

Relative Clauses^{*}

Promotion only, in steps

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Abstract: While Kayne (1994) or de Vries (2002) for example propose that promotion is the only option, seemingly compelling evidence has surfaced, particularly in Sauerland (2000), Bhatt (2002), Fox (2002), Fox (2014), Sauerland and Hulsey (2006), Bhatt and Pancheva (2004), Takahashi and Hulsey (2009) that headed (restrictive) relative clauses (RRC) must allow both promotion – aka head raising - (Vergnaud, 1974, 1985, Kayne, 1994) and matching derivations. In this article, I defend the hypothesis that all headed relatives, be they restrictive or appositives, with gaps or with resumptive pronouns, are derived by promotion. This will mean in particular that there is no need in the grammar for a (phrasal) “matching” operation based on the properties of relative clauses.

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While Kayne (1994) or de Vries (2002) for example propose that promotion is the only option, seemingly compelling evidence has surfaced, particularly in Sauerland (2000), Bhatt (2002), Fox (2002), Fox (2014), Sauerland and Hulsey (2006), Bhatt and Pancheva (2004), Takahashi and Hulsey (2009) that headed (restrictive) relative clauses (RRC) must allow both promotion – aka head raising - (Vergnaud, 1974, 1985, Kayne, 1994) and matching derivations.

In section 1, I first outline and motivate the relevant aspects of the current promotion and matching analyses.

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¹ I will not discuss headless relatives – which are normally assumed to be derived by promotion, nor internally headed relative clauses which are not obviously available in English (or related languages).

In section 2, I point out some explanatory problems raised by the existence of matching derivations that disappear if they are not available. I will take as correct the consequence that relatives are only and always derived by promotion. This means reanalyzing motivations for matching derivations, and addressing some apparent problems arising if all relatives are derived via promotion.

In section 3 and 7, I discuss the empirical motivations that have been provided for the existence of matching relatives to show that they are unconvincing. These motivations come in two kinds: scope and binding properties of the head in simple and extraposition structure (section 3), and seeming island violations of head extraction (section 7). These motivations rely on a network of assumptions crucially building on the availability of Late Merger. I will then show that these motivations underdetermine the analysis needed to account for them. Further, I will show that none of these scope and binding properties but one require anything else than the standard properties of head raising and a syntax/semantics interface mechanism I call Neglect. This workings of this mechanism, whose availability follows from Chomsky's 1995 Principle of Full Interpretation, are discussed in detail in Sportiche (2016b). In particular, I will show that there is no need for Lebeaux's 1991 Late Adjunct Merger which requires matching derivations, which is subsumed under Neglect.

In sections 4 and 5, I briefly discuss how to extend the promotion analysis to resumptive relatives and to appositive relatives.

Section 6 discusses the interaction between relativization and Condition C of the Binding theory. I argue that it also falls out of Neglect, the effects of which can amount to Vehicle Change (as in Fiengo and May, 1994, or Safir, 1999) and a reanalysis of how *wh*-movement precisely works in relativization, which I argue can differ from what (standardly) happens in interrogatives.

As mentioned above, Section 7 discusses the mechanism of head promotion and argues that a proper understanding of the syntactic structures involved not only make the necessary head extraction involved in head raising derivations compatible with movement constraints, but requires a movement analysis, given the island sensitivity displayed by head promotion.

1 The Analyses of Restrictive Relative Clauses

1.1 Types of analyses

Structures that end up being interpreted as relative clauses (fundamentally a clause type shifted to the type of one of its subconstituents by a syntactic mechanism) can assume a variety of forms crosslinguistically. For languages

like English or French, in which the head superficially appears at the left edge of the relative clause², current theories entertain three types of analysis (see Bianchi 2002 for a survey up to 2002 of some of the various motivations leading to this).

The three current analyses of edge headed restrictive relative clauses (RRC), that is restrictive relative clauses with a head found at its periphery, are described below. I will assume as baseline without discussion that RRCs meet the following structural template (which I will question only when relevant):

(1) Structural Template [_{DP} D [NP ...]

Under the non promotion analysis with strong matching, a wh-phrase whose NP matches the Head NP of the RRC in semantic content but perhaps not in form wh-moves to the periphery of the RRC leaving a trace, and gets coindexed with the head of the RRC. Because of the copy theory of traces, the trace ends up being interpreted as a restricted variable, or more precisely, in Fox's 2002 Trace Conversion notation³, as a definite description as shown:

(2) Non promotion: Strong matching

Lees (1960, 1961), Chomsky (1965), Sauerland (1998, 2003), Hulsey and Sauerland (2006).

| | |
|-----------------------|--|
| Syntax: | the book [[which book] _k John likes t _k] |
| Semantics: | the book λx . John read x & book(x) |
| With trace conversion | the book λx . John read the λy . (x=y and book(y)) |

Under the non promotion analysis with weak matching, a silent (pronominal like element) wh-moves to the periphery of the RRC leaving a trace and gets coindexed with the head of the RRC.

(3) Non promotion: Weak matching

Montague (1970), Partee (1975), Chomsky (1973, 1977), Jackendoff (1977), Haegeman (1991), Heim & Kratzer (1997).

| | |
|------------|--|
| Syntax: | the book [Op _k /which _k John likes t _k] |
| Semantics: | the book λx . John read x |

² Whether the visible head is in fact external rather than internal but peripheral to the relative clause is debated, and irrelevant here. I will call it external.

³ In Sportiche (2016), I suggest a modified version of Trace Conversion, eliminating the definiteness of the trace. This is not relevant here.

Under the promotion analysis, a wh-phrase moves to the periphery of the RRC leaving a trace. Its NP is then extracted to become the head of the RRC.

(4) Promotion:

Brame (1968), Schachter (1973), Vergnaud (1974), Afsar (1994), Kayne(1994), Sauerland (1998, 2003), Bianchi(1999), Bhatt (2002), De Vries (2002)

Syntax: the [book]_j [Op_k/which t_j]_k John likes t_k
 Semantics: the λx. John read the λy. (x=y and book(y))

1.2 Basic Motivations

The motivations for these analyses arise within the following set of assumptions:

- Syntactic movement can feed LF
- The copy theory of traces
- Binding (referential) dependencies and Scope properties are computed at LF only
- Items are interpreted where they appear syntactically, except for moved elements which can be interpreted lower than they occur in any trace, that is in any position in which they derivationally occur (they can be reconstructed, see Sportiche, 2016a for a survey of motivations).

1.2.1 Promotion

In the promotion, or head raising analysis, whose existence is hardly controversial, the head originates inside the relative clause and is moved to its periphery – call this derived position the peripheral head - as illustrated below:

phonetics: this is silent
syntax: this is copied ↓

(5) The [**pictures of Picasso** [he displays ~~pictures of Picasso~~

Given the copy theory of movement, the NP *pictures of Picasso* moved to the left periphery leaves a copy in situ as shown. Phonetically, only the top copy is pronounced. The bottom copy is seen as a gap and crossed out to indicate its lack of phonetic (albeit perhaps not phonological) value.

The evidence for a promotion analysis⁴ is based on the existence of clear cases in which a peripheral head (NP) behaves from the point of view of interpretation as if it was embedded inside the relative clause and neither at its periphery nor higher. These cases involve:

- Anaphors (in the head bound by a relative clause internal element)⁵
- Pronouns (in the head bound by a relative clause internal element)
- Idiom chunks (inside the external head tied to a relative clause internal idiom)
- Scope (of the head inside the scope of a relative clause internal element)

This supports a promotion analysis because, under the assumptions above, such interpretive possibilities arise only as a result of total reconstruction of this peripheral head into the RRC, that is the option to interpret at Logical Form only the lowest copy of the two copies (in (5)) created by movement.

This (standard) analysis for the possible interpretive behavior of RRC heads superficially conflicts with Chomsky's 1995's Principle of Full interpretation (**FI**) which requires every element of a syntactic representation to be interpreted at the interfaces with phonetics and semantics. Because the raised head must be able to be fully interpreted within the relative clause, the LF interface must be able to ignore the top copy in (5) yielding total reconstruction. In Sportiche (2016b) I argue that this is a consequence of FI applying to syntactic objects rather than to their occurrences:

(6) Principle of Full Interpretation (FI) :

Interpret every syntactic object.

What FI cares about is not occurrences of objects but objects themselves. This is only relevant in cases of movement of some XP, which is the case of a single object (XP) with multiple occurrences (the locations where it occurs in syntactic structure). If some occurrence (a copy) of a syntactic object, e.g. the head of a relative is interpreted in some location, all others can be ignored. In other words, FI so construed allows:

(7) Neglect: Any material at any interface can be ignored up to crash

Thus, anything in a syntactic representation can be freely neglected at any interface up to crash, that is as long as all relevant principles are satisfied

⁴ The existence of head in-situ relatives, aka head internal relatives (Bambara, Lakota, Quechua, ...) might constitute another reason, although this may involve a covertly raised head (as in Cole, 1987).

⁵ Anaphors can be exempt from Condition A. It must thus be insured that this holds with non exempt anaphors, which it does (see Charnavel and Sportiche, 2016).

(e.g. LF must be interpretable, FI must be satisfied, etc.). Promotion relatives with total reconstruction of the head inside the RRC illustrate Neglect (of the high copy of the head).

1.2.2 Matching Relatives

By way of introduction, I summarize one motivation given in Hulsey and Sauerland (2006) for the existence of matching derivations. I will examine some further reasons they give in section 3.3.2. In the matching derivation for relatives, relativization brings a phrasal XP to the periphery of the relative clause, call this the internal head, where it matches an independently merged external head. This is illustrated below:

- (8) The [_{YP} pictures of Picasso] [**XP** he displays **XP**]
Match (YP, XP) Move (XP, XP)

One main motivation for the existence of matching derivations is a reported Condition C related Question/ Relative asymmetry. This Question/ Relative asymmetry is discussed in Safir 1998:(38a) and is illustrated below:⁶

- (9) The pictures of **Picasso** which **he** displayed **t** prominently are generally the most attractive
- (10)*Which pictures of **Picasso** did **he** display **t** prominently.

In both cases, wh-movement leaves a trace *t*, which must be interpreted. This triggers a Condition C effect if there is presupposed coreference between the pronoun *he* and the name *Picasso*. This effect is derived if *t* is a copy of the moved phrase, as it should under the copy theory of traces. This is correct for questions, but there is no condition C effect in the relative clause case. This means that *t* cannot be an exact copy of the head: this is taken to mean that the relative clause cannot involve promotion.⁷

Since relative clause formation involves wh- movement, Sauerland (2000) proposes the matching derivation:

- (11) The pictures of **Picasso**_i [**XP**_i **he**_j displays **XP**_j
Where: *pictures of Picasso* is the external head
And XP is the internal head and $XP \not\subset \text{Picasso}$

⁶ It is worth noting that judgments involving Condition C and movement are subject to substantial variation of a poorly understood nature. In this case, the former sentence used to be routinely given as deviant while the latter is occasionally given as good. I will for now stick to what is taken to be the standard pattern, reported here.

⁷ If we guarantee that head raising is involved, Condition C effects reappear, see Sportiche (2016a) for a summary of the literature

It remains to specify the exact nature of XP, which can't contain the name *Picasso*.

Sauerland and Hulsey (2006), building on Safir (1999), argue that XP must be a phrase that matches the external head in meaning, if not in form. Safir's 1999 compelling reason in this context is based on the observation that a Crossover effect is observed in all relatives – here in (13a), regardless of how they are built, hence including matching relatives. This is illustrated by the following contrast:

- (12) a. Pictures of **anyone_i** put **him_i** in a good light ...
 b. Pictures of **anyone_i** [that **t** put **him_i** in a good light are ...
- (13) a. * Pictures of **anyone_i** [which **he_i** displays **t** prominently are ...
 b. * **he_i** displays pictures of **anyone_i** ...

Anyone in the head of the relative can bind a pronoun if and only if it could bind it from the relative clause gap position. The obvious generalization is that the gap or the internal head has the same internal structure as the external head and the pronoun is bound from this gap position.

But the gap or the internal head cannot have exactly the same internal make up as the external head; otherwise, the matching analysis would not circumvent the Condition C effects it was designed to circumvent: in (11), XP must be sufficiently identical to the external head to trigger Cross Over effects, but the internal and external heads can't be identical in form.

If the external head and the internal head must match in meaning, but not necessarily in form, a proper name such as *Picasso_j* in the external head can be matched in meaning by a pronoun *him_j* in the gap with the same reference, yielding the following structure of (9):⁸

- (14) ✓ pictures of Picasso_j [~~pic. of him_j~~ that he_j displayed ~~pic. of him_j~~ prominently]

where *pictures of Picasso_j* is matched by *pictures of him_j*. As there is no alternative to match the meaning of *anyone* it must be matched by *pictures of anyone*, hence the cross over effects observed as in:

⁸ Note that it is not entirely clear that in fact, a name and a coreferential pronoun match in meaning. They may match in reference but a name actually has descriptive content (the referent is named Picasso, which can be read *de dicto non de re*, if e.g. someone is mistaken about someone else 's name) which the pronoun lacks: this makes a precise characterization of matching not obvious (but see fn 9). Safir's 1999 treatment does not suffer from this problem. He takes RRCs to be derived by head raising, implements his proposal that "internal and external heads must match in meaning, not necessarily in form" by appealing to Vehicle Change of the name into a pronoun in the trace position. We will in the end adopt his analysis.

(15) * Pictures of anyone_i [~~pictures of anyone_i~~, he_i displays ~~pictures of anyone_i~~,]

One important consequence of Safir's 1999 observation regarding crossover is that matching derivations with weak matching cannot be available: if they were, we would lose the explanation for the existence of the Crossover effects. From now on, matching means strong matching.

As last remark, note that RRCs derived by promotion are expected to show Safir's crossover effects (which they do), as they meet an even stronger identity between the head and the NP in the gap: as copies of the same moved element, they must be identical in all respects (but cf. fn 8).

2 Dual Derivations?

2.1 Matching: the explanatory gaps

The existence of matching relatives raises three explanatory problems (in addition to the empirical problem raised in fn 8):

The first problem concerns the conditions for matching. As we have seen, external and internal heads must match in meaning (if not in form). This raises the question of why this particular match should be required. The earliest (classical) analyses assumed varieties of weak matching - relative clause internal movement being of an indefinite (wh-some one/thing) later deleted or of a silent operator - all able to deliver perfectly well formed LFs:.

(16) the pictures [e_k that he sold e_k]

It is thus unclear why mere semantic compatibility between the external (NP) head and the internal head⁹ (or more precisely the semantic content of the restriction of the relative clause operator) is excluded. There is no explanation as to why such derivations are excluded, as they must be if Safir's crossover effects are to be accounted for.

The second problem concerns why superficially externally headed English or French relative clauses (without resumptive pronouns¹⁰) must, as a matter of fact, involve movement all the way to the periphery of the relative clauses, as

⁹ Given the discussion in Sauerland 2004, the status (and analysis) of such examples as (i) *Sue ordered a more expensive cocktail than the drink Ann did* is crucial to determining whether matching actually can be semantically partial (here the match would be between *drink* and *cocktail*). If matching can be semantically partial, the problem mentioned in fn 8 may disappear.

¹⁰ I will return to resumptive pronoun cases in section 4.

relativization is sensitive to island conditions. This means that matching must occur under structural locality but there is no reason why this should be required. This is especially troubling since in ellipsis cases, one could argue (because of the existence of Vehicle Change) that precisely the same kind of matching occurs (meaning but not form), without structural closeness.

A third arbitrary property of the matching analysis is the fact that ellipsis of matching copies is obligatory in RRC (cf. e.g. **no pictures [which pictures John sold]*).¹¹

Perhaps the most serious problem is that these explanatory gaps (as well the empirical problem in fn 8) disappear immediately if the only analytical option is the promotion analysis:

- That there should be strong matching now simply follows from the assumption that movement is copying.
- That there should be relative clause internal movement follows (or should follow) from the general constraints on movement: to deliver the “raised” head, movement must proceed in steps allowed by movement theory.
- That the internal head should delete in RRC follows from the general fact that by default, all traces but one must be silent.¹²

It seems then that explanatory problems arise if matching derivations are allowed but disappear if they are not. I conclude that Matching is unavailable. As a consequence:

(17) RRCs are derived by promotion only.

Of course, this does not exhaust the general explanatory problems faced by the analysis of relative clauses. One question is what excludes matching analyses, and more generally base generated head external structures in principle, as such structures look readily interpretable too, the way adjunction structures are generally assumed to be. Remaining problems are common to all proposals, as far as I can see. One problem for example (extending to head internal relatives which do seem to involve movement as well, cf. Cole, 1987) is why head raising exists at all. From a theoretical standpoint – except perhaps for the cases Chomsky (2013, 2015) discuss, the necessity of movement in relatives and elsewhere seems quite generally to be unexplained.¹³

¹¹ This observation might appear weakened by the fact that non restrictive relatives do not require ellipsis. I will briefly return to this point in section 5 and show this is consistent with the promotion analysis of non-restrictives I defend.

¹² If we accept, as I do, Fox and Nissenbaum’s 1999 assumption that sometimes, the highest movement copy can be silent and some lower copy pronounced, something additional must be said, but it is of a very general sort (see discussion in section 6).

¹³ A possibility is to attribute the movement requirement to the need for restricted quantification (by the external relative clause determiner) to be syntactically encoded. This would imply that even in head internal relatives, movement is

Another is whether and how to extend this proposal to headed and non-headed, restrictive and non-restrictive relatives with or without resumptive pronouns. I will show, briefly in some cases, how to proceed to do this.

2.2 The logic of the proposal

Sauerland and Hulsey (2006) write:

"Recent evidence from interpretation has led to progress in our understanding of the structure of restrictive relative clauses. The general picture that has emerged from several studies is that relative clauses are ambiguous, as originally proposed by Carlson (1977) and developed further in Bhatt (2002), Heim (1987), and Sauerland (1998, 2000, 2003). The ambiguity concerns the position in which the head NP of the relative clause is interpreted."

In promotion RRC's, the peripheral head of the RRC originates inside the RRC.

Firstly, this means that the head can't be there unless the RRC is there too. As a consequence, the promotion derivation is incompatible with the RRC being Late Merged to an already merged head. If Late Merger of the RRC is empirically motivated, there must be another derivation than promotion.

Secondly, since the head was moved from inside the RRC, it should be reconstructable, and thus can scope inside the RRC. In addition, if the relativization site is c-commanded by a pronoun and the peripheral head of the relative contains a name coindexed with it, we should observe a Condition C violation: relativization by promotion cannot bleed Condition C.

In matching RRCs on the other hand, the external head of the relative was first merged outside of the RRC and must therefore scope outside of it (and so in effect does the internal head of the relative since it is interpretively identical to the external head). Such a derivation is also compatible with Late Merger of the RRC. In addition, because Matching is in meaning only, relativization can appear to bleed Condition C.

Focusing for now on claimed scopal differences between promotion and matching, they do not in principle need to correlate with the promotion/matching structural ambiguity we have described.

involved, possibly of the "covert overt" sort. This is consistent with Cole 1987 or Cole and Hermon 1994's claim that head internal relatives involve movement.

Indeed in a promotion derivation, nothing forces the peripheral head to reconstruct into the RRC.¹⁴ In other words, the interpretive options for a promoted head are a superset of that of a matching external head. Such scopal differences thus do not constitute an argument for a dual derivation of RRC.

But the bulk of the arguments found in the literature to defend matching derivations based on scope capitalizes on another difference: in promotion relatives, the head may, but does not have to reconstruct. In matching relatives on the other hand, the external head cannot reconstruct into the RRC. Any configurations in which the head cannot reconstruct will thus need an additional analytic ingredient.

For the proponent of the matching analysis, this additional ingredient is the matching analysis itself. But a more minimal assumption compatible with a promotion analysis is that the head occupies a position such that it cannot reconstruct. This is what I propose.

More precisely, I will almost entirely agree with Hulsey and Sauerland's (2006) structural analysis except as noted. Thus, I will take the classic promotion analysis, which I will Low Promotion, to be:

(18) Low Promotion:

Syntax: $[_{DP} \text{ the } [_{CP} [_{NP} \text{ book}]_j \{ [_S [_{Op}_k/\text{which } t_j]_k \text{ John likes } t_k \}]]]$
 Semantics: the $\lambda x. \text{ John read the } \lambda y. (x=y \text{ and book}(y))$
 or
 Semantics: the book $\lambda x. \text{ John read the } \lambda y. (x=y \text{ and book}(y))$

In it, the D (here *the*) takes a CP complement containing an NP at its left periphery and a curly bracketed string S. A crucial assumption is that the string S is not extraposable, either because it is a non-maximal projection, e.g. a C' as in Bianchi (2000) or Sauerland and Hulsey (2006), a non late mergeable non complement to an NP as in Bhatt (2002) or not even a constituent as in Kayne (1994) or de Vries (2002).

Its semantics is ambiguous because nothing in principle forces head reconstruction.

But the head can move one further step (or possibly more directly) to a higher position. I will call this High Promotion:

¹⁴ For reasons unclear to me, Hulsey and Sauerland (2006) assumes otherwise. They write "in the raising structure, the head NP is interpreted only in the relative clause internal trace position." But they do not provide any motivation for this assumption that runs counter what we normally observe with movement: apart from special cases (e.g. idiom chunk movement), total reconstruction of a moved phrase is never obligatory.

(19) High Promotion:

Syntax: $[_{DP} \text{ the } [_{NP} \text{ book}]_j [_{CP} t_j \{ [_{Op_k/which} t_j]_k \text{ John likes } t_k \}]]$

Semantics: $\text{the book } \lambda x. \text{ John read the } \lambda y. (x=y \text{ and book}(y))$

The semantics provided is similar to Hulsey and Sauerland's matching except for the fact that I take the high scope of the head to come from the assumption that this position is intrinsically a scope position for the head (a way to think about it is the result of overtly QR-ing the NP).¹⁵ It should be clear that this proposal entails that in high promotion, as in matching, the head cannot scope inside the RRC.

2.3 Further motivations for matching

But there are further differences between High Promotion and Matching:

- a. In High Promotion, the high head/trace relation is one of identity: relativization can't bleed condition C, contrary to fact, apparently. This will be discussed in section 6.
- b. In High Promotion unlike Matching, Late RRC merger is disallowed. Any argument in favor of Late RRC insertion must be circumvented. These include:

1. Complement /adjunct asymmetries under Condition C in questions (Lebeaux, 1991)
2. Complement / adjunct Extraposition asymmetries (Fox and Nissenbaum, 1999)
3. Further Extraposed/ non extraposed RRC's asymmetries (Hulsey and Sauerland, 2006, Cinque, 2015)
4. Extraposed/ non extraposed asymmetries with respect to Case Attraction (Cinque, 2015)

In addition, differences in behavior between cases which are demonstrably promotion cases and others are sometimes taken to support matching derivations:

5. Properties of some idioms
6. RRCs asymmetries under Stacking, weak island sensitivity (Cinque, 2015)

¹⁵ We will see in section 3.3, as Sportiche (2016b) discusses, that other optional movements such as extraposition have this property.

All these, (except 4 and 6 not addressed in this article for brevity's sake) will be discussed in section 3.

To preview the main conclusions, I will argue (in part based on Sportiche, 2016b), that

- Late merger cannot handle the complement/adjunct asymmetries (which I argue are in fact not complement/adjunct asymmetries)
- Late merger cannot handle the complement/adjunct extraposition asymmetries, and that the asymmetries follow from the general, but independent, fact that extraposition freezes scope.
- The RRC asymmetries discussed in by Hulsey and Sauerland follow from the properties of high promotion and an independent structural property of low promotion RRC (namely constituency) which prohibits extraposition.

3 Assessing the Arguments for Matching

3.1 The Idiom Argument

The idiom argument is based on the following sentences:

- (20) a. We made headway that was sufficient.
b. *The headway was sufficient.
c. John made some headway. ??Its amount surprised me (it = the headway)
d. John pulled the strings that got Bill his job.
e. *The strings/Strings got Bill his job
f. John pulled some strings. ??They got Bill his job (they= the strings)

We see idiom chunks (*headway*, *strings*) as head of an RRC being licensed in the main clause but not in the RRC. The only argument I can see bearing on the issue at hand would be based on assumption A:

A: an idiom chunk must be first-merged as part of the whole idiom.

If A holds, the RRC could not have contained the head of the RRC since it is not licensed within the RRC: a promotion analysis would have to be ruled out. But A is not justified as we see now.

First, there is no reason a priori why it should hold. What the well formedness of (20a,d) tells us, under any of the two viable analyses for RRC, is that the gap inside the relative qualifies as a match for the idiomatic head. But this does not tell us the precise make up of this gap. What could the gap be for there to be matching?

Under a promotion analysis, the gap must be of the form [*wh headway*], with NP identity.

Under a matching analysis, it could be either [*wh headway*] too, or some kind of pronominal correlate (e.g. *it* or *one*). Obviously, only if the second

option, which distinguishes promotion from matching, were required would a promotion analysis be excluded.

But there are difficulties with this pronominal correlate option. Indeed, if an NP like *headway*, or *strings* which only occurs (or occurs with a certain meaning contribution) as part of an idiom could be pronominalized, nothing would block the deviant (20c,f). If on the other hand, such NPs are not pronominalizable, they are correctly ruled out.¹⁶

A simple alternative is to give up A and to simply require that LF be interpretable. An NP like *headway* (or *strings*) can be freely inserted, as long as at some point, it is licensed (or licensed as part of an idiom): this would happen if it raises to become object of *make* (resp. *pull*). This alternative, the null hypothesis really, is fully compatible with promotion.

3.2 The complement/adjunct Asymmetries under Condition C

The following so-called complement/adjunct asymmetry motivates Lebeaux's 1991 classic Late Adjunct Merger proposal:

- (21) a. Which *pictures* that Picasso_i liked did he_j sell
 b. * Which *pictures* of Picasso_i did he_j sell
 c. * Whose *hypothesis* that Picasso_i left did he_j deny t

Here is the standard account in terms of Late merger.

The boxed relative clause in (21a) is taken to be an adjunct to the noun *pictures*, the boxed phrase in (21b, c) a complement to the noun (*pictures* or *hypothesis*). The Late Adjunct Merger analysis allows (21a) to be derived in either of the following two ways:

- (22) a. Which *pictures* that Picasso_i liked did he_j sell ~~which pictures that Picasso_i liked~~
 b. Which *pictures* that Picasso_i liked did he_j sell ~~which pictures~~

If the trace is a full copy of the moved phrase as in (22a), the (unpronounced) bottom copy in bold must be interpreted; this yields a condition C effect at LF. But Late Adjunct Merger also allows the derivation

¹⁶ Why aren't (20c,f) totally deviant? In fact, not all idioms are equal in this respect. Thus, observe:

(i) **John kept on Bill tabs that were sufficient.* (ii) **The tabs were sufficient.* (iii) *John kept close tabs on Bill.* **They...* (*they=the tabs*). The difference can be attributed to the observation that these idioms are not all equally "compositional". *Tabs* in the idiomatic sense does not refer to anything, while *headway* is a word of limited distribution that means *progress*; and in the *pull string* idiom, *pull* means *call on* and *strings* means *connections*. Because these are regular properties, they can intersect with others as in (20a,d) and derivatively be "pronominalized" as in (20c,f).

in (22b) with the boxed part inserted after wh-movement, thus circumventing Condition C. (21a) with this derivation is fine.

An independently motivated principle requires a complement to form a constituent with its host upon first merger of this host; as in Sportiche (2016b), I will call this property: Local Predicate Saturation (here of the host by the complement). Because the *of* phrase in (21b) or the *that* clause in (21c) is assumed to be a complement, it cannot be late inserted (because of Local Predicate Saturation). Consequently, the bottom copy must recursively contain *picture*, a complement (of the D complement of) *sell*, and *of Picasso* or the *that* clause, which are complement of the nouns. The full representation of (21b) for example must contain the substructure below, triggering a Condition C effect:

(23) **he_j** sell ... ***pictures of Picasso_i***,

As mentioned earlier, Late adjunct Merger of the RRC is incompatible with a promotion analysis of RRC:¹⁷ since the head originates inside the RRC, the RRC must be present for the head NP to be there at all. Another analysis of RRCs is needed: matching.

The detailed discussion of such cases in Sportiche (2016b) – to which I refer the reader – concludes however – on the basis of an extensive independent literature – that, contrary to what Lebeaux’s account assumes, this cannot be a complement/adjunct asymmetry because *of* phrases (or adnominal “complement” clauses such as in *the argument that John left*) are syntactically not complements of the N but relative clause modifiers of this N (or NP).

More precisely, Sportiche (2016b) concludes that:

1. *of* phrases (or adnominal “complement” clauses) both are Predicate headed RRCs, a conclusion relevant to the next section.
2. The complement/adjunct asymmetry is in fact an asymmetry on the type of RRC heads (argument vs predicate)
3. The facts follow because predicative RRC heads must totally reconstruct inside the RRC, while arguments do not have to.

Late adjunct merger is not thus needed, and no argument for matching can be built on this basis.

¹⁷ Both Bhatt and Pancheva (2004) and Takahashi and Hulsey (2009) propose that the complement of a D could also be Late merged. If this were the case, (22b) would look like:

(i) Which *pictures that Picasso_i liked* did **he_j** sell ~~**which**~~

Such an option would be compatible with a promotion analysis. However I argue in Sportiche (2016b) that this option (and Late Merger in general) is not available.

3.3 Asymmetries under Extraposition

A second class of argument for a matching derivation crucially relies on the availability of Late Adjunct Merger. It is based on:

- (i) an analysis of (PP and) RRC extraposition from object proposed in Fox and Nissenbaum (1999).
- (ii) a number of asymmetries found between extraposed RRCs and non extraposed RRCs documented in Hulse and Sauerland (2006).

3.3.1 Fox and Nissenbaum

I discuss Fox and Nissenbaum (1999) in detail in Sportiche (2016b). Here I will only summarize this discussion. Fox and Nissenbaum want to account for Williams's 1974 generalization:

(24) Williams's generalization (WG): When β is "extraposed" from a "host QP" α , the scope of α is at least as high as the attachment site of β (the extraposition site) if β is an adjunct.

Fox and Nissenbaum focus on Extraposition from object. They accept the following four generalizations (we crucially return to the second one below):

1. Extraposition from object (the host) is allowed of PPs and of RRCs.
2. A complement PP can be extracted out of its host, but an adjunct PP or a RRC (which is not a complement) cannot.
3. A complement must form a constituent with its host upon first merger of this host. This is the aforementioned principle of Local Predicate Saturation (here of the host by the complement).
4. An adjunct β must form a constituent with its host α to be interpretable at LF. In Sportiche, 2016b, I include this under Local Predicate Saturation too (where this time, the predicate is the adjunct).

They propose the following analysis:

5. Extraposition of an adjunct always involves ("rightward") movement of the host α to which the adjunct is Late merged, as Lebeaux (1991) argues is possible. In such cases, α can (must?) be pronounced in its trace position only, yielding the appearance of adjunct extraposition.
6. Since the adjunct was Late merged in the extraposition position, it cannot be reconstructed anywhere lower: by point 4 above, its host must be interpreted at least as high as this extraposition position and Williams's generalization follow.

7. Extraposition of a complement must involve (“rightward”) movement of this complement (since Late merger of a complement is disallowed).

In Sportiche (2016b), I reach two conclusions: I conclude first Fox and Nissenbaum’s account is insufficient; I also conclude that WG is too strong in prohibiting extraposed adjunct reconstruction (both Williams’s 1974 original formulation, Fox and Nissenbaum’s extension). The reason for the first conclusion is that some complements of N are not extractable out of NP (only certain *of*-PP complements are) – this contradicts point 2 above - yet they can be extraposed (and behave like extraposed complements, e.g. w.r. to Condition C and scope – see Sportiche 2016b). For example *gift* takes a *to* PP as (one of two) complements and allows extraposition:

(25) I refused to accept every gift of money yesterday to our charity¹⁸

Given WG, this confirms that the *to* PP is a complement (and this can be further supported by other tests that Fox and Nissenbaum provide, that are discussed in Sportiche, 2016b).

Because of point 3, such examples cannot be generated under Fox and Nissenbaum’s analysis (as they can neither be moved nor late merged). The only option is that the entire host including the non-extractable PP is extraposed, and part of the resulting representation must be able to be ignored at LF as a case of Neglect: this is the analysis proposed in Sportiche (2016b):

↓ trace of moved DP

↓ Extraposed DP

(26) a. We saw [_{DP} a letter [*to John*]] yesterday [_{DP} ~~a~~ [_{NP} ~~letter~~] [*to John*]]

b. We saw [_{DP} a letter [*to John*]] yesterday [_{DP} ~~a~~ [_{NP} ~~letter~~] [*to John*]]

Legend: *italics* = Neglected at PF; ~~crossed-out~~ = (optionally) Neglected at LF

The second conclusion is due to such examples as:

¹⁸ A priori, two scopal relations could hold: *refuse* > \forall (...*I only accepted some*) and \forall > *refuse* (... *because we do not accept money*). Without extraposition, both scope are possible, in particular, the object can scope under the verb *refuse*, hence lower than the extraposition site of the complement. The same remains true with extraposition (making sure we take *yesterday* to modify *refuse*) witness the availability of the first reading, made prominent by the indicated continuation (which is felicitous and non contradictory, but incompatible with the second reading).

- (27) a. I give someone 3 books every day
b. I give someone 3 books from my library every day
c. I give someone 3 books every day from my library

The background is that in double object constructions, the direct object can never outscope the indirect object. Thus, in (27a,b and c), 3 cannot outscope *some*. In (27a), *every* can (but does not have to) outscope *some*, but *some* > 3. In (27c), extraposition of the adjunct *from my library* past *every day* is fine. But the scope facts remain identical to those found in a: it is possible simultaneously to have *every* > *some* > 3. Under WG, this is unexpected: the position of the adjunct should guarantee 3 > *every*, hence *some* > *every* (since *some* must outscope 3).

As a result of this analysis, and given the conclusions of section 3.2, no argument for matching can be based on the need for late merger of adjuncts.

3.3.2 Extrapolation asymmetries

We now turn to the asymmetries between extraposed RRCs and non extraposed RRCs documented in Hulsey and Sauerland (2006), and Cinque (2015), which they claim support the existence of two kinds of relatives.

- Anaphors or pronouns in the head bound from within RC¹⁹
- (28) a. I saw the picture of himself that John liked.
 b. Mary discovered the book about himself that Bob wrote.
- (29) a. *I saw the picture of himself_k yesterday that John_k liked.
 b. *Mary discovered the book about himself_k yesterday that Bob_k wrote.
- Head scoping inside the RC
- (30) a. I called the two patients that every doctor will examine tomorrow. (OK $\forall > 2$)
 b. I called the two patients yesterday that every doctor will examine tomorrow.
 ($*\forall > 2$)
- Amount relatives (in which head reconstruction into the RRC is required)
- (31) a. I will not even read the very few books (*tomorrow) that there are ___ on his shelves
 b. It will take us long to drink the champagne (*<AMT> tomorrow) that they spilled

¹⁹ These contrasts are not reported by speakers we consulted as sharp. This possibly due to the fact that the reflexive is animate and thus can be treated as exempt from Condition A (see Charnavel and Sportiche, 2016). Controls with inanimates – which can't be exempt – do support the contrast however: *I photographed the shadow under itself (*yesterday) that the Eiffel Tower cast.*

- Idiom chunks headed RRC's licensed inside the RRC: they must involve promotion²⁰
- (32) a. Mary praised the headway that John made.
b. I was shocked by the advantage that she took of her mother.
- (33) a. *Mary praised the headway last year that John made.
b. *I was shocked by the advantage yesterday that she took of her mother.
- (34) a. Mary praised the pot roast yesterday that John made.
b. I was shocked by the garish dress yesterday that she took from her mother.
- (35) a. *?The careful track is well-known that she was keeping of her own expenses.
b. The careful track that she was keeping of her own expenses is well-known.
- Free relatives
- (36) a. *Whatever friends are gone [I once had] (from Bresnan 1973)
b. Whatever friends I once had are gone; ?The friends are gone I once had
- Free relative from an existential-*there* context
- (37) a. ?*What meat was soon eaten that there was (cf. Carlson 1977, 526)
b. What meat that there was was soon eaten)
- (38) a. *?Every doctor rushed to room 222 that there was
b. Every doctor that there was rushed to room 222
- Predicate relativization
- (39) a. *The one thing is honest [that I want a man to be]
(cf. Heycock and Kroch, 1999 p. 379)
b. The one thing that I want a man to be is honest
- (40) a. *?The gifted mathematician is very rare nowadays that Bill was
b. The gifted mathematician that Bill was is very rare nowadays

²⁰ These are Hulsey and Sauerland's examples, perhaps not entirely convincing given that judgments vary somewhat, and given the conclusions of section 3.1. However "less compositional" examples make the point, e.g. (i) *I was pleased by the careful track (*yesterday) that she's keeping of her expenses*. Interestingly, neither example involving idioms Cinque (2015, fn 11) cites as potential counterexample really is: (i) There isn't the water in the sink that there is in the bathtub (attributed to L. Selkirk) (ii) *He made the same amount of headway this year that I made last year* (attributed to Richard Kayne): Such examples do not actually require a low promotion analysis as the head can be simultaneously interpreted/licensed both in the main clause and in the RRC.

- Degree relative
- (41) a. *?Every pound is worth a fortune that Max weighs
 b. Every pound that Max weighs is worth a fortune
- Adjunct relativization
- (42) a. *?The (very) way impressed me that he solved the problem [manner adverb]
 b. The (very) way that he solved the problem impressed me
- (43) a. *?The longest was two decades that Sheldon had to wait () [temporal adverb]
 b. The longest that Sheldon had to wait was two decades (from Ross 1984, 264)

In addition, Cinque cites Harris's 2008 conclusion that the ambiguity given in (44b,c) discussed in Heim's (1979) of the following sentence:

- (44) a. John guessed the price that Mary guessed
 b. Reading A: John and Mary happened to guess the same price, but not necessarily anything about each other. John and Mary need not even know of the other's existence.
 c. Reading B: John guessed something about Mary; that is, John guessed the answer to the question "What price did Mary guess?"

Harris's conclusion is that Reading A corresponds to a matching analysis, while reading B corresponds to a promotion analysis. Crucially, Harris (2008) further notes that reading B disappears if the relative clause is extraposed:

- (45) John guessed [the price t] yesterday [that Mary guessed]
 (ok reading A/ * reading B)

Hulsey and Sauerland accept Fox and Nissenbaum's 1999 analysis, and the consequence that an extraposed RRC cannot be derived by promotion: indeed, as described earlier, an extraposed RRC must, for Fox and Nissenbaum, be late merged, but a promotion RRC can't be since its head originate inside the RRC. This makes the following prediction: if we guarantee that an RRC is derived by promotion, it cannot be late merged and should thus behave like complements for Fox/Nissenbaum.

This prediction seems correct as illustrated above. In all cases, according to standard analyses, the head must be interpreted wholly inside the RRC,²¹ that is, wholly reconstructed into it, and in all cases, extraposition of the RRC is

²¹ Note that the fact manner adverbs and temporal adverbs relativization must behave as low promotion RRCs corroborate the hypothesis that moved predicates must reconstruct and our contention that adjuncts should be treated as predicates taking their modifiee as argument.

ill formed. It follows that these RRC cannot be derived by promotion, which justifies matching derivations.

Since the Late RRC merger approach is in fact insufficient to handle the complement/adjunct asymmetry under extraposition, I propose to handle the facts as follows. Recall that the High Promotion derivation in (19) is incompatible with head reconstruction: high promotion “freezes” the scope of the head relative to the RRC. This means the above examples must all be cases of low promotion. But they cannot be because in low promotion RRCs, the complement string to the NP within CP is not extraposable.

Finally, Cinque (2015) puts forth its own— rather different - analysis of RRCs. One common property to his version of the promotion and matching analyses is the presence of both an external head and a matching internal unrelated by movement. As a result, it is subject to the explanatory problems discussed in section 2.1. In addition, total reconstruction into the RRC cannot be achieved for his view of the promotion analysis under the general theoretical assumptions I am adopting.²²

4 Extending the promotion analysis: RRCs with Resumptive Pronouns

The point of this section is not to discuss resumptive relativization in detail. I do this in Sportiche (2017). Rather, it is to show why there are grounds for concluding that resumptive relativization (i) is compatible with a promotion analysis and (ii) always involves A-bar movement of the head container, just like non resumptive relativization. The second point in particular suggests a type of derivation that we can capitalize on when we turn to the question/relative asymmetry with respect to Condition C that we will discuss in section 6. The fundamental idea behind both points is that movement is in fact taking place, but not necessarily from the position of the resumptive element.

Resumptive constructions compare with movement constructions as in (the pseudo for illustrative purposes) English below, where X can be an island or not:

(46) The man who ... [_X ... you saw a picture of <gap>] (* if X is an island)

(47) The man who ... [_X ... you saw a picture of him] (non standard if X not an island)

²² Cinque must have different theoretical assumptions but they are not spelled out in sufficient detail in his ms to allow a fair assessment.

Because some resumptive constructions seem immune to movement constraints, it is universally assumed that such constructions cannot always involve overt movement (Chomsky 1977, Borer 1984, Safir 1986, and Rouveret, 2011 for a recent extensive survey) with some drawbacks, e.g. uneconomically requiring two distinct mechanisms (both first merge and remerge) to generate left peripheral phrases (e.g. *who* in (46)/(47)).

I will propose that all resumptive constructions, even when the resumptive element is an island, involve **overt** movement, but, this is the crucial assumption, not necessarily from the <gap> or RP position. Instead, movement can be from a (possibly base generated) position doubled by and not necessarily adjacent to a pronoun, as e.g. a Clitic Left Dislocated position, or Contrastive Left Dislocation.

4.1 How to reconcile promotion and resumption

A long tradition of analysis concludes that relative clauses with resumptive pronouns do not involve overt movement, because such relativization does not respect island constraints and is variously analysed in terms of a binding relation between the resumptive pronoun and a base-generated RRC peripheral null operator OP (or in terms of resumptive pronouns being in situ relative pronouns that move in covert syntax as in Demirdache, 1991).

Part of the thesis that relative clauses are always derived by promotion of a head from within the RRC means that (non head internal) relativization always involves some overt movement.

We now show why promotion analyses are fully compatible with resumptive relativization not only in principle, but also given all the evidence put forth for a no movement or a non overt movement analysis of resumptive relativization.

The reasoning showing that promotion and resumption are compatible is straightforward. Consider the following resumptive relativization template:

(48) The head $OP_k \dots [X \dots gap_k \dots]$

Where *head* is the head of the RRC, OP_k is the RRC peripheral operator, gap_k is the relativization site inside the constituent X , bound by OP_k . In resumptive relativization, gap_k is a pronoun RP_k and typically, but not necessarily, X is an island. Does this configuration mean that *head* has not been promoted? The answer is negative: *head* could have been promoted from inside the OP_k constituent. Although its internal structure is rarely made clear, it could be objected that OP_k lacks the internal structure to allow for the promotion of *head*. But this would be incorrect. Thus in English, we find (from Prince, 1990, cited in Choueiri, in press):

This is confirmed by Suñer's 1998 survey of resumptive relativization documents, documenting that resumptive relativization routinely occurs with OP_k being a full fledged relative pronoun. As a consequence, nothing prevents the derivation of (48) (in case of DP relativization) as follows, with OP_k = [_{DP} D t_m]_k:

This conclusion opens the door to the second point. What movement theory tells us is that the relation between OP_k and gap_k ($=RP_k$ here) cannot be an (overt) movement relationship if X is an island (for the movement involved). But this does not mean that OP_k has not moved to its peripheral position from some RRC internal position. The only conclusion we can draw is that if movement there is, it cannot be from inside X . If X is an island, a movement derivation could only have proceeded as in (51a) below. If on the other hand, X is not an island, it could have proceeded either as in (51a) or as in (51b):

- In all cases, extraction would be from the position t_k linked to the resumptive pronoun, RP_k by a binding relation. In other words, the source would be a structure akin to (51c).

“a deep mystery lying at the bottom of it all. It is known that resumptive elements may serve the purpose of marking variable positions in unbounded dependency constructions.

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It is known that resumptive elements may occur in positions from which movement is impossible (hence apparently allowing greater expressive power than is permitted by movement alone). It is also known that resumption imposes a considerably lighter burden on the human sentence processor than does the production and resolution of syntactic movement configurations. Why, then, is movement used at all in the creation of these structures?”

The partial answer to this question is: there is no alternative to movement.²⁴ If an operator appears in a non thematic position at the (left) periphery of the clause, it must have been moved there.

4.2 Evidence for movement: Lebanese Arabic and French

Aoun et al. (2001) provide compelling evidence that some resumptive constructions in Lebanese Arabic involve movement. They show that when the resumptive pronoun is not in an island – what Sells (1984) calls **intrusive** pronouns - reconstruction to (near) the position of the pronoun is found. Abstractly, this means that in a structure such as:

(52) The head_m [DP D t_m]_k ... [... A ... [... RP_k ...]]

the head behaves as if it was below some RRC element A, c-commanding the RP.

Thus, if the head contains a pronoun, this pronoun can be bound by A, where A is a quantified phrase. Or if the head contains a name, Condition C effects can be observed if A is a pronoun coindexed with the name.

They also show that when the resumptive pronoun is in an island – what Sells (1984) calls **(true) resumptive** pronouns - reconstruction to the position of the pronoun is not found.

However, this negative result is an artefact of their choice of examples. Indeed, it is possible to show that reconstruction can always be observed, both with intrusive pronouns and with true resumptives.

Thus consider the following French examples:

- (53)a. **la photo de fiançailles_k** que Jean pense qu’il faut (la) détruire t_k
the engagement picture that John thinks that we should destroy t/it.
 b. **la photo de fiançailles_k** que Jean pense que si **son_k** auteur vient, on est foutus
the engagement picture that John thinks that if its author comes, we are doomed.

²⁴ Demirdache and Percus (2011) also argue for mandatory movement (overtly of the pronoun) albeit with a different analysis, similar to Demirdache’ 1991 (covert movement of the pronoun) analysis, and neither compatible with promotion.

Consider a context in which John is looking at some potentially incriminating pictures of friends of his, mistakenly thinking that some are their engagement pictures, when in fact, all are wedding pictures.

Now consider (53a). In it *the engagement picture* can be interpreted *de dicto* (John thinks there is such a picture but in fact there aren't any). This means that the head of the relative is wholly interpreted in the scope of an intensional element, here the verb *think*. This is expected if there is no RP. This is also expected if there is an **intrusive** RP, given Aoun et al.'s observations about Lebanese Arabic: Intrusive pronouns in fact involve movement of the antecedent of the pronoun, hence possible (total) reconstruction of this antecedent to below *think* (as required for this reading).

But (53b) is surprising: even though there is a **resumptive** RP inside an island, the *de dicto* reading is still available. This suggests that movement has taken place from below *think*.

Variable binding shows the same pattern:

- (54) a. $[la\ photo\ de\ lui_k]_m$ que j'ai dit à **aucun accusé_k** de décrire t_m
*[His_k picture]_m that I told **noone_k** accused to describe t_m*
 b. $[la\ photo\ de\ lui_k]_m$ que j'ai dit à **aucun accusé_k** que si **son_m** auteur
 vient, on est foutus
*[His_k picture]_m that I told **noone_k** accused that if **its_m** author
 comes, we are doomed*

The bound pronoun must be able to be fully in the scope of its binder *aucun accusé* at LF which is possible in (54a) – with a regular trace and in (54b) with an intrusive RP. But this is degraded in (54c) as there is no position which could have been moved from in the scope of *aucun accusé* to which its container can reconstruct (as the potential binder is embedded inside an island). These examples show that overt movement of a peripheral phrase can be involved in all cases regardless of whether the RP itself is movement accessible.

I conclude that movement can take place, e.g. from a position at the periphery of the embedded clause, linked to a pronoun (the RP) in the embedded clause, e.g. some left peripheral position, (as in Iatridou's 1995 analysis of Greek Clitic Left Dislocation).²⁵

Making this conclusion fully general, RP constructions are movement constructions except for the fact that extraction can take place from some Dislocated position **DL** binding the RP (the presence of the RP making DL a

²⁵ Note though that Angelopoulos and Sportiche (2016) conclude that Greek (and French) CLLD is movement all the way through).

CLLD-like position):

Step2
Step 1 (not necessarily movement)

(55) $\boxed{DP_k} \leftarrow \text{Movement.} \leftarrow [_{DL} \boxed{DP_k}] \leftarrow \text{Dislocated Position} \rightarrow \boxed{RP_k}$

The study of resumptive constructions now becomes in part the study of where this **DL** position can be and what interpretation is associated with it. Concerning where exactly **DL** is, the complexity of reconstruction facts discussed in the literature (Aoun et al., 2001, Demirdache, 2012, 2015, Demirdache and Percus, 2008, 2011, Guilliot and Malkawi, 2006, 2007a, 2007b, 2009, 2011, Rouveret, 2012) can now be attributed to the fact that there may be different possibilities for the DL position. Thus, that variable binding or *de dicto* reading are available shows that some DL position is available “low” enough, below the potential binder. The documented failure of (reconstructed) Condition C effects (cf e.g. Rouveret, 2012 for Welsh) shows that some “high” enough DL position is available (too). I refer to Sportiche (2017) for further discussion of resumption.

5 Extending the promotion analysis: Appositives

I will now very briefly show why appositive relatives clauses (ARC) can also be derived via a promotion analysis. Two prominent facts about ARC’s must be accounted for:

- i. The head of an ARC cannot be quantificational.
- ii. The head of an ARC can never scope inside the ARC.

To handle these facts, I propose (following to a large but not complete extent de Vries, 2002) that ARC are not analyzed as CP adjoined to a DP head as in (56a) as standardly assumed but rather as DPs containing an RRC in apposition to a DP as in (56b) (we represent the NP head inside the CP RC as unmoved but it in fact could raise past the relative pronoun):²⁶

- (56) a. $[_{DP} DP_1 CP]$
 b. $DP_1 [_{DP2} D CP]$

These two structures are exemplified below respectively in (57a) and (57b):

- (57) a. This man /Bill, $[_{CP} \text{who John met yesterday}]$, is an actor
 b. This man/ Bill, $[_{DP} [_D e] [_{CP} \text{who } [_{NP} e] \text{ John met yesterday}]]$, is an actor
 c. This man/Bill, him who John met yesterday, is an actor

²⁶ I will pursue this here but I would argue that the postulated structure is in fact independently available in so called free or headless relatives.

- d. This man/Bill, the man who John met yesterday, is an actor
- e. This man/ Bill, the great driver, is an actor

We thus see a DP containing an RRC in apposition to the putative head as it can be in (57c), (57d), or even without an RRC as in (57e). Obviously, the putative head is in fact not the head of the RRC at all, hence not promoted from inside the ARC and hence cannot reconstruct into it. We derive the fact that DP1 (the putative head) cannot be quantificational because quantifiers do not bind into their apposee (as Aoun et al. 2001 discussion of this point). This proposal also immediately makes sense of two further facts about ARC. First, the head can seemingly occur twice as in (58a):

- (58) a. I loved this magazine, which magazine one can no longer purchase
- b. I loved this magazine, [_{DP} [_D e] [_{CP} which [_{NP} magazine] one can no longer purchase t]

as shown in (58b), this simply reflects the fact that the head can fail to raise out of the wh-phrase. This possibility must of course be tied to the nullness of the definite D (itself tied to the appositive character of the constituent).²⁷ Second, the “head” of an ARC can’t be quantificational, but need not be simply referential, contrary to what is sometimes claimed, witness (59a):

- (59) a. No student wrote to his brother, who is traveling by the way.
- b. No student wrote to his brother, who is his best friend by the way

which is possible, the same way as (59b) is because the “head” can covary with the pronoun headed appositive DP, both being bound by the higher quantifier.

6 Question/Relative Asymmetry Under Condition C:

Let us now return to the question/relative asymmetry with respect to Condition C. Recall that in questions, pied piping of a “complement” does not bleed Condition C:

- (60) a. * Which [[pictures of Picasso]_k] did he_k lend to you
- b. Which picture of John_k does he_k like

But in relativization, it can:

²⁷ For reasons too long to detail here related to the theory of pied piping mentioned in section 7.3, this proposal also derives the differences in pied piping possibilities between RRC and ARC: the latter allows much heavier pied piping precisely because the head need not be overtly promoted, even when silent: in effect, they are head internal relatives with silent heads.

- (61) a. In [[pictures of Al_k] which he_k lent to us], he is shaking hands with the president (from Munn 1994 via Safir 1999).
 b. The picture of $John_k$ he_k likes.... (from Sauerland 1998,76)

How can we account for this pattern if promotion is the only derivation available for relativization? Under such a hypothesis, a fuller representation of (61a) would have to be, with the a low copy triggering a condition C effect:

- (62) In [[pictures of Al_k] ..which ... he_k lent [*which* [*pictures of Al_k*]] to us]

Before trying to address this question, let me note that the data situation is particularly murky (a reason why Bhatt, 2002, p. 85 fn 22, does not investigate it). While the question/relative asymmetry is reported as above, it has been called into question from both directions. Thus examples such as (61) are reported as acceptable, but comparable examples are also reported, and used to be routinely reported, as unacceptable. It does seem that at least for speakers who find the examples (60) unacceptable, they are more strongly unacceptable than the examples in (61): this suggests the existence of a difference factor between questions and relatives. Secondly, some speakers both in English (e.g. Timothy Stowell, p.c.), and in French (e.g. Philippe Schlenker, p.c.), find examples in (60) straightforwardly acceptable (I find them totally deviant). This points to the existence of some as of yet unidentified variable(s). Furthermore, as we will see, some variability is reported (in unsystematic fashion) in the literature.

To complicate matters, it is unclear how the data in (60) generalizes to cases that should work the same way. Thus as reported by various authors, the following all have the status of somewhat weaker violations (or no violation at all for some speakers), a status tied, it seems, to the offending pronoun being more deeply embedded, albeit still c-commanding the wh-trace:

- (63) a. Which [[pictures of Picasso_k] did you remind him_k of t first
 b. Which picture of John_k do you think he_k would like to sell t

I will now take the standard report as correct as a starting point, later trying to make sense of the reported variation.

Classically, because they both involve wh-phrases and unbounded movement, questions and relatives are treated alike. But this bleeding behavior of movement with respect to Condition C in fact groups together relativization with A-movement, and not with question formation. Indeed, as

is well known, A-movement can routinely bleed condition C, witness the contrast between questioning and raising:²⁸

- (64) a. * Which pictures of Picasso_k did he_k display t prominently.
 b. The pictures of Picasso_k seemed to him_k to be t unattractive
 c. The pictures of Picasso_k that/which he_k lent t to us were unattractive

I would therefore like to pursue an approach to this puzzle that echoes Safir's 1999 approach by reexamining whether relativization does not in fact share a crucial property with A-movement that question formation does not (normally) share. To circumscribe the possible analytical options, I will adopt the treatment of the question/raising-to-subject asymmetry proposed in Sportiche (2016b). Its crucial ingredient is that the span of the movement involved determines its bleeding capacity with respect to Condition C: Wh-question formation is movement from the spell out domain of a phase to the edge of this phase, while raising to subject is movement within the spell out domain of a phase. Condition C bleeding will occur if this latter movement removes the name from the c-command domain of the pronoun coindexed with it, as it does in (64b).

We could thus readily account for the bleeding behavior of relativization if such an intermediate step was available, that is, if relativization could involve an intermediate XP movement step patterning with A-movement (normally) not available for question formation (out of which XP the head is extracted). For example, taking the spell out domain of a phase to be the crucial ingredient, the above sentence would have the following derivation:

- (65) The pictures of Picasso_k [_{spell-out-domain} t_j² he_k lent t_j¹ to us]

We have in fact already argued that this type of derivation involving two steps of a different nature is available in connection with resumption relatives in section 4, more precisely in the discussion in section 4.2. The point there was that relativization could take place from a clause peripheral dislocated position binding a resumptive pronoun.

In principle then, relativization could also involve a slightly different two step derivation. The second step would be standard relativization from a clause peripheral position as above. The first could just be movement to this position with the right Condition C bleeding characteristics, binding its trace.

²⁸ In both relatives and A-movement, Condition C is not bled if the moved element totally reconstruct, as we would expect. A summary of such cases is found in Sportiche (2014), or in Hulsey and Sauerland (2006) for relatives (which must then be analyzed, in our terms, as low promotion relatives).

I would like to suggest that in English, this first step is in fact Topicalization. The reason is that as Safir (1999) remarks, Topicalization can bleed Condition C. He cites the following (examples (a-d) from Postal, 1997, (c) from Ross 1973:198 and (d) from Culicover 1997:333):

- (66) a. Most articles about Mary_k I am sure she_k hates.
 b. That the director_k was corrupt, everyone knew that he_k would always be able to deny with a straight face.
 c. That Ed_k was under surveillance he_k never realized.
 d. That John_k had seen the movie, he_k never admitted.

Furthermore, as Rizzi (1997) shows, Standard Topicalization is left peripheral but need not be as high as the position of wh-interrogative phrases, so plausibly within the spell out domain.

In principle, this proposal – as well as that related to resumptive relativization – should be testable by taking into account the information structure imposed by Topicalization, Focalization or Dislocation. But little overall consensus has emerged on the relatively small number of investigations of the syntactic structure/information structure relations. Szűcs (2014) summarizes the recent literature and concludes fairly uncontroversially I think, that English Topicalization yields contrastive topics or foci.

Assume that this is right. This would imply that in the derivations we are entertaining, a contrastive topic or focus is relativized. This means that sentence (65) has the derivation indicated below in (67a) where TOPIC marks the Topicalized position with the very rough paraphrase in (67b).²⁹

- (67)a. The pictures of Picasso_k [_{spell-out-domain} [TOPIC t_j²] he_k lent t_j¹ to us]
 b. The pictures of Picasso such that them (and nothing else), he lent to us

Extraction is from a position associated with a contrastive interpretation. If contrast there is, this means that there is a set of contextually salient alternatives (here to *pictures of Picasso*). This means that this TOPIC is D-linked in the ordinary sense (it is a member of a contextually salient set) and that it is unique in satisfying that property.

The prediction we make is that just in case Condition C is bled (and thus that extraction must have transited through this TOPIC position), this contrastive interpretation must be present too.³⁰

²⁹ If Trace Conversion is done as in Fox, 2002 this is roughly what we would expect. If Trace conversion is revised as in Sportiche (2015), a better paraphrase would take the topicalized not to be a definite description but closer to an indefinite description (a restricted variable): *The pictures of Picasso such that pictures of Picasso (and nothing else), he lent to us*

³⁰ We make a similar prediction for resumptive relatives if the DL position is that of Clitic Left Dislocated constituents and if Arregi 2003 is right in claiming that Clitic

If this approach is on the right track, it may help make sense of the variation reported in acceptability and perhaps ties it to how easily speakers allow resumptive relativization (or questioning). Speakers who easily allow this intermediate Topic position will tend to have weaker or non-existent condition C effects, not only in relative clauses, but also in interrogatives. Some speakers readily allow it even in questions (albeit typically with which interrogatives, which are D-linked). Others to a lesser extent. Thus Safir (1999) reports the following examples from Heycock (1995:557, fn. 13), who finds it acceptable unless *best* is omitted:

(68) Which picture of John_k does he_k like ??(best)?

The presence of “best” guarantees that the answer will be exhaustive, hence the contrastive interpretation.

Clearly, the empirical picture remains somewhat murky and more needs to be said.

7 Constraints on Head Extraction

In Bhatt (2002), a serious objection is raised against deriving all RRC by promotion based on such sentences as:

(69) The man [[[who t]’s] brother]’s band] you like

Indeed, under a promotion analysis, *t* the trace of *man* is extracted from inside the specifier of a specifier, an apparent violation of a well-established movement constraint (here the Left Branch Condition).

I will now discuss such cases and others and show that:

- a. Such sentences are in fact compatible with a promotion analysis.
- b. There are direct arguments why such sentences should sometimes be derived by promotion.
- c. Some cases of relativization are ill-formed, which can be explained only if promotion is the only analytic option.

7.1 Compatibility

In current theories, constraints on movement can arise for one of two reasons:

Left Dislocation (in Spanish) is contrastive topicalization (which its French counterpart can certainly be, although perhaps not exclusively).

- The Phase Impenetrability Condition (or PIC), part of Phase Theory (aka the theory of the cycle, Bounding Theory, Subjacency etc...) which precludes extraction from within a Phase except for its edge.
- Intervention (aka Closest Attract, Relativized Minimality, etc...), typically (but not necessarily) implemented in terms of a Probe looking for the closest Goal to Agree with.

In cases such as (69), the PIC is not involved: it may well be that DPs are phases (when they have subjects) but if they are, the subject/specifier of the DP must count as being at its edge (cf. e.g. Carstens, 2000, Svenonius, 2000, 2004, Charnavel and Sportiche, in press). Since the head NP is extracted from this edge, phase locality imposes no restriction in this extraction.

Is intervention involved? Since what is extracted is a NP, what will count as a potential intervener would be another, closer NP to the landing site of movement. But as can be seen below, there is none:

(70) Landing site →

man [DP [DP [DP who [NP ~~man~~]]'s [NP brother]]'s [NP band]] ...

I conclude that NP extraction does not obey and is not predicted to obey the Left Branch Condition.

Note that for the same reason, such subextraction from PP as in *the man with whose brother I played*, are allowed too. Superficially, it may seem that intervention should play a role in RRC such as:

(71) The man [pictures of who ~~man~~'s brother] were published

But recall that following Sportiche (2016b), we analyze such structures as predicate headed relative clauses/ The string *picture of this man* is thus analyzed as follows:

(72) [[picture t] [of [SRC [this man] T]]]

with SRC a “small relative clause”, t the trace of *[this man]*, raised out of the predicate) *[[this man] picture]*, itself relativized, leaving trace T. More precisely, in the case under discussion, the bracketed strings *[pictures of who ~~man~~ 's brother]* is analyzed as follows:

(73) [SC t_{DP*} [NP pictures]]_k of [[DP* [DP who [NP ~~man~~]]'s [NP brother]] t_k]

That is, DP*, subject of the Small Clause SC headed by the NP *pictures* first moves out of SC, and SC is relativized (promoted) to the left of *of*. The effect of this derivation is that there is no intervener between the NP *man* and its landing site in (73).

7.2 The Usefulness of Promotion

The above section shows that Rajesh Bhatt's examples could be derived by promotion. I now show that under certain circumstances, they must. If so, by simple parsimony, they should always be.

To show that they sometimes must, it suffices to combine this type of example with a circumstance in which we would want head promotion to have taken place because head reconstruction into the RRC is required.

The fact that promotion relatives that obligatory reconstruct typically (and perhaps always) end up creating non individual variables (typically predicate or property variables). Pied piping on the other hand as in Bhatt's examples involve relative pronouns which impose individual variable readings. As a result, not all cases of pied piping are compatible with reconstruction.

However some are.

Consider for example Harris's 2008 analysis of Heim's ambiguity, observe the following (with the slight marginality of using *whose* for an inanimate):

- (74) John guessed the integer whose prime factors' exponents Mary guessed
- a. Reading A: John and Mary happened to guess related numbers (John an integer, Mary the exponents of the prime factors of this integer) but not necessarily anything about one another. John and Mary need not even know of the other's existence.
 - b. Reading B: John guessed something about Mary; that is, John guessed the answer to the question "Mary guessed the exponents of the prime factors of what integer?"

For some, but not all, speakers, reading B is available.³¹ As per Harris's 2008 analysis, it must be a case of promotion, yet the head is extracted from within a specifier.

This makes the point.

7.3 The Necessity of Promotion

I now turn to island effects whose existence is mysterious unless the promotion analysis is the only option.

When should we expect to see island effects with head raising?

³¹ Thanks to Corey Barnes, John Gluckman, Jesse Harris, Kaspars Ozolins, Tim Stowell and some UCLA students for providing judgments. The nature of the linguistic variation involved here is unclear.

Given the above discussion, there should be two circumstances: the head is too deeply embedded inside a phase to be extractable or a closer NP blocks by intervention the extraction of the targeted head.

To illustrate intervention effects, we need to find cases in which a closer NP intervenes between the landing site and the target. In general the two NP's cannot belong to independent DPs because NPs are part of DPs and will therefore not c-command outside of this DP. But if one DP is embedded inside another, the target NP can find itself inside a larger NP (yielding an A over A effect). In such cases, intervention effects are found, witness:

(75) *The summer [the famous [NP storm [during [which [NP ~~summer~~]]]]] I remember...

Similarly, the target NP can find itself inside a larger NP in Coordinate Structures. This yields island effects:

(76) *The [NP neighbor]_k because [of whom t_k and (of) the doorman] I talked about the fight....

As expected, Across-The-Board extraction overcomes the Coordinate Structure Constraint:

(77) ✓The [NP neighbor]_k because [of whom t_k and of who t_k's doorman] I talked about the fight...³²

The PIC can be illustrated by cases such as the following:

(78) a. The [NP law] [which [NP ~~law~~]] I think that you support ...
b. * The [NP law] [that you support which [NP ~~law~~]] I think...

The first example involves (successive cyclic) wh-movement followed by head promotion. The second involves pied piping of the embedded CP. In such case the NP is too deeply embedded to be promoted (under the standard assumption that NP's do not raise successive cyclically). Note that this is not a competition effect, witness the deviance of both RRCs (on ARCs see fn 29):

(79) a. *Any [NP law] [which [NP ~~law~~]] you met the activist who proposed t

³² It does not matter to the argument presented here, but the Coordinate Structure Constraint is probably best analyzed as illustrating a movement island (not derivable from the PIC) rather than an intervention effect. Indeed, perhaps the best reason to believe that Agree (subject to Intervention) exists is first (or last) conjunct agreement, which Agree presumably allows even though first (or last) conjunct movement is excluded.

- b. *Any [_{NP} law] [the activist who proposed [which [_{NP} ~~law~~]] you met...

Note finally, that these facts clearly tie in with the existence of pied piping. Although I will not pursue this here, pied piping can be understood as a way to deliver a close enough NP head to an RRC external D to avoid violating movement constraints (and not because of required agreement between a relative C and a relative pronoun, viz. the remarks in fn 32). And as we can see, attempts to circumvent these constraints via pied piping but leaving the to-be-raised head too deeply embedded within the pied piped constituent from the relative clause periphery displays expected sensitivity to movement constraints.

If matching were available, accounting for these island effects would require building in the matching mechanism sensitivity to the same constraints that movement is sensitive to.

A theory in which all RRCs must be derived via promotion is more parsimonious.

8 Conclusion

All relative clauses are derived by promotion.

9 References

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