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# A new version of the Matching Analysis of relative clauses

Combining deletion under recoverability with vehicle change

## 1 Introduction: Analyses of relative clauses

The biggest analytical challenge posed by relative clauses is arguably the so-called connectivity problem, viz., the double role of the head noun: it is a constituent of the matrix clause but is also related to a position inside the relative clause.

In the current syntactic literature on relative clauses, there are three basic derivations that are still entertained to solve the connectivity problem: the Head External Analysis (HEA), the Head Raising Analysis (HRA) and the Matching Analysis (MA):<sup>1</sup>

- |     |    |   |     |
|-----|----|---|-----|
| (1) | a. | the book <sub><i>i</i></sub> [ <sub>CP</sub> [ <sub>DP</sub> Op <sub><i>i</i></sub> /which <sub><i>i</i></sub> ] <sub>1</sub> John likes ___ <sub>1</sub> ] | HEA |
|     | b. | the [ <sub>CP</sub> [ <sub>DP</sub> book <sub>2</sub> Op/which ___ <sub>2</sub> ] <sub>1</sub> John likes ___ <sub>1</sub> ]                                | HRA |
|     | c. | the book <sub><i>i</i></sub> [ <sub>CP</sub> [ <sub>DP</sub> Op/which <del>book<sub><i>i</i></sub></del> ] <sub>1</sub> John likes ___ <sub>1</sub> ]       | MA  |

The Head External Analysis (HEA) is the classical analysis based on A'-movement of a relative pronoun/operator (overt or covert) to the left periphery of the relative clause and adjunction of the relative clause to the head NP; the relationship between the head NP and the operator is handled by means of co-indexation or simply follows from the compositional interpretation of such structures (including predicate abstraction and predicate modification). The HEA seems to go back to Quine (1960) and is explicitly adopted in Montague (1973), Partee (1975), Chomsky (1977) and Jackendoff (1977); it was the standard analysis in the Government and

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<sup>1</sup> In most accounts the HRA and the MA are combined with adjunction of the relative clause to the head noun while in the raising analysis the relative clause is merged as a complement (usually of the matrix determiner); alternative proposals (HRA/MA with complementation and raising with adjunction) can be found as well, though. There are in my view hardly any decisive arguments in favor of either complementation or adjunction; the choice between complementation and adjunction will therefore not play a role in what follows except in section 3.6 below. See Salzmann (2017: 40–55) for detailed discussion of this issue.

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Binding period. The Head Raising Analysis goes back to Brame (1968), Schachter (1973) and Vergnaud (1974) and was revived in Kayne (1994); it captures the double role of the head noun by means of a direct movement relationship from within the relative clause to its surface position, which is either taken to be a position at the periphery of the RC as in (1b), the structure proposed by Kayne (1994) and in the implementations by Bianchi (1999) and de Vries (2002), or a position outside of the relative clause as in Bhatt (2002), Donati & Cecchetto (2011), Cecchetto & Donati (2015). As a consequence of this movement operation there is a full representation of the external head inside the relative clause. The Matching Analysis, going back to Lees (1960, 1961), Chomsky (1965), and revived in Munn (1994), Sauerland (1998, 2003), Citko (2001) and Salzmann (2006), can be considered a compromise between the two other analyses: While there is A'-movement to the left periphery but no movement out of the relative clause, there is a full representation of the external head inside the relative clause because the relative operator/pronoun is reanalyzed as a determiner taking an NP-complement; the relationship between the two is mediated by deletion of the NP-complement of the operator under identity with the external head.

In the GB-era there was surprisingly little discussion about the structure of relative clauses. Since Kayne's revival of the Raising Analysis, however, discussions about the syntax of relative clauses have become very prominent. Kayne's proposal has been extremely influential and it seems fair to say that the HRA is considered by many the standard analysis of relative clauses nowadays. This is somewhat surprising since the HRA has been subject to very serious criticism, starting with Borsley (1997). Some of the issues were addressed in Bianchi (2000), but many of the problems are left unsolved, and additional problems have been identified in Borsley (2001), Heck (2005), Salzmann (2006: 13–19), Boef (2012), Salzmann (2017) and Webelhuth, Bargmann & Götze (this volume). In my view, the high cost associated with the adoption of the HRA can only be justified if it can be shown to be indispensable in a very central part of grammar. This indeed seems to characterize the majority view in the field: The shortcomings are either ignored or tacitly accepted because it is assumed that the HRA is the only possible derivation to model reconstruction effects. This is to some extent a historical coincidence in that the revival of the HRA coincided with the introduction of the copy theory of movement in early Minimalism, which led to a different view on reconstruction: Instead of literally undoing a movement operation at LF to bring back a constituent into the position where it is interpreted, reconstruction could be handled by simply interpreting the lower copy of a movement chain. Under the copy theory, reconstruction for variable binding in *wh*-movement as in (2a) is accounted for by the (simplified) LF in (2b):

- (2) a. [Which gift of his<sub>i</sub> wife]<sub>1</sub> does every man<sub>i</sub> like best [which gift of his<sub>i</sub> wife]<sub>1</sub>?  
 b. [Which x] does every man<sub>i</sub> like best [x gift of his<sub>i</sub> wife]?

Note that the copies are modified according to the Preference Principle, cf. Chomsky (1995: 209), which prefers minimally restricted operators. As a consequence, only the bottom copy is retained (the copy of the operator is replaced by a variable) while the copy in the final landing site is reduced to the operator.<sup>2</sup> The major motivation for the Preference Principle comes from reconstruction for Principle C in wh-movement as in (3):

- (3) \* Which picture of John<sub>i</sub> did he<sub>i</sub> buy \_\_?

If reconstruction, i.e. the interpretation of the lower copy, were optional, this fact could not be derived. Importantly, this default can be overridden if the interpretation of the higher copy instead of the lower one leads to a semantic effect, i.e. provides different scope or binding possibilities, see Heycock (1995) and Fox (1999).

I will argue in this paper that the advantage of the HRA with respect to capturing reconstruction effects is only apparent. Rather, I will propose a new version of the matching analysis that not only captures the basic facts just as well but additionally accounts for various intricate reconstruction data that neither the raising analysis nor previous versions of the matching analysis can handle.

The paper is organized as follows: In section two, I present an overview of the major reconstruction effects in relative clauses and how they have been captured in the various analyses. In section three, I will introduce a new version of the matching analysis and show that it can account for the entire range of reconstruction effects. Section four argues that the mechanism at the heart of the matching analysis, viz., deletion under identity, is also at work in resumptive relatives and in ATB-movement. Section five concludes.

## 2 Reconstruction effects in relative clauses

In this section I will provide an overview of the most prominent reconstruction effects that have been discussed in the literature. I will first address instances of reconstruction before discussing cases of non-reconstruction. In the last subsection, I will briefly discuss reconstruction effects that arguably do not provide conclusive evidence for the presence of a relative clause-internal representation of the external head.

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<sup>2</sup> Fox (1999, 2002) provides a more elaborate Trace Conversion mechanism, but since the differences do not matter for my present purposes, I will stick to the older notation.

## 2.1 Reconstruction of the external head

The following examples illustrate reconstruction for idiom interpretation, Principle A and scope reconstruction ((4a) is from Schachter 1973: 32, (4b) from Salzmann 2006: 99, and (4c) from Sauerland 1998: 68; for reconstruction of bound variables and superlative adjectives, see section 2.4; the external head is henceforth enclosed in brackets):<sup>3,4</sup>

- (4) a. The [*careful track*] [that she's *keeping* \_\_\_ of her expenses] pleases me.  
 b. Der [Wesenszug von sich<sub>i</sub>], [den Peter<sub>i</sub> noch nicht \_\_\_ kannte],  
 the trait of self which Peter still not know.PST.3SG  
 störte niemanden.  
 annoy.PST.3SG no one.ACC  
 'No one was annoyed by the side of himself<sub>i</sub> that Peter<sub>i</sub> did not know yet.'

**3** Reconstruction for Principle A requires some care because many of the examples that have been discussed in the literature contain confounds and thus do not provide conclusive evidence for reconstruction. The first issue concerns the presence of an implicit PRO: While the choice between reflexive and pronoun is normally free in picture nouns, cf. Reinhart & Reuland (1993: 685f.), Salzmann (2006: 24–28), there are cases where only the reflexive is acceptable:

- (i) a. Lucie<sub>i</sub> saw a picture of her<sub>i</sub>/herself.  
 b. Lucie<sub>i</sub> took a picture of \*her<sub>i</sub>/herself.

Cases like (i-b) involve verbs whose semantics entails that the agent of the verb must be identical to the agent/producer of the nominal predicate. One way of accounting for this is to postulate an implicit PRO inside the NP representing the agent: [PRO<sub>i</sub> picture of herself<sub>i</sub>] (there are alternative proposals in the literature that would also work for my purposes, cf. Reinhart & Reuland 1993: 685f.). Many examples in the literature do not control for this so that they arguably do not constitute reliable evidence for reconstruction. To avoid the possibility of an implicit PRO acting as a binder example (4b) contains an unaccusative noun that does not take an external argument. For related discussion, see Bianchi (1999: 118–119) and Cecchetto (2005: 16–18).

Second, one has to make sure that what looks like local anaphor binding does not in fact constitute logophoric binding. Since English allows for logophoric binding, cf. Reinhart & Reuland (1993: 681–685), many of the examples in the literature putatively illustrating reconstruction for Principle A may thus be irrelevant. For this reason, an example from German is used in the text, where logophoric binding is not a possibility, see Kiss (2001: 186). Other languages that do not allow for logophoric binding and thus can be used to test reconstruction for Principle A are e.g. Italian, see Bianchi (1999: 116), and Dutch, see de Vries (2002: 80–82). See Salzmann (2017: 66–71) for more detailed discussion of these issues.

**4** As has been pointed out in de Vries (2002: 79), relativization is restricted to collocations while it is blocked with completely opaque idioms like *kick the bucket*. For arguments against treating the interpretation of idioms/collocations as evidence for reconstruction see Sternefeld (this volume) and Weibelhuth, Bargmann & Götze (this volume); for further discussion, see also Salzmann (2017: 71–72).

- c. No linguist would read the [*many books*] [Gina will *need* \_\_ for vet school].  
(many > need); need > many

Under the HEA it never became clear how the information in the external head in examples like (4) could be made available inside the relative clause through mediation of the relative operator. The HRA, however, offers a straightforward solution: Reconstruction effects simply result from interpreting the lower copy of the raised head, which leads to the following LF-representations/-interpretations (after application of the Preference Principle; note that amount readings as in (4c) involve abstraction over a degree; I will use English words in all LFs for ease of representation):

- (5) a. the  $\lambda x$ . that she is keeping [x, careful track] of her expenses  
 b. the  $\lambda x$ . Peter<sub>i</sub> did not know [x, trait of himself]<sub>i</sub>  
 c. the  $\lambda d$ . Gina will need [d, many books] for vet school

Crucially, it has been argued that only the raising analysis can provide an account of reconstruction effects in relative clauses, cf. Bhatt (2002: 52), Hulse & Sauerland (2006). This is why reconstruction effects have become the prime diagnostic for the correct analysis of RCs. Although the MA also features a representation of the external head inside the RC, the above-mentioned authors argue that it cannot easily capture reconstruction effects because the external head also has to be interpreted. This becomes problematic once it contains material that cannot receive a proper interpretation in this position as in (4a/b): it is unclear how the idiomatic NP in (4a) can be interpreted if it normally only receives an interpretation together with the verb; similarly, the reflexive pronoun in (4b) seems to remain unbound. Furthermore, in (4c), retaining both the external head and the relative clause-internal copy would lead to contradictory scope readings. Given that the external head is not part of a movement chain, it cannot be deleted at LF (unlike in the HRA where the top copy is deleted as a consequence of the Preference Principle). Consider the following simplified LF-structure/-interpretation of (4a) under the MA:

- (6) a. the [careful track]<sub>i</sub> [<sub>CP</sub> [Op careful track]<sub>i</sub>]<sub>1</sub> that she is keeping [Op careful track]<sub>1</sub> of her expenses]  
 b. the careful track  $\lambda x$ . that she is keeping [x, careful track] of her expenses

However, this argument only applies to a particular implementation of the MA, viz. that by Sauerland (1998, 2003).

Munn (1994) and Citko (2001) propose a version of the matching analysis where deletion of the external head is possible as long as it can be recovered from the relative clause-internal context. Since this is the case in the reconstruction

examples above, they can be accommodated by this theory as well. The LFs of the examples in (4) thus look as under the raising analysis (next to deletion of the external head, the Preference Principle applies inside the relative clause; the authors do not explicitly discuss amount readings, but nothing should rule them out as far as I can tell if the upper copy can be deleted under identity with the lower one):

- (7) a. the [~~careful track~~] [<sub>CP</sub> [ $\lambda x$ . ~~careful track~~]<sub>1</sub>] she is keeping [ $x$  careful track]<sub>1</sub> of her expenses]
- b. the [~~trait of himself<sub>i</sub>~~] [<sub>CP</sub> [ $\lambda x$ . ~~trait of himself<sub>i</sub>~~]<sub>1</sub>] Peter<sub>i</sub> did not know [ $x$  trait of himself<sub>i</sub>]<sub>1</sub>]
- c. the [~~many books~~] [<sub>CP</sub> [ $\lambda d$ . ~~many books~~]<sub>1</sub>] Gina will need [ $d$  many books]<sub>1</sub> for vet school]

To summarize up to this point, regular reconstruction effects in relative clauses can be captured both by the raising and by the matching analysis given certain assumptions.

## 2.2 Non-reconstruction

Proponents of the raising analysis (e.g. Bhatt 2002, Sauerland 2003) generally admit that it cannot be applied to all restrictive relatives. It cannot be available in those instances where reconstruction of the external head does not seem to take place. The case discussed most frequently are Principle C effects, which are absent in relative clauses unlike in *wh*-movement (Sauerland 2003: 211):

- (8) a. \* [Which report on Bob's<sub>i</sub> division]<sub>1</sub> will he<sub>i</sub> not like \_\_\_<sub>1</sub>?
- b. I have a [report on Bob's<sub>i</sub> division] [he<sub>i</sub> won't like \_\_\_].

It must be pointed out that there is no perfect consensus in this debate. While many agree on the contrast, some, e.g. Safir (1999) and Henderson (2007), argue that Principle C effects are absent in *wh*-movement as well. I will follow the majority view here, not the least because the contrast seems quite clear in other languages, e.g. in German. The issue is somewhat more complex in that the argument–adjunct distinction and factors like embedding and perspective play a certain role. But I believe that once these factors are carefully controlled for, robust contrasts can be obtained. See Salzmann (2006: 28–34) and Salzmann (2017: 134ff.) for a detailed overview of the discussion.

At any rate, if the HRA is applied to (8b), the top copy is reduced according to the Preference Principle while the lower copy is retained. This incorrectly predicts

Principle C effects in relative clauses (i.e. (9) should have the same status as (3) above):

- (9) \* I have a  $\lambda x$ .  $he_i$  won't like [ $x$ , report on  $Bob_i$ 's division]

Proponents of the raising analysis (e.g. Bhatt 2002, Sauerland 2003) generally assume that the matching analysis is used in these configurations. There are two types of explanations for the absence of Principle C effects in relative clauses: The version proposed by Sauerland (1998, 2003) capitalizes on the deletion operation involved in the matching analysis. He argues that since ellipsis is involved, we expect properties of ellipsis to be visible in relative clauses as well. One such property are systematic mismatches between antecedent and ellipsis site, so-called vehicle change effects first described in Fiengo & May (1994). Consider the following example from VP-ellipsis:

- (10) a. \* John likes  $Mary_i$  and  $she_i$  does, too.  
 b. John likes  $Mary_i$ , and  $she_i$  knows that I do, too.

This contrast is mysterious if the ellipsis site is identical to the antecedent, viz. consists of *like Mary*. The pattern can be made sense of, however, if the ellipsis site contains a pronoun instead of an R-expression:

- (11) a. \* John likes  $Mary_i$  and  $she_i$  does (~~like her<sub>i</sub>~~), too.  
 b. John likes  $Mary_i$ , and  $she_i$  knows that I do (~~like her<sub>i</sub>~~), too.

While the pronoun still triggers a Principle B violation in (11a), the additional level of embedding in (11b) improves the example to full grammaticality. Simplifying somewhat, it is generally assumed that the mismatch is licensed because antecedent and ellipsis site are semantically identical (cf. e.g. Merchant 2001). Sauerland (1998, 2003) then applies the same reasoning to relative clauses: In (8b) the R-expression *Bob* corresponds to the personal pronoun *he* in the relative clause-internal representation of the external head (since *Bob* occupies the possessor position, it surfaces as *his*):<sup>5</sup>

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<sup>5</sup> I assume that vehicle change is not an operation as such but rather describes certain types of mismatch that are licensed under ellipsis. I further assume that vehicle change is restricted to ellipsis and thus not freely available (unlike Safir 1999 and Henderson 2007, who assume that vehicle change can freely affect bottom copies in  $A'$ -movement).

Note that while Sauerland (1998: 76) assumes that in a relative clause like *the picture of John that he likes* the representation inside the the relative clause contains a personal pronoun, viz., *picture of him*, he proposes in Sauerland (2003: 222) that it actually contains the NP-anaphor *one* (because he assumes that pronouns coreferential with the subject are not licensed inside picture

- (12) I have a [report on Bob<sub>i</sub>'s division] [<sub>CP</sub> [ $\lambda x$ . ~~report on his<sub>i</sub> division~~]<sub>1</sub> he<sub>i</sub> won't like [x report on his<sub>i</sub> division]<sub>1</sub>].

This derives the correct result because the relative thus corresponds to a simple clause like *He<sub>i</sub> won't like a report on his<sub>i</sub> division* where no violation of the Binding Theory obtains. To account for the entire reconstruction pattern, proponents of the raising analysis like Bhatt (2002), Sauerland (1998, 2003) and Hulsey & Sauerland (2006) therefore assume that the grammar includes both the raising analysis and Sauerland's version of the MA.

In the implementations of the MA by Munn (1994) and Citko (2001), the absence of Principle C effects is accounted for differently: While the external head is retained, the internal head is deleted under identity with the external one. As a consequence no offending R-expression is present within the relative clause. This leads to the following LF:

- (13) I have a [report on Bob<sub>i</sub>'s division] [<sub>CP</sub> [ $\lambda x$ . ~~report on Bob<sub>i</sub>'s division~~]<sub>1</sub> he<sub>i</sub> won't like [x ~~report on Bob<sub>i</sub>'s division~~]<sub>1</sub>].

In this theory, recoverability thus plays a crucial role. Either the external head or the relative clause-internal copy can be deleted as long as it can be recovered. Deleting the external head is needed to account for reconstruction effects. Deletion of the RC-internal copy is required to model the absence of reconstruction effects.

### 2.3 Intermediate summary

Table 1 provides an overview of the reconstruction phenomena discussed so far and shows which theory can account for them to what extent. The table shows that the frequent claim that the HRA is indispensable because it is the only theory that provides an account of reconstruction effects must be reconsidered: It cannot be applied to all configurations, the absence of Principle C effects requires a version of the MA. The consequence of adopting the HRA is thus that the grammar necessarily contains two derivations for relative clauses. Given certain assumptions however, the MA can provide an account of both regular reconstruction effects and cases where there is no reconstruction as with Principle C. It thus has better empirical coverage than the HRA. Since in addition it is not confronted with the many independent problems that the HRA is (see the references in section 1), the MA already emerges as superior.

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NPs, contrary to Reinhart & Reuland 1993, recall fn. 3). I will assume in what follows that vehicle change involves a mismatch between an R-expression and a pronoun. See section 3.3 for two further types of vehicle change.

**Tab. 1:** Reconstruction phenomena and analyses of relative clauses

	Raising	MA: Sauerland	MA: Munn/Citko
Idioms	+	–	+
Principle A	+	–	+
Amount readings	+	–	+
non-reconstruction Principle C	–	+	+

In the rest of this paper, I will strengthen this claim by showing that there are more reconstruction effects that require the MA. I will also show that previous versions of the MA are not sufficient to capture the entire range of facts. I will therefore propose a new version of the MA that combines insights from Citko (2001) and Sauerland (2003).

Before presenting my own analysis, I will briefly address reconstruction diagnostics that have played a prominent role in the discussion but which upon closer inspection arguably do not provide strong evidence for a relative clause-internal representation of the external head.

## 2.4 Problematic reconstruction diagnostics

Reconstruction for variable binding has figured quite prominently in the discussion. Consider the following examples ((14a) is from Safir 1999: 613, (14b) is from Hulsey & Sauerland 2006: 121, (14c) a translation of an Italian example by Bianchi 1999: 124):

- (14) a. John generally has an [opinion of his<sub>i</sub> book] [that every novelist<sub>i</sub> respects \_\_\_].
- b. The [picture of himself<sub>i</sub>] [that everybody<sub>i</sub> sent \_\_\_ in] annoyed the teacher.
- c. The [period of his<sub>i</sub> life] [which nobody<sub>i</sub> is willing to speak about \_\_\_] is adolescence.

In much of the literature (e.g. Åfarli 1994: 87, Safir 1999: 613, Bianchi 1999: 124, Bhatt 2002: 52, Aoun & Li 2003: 113), reconstruction for variable binding has been taken as evidence for a relative clause-internal representation of the external head. However, this view has been challenged for two reasons. First, Cecchetto (2005: 19–21) has observed that for many speakers reconstruction for variable binding is only fully acceptable in equative sentences but degraded in subject predicate sentences.<sup>6</sup> He suggests that this is not accidental and proposes that reconstruction

<sup>6</sup> He argues that the same pattern can be observed for cases of scope reconstruction where quantifiers interact.

for variable binding as in (14c) can be subsumed under classical cases of indirect binding as in (15) (cf. Cecchetto 2005: 19, 22):

- (15) The woman every man<sub>i</sub> loves \_\_ is his<sub>i</sub> mother.

Such examples cannot easily be accounted for by means of interpreting a relative clause-internal copy of the external head. Rather, simplifying somewhat, the interpretation of such examples results from the fact that two functions are equated with each other. Given this possibility, the interpretation of examples like (14c) does not require a relative clause-internal copy of the external head. Although I tend to share Cecchetto's judgments, it should be pointed out that there is no consensus in the literature. While it is indeed remarkable that many of the examples in the literature involve equatives (cf. (14c)), there are also several examples with subject-predicate structures (cf. (14a/b)).

Even if we set the confound with equatives aside, simply interpreting the lower copy inside the relative clause in the examples in (14) will not be sufficient to derive the most salient interpretation of these examples; in (14b), for instance, *picture* covaries with *everybody*, i.e. everyone sent in a different picture showing only himself. As discussed in Hulsey & Sauerland (2006: 121), since the determiner has scope over the RC, we would expect a different interpretation, viz., one where there is a single picture that shows every student. To derive the salient distributive interpretation, something else is needed, e.g. QR of the QP out of the relative clause as proposed in Hulsey & Sauerland (2006) (but see Sharvit 1999 and Sternefeld this volume for critical discussion). Whatever will turn out to be the best solution, it should be clear that reconstruction for variable binding cannot be considered a strong argument in favor of interpreting a relative clause-internal copy. I will consequently set it aside in the rest of this paper.

Another controversial issue are the low readings of superlative adjectives, first discussed in Bhatt (2002):

- (16) the *first* book that John said that Tolstoy had written

Under the so-called low reading, the superlative adjective applies to the lower verb, this interpretation is thus about the first book Tolstoy actually wrote. Under the high reading, the superlative adjective applies to the matrix verb and is thus about the first book about which John made the claim that Tolstoy wrote it. Heycock (2005) argues that a syntactic reconstruction account overgenerates and argues instead that there is a link between low readings and neg-raising (the verbs supporting the low reading also allow neg-raising). Bhatt & Sharvit (2005) and Hulsey & Sauerland (2006) on the other hand argue that the low readings do constitute evidence for syntactic reconstruction. Given the complexities involved, I will set the low readings of superlative adjectives aside as well.

Facts like those discussed in this subsection and reconstruction in pseudo-clefts where a solution in terms of the copy theory is even less likely have led Cecchetto (2005) and Boef (2012) to the conclusion that reconstruction effects do not provide any insight into the structure of relative clauses (see also Salzmann 2017: 177, fn. 136). Even though I agree that the range of reconstruction effects that have to be accounted for without recourse to syntax is larger than previously thought, I believe that the data discussed in this paper do provide interesting insights for the (syntactic) analysis of relative clauses.<sup>7</sup>

### 3 A new version of the MA

In this section, I will propose a new version of the MA that can account for all the data discussed so far as well as additional ones that have received little attention in the literature and which prove problematic for both the HRA and previous versions of the MA.

#### 3.1 Basic assumptions

The version of the MA I am about to introduce combines ingredients of both the recoverability approach proposed in Munn (1994) and Citko (2001) as well as the vehicle-change approach by Sauerland (1998, 2003).<sup>8</sup> As in other versions of the MA, I assume that there is A'-movement of the operator phrase to Spec, CP. The relative pronoun/operator takes a full NP complement which is PF-deleted under identity with the external head, leading to the following PF-representation:

(17) the book<sub>i</sub> [<sub>CP</sub> [<sub>DP</sub> Op/which ~~book<sub>i</sub>~~]<sub>1</sub>] John likes \_\_\_<sub>1</sub>

The LF-representation is basically derived according to the Preference Principle (thus as in wh-movement): the restriction of the wh-operator is deleted in the operator copy but retained in the lower copy inside the relative clause where the

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<sup>7</sup> For reasons of space, I will not be able to discuss the semantic literature in any detail; this is not intended to mean that semantic accounts for reconstruction are misguided; rather, what I intend to show is that if a syntactic approach to reconstruction is to be adopted, then the MA is clearly superior to the HRA. For semantic accounts of reconstruction, see e.g. Sharvit (1999), Sternefeld (2001, this volume).

<sup>8</sup> An earlier version appeared in Salzmann (2006: chapter 2); for a more detailed version, see Salzmann (2017: 134–179).

copy of the operator is replaced by a variable; additionally, the external head is also retained:

- (18) the book  $\lambda x$ . John likes [x book]

In other words: both reconstruction and retention of the external head are the default. Furthermore, both defaults can be overridden in well-defined circumstances: if the external head or the lower copy inside the relative clause contains an element with a so-called positive licensing requirement, it can be exceptionally LF-deleted if the material is not licensed in that particular position. By “positive licensing requirement” I mean that a given element is dependent on another element. Two types of elements are relevant in the present discussion: anaphors and idiomatic NPs: anaphors require a local c-commanding antecedent and idiomatic NPs have to be adjacent to the idiomatic verb to receive an interpretation. Importantly, this exceptional deletion operation is subject to a recoverability requirement: the external head may only be deleted if its content is recoverable from the copy inside the relative clause and vice versa. Next to elements with a positive licensing requirement there are elements with a “negative licensing requirement”. Such elements have to be free in a certain domain. The prime examples of this category are pronouns and R-expressions. By assumption neither one can be exceptionally deleted. This division will turn out to be crucial for the analysis of Principle C effects and cases where only the external head is interpreted. This is also where I crucially differ from the recoverability approaches by Munn (1994) and Citko (2001), where exceptional deletion of either the external head or the relative clause-internal copy is in principle always possible if it rescues an otherwise ungrammatical structure. I will argue instead that cases where reconstruction of elements with a negative licensing requirement fails to be observed are due to vehicle change.

### 3.2 Regular reconstruction effects

The reconstruction effects in (4) above are repeated in (19) for convenience:

- (19) a. The [*careful track*] [that she’s *keeping* \_\_\_ of her expenses] pleases me.  
 b. Der [Wesenszug von sich<sub>i</sub>], [den Peter<sub>i</sub> noch nicht \_\_\_ kannte],  
 the trait of self which Peter still not know.PST.3SG  
 störte niemanden.  
 annoy.PST.3SG no one.ACC  
 ‘No one was annoyed by the side of himself<sub>i</sub>; that Peter<sub>i</sub> did not know yet.’  
 c. No linguist would read the [*many books*] [Gina will *need* \_\_\_ for vet school].  
 (many > need); need > many

Under the present analysis, (19a/b) receive the LFs in (20), which are identical to those proposed by Munn (1994) and Citko (2001), cf. ex. (7), and those of the HRA:

- (20) a. the [~~careful track~~] [<sub>CP</sub> [ $\lambda x$ . ~~careful track~~]<sub>1</sub> she is keeping [x, careful track]<sub>1</sub> of her expenses]  
 b. the [~~side of himself<sub>i</sub>]~~ [<sub>CP</sub> [ $\lambda x$ . ~~side of himself<sub>i</sub>]~~<sub>1</sub> Peter<sub>i</sub> did not know [x, side of himself<sub>i</sub>]<sub>1</sub>]

While the Preference Principle modifies the copies inside the relative clause in the by now familiar way, the external head is deleted as well. In (20) this happens because the external head contains elements with a positive licensing requirement that are not licensed there (no idiomatic verb, no local binder for the anaphor); due to the RC-internal copy, deletion of the external head is recoverable. Deletion of the external head is also necessary to capture the amount reading in (19c). However, the deletion must be motivated differently because the quantified external head is not subject to a positive licensing requirement. Deletion can be motivated by the fact that retaining both copies would lead to contradictory scope readings. I propose that in such a situation either copy can be privileged to yield the respective meanings. Importantly, this option is limited to scopal elements because it yields a difference in interpretation (as we will see in the next subsection, this option is crucially unavailable in the case of Principle C).

- (21) a. the [~~many books~~] [<sub>CP</sub> [ $\lambda d$ . ~~many books~~]<sub>1</sub> Gina will need [d many books]<sub>1</sub> for vet school]  
 b. the [many books] [<sub>CP</sub> [ $\lambda x$ . ~~many books~~]<sub>1</sub> Gina will need [x ~~many books~~]<sub>1</sub> for vet school]

So far, the present proposal has the same coverage as the previous versions of the MA. In the next subsections, I will discuss data that only my version can account for.

### 3.3 Obligatory non-reconstruction

As shown in section 2.2 above, the MA provides two different accounts of the absence of Principle C effects: either it is due to vehicle change as in Sauerland (1998, 2003) or it results from the deletion of the copy inside the relative clause as in Munn (1994) and Citko (2001). Regular Principle C data do not distinguish between these two options. The Crossover data from Safir (1999: 611) (indirectly) show, however, that vehicle change is the correct solution:

- (22) a. \* [Pictures of anyone<sub>i</sub>] which he<sub>i</sub> displays \_\_ prominently are likely to be attractive ones.  
 b. [Pictures of anyone<sub>i</sub>] [which \_\_ put him<sub>i</sub> in a good light] are likely to be attractive ones.

The contrast clearly suggests that there is reconstruction because the position of the trace with respect to the coreferential pronoun matters. (22a) thus displays a Crossover effect. If offending copies could be freely deleted, deleting the relative clause-internal copy should lead to a well-formed structure, contrary to fact. Munn (1994) and Citko (2001) thus wrongly predict the following LF-representation for (22a):

- (23) [Pictures of anyone<sub>i</sub>]<sub>[CP λx. pictures of anyone<sub>i</sub>]<sub>1</sub> he<sub>i</sub> displays [x pictures of anyone<sub>i</sub>]<sub>1</sub> prominently] are likely to be attractive ones.</sub>

Under my approach where elements with a negative licensing requirement cannot undergo exceptional deletion, the Crossover effect is expected. However, it remains to be explained why the example cannot be saved by vehicle change. Here I follow Safir (1999: 605ff.), who shows that vehicle change cannot freely apply to (copies of) quantifiers (or their variables).<sup>9</sup> Consequently, there is a full copy of *anyone* inside the relative clause, leading to a Principle C violation in (22a) due to c-command by *he*, but not in (22b), where the quantifier is not c-commanded by *him*. The LF of (22a) under the present analysis is shown in (24):

- (24) \* [Pictures of anyone<sub>i</sub>]<sub>[CP λx. pictures of anyone<sub>i</sub>]<sub>1</sub> he<sub>i</sub> displays [x pictures of anyone<sub>i</sub>]<sub>1</sub> prominently] are likely to be attractive ones.</sub>

The Crossover data thus provide an argument for my approach and against that of Munn (1994) and Citko (2001).<sup>10</sup>

<sup>9</sup> For a different view, see Sauerland (2003: 222f.). For more discussion, see Salzmann (2017: 151–154).

<sup>10</sup> The inapplicability of vehicle change also accounts for Strong Crossover Effects in relative clauses:

- (i) a. \* the man who<sub>i</sub> he<sub>i</sub> likes \_\_  
 b. \* the man whose<sub>i</sub> sister he<sub>i</sub> likes \_\_

The relative clause-internal representation under the MA is *who man* and *who man's sister*. Vehicle change, which targets DPs, cannot apply here: the only DP available is the entire operator phrase, but given that it contains a quantifier, it cannot be vehicle changed so that a Principle C violation is unavoidable; cf. Salzmann (2006: 65–70) for further discussion.

Regular cases of non-reconstruction for Principle C as in (8b) above, repeated in (25a), follow under vehicle change in the present account, as shown by the LF in (25b):<sup>11</sup>

- (25) a. I have a [report on Bob's<sub>i</sub> division] [he<sub>i</sub> won't like \_\_\_\_].  
 b. I have a [report on Bob<sub>i</sub>'s division] [<sub>CP</sub> [ $\lambda x$ . report on his<sub>i</sub> division]<sub>1</sub> he<sub>i</sub> won't like [x, report on his<sub>i</sub> division]<sub>1</sub>].

While unrestricted exceptional deletion is thus too powerful, there are cases of non-reconstruction that can be handled straightforwardly if elements with a positive licensing requirement must be deleted in positions where they are not licensed. While the problem of obligatory non-reconstruction is usually discussed on the basis of Principle C facts, the issue is more general: There are cases where the external head must be interpreted while the internal head must not. The following examples illustrate this for idiom interpretation and Principle A, see McCawley (1981: 137) for (26a):

- (26) a. Parky pulled the [strings] [that \_\_\_\_ got me my job].  
 b. but Hawking has endorsed The Theory of Everything, so he<sub>i</sub> must like the [portrait of himself<sub>i</sub>] [that it presents \_\_\_\_]  
<http://www.spectator.co.uk/2015/01/what-the-theory-of-everything-doesnt-tell-you-about-stephen-hawking/>, accessed June 1, 2016

The following German examples make the same point (for Dutch data, see Boef 2012: 161f.):

- (27) a. Hier werden die [Fäden] gezogen, [die \_\_\_\_ anschließend zu  
 here become.3PL the strings pull.PTCP which later to  
 Toren führen].  
 goals lead.3PL  
 'This is where the strings are pulled that later lead to goals.'  
[http://www.kicker.de/news/fussball/bundesliga/startseite/608708/2/slideshow\\_ein-koeniglicher-weltmeister-geht-voran.html](http://www.kicker.de/news/fussball/bundesliga/startseite/608708/2/slideshow_ein-koeniglicher-weltmeister-geht-voran.html), accessed June 1, 2016

**11** Further evidence that copies containing elements with a negative licensing requirement cannot be deleted comes from examples like (i), where retention of the external head is crucial to account for the Principle C effect:

- (i) \* He<sub>i</sub> likes the picture of John, that I bought.

Vehicle change could turn *John* into *him*, avoiding the Principle C effect inside the relative clause; if additionally the external head could be deleted, the Principle C effect would also be voided in the matrix clause, contrary to fact.

- b. Schicken Sie<sub>i</sub> uns ein [Foto von sich<sub>i</sub>], [das \_\_\_ beweist], dass Sie send.IMP you us a picture of self which prove.3SG that you ein wahrer Ferrari-Anhänger sind.  
 a true Ferrari-fan be.3PL  
 ‘Send us a picture of yourself which proves that you are a true Ferrari-fan.’  
[http://www.vodafone-racing.de/pda/f\\_fancontest.html](http://www.vodafone-racing.de/pda/f_fancontest.html), accessed September 2005

Examples of this type are a problem for the HRA (like the absence of Principle C effects), where the lower copy is interpreted by default.<sup>12</sup> Here the recoverability aspect of the MA I have proposed becomes important: Interpreting the idiom or the anaphor in the external head is no problem under the MA because the external head is retained by default. The bottom copy inside the relative clause, however, contains material with a positive licensing requirement that is not licensed there (the anaphor is too far away from its antecedent and the idiomatic NP is not adjacent to the idiomatic verb). Consequently, the bottom copy undergoes LF-deletion under identity with the external head. The LF of (26a) thus looks as follows:

- (28) John pulled the strings [<sub>CP</sub> [ $\lambda x$ . strings] that [x strings] got him the job ].

Vehicle change is arguably not sufficient to capture both cases of non-reconstruction: it can deal with the anaphor example because ellipsis has been shown to

<sup>12</sup> A variant of (27b) can be found in Kayne (1994: 87, ex. 8), which suggests that reconstruction for anaphor binding is optional (see de Vries 2002: 82, ex. 26 for a Dutch example):

- (i) John<sub>i</sub> bought the picture of himself<sub>i/j</sub> that Bill<sub>j</sub> saw

This recalls facts from *wh*-movement, where it is usually assumed that although the Preference Principle is the default, it can be overridden if additional binding options obtain:

- (ii) John<sub>i</sub> wondered [which picture of himself<sub>i/j</sub>]<sub>1</sub> Bill<sub>j</sub> saw \_\_\_<sub>1</sub>.

It is conceivable that the Preference Principle can also be overruled under the raising analysis in the binding case. However, while this may work for English, it arguably does not for languages like German where anaphors cannot be bound when located in Spec, CP (see Kiss 2001: 186 and Salzmann 2006: 140–141):

- (iii) Hans<sub>i</sub> fragt sich, [[welches Foto von \*sich<sub>i</sub>/ihm<sub>1</sub>]<sub>1</sub> ich am liebsten \_\_\_<sub>1</sub> mag].  
 John asks self which picture of self/him I the best like  
 ‘John<sub>i</sub> was wondering which picture of himself<sub>i</sub> I like best.’

Even if privileging the higher copy were possible under the raising analysis, this would not be sufficient to account for German cases of non-reconstruction of anaphors as in (27b) above, at least not in those implementations where the external head remains inside the relative clause (as in Kayne 1994, Bianchi 1999 and de Vries 2002). Things may be different in the implementation by Bhatt (2002), where the external head moves out of the relative clause.

license a mismatch between reflexives and pronouns, as in the following VP-ellipsis example from Fiengo & May (1994: 206–214):

- (29) John<sub>i</sub> believes himself<sub>i</sub> to be heroic, and he<sub>j</sub> said that Mary does, too < believe him<sub>j</sub> to be heroic >.

Applied to the relative clause in (26b), the relative clause-internal copy would appear as *portrait of him<sub>i</sub>*, leading to a well-formed result.<sup>13</sup> The idiom example in (26a), however, cannot be accounted for this way. Bhatt (2002: 47f., note 1) speculates that the MA could perhaps handle such cases if the external head is matched not against the literal form of the idiom but its semantic interpretation. But this certainly goes beyond regular cases of vehicle change and it is not clear what the consequences of such an extension would be. I thus conclude that some cases of non-reconstruction require a recoverability perspective.

A case where vehicle change is necessary under the present assumptions are non-reconstruction examples with NPIs discussed in Citko (2001: 134ff.). The example in (30a) would be predicted to be as ungrammatical as (31) if the external head were interpreted within the relative clause as in (30b) because another quantifier would intervene between the negative quantifier and the NPI (thereby violating the Immediate Scope Constraint by Linebarger 1987: 338):<sup>14</sup>

- (30) a. Nobody found [a picture of *anybody*] that everybody liked  
 b. \*Nobody found [a picture of *anybody*] that everybody liked [picture of *anybody*]
- (31) John didn't give a red cent to \*every charity.  
 (at LF: \*not > every charity > a red cent)

Munn (1994) and Citko (2001) can handle such cases straightforwardly since the relative clause-internal copy can be freely deleted. In my system this is not possible

<sup>13</sup> Note that nothing so far prevents application of vehicle change in cases of reconstruction for Principle A like (4b). If the external head is deleted and there is vehicle change from anaphor to pronoun, a well-formed representation obtains inside the RC, viz. *side of him*. Importantly, examples where only the anaphor is grammatical show that vehicle change must be optional:

- (i) Peter<sub>i</sub> took a picture of himself<sub>i</sub> that he<sub>j</sub> should not have taken.

Recall from fn. 3 that in picture NPs of this semi-idiomatic type, only the reflexive is grammatical while the pronoun is not, cf. *He<sub>j</sub> took a picture of himself<sub>i</sub>/\*him<sub>j</sub>*, (arguably because of an implicit PRO). Consequently vehicle change must not apply in (i) and therefore must in principle be optional.

<sup>14</sup> The argument is weakened by the frequent observation that NPI-licensing is sensitive to surface structure.

because *pictures of anybody*, an element with a positive licensing requirement, is in principle licensed within the relative clause as it is in the c-command domain of *nobody*. Consequently, exceptional deletion is not an option. Rather, I argue that vehicle change comes to the rescue as ellipsis allows mismatches between *some* and *any*: *John drank some milk, but Bill didn't <drink any milk>*. Consequently, the relative clause-internal representation will be *a picture of somebody*, which avoids a violation of the Immediate Scope Constraint and thus leads to a well-formed result:

- (32) Nobody found a picture of anybody  $\lambda x$ . that everybody liked [x picture of *somebody*].

As in the Principle C cases, both the external head and the relative clause-internal copy are thus retained.

### 3.4 Conflicting requirements

The data discussed in the previous subsection represent an argument in favor of the MA and against the HRA because they require the interpretation of the external head and the non-interpretation of the internal head. The data discussed in this subsection will provide additional evidence for the MA because they require the interpretation of relative clause-internal as well as relative clause-external material. Additionally, they provide more evidence for vehicle change. Consider the following example, which involves conflicting requirements (the English data have been verified by native speakers):<sup>15</sup>

- (33) a. I will never forget Somi, his sunken eyes, and the way he crawled into my arms as he<sub>i</sub> showed me the [picture of himself<sub>i</sub>] [<sub>CP</sub> that one of my fellow students took \_\_ ].  
<http://www.textbooksforafrica.org/19438.html>
- b. Peyton<sub>i</sub> bekommt per Email ein [Foto von sich<sub>i</sub>], [das Derek \_\_ P. receives by e-mail a picture of self which D. gemacht hat].  
 taken has  
 'Peyton receives by mail a picture of himself that Derek took.'  
<http://www.myfanbase.de/one-tree-hill/episodenguide/?eid=2596>, accessed September 28, 2012

<sup>15</sup> For data with variable binding see Heck (2005) and Salzmann (2006: 42, 118).

The examples are challenging for two reasons: the reflexive is only licensed in the highest copy/in the external head, but for the idiomatic interpretation the external head also has to be inside the relative clause. I don't see a possibility to derive this example with the HRA. Even if both copies were retained at LF, there would be two problems: First, the reflexive would not be licensed relative clause-internally as the binder in the matrix clause is too far away. Second, since in *take a picture* only the reflexive is grammatical, it contains an implicit PRO. Inside the RC this must be coreferential with *one of my fellow students*, but then the reflexive inside the RC should be bound by *one of my fellow students*, contrary to fact, and the reflexive inside the higher copy cannot be bound by *he* because PRO intervenes. Since picture NPs in English may also allow for logophoric binding (even though this may be blocked in this case because of the PRO, cf. Reinhart & Reuland 1993: 686, note 29), data from English must be taken with care. German is more reliable in this respect, logophoric use being impossible (recall from fn. 3 above and see Salzmann 2006: 85–94). The problem posed by examples like (33) is thus real.

The MA is better equipped to handle such cases because the interpretation of both the external and the internal copy is generally possible. However, this is not yet sufficient. First, the implicit PRO inside the picture NP that is disjoint from the reflexive will block binding of the anaphor inside the relative clause. Second, if this PRO is also present inside the external head, Principle A will also be violated in the matrix clause. In other words, such examples cannot be captured by the recoverability approach by Munn (1994) and Citko (2001) because both copies would have to be retained and there is no possibility to modify either of them. The present approach, however, provides a solution by means of vehicle change: The anaphor in the matrix clause can correspond to a personal pronoun inside the relative clause (recall (29)) so that we obtain [*PRO<sub>j</sub> picture of him<sub>i</sub>*]. Additionally, since the picture NP does not receive an idiomatic interpretation in the matrix clause there is arguably no implicit PRO (which is also suggested by the fact that the reflexive could be substituted by a pronoun). I thus propose that the external head does not contain an implicit PRO and that vehicle change licenses the mismatch between an NP with a PRO and one without. The resulting LF-representation of (33b) thus looks as follows:

- (34) Peyton<sub>i</sub> received a [picture of himself<sub>i</sub>] [<sub>CP</sub> λx. Derek<sub>j</sub> took [x, PRO<sub>j</sub> picture of him<sub>i</sub>]]

The present analysis is thus superior to both the raising analysis and previous versions of the MA.<sup>16</sup>

### 3.5 Re-emergence of Principle C?

A frequent argument in favor of syntactic reconstruction is based on the observation that reconstruction effects usually go together, see Heycock (1995), Romero (1998: 90–101) and Fox (1999: 164–178) for *wh*-movement. The same observation has been made for relative clauses. Crucially, it has been argued that Principle C effects re-emerge in relatives once reconstruction (and thus head-raising) is forced for variable binding, idiom interpretation or scope, cf. Munn (1994: 402, ex. 15), Citko (2001); the following data are from Sauerland (2003: 213–215):

- (35) a. \* The [letters by John<sub>i</sub> to her<sub>j</sub>] that he<sub>i</sub> told every girl<sub>j</sub> to burn \_\_ were published.  
 b. \* the [picture of Bill<sub>i</sub>] that he<sub>i</sub> took \_\_  
 c. \* The [headway on Mary's<sub>i</sub> project] that she<sub>i</sub> had made \_\_ pleased the boss.  
 d. \* The [many books for Gina's<sub>i</sub> vet school] that she<sub>i</sub> needs \_\_ will be expensive.

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**16** Henk van Riemsdijk (p.c.) has pointed out to me a related (but less problematic) case where the head noun receives an idiomatic interpretation both in the matrix clause and relative clause-internally (cf. also fn. 13):

- (i) John never pulled [the strings] [that his mother told him should be pulled \_\_].

Such examples are a problem for the raising analysis if the higher copy is obligatorily deleted or if only one copy can be retained for principled reasons. No problem arises for the matching analysis since usually there are always two occurrences that are interpreted.

The same issue arises with anaphor binding if the anaphor is licensed both in the matrix and inside the RC-clause (note that the subject containing the relative clause starts out below the experiencer object):

- (ii) Das [Spiegelbild von sich<sub>i</sub>], [das er<sub>i</sub> an der Wand \_\_ sah], beunruhigte ihn<sub>i</sub>.  
 the reflection of self which Peter on the wall see.PST.3SG disquiet.PST.3SG him  
 'The reflexion of himself that Peter saw on the wall made him nervous.'

Next to the problem of having to interpret both copies, such examples pose an additional challenge for those implementations of the raising analysis where the head of the relative remains inside the relative clause as this would require binding in an A'-position, which German generally disallows, recall the discussion in fn. 12 above.

Note that such examples are unproblematic for the present account as well as for previous versions of the MA since unlike the examples in the main text the retention of both instances of the head is sufficient.

- e. \* I visited all [the relatives of Mary's<sub>i</sub>] that she<sub>j</sub> said there are \_\_ left.

These facts follow straightforwardly under the raising analysis. Since reconstruction for variable binding, cf. (35a), idiom interpretation, cf. (35b/c), and scope, cf. (35d/e), requires a relative clause-internal copy, that copy will also contain the R-expression so that one correctly expects Principle C effects as well.

These facts also follow under the version of the MA proposed by Munn (1994) and Citko (2001) because reconstruction requires a full copy inside the relative clause (the external head can be deleted without violating recoverability).

However, the facts seem to constitute a serious problem for the present account because vehicle change should void the Principle C effects: If the R-expression can correspond to a pronoun, the examples in (35c–e) would thus correspond to the following well-formed simple sentences (on (35a/b) see below):

- (36) a. She<sub>i</sub> made headway on her<sub>i</sub> project.  
 b. She<sub>i</sub> needs many books for her<sub>i</sub> vet school.  
 c. She<sub>i</sub> said that there are relatives of hers<sub>i</sub> left.

I will show in the remainder of this subsection that upon closer inspection the argument from the examples in (35) actually turns out to be an argument in favor of the present vehicle change-based account: Most of the data discussed in the previous literature are ungrammatical for independent reasons and once the examples are properly constructed, Principle C effects indeed vanish. They thus argue against the HRA and the accounts by Munn (1994) and Citko (2001).

### 3.5.1 Irrelevant cases

First of all, I will disregard examples with variable binding as in (35a) given the objections raised in section 2.4.<sup>17</sup> Second, (35b) is semi-idiomatic and thus arguably contains an implicit coreferential PRO (note that the pronoun is ungrammatical inside the picture NP). Consequently, even if vehicle change applies, the pronoun substituted for *Bill* will trigger a Principle B violation inside the picture NP as the lower copy contains [*PRO<sub>i</sub> picture of him<sub>i</sub>*]. Note that once a level of embedding is added, the example becomes grammatical: *the picture of Bill<sub>i</sub> that he<sub>i</sub> thinks I took*.<sup>18</sup>

<sup>17</sup> See Salzmann (2006: 108f.) for German equivalents of (35a) that do not show Principle C effects. I do not know what causes this crosslinguistic difference.

<sup>18</sup> This objection applies to most of the data in the literature suggesting that there are Principle C effects in relatives, cf. e.g. Schachter (1973: 32).

There thus remain the cases in (35c–e). Examples with existential *there* like (35c) are generally assumed to require reconstruction as they involve amount readings (cf. e.g. Bhatt 2002). The ungrammaticality of examples of this type is unclear, though. Safir (1999: 613, note 22), for instance, judges the following example acceptable:

- (37) the [number of pictures of Diana<sub>i</sub>] [that she<sub>i</sub> thought there were \_\_ in the envelope]

I will thus assume that these are only putative counter-examples. The grammaticality of (37) is due to vehicle change, with *Diana* corresponding to *her* inside the relative clause. See the next subsection for more examples of this type.

The examples (35c) and (35d) are ungrammatical for independent reasons: the external head is not a proper constituent. In fact it consists of two independent constituents. In the idiom case (35c), *headway on Mary's project* is simply not a possible constituent. In the expression *make headway on Mary's project* the PP *on Mary's project* is not dependent on *headway* as it would yield the wrong semantics: *on Mary's project* does not restrict *headway*; rather, the PP depends on the entire expression *make headway*. One can test this syntactically: if the PP *on Mary's project* were a complement of *headway*, one would expect it to be inextractable when *headway* is headed by a definite determiner because definite DPs normally disallow extraction of their complements. But this prediction is not borne out: wh-movement of the allegedly dependent PP is unproblematic:

- (38) On which tasks did Peter make the most significant headway?

Conversely, in cases where *headway* is used without the idiomatic verb it can take complements and then bars extraction of complements if the DP is definite:

- (39) \* On which tasks did the boss praise the significant headway?

Similarly, if we passivize such sentences, moving *headway* + PP leads to strong degradedness, it is much more natural to just move *headway* without the PP (for unclear reasons not all speakers find (40a) completely ungrammatical):

- (40) a. ?? Much headway on this project was made.  
b. Much headway was made on this project.

This strongly suggests that *headway* + PP cannot form a nominal constituent in (35c). Consequently, (35c) is simply ungrammatical because it contains a non-constituent as external head. Note that when the PP restricts *headway*, passivization is unproblematic:

- (41) The headway on her project was considered sufficient.

However, this reanalysis seems to be refuted by the observation in Sauerland (2003: 214, ex. 24b) that (35c) becomes grammatical if the R-expression is replaced by a pronoun:

(42) The [headway on her<sub>i</sub> project] [Mary<sub>i</sub> had made \_\_] pleased the boss.

However, I have found several speakers who find this sentence still strongly degraded, arguably for the above-mentioned reasons. The much more acceptable way of saying this is by leaving the PP inside the relative clause:

(43) The [headway] [that Mary<sub>i</sub> had made \_\_ on her<sub>i</sub> project] pleased the boss.

The contrast is very clear in German, consider the following pair (for unclear reasons, (44a) is not fully ungrammatical for all speakers):

- (44) a. ?? Die [Fortschritte bei ihrem Projekt], [die Maria \_\_ machte], waren  
the progress at her project which Mary made were  
beträchtlich.  
remarkable  
'The progress that Mary made on her project was remarkable.'
- b. Die [Fortschritte], [die Maria \_\_ bei ihrem Projekt machte], waren  
the progress which Mary at her project made were  
beträchtlich.  
remarkable

Alain Rouveret and Nicolas Guilliot have pointed out to me that the same holds for French.

I therefore conclude that (35c) does not provide any evidence for a full relative clause-internal representation of the external head.<sup>19</sup>

The same explanation can be given for the ungrammaticality of (35d): the external head simply is a non-constituent. The string *need something for something* as such is structurally ambiguous; *for something* can be dependent on the first noun and restrict it or it can be independent, i.e. a VP-adjunct, in which case it

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**19** The empirical facts have recently been challenged to some extent. Heycock (2012: 9, ex. 42, this volume) gives the following as grammatical (which under our assumptions would be expected to be ungrammatical as it contains an illicit external head):

- (i) This represents the [only headway on Lucy<sub>i</sub>'s problem] [that she<sub>i</sub> thinks they made \_\_ so far].

Bhatt & Iatridou (2012: 6, ex. 22) on the other hand give a minimally different version of (i) (where *she* and the reconstruction site are clause-mates) as ungrammatical. German equivalents of their examples and of (i) all seem equally degraded as equivalents of (35c).



- (49) a. Many books are needed for vet school these days.  
 b. \* Many books for vet school are needed these days.

Under the construal where the PP is dependent on the NP, however, passivization is unproblematic:<sup>21</sup>

- (50) Many books for vet school are sold in this bookshop.

Having reassessed the examples that putatively provide evidence for Principle C effects, I will now show that once the examples are constructed properly, Principle C effects are still absent even if reconstruction of the external head is forced otherwise.

### 3.5.2 Further evidence for vehicle change

I will now discuss examples that require reconstruction for idiom interpretation; crucially, even though the idiomatic NP contains an R-expression, Principle C effects still do not obtain if there is a coreferential pronoun inside the relative clause. Consider first the following pair from German, cf. Salzmann (2006: 134–137):

- (51) a. \* Der [Streit über Maria<sub>i</sub>], [den sie<sub>i</sub> \_\_ vom Zaun gebrochen hat], nervt mich.  
 the fight about Mary which she off.the fence break.PTCP  
 have.3SG annoy.3SG me  
 lit.: ‘The fight about Mary<sub>i</sub> that she<sub>i</sub> started annoys me.’  
 b. Der [Streit über Peters Kritik an Maria<sub>i</sub>], [den sie<sub>i</sub> \_\_ vom Zaun gebrochen hat], nervt mich.  
 the fight about Peter’s criticism of Mary which she off.the  
 fence break.PTCP have.3SG annoy.3SG me  
 lit.: ‘The fight about Mary’s criticism of Peter<sub>i</sub> that he<sub>i</sub> started annoys me.’

The idiom *einen Streit vom Zaun brechen*, lit. ‘break a fight off the fence’, meaning ‘start a fight’ arguably contains an implicit PRO because in simple sentences only the reflexive is possible within the NP, while the pronoun is ungrammatical:

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Bhatt & Iatridou (2012: p. 8, ex. 28–29) present an example similar to (i) as grammatical and minimally different ones (where the binder and the reconstruction site are clause-mates) as ungrammatical. I find the German equivalents of their examples strongly degraded.

<sup>21</sup> Similarly, in variants of (35d) where there are no problems with the external head, no Principle C effects occur. See Salzmann (2006: 115–116) and Salzmann (2017: 163) for German examples.

- (52) Sie<sub>i</sub> hat einen [PRO<sub>i</sub> Streit über \*sie<sub>i</sub>/sich<sub>i</sub>] vom Zaun gebrochen.  
 she have.3SG a fight about her/self off.the fence break.PTCP  
 ‘She<sub>i</sub> started a fight about \*her<sub>i</sub>/herself<sub>i</sub>.’

The implicit PRO will lead to a Principle C effect in (51a) irrespective of vehicle change, i.e. even if *Maria* corresponds to *sie* ‘her’ because that would correspond to the ungrammatical variant of (52). If, however, the R-expression is further embedded as in (51b), the example becomes grammatical. This is expected under the vehicle change account because (51b) then essentially corresponds to the following simple sentence where the pronoun is grammatical:

- (53) Sie<sub>i</sub> hat einen [PRO<sub>i</sub> Streit über Peters Kritik an ihr<sub>i</sub>] vom  
 She have.3SG a fight about Peter’s criticism of her off.the  
 Zaun gebrochen.  
 fence break.PTCP  
 ‘She<sub>i</sub> started a fight about Peter’s criticism of her<sub>i</sub>.’

Importantly, the contrast in (51) does not follow under the raising analysis because it would always posit a full copy of the R-expression inside the relative clauses and thus predicts both examples to be ungrammatical. The same goes for the approach by Munn (1994) and Citko (2001), who would also assume a full copy of the external head inside the relative clause. The present vehicle change-based account, however, derives the contrast straightforwardly. The LFs of the two sentences thus look as follows (note that there is no implicit PRO inside the external head because that NP does not receive an idiomatic reading, vehicle change thus licenses this mismatch as well):<sup>22</sup>

<sup>22</sup> Citko (2001: 144) tries to argue against vehicle change by means of a semi-idiomatic example with an implicit PRO coreferential with the subject:

- (i) \* He<sub>i</sub>/Picasso<sub>i</sub> painted [PRO<sub>i</sub> self-portraits of him<sub>i</sub>] in the Blue period.

There is no doubt that this sentence is ungrammatical. In a next step, she uses such an idiomatic DP with an R-expression instead of a pronoun and tests reconstruction for Principle C. According to her, the following sentence is grammatical:

- (ii) The [self-portraits of Picasso<sub>i</sub>] [that he<sub>i</sub> had painted \_\_ in the Blue period] are in the Met now.

She argues that under a Vehicle Change approach, (ii) should be equally ungrammatical as (i): the lower copy inside the relative clause is retained and *Picasso* would be turned into *him*, but would still be c-commanded by the implicit PRO so that a Principle B effect should obtain as in (i), which is not the case according to her:

- (iii) % The [self-portraits of Picasso<sub>i</sub>]<sub>j</sub> [[Op [PRO<sub>i</sub> self-portraits of him<sub>i</sub>]<sub>j</sub>]<sub>1</sub> that he<sub>i</sub> had painted [x PRO<sub>i</sub> self-portraits of him<sub>i</sub>]<sub>1</sub> in the Blue period] are in the Met now.

- (54) a. \* the fight about Mary<sub>i</sub> λx. she<sub>i</sub> started [x, PRO<sub>i</sub> fight about her<sub>i</sub>] off the fence  
 b. the fight about Peter's criticism of Mary<sub>i</sub> λx. she<sub>i</sub> started [x, PRO<sub>i</sub> fight about Peter's criticism of her<sub>i</sub>] off the fence

The correlation data, which were originally intended as an argument for the raising analysis, thus actually turn out to be an argument in favor the the MA proposed here with deletion under recoverability and vehicle change. See also Heycock (2012, this volume) for more evidence that reconstruction effects can be dissociated (she discusses dissociation of low readings of adjectives with Principle C and anaphor binding).<sup>23</sup>

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Under her recoverability approach, however, things are different because the lower copy can be deleted under identity with the external head so that not even a Principle B effect obtains:

- (iv) The [self-portraits of Picasso<sub>i</sub>]<sub>j</sub> [[Op [PRO<sub>i</sub> self-portraits of Picasso<sub>i</sub>]<sub>j</sub>]<sub>1</sub> that he<sub>i</sub> had painted [x PRO<sub>i</sub> self-portraits of Picasso<sub>i</sub>]<sub>1</sub> in the Blue period] are in the Met now.

This seems indeed to argue in favor of Citko's approach. However, I do not think that the argument goes through because the speakers I have consulted do not share the judgment that (ii) is grammatical. Rather, the example patterns with (51a) above.

For the speakers that find the sentence acceptable, *of Picasso* is arguably treated as an adjunct and can thus be merged late (see the next subsection). Note also that the interpretation of *of Picasso* does not seem to be identical in the baseline sentence and in the relative. In the relative, only a possessor/creator but not a theme interpretation seems possible.

**23** There are aspects of reconstruction for Principle C that remain ill-understood. On the one hand, there is a non-syntactic component affecting the acceptability: For instance, stress on the coreferential pronoun within the relative clause or focus particles associated with it makes coreference much more acceptable, even in *wh*-movement, see Salzmann (2006: 29) for German and English and Bianchi (1999: 109–115) for Italian; see Krifka (2011, this volume) for more discussion of information structural factors.

On the other hand, there are cases where vehicle change does not seem to be sufficient. Consider the following examples involving possessors (cf. Krifka 2011: p. 2, ex. 15; p. 4, ex. 44b):

- (i) a. \* the [responsible guardian of Bill<sub>i</sub>'s sister] [that he<sub>i</sub> claims to be \_\_\_]  
 b. \* the [(dozens of) stories about Diana<sub>i</sub>'s brother] [that she<sub>i</sub> is likely to invent \_\_\_]

The external head should not be problematic in either of these examples as the PP restricts the head noun. Under vehicle change, the R-expressions would correspond to possessive pronouns inside the relative clause so that the Principle C effect should be bled, contrary to fact:

- (ii) a. he<sub>i</sub> claims to be [<sub>XP</sub> PRO<sub>i</sub> [<sub>X'</sub> [<sub>DP</sub> guardian of his<sub>i</sub> sister]]]  
 b. she<sub>i</sub> is likely to invent dozens of stories about her<sub>i</sub> brother.

Interestingly, both examples improve if a level of embedding is added:

- (iii) a. John is not the [responsible guardian of Mary<sub>i</sub>'s daughter] [that she<sub>i</sub> was hoping he would be \_\_\_].

### 3.6 Late merged relative clauses and reconstruction

The last type of configuration I will discuss here provides both evidence for the MA as well as for a recoverability component. It involves instances of *wh*-movement with a relative clause modifying the *wh*-phrase; one can construct cases where the restriction of the *wh*-word must reconstruct into that relative clause while the relative clause itself does not reconstruct together with the *wh*-phrase, see Henderson (2007: 214) (equivalent data are discussed in Sportiche 2006: 65 and Takahashi & Hulsey 2009):

- (55) a. [What headway] [that John<sub>i</sub> made \_\_\_] did he<sub>i</sub> later regret [what headway]<sub>i</sub>?  
 b. [Which picture of himself<sub>j</sub>]<sub>i</sub> [that John<sub>j</sub> gave \_\_\_ to Mary<sub>i</sub>] did she<sub>i</sub> take home [which picture of himself<sub>j</sub>]<sub>i</sub>?

Reconstruction of *headway* and *picture of himself* requires a representation of them within the relative clause. The fact that there is no Principle C violation suggests that the relative clause does not reconstruct. The non-reconstruction of the RC can be accounted for by assuming that it is merged late, like other adjuncts, cf. e.g. Lebeaux (1991). This creates an interesting paradox for the HRA: The reconstruction facts seem to require a raising analysis and thus complementation; late merger, however, implies adjunction on standard assumptions (but see Takahashi & Hulsey 2009 and Stanton 2016 for a different view and Salzmann 2017: 110–118, 168–172

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- b. Noone will want to hear the [(dozens of) stories about Diana<sub>i</sub>'s brother] [that she<sub>i</sub> thinks people will invent \_\_\_].

This may at first suggest the presence of an implicit PRO, and at least in cases with verbs of creation like (iii-b), this has been argued for, see Fox (1999: 167, fn. 24) (cf. *he invented stories about himself/\*him*, but see Heycock 1995: 558, note 15 for a different view). However, an implicit PRO would still not cause a Binding violation under vehicle change in (i) since the possessive pronoun can be bound locally:

- (iv) She<sub>i</sub> invented [PRO<sub>i</sub> stories about her<sub>i</sub> father].

Consequently, a different explanation must be found.

The Principle C effect in the intensional context in (i-a) may perhaps be due to independent reasons since there seems to be no possibility to turn the fragment into a full sentence without *Bill* or *he* as the subject so that the Principle C effect already obtains in the matrix clause:

- (v) He<sub>i</sub>/Bill<sub>i</sub> is not the responsible guardian of Bill<sub>i</sub>'s sister that he<sub>i</sub> claims to be.

Consequently, while (i-a) may eventually turn out to be irrelevant, (i-b) remains unaccounted for under the present approach. The facts thus suggest that embedding plays an important role in ways that are not fully understood yet. See Fischer (2002) for an interesting proposal in this respect.



Normally, such deletion is not possible in *wh*-movement as this would mean that no copy of the restriction survives. But once it is additionally modified by a relative clause, an additional copy is available for the purposes of recoverability.<sup>25</sup>

**25** My treatment of the data in (55) seems to make the wrong prediction for extraposed relatives: As pointed out in Hulsey & Sauerland (2006: 114), reconstruction effects vanish if the relative clause is extraposed:

- (i) a. \* Mary praised the [headway] last year [that John made \_\_\_\_].
- b. \* I saw the [picture of himself<sub>i</sub>] yesterday [that John<sub>i</sub> liked \_\_\_\_].

On their account, this follows because adjunct extraposition involves QR of the head noun and late merger of the relative clause. Since late merger requires adjunction, only the MA is a possibility, which under their assumptions cannot handle reconstruction. The resulting structure for (i-a) will thus be as follows, where *headway* is not licensed inside the external head:

- (ii) Mary praised [the headway]<sub>1</sub> last year [[the headway]<sub>1</sub> [[λx. headway] that John made [x headway]]]

With my assumptions so far, reconstruction should not be a problem since *headway* is licensed within the relative clause and given the treatment of (55), LF-deletion of *headway* in the theta-position should also be possible.

Henderson (2007: 215) observes that the examples in (i-a/b) improve once the copy in the theta-position is also licensed by a binder or a verb with which it can form an idiomatic expression. It thus seems that the offending copy is the one in the theta-position. Why it can be deleted in *wh*-movement as in (55) but apparently not under extraposition as in (i) is unclear (note that the problem also obtains if relative clause extraposition simply involves movement of the relative CP). However, there are also reasons to be skeptical about the data in Hulsey & Sauerland (2006): First, reconstruction of idiomatic NPs under extraposition is unproblematic in German, cf. (iii):

- (iii) weil er sich über den [Streich] ärgerte, [den wir ihm \_\_ gespielt  
because he self about the trick be annoyed.PST.3SG which we he.DAT play.PTCP  
haben]  
have.1PL  
'because he was annoyed about the trick we played on him'

Similarly, Heycock (2012, this volume) has argued that extraposition does not always block reconstruction in English either (at least not reconstruction of low readings of adjectives and reconstruction of idioms, perhaps not even reconstruction of anaphors):

- (iv) Describe all the [habits] to me [that you want to kick \_\_\_\_].

Reconstruction for binding in German is strongly degraded under extraposition, see Salzmann (2006: 147–148, fn. 123). This may be related to the fact that binding reconstruction is best if the head noun occurs sentence-initially, a fact that holds in Dutch as well, see de Vries (2002: 82). Claiming that reconstruction is generally blocked under extraposition is thus too strong. Further research is needed to tease apart the factors that affect the acceptability. At the moment, the present account certainly does not fare worse than the other approaches. See Salzmann (2017: 172–174) for further discussion of these issues.

### 3.7 Overview

Table 2 provides an overview of the relevant reconstruction (and non-reconstruction) effects in restrictive relative clauses and shows the coverage of the various theories discussed in this paper. It shows very clearly that the raising analysis only covers a rather small part of the data. Even if the grammar were to contain both the raising analysis and Sauerland's version of the MA (a combination that is opted for in Bhatt 2002 and Sauerland 2003), its coverage would still not exceed that of the MA proposed by Munn (1994) and Citko (2001). The version of the MA proposed in this paper that combines recoverability with vehicle change clearly has the best

**Tab. 2:** Reconstruction phenomena and analyses of relative clauses

	Raising	MA Sauerland	MA Munn/Citko	MA Salzmann
Idioms	+	–	+	+
Principle A	+	–	+	+
Amount readings	+	–	+	+
non-reconstruction Principle C	–	+	+	+
Crossover	+	+	–	+
non-reconstruction idiom	–	–	+	+
non-reconstruction Principle A	–	+	+	+
non-reconstruction NPI	–	+	+	+
conflicting requirement	–	+	–	+
no correlation idiom/Principle C	–	–	–	+
late merger	+/–	–	+	+

coverage in that it accounts for all the relevant reconstruction diagnostics that have been discussed in the literature (to my knowledge).<sup>26,27</sup>

**26** This section has shown that reconstruction effects eventually do not provide evidence in favor of the HRA. The same holds in my view for most of the evidence unrelated to reconstruction that is often said to require the HRA. There is some evidence for a special relationship between the external determiner and the relative clause; but this may only be evidence for complementation (which is also compatible with the MA) if not simply an interpretive dependency that need not be modeled by means of syntactic selection.

Perhaps the strongest remaining evidence for the HRA are head-internal relative clauses like the following, cf. Bianchi (1999: 61ff.):

- (i) [Nuna bestya-ta ranti-shqa-n] alli bestya-m ka-rqo-n.  
 man horse-ACC buy-PFV-3 good horse-EVD be-PST-3  
 ‘The horse that the man bought was a good horse.’

*Ancash Quechua*

Under the HRA, such relatives can be analyzed as simply involving PF-realization of the lower copy instead of the higher one as in externally headed relative clauses. The difference thus reduces to spell-out differences at PF and allows for a unified treatment of these superficially very different constructions. Under the HEA where there is just an operator relative clause-internally, it is not clear how such structures can be derived. It seems that a completely different approach is needed to accommodate this type of relative clause. The HRA with its unified treatment of both head-internal and head-external relative clauses is thus certainly superior. I believe, though, that the MA can handle head-internal relatives as well because a. it has a relative clause-internal representation of the external head, which can be PF-realized, and b. the necessary PF-deletion of the external head can be understood from the recoverability perspective I have taken here: Deletion of the external head is possible because its content is recoverable from the relative clause-internal copy. What I postulated at LF for the reconstruction data is thus mirrored on the PF-side.

Interestingly, there are also languages where relatives have both an internal and an external head, cf. the following example from Tibetan, cf. Keenan (1985: 152):

- (ii) [PeemE *coqtsee* waa-la kurka thii-pe] *coqtse* the na noo-qi yin  
 Peem.ERG table.GEN under-DAT cross.ABS write-PART table the.ABS I.ABS buy-PRS be  
 ‘I will buy the table under which Peem made a cross.’

*Tibetan*

The existence of such structures is directly predicted by the MA but not necessarily by the HRA under which it would require the realization of multiple copies, which is normally subject to very strict conditions. Note though that Cinque (2011) has shown that double-headedness is often quite restricted with the external head frequently having classifier-like properties; furthermore, the two heads sometimes differ, which may suggest that the phenomenon eventually does not provide strong evidence for the MA. For detailed discussion of all these issues see Salzmann (2017: 17f., 56–60, 147–150).

**27** One unsatisfactory aspect of the MA that it shares with the HRA is that it has to assume that the relative pronoun always is a transitive determiner; this will lead to rather strange configurations in adverbial relatives: A sentence like *the reason why he did not come* will contain a representation like *why reason* inside the relative clause; one thus loses the generalization that wh-relativizers are surface-homophonous with interrogative pronouns. Similarly, in German, by treating the relative pronoun as a determiner one loses the generalization that it inflects like the demonstrative pro-

## 4 Further evidence for the role of ellipsis in reconstruction

In this section I will briefly discuss two other configurations where an ellipsis/matching perspective has proved to be fruitful to account for reconstruction effects.

The first one concerns reconstruction under resumption/base-generation: In the more recent literature on resumption it has been found that reconstruction is also observed in configurations where movement is unavailable, i.e. within (strong) islands, so that reconstruction cannot be modeled by means of interpreting the bottom copy of a movement chain. Consider the following example from French *wh*-movement where the *wh*-phrase is related to a resumptive within an adjunct island, cf. Guillot & Malkawi (2006: 170):

- (61) *Quelle photo<sub>i</sub> de lui<sub>j</sub> es-tu fâché* < *parce que chaque prof<sub>j</sub> l<sub>i</sub>' a*  
 which picture of him are-you furious because every prof it has  
*déchirée?* )  
 tear.apart.PTCP  
 'lit.: 'Which picture of him are you furious because each teacher tore it?'

The bound variable interpretation suggests that an instance of the *wh*-phrase occupies the position of the resumptive. Since direct movement cannot be at stake, a different solution is necessary. The authors propose, adapting the NP-ellipsis theory of pronouns of Elbourne (2005), that weak resumptives can be analyzed as transitive determiners whose complement is elided under identity with an antecedent. This is sufficient to get the reconstruction effect in (61), where the representation of the resumptive is actually [<sub>DP</sub> the [photo de lui<sub>i</sub>]].

Another configuration where an ellipsis/matching perspective has proved fruitful is ATB-movement. As argued in Salzmann (2012a,b), there are non-identity effects between the gap in the first conjunct and that in the second. While there is always reconstruction into the first conjunct, reconstruction into the second is – apparently – only found with idioms, scope and variable binding as in (62) but not e.g. with Principle C as in (63):

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noun *der* rather than the demonstrative determiner. See Heck (2005), Salzmann (2006), Salzmann (2017: 93–96, 174f.), Webelhuth, Bargmann & Götze (this volume) for critical discussion of these issues. But see also Wiltschko (1998) for arguments that both D- and relative pronouns involve an elided NP and that morphological differences between the “pronominal” and the determiner use are due to ellipsis licensing.

- (62) [Which picture of his<sub>i</sub> mother] did [you give \_\_ to every Italian<sub>i</sub>] and [sell \_\_ to every Frenchman<sub>i</sub>]?  
 (63) a. \* [Which picture of John<sub>i</sub>] did [he<sub>i</sub> like \_\_] and [Mary dislike \_\_]?  
 b. [Which picture of John<sub>i</sub>] did [Mary like \_\_] and [he<sub>i</sub> dislike \_\_]?

I cannot go into the details here, but the core of the analysis involves an ellipsis operation of the ATB-moved constituent in the second conjunct under identity with the ATB-moved constituent in the first. Since ellipsis is involved, we expect the possibility of mismatches. The lack of Principle C effects in (63b) can then be related to vehicle change. A Simplified LF-representation of (63b) looks as follows:

- (64) [<sub>CP</sub> [<sub>DP</sub> Which x] C [<sub>&P</sub> [<sub>TP</sub> Mary like [x picture of John<sub>i</sub>]] & [<sub>TP</sub> he<sub>i</sub> dislike [<sub>DP</sub> x picture of him<sub>i</sub>]]]]]

These two phenomena clearly show that ellipsis plays an important role in accounting for reconstruction patterns quite generally and thus provide indirect support for a deletion/matching analysis of relative clauses.<sup>28</sup>

## 5 Conclusion

In this paper I have argued against the mainstream view that reconstruction in relative clauses requires the Head Raising Analysis. I have shown that a slightly modified version of the Matching Analysis that includes a recoverability component as well as vehicle change not only accounts for cases of reconstruction but can also handle instances of obligatory non-reconstruction in a straightforward way. It thus achieves better empirical coverage than the HRA and previous versions of the MA. Given that it is not subject to the severe criticism that has been directed against the HRA, it emerges as superior. Since we no longer need both the HRA and the MA as in the mainstream accounts but just one analysis of relative clauses, we arrive at a simpler and theoretically more satisfactory result that also does justice to Occam's razor. The postulation of a matching operation in relativization receives additional support from other reconstruction configurations where ellipsis plays a crucial role as well.

<sup>28</sup> Further evidence for ellipsis can be found in Salzmann (2006, 2017), where I show that prolepsis and *tough*-movement basically display the same reconstruction pattern: while there is systematic reconstruction for variable binding, Principle A and idiom interpretation, there is no reconstruction for Principle C. I argue that the matching analysis can be fruitfully extended to these constructions.

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