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The HEAD-Raising Analysis is Not a Solution: A Reply to Donati and Cecchetto (2011)

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Abstract The structure of English restrictive relative clauses has been the subject of continuous debate in the linguistic literature. Inconsistencies frequently emerge after theories and propositions have been introduced. Being part of such a debate, scholars usually use squibs for reporting analysis of anomalous data without providing solutions to a problem as is the case in articles. This squib aims at providing phenomenon that present challenges for some aspects of Donati and Cecchetto (2011) analysis. Donati and Cecchetto propose a modified version of the raising analysis. They argue that the raising analysis proposed by Kayne (1994) and Bianchi (2000) suffers from drawbacks. The central idea of their proposal is that what is raised in a restrictive relative clause is a noun and not an NP or a DP. The discussion which draws on evidence from reconstruction, movement of wh-phrases, resumption, islands, free relatives, ... shows a variety of gaps in the analysis which renders it untenable.

Keywords Head-raising analysis, restrictive relative clause, free relative clause, reconstruction

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1. Introduction

The structure of English restrictive relative clauses (RRCs) as in *the lady whom I met* ___ has been the subject of considerable debate in the linguistic literature. There is a dependency between the head N *lady* and an empty position in the RRC. The issue is: what is the nature of the dependency. This squib evaluates one proposal that has addressed this issue, one that might be described as the HEAD-raising analysis whose merits have been highlighted by Donati and Cecchetto (D&C) (2011). The discussion aims at showing a variety of gaps in Donati and Cecchetto's analysis which renders it untenable.

The paper is organised into 4 sections. Section 2 discusses the rationale for the HEAD-raising analysis. Section 3 then presents a critical evaluation of the proposal. Section 5 concludes the squib.







2. The HEAD-RAISING analysis

Prior to the Head-Raising analysis, a number of analyses were proposed to account for the structure of RRCs such as the matching/operator analysis, the raising/promotion analysis, and its variant, the head raising analysis, and the partial promotion analysis¹. In this section, a review of the HEAD-RAISING analysis is presented.

A modified version of the raising analysis is advanced by D&C's (2011) work. They argue that the raising analysis proposed by Kayne and Bianchi 'suffers from drawbacks that all trace back to an incomplete understanding of the nature, the properties, and the trigger of this movement operation' (552). For example, in the case of *wh*-RRCs, they highlighted a problem with the derivation, namely that it is unsatisfactory to have a D with a CP complement; the complement of the D should be an NP. The core of their proposal is that what is raised in a RRC is a noun and not an NP or a DP. On their analysis it follows from this that the mother of the moved expression becomes an NP. Hence, we have the structure in [DP the [CP book [CP that I read]], but not in [DP the [NP book [CP that I read]]. D&C assume a Probing Algorithm (the label of a syntactic object (α , β) is the features(s) that acts as a probe of the merging operation creating (α , β) (521)). What this means is that only lexical items, 'heads', can raise to check their feature, the edge feature (D&C assume that lexical items have an edge feature. Their account is different from the standard account where the edge feature is associated with C), that forces them to merge with another element. Thus, *book* is a lexical item and has an edge feature that needs to be satisfied that is why it is merged with CP leaving behind in the original position a stranded null D. It then, following the Probing Algorithm, relabels the structure and allows it to combine with the external D. In other words, when there is a head movement, the moved constituent projects which is not what is traditionally assumed. Here are the trees they propose for both *wh*-RRCs and *that*-RRCs:

Wh-RRC

That-RRC

DP					DP				
									
D	NP				D	NP			
the					the				
N		CP			N		CP		
book					book				
[which book] John saw [which book]					that you saw [D book]				

The structure that they are proposing is the one assumed in a traditional non-raising analysis in that there is a D followed by an NP, and not DP followed by CP. They argue that when D has the *wh*-feature as in the case of *wh*-RRC (a), it is visible to the root C, therefore, the *wh* D-label is closer than the N to C, and the entire DP is attracted to C. Whereas when D does not have a *wh*-feature as is the case of *that*-RRCs (b), N can move alone since the D-label no longer interferes. They also propose that when it looks as if a noun and its modifier have been raised, the modifier has been added after movement so that the modifier cannot prevent labelling. Thus, in *the recently published book about syntax by a linguist from Oxford that we are planning to read* only *book* is raised out of the RRC and *recently published* and *about syntax by a linguist from Oxford* are added after raising; later merged.

¹ For a review of the proposals, see Shaheen (2013).

3. Problems for the HEAD-raising analysis

3.1 Reconstruction

D&C used the literature that postulates the presence or absence of reconstruction effects as an argument for or against the traditional version of the raising analysis, namely, the version that assumes that what raises is the noun plus the material that modifies it. D&C use the absence of a reconstruction effect in *the professor of John_i's that he_i always praises* (the fact that *he* and *John* can be coindexed) as evidence for their position. However, they have to reject the account of reconstruction effect that Aoun & Li (2003) and others assume for a sentence like *the portrait of himself that John painted is extremely flattering*. They provide evidence against the raising of the whole antecedent. They have to say that this is not evidence that *of himself* originates inside the RRC.

D&C agree that there is a dissociation between Condition C reconstruction effects, which are missing in *the professor of John_i's that he_i always praises*, and Condition A reconstruction effects, which are attested in *the picture of himself [that John likes e most] was never on display*. Their solution involves the claim that the anaphor is actually bound by PRO, which occupies the subject position of the NP, as shown in [_{DP} The [_{NP} PRO_i picture of himself_i] [that John_i likes picture most]] (*was never on display*).

However, C&D's treatment of their example *the picture of himself [that John likes e most] (was never on display)*, and other reconstruction effects do not offer a parsimonious account for the phenomenon. Here I provide a critical discussion of specific syntactic arguments about the reconstruction phenomenon that have been widely endorsed. The discussion will illuminate the fact that arguments based solely on syntax, specifically c-command² are problematic.

In the literature, reconstruction is dealt with differently by different linguists; some use the term as a name for a class of phenomena. Here the phenomenon is used for a certain sort of interpretation whereby X is not c-commanded by Y but it is interpreted as if it were as in *the picture of himself that John painted* where *picture of himself* behaves as if it were in object of *painted*, others use it as a type of analysis. Different views are proposed to explain reconstruction. One view involves movement; 'reconstruction places the relevant element in a lower position' (Haegman (1994: 525)) (see also Aoun and Li (2003), Bianchi (2000) among others). This approach assumes that c-command is required and proposes that the requirement is met prior to movement (it is not met on the surface.) The relation between the crucial elements is explained in terms of a grammatical operation; movement. There is disagreement though as to the nature of the moved element. Movement analyses of reconstruction are inadequate. The arguments for the interpretation of the crucial elements do not provide any robust evidence for movement and not for c-command at any level of syntax. This is not to deny the Standard Binding Theory proposed by Chomsky (1981 and 1986) where reflexives, pronouns and proper names are in c-command relation with a referent in a minimal syntactic domain.

It is not clear how the crucial phenomena really require c-command given examples like *the picture of himself in Newsweek made John's day* and *His X-box is every boy's favourite possession*. The first of these is from Pollard and Sag (1994). The point is that neither example has a plausible analysis in which the pronouns are c-commanded by their antecedents. A number of objections are raised against the very idea of movement³ as a diagnostic for reconstruction.

- a) A **reflexive** anaphor normally requires a local antecedent which c-commands it. *Portrait of himself* in *the portrait of himself that John painted is extremely flattering* (Schachter 1973 cited in A&L, 2003: 98) is apparently not c-commanded by *John*, however, some argue that the *portrait of himself* originated in object position of the verb *painted*. A copy of the moved element is left behind in the RRC and from there can be bound by *John*, thus showing a reconstruction effect.

Exempt anaphors (Pollard and Sag, 1994), which do not have to be c-commanded by an antecedent, provide a counterargument that some reflexives do not have a c-commanding antecedent at any level of syntax. In *The picture of himself in Newsweek shattered the peace of mind that John had spent the last six months trying to restore*. (Pollard and Sag, 1994: 279), *John* is inside an RRC modifying *peace of mind*, but *picture of himself in Newsweek* does not start inside this RRC meaning on any plausible analysis that it is not c-commanded by *John*. Plenty of people assume that

² A constituent X c-commands its sister constituent Y and any constituent Z which is contained within Y (Radford, 2010: 53)

³ It might be worth noting that not everyone who assumes movement assumes that the antecedent of a relative clause is moved. The situation is different with *wh*-interrogatives where everyone who assumes movement assumes that the *wh*-phrase is moved.

there is no movement in any of the examples, but even if one assumes movement, it is not going to help in an example like this.

- b) A pronoun with a **quantified antecedent** must normally be c-commanded by that antecedent, for example *I saw everyone and he saw me*, which contrasts with *I saw Kim and he saw me*. In *The picture of his mother that every student liked best was an old black and white*. (Aoun & Li, 2003: 99), *his* is not c-commanded by an antecedent, but some assume that *picture of his mother* originates below *every student* and is c-commanded by it. Thus, *his* could be said to refer to *every student*. However, there are examples which suggest that some pronouns have a quantified antecedent which does not c-command it at any level of syntax, i.e., *His X-box is every boy's favourite toy* (Borsley, personal communication). There is no plausible analysis here in which *his X-box* originates in a position c-commanded by *every boy*.
- c) **Scope Interpretation** can also be taken as evidence against assuming movement as a diagnostic for movement. Normally a quantifier has scope over another quantifier if it c-commands it, but *I phoned the two patients that every doctor will examine tomorrow* seems to be different. On the movement approach it is not really different. The idea that a head nominal can be interpreted as having narrow scope with respect to another quantifier within an RRC is assumed to argue for movement. The interpretation that there are two patients for every doctor is possible if the QP *every doctor* can have scope over the relativized nominal *two patients*, i.e., *two patients* originates in object position after *examine* and then gets raised to its position in the PF. In other words, it seems to be unproblematic given the assumption that relative antecedents originate inside the relative clause. However, a universal quantifier sometimes has scope over an existential quantifier where there is no reason to think that its c-commands the existential quantifier at any syntactic level. *An X-box is every boy's favourite toy* (Borsley, personal communication), *Every boy* has scope over *an X-box*, but it doesn't c-command it at any level suggesting that there can be as many *X-boxes* as *boys*. This is because *X-box* is not referring to a single *X-box*. This interpretation is possible even though *every boy* does not c-command *an X-box* as *every boy* is inside the DP *every boy's favourite toy*. The point is not that it doesn't c-command it in the obvious structure but there is no plausible underlying structure in which it c-commands it.
- d) So, the facts about reconstruction are not as straightforward as simple c-command. The problem can be further complicated when posing an example such as *His last poem is what every Englishman prefers* (Aoun & Choueiri, 1997: 16) which is a reversed pseudo-cleft sentence. Here *what* presumably originates as object of *prefer*. If so, *his last poem* cannot originate there. No movement is involved; the crucial constituent has not moved. In other words, one can't account for the facts with just movement. One has to assume another mechanism (predication and coindexing) as well.

3.2 Idiomatic expressions

In transformational work, idiom chunks are introduced as a unit but they may not be a unit in the superficial structure of a sentence: *Pull the strings* as in *the strings [that Pat pulled] got Chris the job*. There are cases where the parts of the idiom are separated. The behaviour of idiom chunks might suggest that they involve raising. However, there are some arguments, one of which is that of Nunberg, Sag and Wasow (1994)⁴, which assume that idioms are 'semantically compositional', and the very idea of idiomaticity is 'fundamentally semantic in nature' (491). For example, a. *The strings [that Pat pulled] got Chris the job*, and b. *Pat pulled the strings [that got Chris the job]* (Nunberg, Sag and Wasow, 1994: 510). (a) would have the structure [DP the [NP [CP that Pat pulled [DP strings] got Chris the job]], while (b) would have the structure in [DP the [NP [CP that [DP strings] got Chris the job]]].

If we assume that the lexical item raises out of the RRC, this might work to explain why (a) may be interpreted idiomatically, but then (b) should not allow an idiomatic interpretation, as the *strings* is in the RRC at the underlying structure, while *pull* is in the upper clause. What this means is that idioms are not always introduced as one unit, and the components of an idiom do not need to form a unit at any syntactic level.

3.3 Type of the movement

D&C assume that *that*-RRCs involve movement of an N leaving behind an empty D. So, we have the following structure [DP the [NP book [CP that I read [DP D book]]]]. Essentially, they are assuming that a head can move in the same

⁴ This argument came originally from McCowley (1981) as they note.

way as an XP, for example, that it can be extracted from a subordinate clause [_{DP} the [_{NP} book [_{CP} that I think [_{CP} he read [_{DP} D book]]]]. However, it is traditionally assumed (see Radford 2009: 122-124) that head-movement is very local, i.e., it is subject to the Head Movement Constraint, which only allows movement to the nearest higher head. They have a brief remark on head movement which is that head movement 'is not restricted by such a condition' (530). D&C have to assume that head movement can operate in exactly the same way as A'-movement; it is no more restricted than A'-movement (e.g., that it can extract a head from a clause).

3.4 Wh-phrases

D&C's analysis also faces the problem highlighted by Aoun & Li (2003) (earlier made by Kayne (1994)) namely that wh-relatives include, at an early stage of their derivation, wh-phrases like *who man*, *when time*, *where place* and *why reason*. Such phrases are not independently motivated.

3.5 Definiteness

D&C's analysis does not explain why the empty D cannot appear with an in-situ noun, as in *He read [_{DP} D book]. It also doesn't explain why one cannot have an overt D left by movement as in **the book that I read the* _____. One might assume that D is the overt *the*, and gets dropped in PF when it is stranded by N-Raising, due to its clitic status. However, the question to be asked here is what ensures promotion? Sentences involving *this* or *that* do not need a nearby NP, thus, it is not clear how the DP containing an NP is fronted when the D is *this* or *that*. Consider the following sentences **The [I saw e man]* and *the [e man I saw]*. The first is ungrammatical for two reasons: *the* does not have an NP close enough, and *e man* needs an overt D near to it. These two conditions are satisfied in the second. This is not the case in **This [I saw e man]*, where we have a different D. The sentence is ungrammatical for one reason; *man* needs a nearby overt D, *this* does not need a DP near it; it can stand by itself. This condition is fulfilled in *This [e man I saw]*. Now consider the ungrammaticality of **this/that [I saw the man]* and **this/that [the man saw me]*. The question to be asked here is the following: how can D&C's analysis account for the ungrammaticality of these sentences.

Also, in a. **There were the men in the garden*, b. *There were 0 men in the garden*, and c. *The men that there were in the garden were all diplomats* (Aoun & Li, 2003: 103), there seems to be a possibility of a gap. However, D&C consider the plural *men* which does not have to appear with a D. Thus, although one cannot have a definite DP after *there be*, one cannot have a bare singular count NP either, hence the ungrammaticality of **There was man in the room*.

3.6 RRCs with Resumptives

In the literature, it is generally assumed that a gap inside an island renders the structure ungrammatical or less acceptable. It is also argued (see McCloskey (2006)) that the presence of a resumptive clitic inside the island could rescue island violations as there is no movement when there is a resumptive and hence no island effects. Actually, island violations are usually used as a diagnostic for the sensitivity to movement, this is because islands do not allow extraction.

D&C's assumption that both relatives with a gap and relatives with a resumptive pronoun (RP) require a HEAD-Raising derivation predicts, contrary to fact, that relatives with an RP are island-sensitive.

3.7 Islands

Islands do not allow extraction. A problematic syntactic consequence for D&C's proposal is that when the crucial element occurs within a syntactic island, extraction out of it is degraded. For example, in a. *He will put the chair between some table and some sofa*. b. **What sofa_i will he put the chair between some table and _i?* c. **What table_i will he put the chair between _i and some sofa?* (Miliorini, 2016: 41)

In a, there is a coordinate structure (... some table and some sofa). The attempt to extract a coordinate phrase (what sofa and what table) out of the conjunct in (b) and (c) makes the sequence ungrammatical, by violation of Coordinate Structure Constraint. Ross states that "in a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct" (1967: 161). So, a gap inside an island renders the structure ungrammatical.

3.8 Wh-ever relatives

There are objections to C&D's characterization of wh+ever relatives. In their Appendix, C&D claim that such relatives are always full relatives⁵, ignoring problematic data like a. *I will arrest **whoever's signature** appears on this list* and b. *#I will arrest **anybody's signature** that appears on this list*. (Grosu, 2016: 1257). If the emboldened phrase in (a) is CP-external, as the one in (b) incontrovertibly is, one would expect (a) to necessarily have the pragmatically odd reading that (b) has (i.e., that it is the signature, not its author, that gets fired), and this expectation is not fulfilled.

3.9 Free relatives

For D&C (557), 'free relatives are only those ambiguous structures where a determiner-like wh-element raises to the edge of a clause, optionally relabeling it by virtue of the projecting property of heads'. In their analysis of free relatives, they assume that the structure resulting from phrasal movement can only occur in environments for clauses and can only be interpreted as a simple interrogative. Hence the grammaticality of *I wonder what book you read*, and ungrammaticality of **I read what book you read*.

Moreover, they assume that 'late Merge is possible whenever the late-merged element does not receive a &-role from the category it is late-merged with, it is possible to claim that any modifier is late-merged with the head noun of the relative clause.' (534)

Two objections can be raised to C&D's analysis of free relatives, as it predicts that data like *What little light there is in this picture is quite diffuse* are ungrammatical. First, the structure resulting from phrasal movement did not occur in the environments for clauses and is not interpreted as a simple interrogative. Second, although *this picture* received &-role from the preposition *in*, it did not undergo late-merge.

3.10 Stacking

C&D do not actually discuss stacking. It is not clear though how their analysis deals with stacking. If N undergoes raising out of the rightmost CP, the leftmost CP being late-merged with N, it must itself exhibit a token of N, yielding deviant structures. For instance, in *the book that Chomsky wrote which I read last year*, they would have to assume that *book* raises out of *which I read last year* to give the structure in [_{NP} book [_{CP} which I read last year]]. Then *that Chomsky wrote* would somehow have to be added to *book*. The problem is that *that Chomsky wrote* must presumably be the result of head-raising, but that will give something like *book that Chomsky wrote*. If *book that Chomsky wrote* is combined with *book*, the result is **book book that Chomsky wrote*, which is obviously not acceptable. One might argue that the full version raises no semantic difficulties, one token of *book* being simply redundant. One way to fix this is to view the sequence *book book* as an instance of haplology, which gets reduced in PF.

However, this is not robust argument simply because, as argued in Neelman and Koot (2017: 3169) 'it is highly unpredictable in which cases avoidance strategies [of repeated items] are employed' and because 'haplology is language-specific, construction-specific, and morpheme-specific'.

4. Conclusion

Proposals previous to D&C appear to fail to satisfactorily explain all aspects of the syntax and interpretation of RRCs in English. The same is true of the HEAD-raising analysis. The above discussion shows a variety of gaps in the HEAD-raising analysis which render it untenable.

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⁵ D&C (2022) assume that ever+NP relatives are a special kind of headed wh-relatives which involve D to D movement of *what to ever*.

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