammaticality of (30) suggests that the RC head has to be generated independently of the gapped position.

It could be argued, however, that (31) can be a potential base structure for (30): movement of the RC head *everything* obviates the co-occurrence restriction between existential *there* and *everything*. There is evidence, however, that the definiteness effect holds even after movement of the offending argument. For instance, definite DPs may not appear as left-dislocated topics extracted from existential *there* constructions:

(32) Kim, Pat thinks Ray likes t.

(33) *Kim, Pat thinks there was t at the party.

Also, questions with *how many* only seem to allow weak QP answers if they involve existential *there*:

(34) Q: How many redheads do you think there were t at the conference?

A: Three/more than three/half a dozen/many/not many/none

#All of them/most/every

These data show that the absence of definite effects in (36) cannot be due to movement of the definite subject *everything* out of the RC. Rather, as argued, the grammaticality of (50) can best be accounted for if the RC head is base-generated outside the RC.

This analysis forces the assumption that RC head nouns in *that*-RCs are base-generated above the remainder of the RC. Empirical evidence for this will be given in the following sections.

3.1. Wh-effects without wh-movement

The pronominal status of the gapped argument within *that*-relatives is independently motivated by relative clause patterns crosslinguistically. It has been noted that in a number of languages, relative clauses contain overt resumptive pronouns. In Hebrew, for instance, resumptive pronouns appear fairly freely in RCs, but not in wh-questions. Notably, Hebrew relatives, like English *that*-RCs, contain complementizers rather than relative pronouns:

- (27) Ha'i's ʔse pagaʔsti oto
 The.man that I.met him
 (Hebrew: Sells 1984)

Sells analyzes the complementizer in Hebrew relatives as a [-wh] operator binding the resumptive pronoun. If this proves to be the case, then Hebrew provides another example of relative clause formation involving A' dependencies other than wh-movement.

That-RCs also license parasitic gap constructions, which is also consistent with the standard view that relatives are derived by wh-movement: parasitic gaps are defined as being dependent on the presence of a wh-trace. In (28), for instance, the parasitic gap (e) is licensed by the wh-trace t:

- (28) The book that they read t without understanding e

However, Georgopoulos (1985) notes that parasitic gaps can be licensed by either overt or covert resumptive pronouns in Palauan:

- (29) [ng-teruata el 'ad] [a m-ulengede'edu' er tir [e dimlak mes-terir t]]
 Cl-which L person irr-2-Im-talk P them COMP pst-neg IR-2-Pf-see-3p
 "Which people did you talk to__without seeing__?"

Georgopoulos 1985: p. 112

Georgopoulos argues that Palauan resumptive pronouns and their antecedents are base-generated in their surface positions. Thus, it is plausible that English *that*-relatives, which show numerous patterns inconsistent with the presence of wh-movement, may be able to license parasitic gaps via a strategy similar to that used in Palauan: the parasitic gap may be licensed by a base-generated null pronoun.

To sum up, a number of traits of *that*-relatives that have been attributed to wh-movement have independent explanations that do not involve wh-movement.

4.2. Universal QP Subjects in *that*-RCs and *wh*-RCs

The different possible readings of universal QPs in subject position in *that*-RCs and *wh*-RCs also suggest that *that*-RCs and *wh*-RCs have different structures. In particular, I will show that their behavior supports the proposal that heads of *that*-RCs are base-generated in their surface position, while heads of *wh*-RCs are base-generated inside the RC and raise to their surface positions.

The relevant data are as follows: *wh*-relatives with universal QP subjects allow only a narrow-scope reading of the subject QP, while *that*-RCs allow the universal QP subject to take either wide or narrow scope:

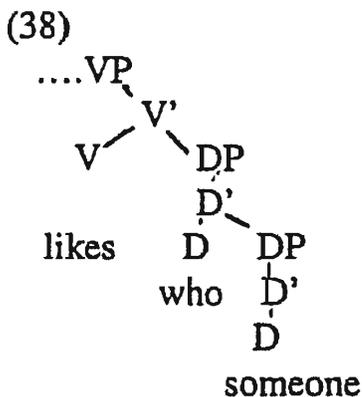
(35) I have to invite [someone who everyone likes t]
(wh > every , *every > wh)

(36) I have to invite [someone that everyone likes t]
(wh > every, every > wh)

The constraint on the possible interpretation of the *wh*-relative is unexpected in light of the fact that subject QPs may, in general, take scope over *wh*-words, as seen in (43):

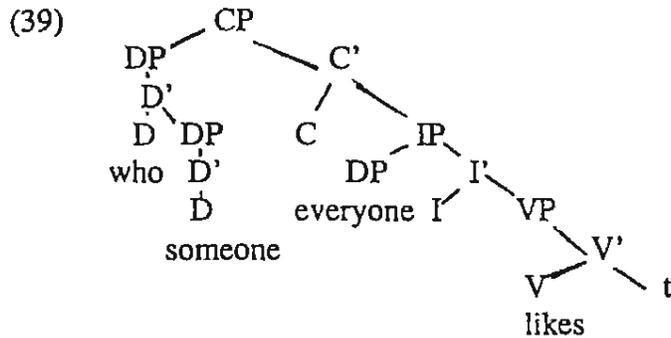
(37) What did everyone buy for Max?
(wh > every, every > wh)

This constraint, however, falls out naturally as a result of the underlying structure of *wh*-RCs. Following Kayne (1994), I assume that the RC head “someone” is base-generated as the complement of *who*:

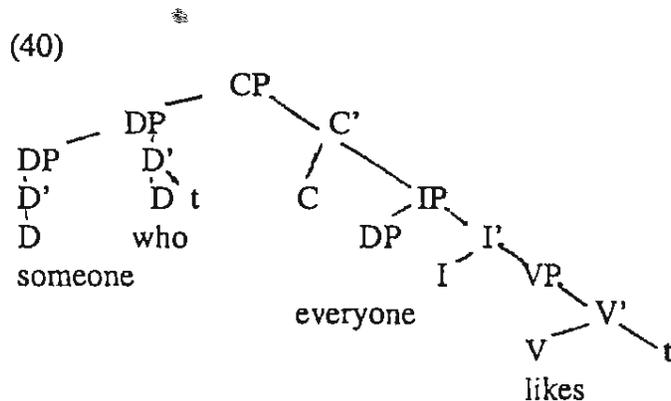


The *wh*-expression raises to spec, CP:

Relative Clauses without Wh-Movement



The RC head then adjoins to the projection headed by the *wh*-expression:



The RC head thus takes scope in the same position as *who*.

Why should this configuration constrain scope readings? A relevant piece of evidence is that complex *wh*-expressions don't seem to allow distributive readings when generated under QP subjects with *every*:

(41) What movie did every critic hate?
(*wh* > *every*, **every* > *wh*)

(42) What class did everyone take?
(*wh* > *every*, **every* > *wh*)

Assuming the structure of *wh*-RCs shown above, the inability of *wh*-RCs to allow distributive readings is explainable in terms of the general constraint against complex *wh*-expressions reconstructing into positions under *every*.

The possibility of distributive readings of subject *every* in *that*-RCs is consistent with the proposal that indefinite QPs and universal QPs take scope freely over each other: *everyone* may raise to take scope over *someone* at LF.

4.3 Predicate Nominal RC Heads

Another piece of evidence against *wh*-movement in *that*-RCs—and for the base-generation of *that*-RC heads outside the RC—comes from the fact that predicate nominals may appear as heads of *that*-RCs, but not *wh*-RCs:

- (43) (He probably voted for Nader, being)
the [idealist that/*who he is t]
- (44) He's no longer the [athlete that/*who he used to be t]

As previously noted, *wh*-movement is incompatible with fronted predicate nominals. If the fronting of predicate nominals blocks *wh*-movement (or vice versa), then there should be no way for the predicate nominals in (43) and (44) to raise past a relative pronoun. This prediction is borne out. The fact that predicate nominal heads are licit in *that*-RCs further supports the view that these structures do not involve movement of the head past a *wh*-operator.

The asymmetry between *wh*-RCs and *that*-RCs in (43) and (44) supports the hypothesis that heads of *that*-RCs are base-generated outside the RC, and that no *wh*-movement is involved in these structures. Theoretical support for this comes from den Dikken's (1994) analysis of predicate nominals. He accounts for incompatibility of fronted predicate nominals and *wh*-words in the following way: *wh*-movement past fronted predicate nominals constitutes a Principle C violation. Since both the predicate nominal and the *wh*-word get the same index, the *wh*-trace would wrongly be both A- and A'-bound by the two elements:

- (45) **wh*_i...predicate_i... t

This proposal can be extended to *wh*-RCs. The ungrammaticality of predicate nominal heads of *wh*-RCs follows from the proposal that heads of *wh*-RCs are generated inside the relative clause: the predicate nominal would have raise past the subject into an A' position via *wh*-movement, thus causing the same effect:

- (46) *predicate...*wh*_i...subject_i...t

Conversely, the compatibility of predicate nominal subjects with RCs without relative pronouns follows from the theory that their heads are base-generated in their surface position:

- (47) predicate....subject_i....pronoun

The null pronoun is base-generated in the predicate position inside the RC, and is itself coindexed with the subject of the RC. The base-generated head of the RC is independently coindexed with the subject. This allows the null pronoun and the externally generated predicate to be coreferential without any direct binding dependency between them.

5. Summary

This paper has argued for the following points: first, there is both semantic and syntactic evidence that not all relative clauses are composed via *wh*-movement; second, relative clauses with *wh*-pronouns are instantiations of *wh*-movement, while *that*-RCs are

not; third; that-RCs contain indefinite pronouns that are bound by the base-generated head of the RC.

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