

Reanalyzing reconstruction effects

An optimality-theoretic account of the relation between
pronouns and R-expressions

Silke Fischer

This paper presents an optimality-theoretic account of the relation between pronouns and R-expressions which offers a new way of analyzing apparent Principle C effects in so-called reconstruction contexts. It is argued that this phenomenon can be dealt with in syntax in the course of the derivation. The basic assumption is that the relevant binding principles are violable constraints that are checked in local optimization procedures after the completion of each phrase. Thus, ungrammatical structures are ruled out immediately during the derivation, and reconstruction in the traditional sense might be a superfluous mechanism.

1. Introduction

It is a well-known fact that pronouns must not overtly c-command coreferent R-expressions, since this configuration violates Principle C of the binding theory. However, things become more complicated if subsequent movement of the phrase containing the R-expression dissolves this configuration (cf. 1).

(1) [_{XP} ... R-expression₁ ...] ... pronoun₁ ... t_{XP}

As the contrast between (2) and (3) shows, the resulting structure may be well-formed, as in (2), or ungrammatical, as in (3). (English and German behave alike in these examples.)

- (2) a. Which claim that John₁ made did he₁ later deny t?
b. Welche Behauptung, die Hans₁ gemacht hat, hat er₁
which claim that John made has has he
später t bestritten?
later denied
- (3) a. *Which picture of John₁ does he₁ like t?

- b. *Welches Foto von Hans₁ mag er₁ t?
 which picture of John likes he

What has often been assumed is that this contrast crucially depends on the argument-adjunct distinction (cf., among others, Lebeaux 1988, 1990, Chomsky 1993, 1995, Epstein *et al.* 1998, Fox 1999, 2000). The general prediction of this kind of analysis is the following: If the R-expression is embedded in an adjunct, the sentence is predicted to be grammatical (cf. 2), whereas if it is part of an argument, the sentence is predicted to be ill-formed (cf. 3). The argument-adjunct approach is based on the standard assumption that adjuncts, unlike arguments, can be inserted noncyclically into the derivation (cf. Lebeaux 1988, who originally came up with this proposal). Thus, sentences involving adjuncts can avoid a Principle C configuration from the beginning by late merge. Before movement takes place, the pronoun does not c-command the R-expression, because the adjunct containing the latter has not been inserted yet, and after movement, the c-command relation between pronoun and R-expression no longer holds anyway.

This analysis can account for the contrast between (2) and (3), but as the numerous counterexamples presented in the next section illustrate, it also faces severe problems and thus does not really provide a satisfactory answer. Therefore I will propose an alternative analysis that is based on the observation that it is basically the kind of embedding of the R-expression that determines whether a reconstruction sentence is well-formed or not.

2. Remarks on the argument-adjunct distinction

Let us first take a look at the empirical counterevidence against the argument-adjunct approach (cf. also Müller 1995, Kuno 1997, Lasnik 1998, Safir 1999). As examples like (4) and (5) illustrate, there are sentences where the R-expression is contained in an adjunct, but which are still ungrammatical. In order to rescue the analysis, it would have to be assumed that in these examples late merge of the adjunct is not an available option for some reason or other.

- (4) *In Ben₁'s office he₁ lay on the desk.
 (5) *Wegen Peters₁ Mutter blieb er₁ weg.
 because of Peter's mother stayed he away
 'because of his mother, Peter stayed away.'

However, what is even worse for the argument-adjunct approach is that there are also grammatical sentences where the R-expression is contained in an argument, as illustrated in the following examples.

- (6) Which piece of evidence that John₁ was guilty did he₁ successfully refute?

- (7) Whose claim that the Senator₁ had violated the campaign finance regulations did he₁ dismiss as politically motivated?
- (8) That John₁ had seen the movie he₁ never admitted.
- (9) Welches Argument (dafür), dass Hans₁ am besten geeignet ist, which argument (for it) that John at best suitable is hat er₁ schließlich akzeptiert? has he finally accepted
'Which argument that John is the best man for it did he finally accept?'
- (10) Wessen Behauptung, dass Bärbel₁ Roman geschlagen habe which claim that Bärbel Roman beaten has hat sie₁ als Verleumdung zurückgewiesen? has she as slander dismissed
'Whose claim that Bärbel had beaten Roman did she dismiss as slander?'
- (11) Dass Hans₁ verloren hat, hat er₁ mir natürlich verschwiegen. that John lost has has he me of course not told
'That John had lost he did not tell me of course.'
- (12) Marias Behauptung, dass Peter₁ faul sei, bestreitet er₁ Mary's claim that Peter lazy would be denies he natürlich vehement. of course vehemently
'Mary's claim that Peter was lazy he denies vehemently of course.'
- (13) Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert. Mary's punishment for Peter's being late has he accepted
'Peter accepted Mary's punishment for his being late.'

According to the argument-adjunct approach, it would have to be assumed that arguments must be inserted cyclically into the derivation and that a resulting Principle C configuration is fatal. However, on these assumptions the data in (6)-(13) are clear counterevidence for the analysis sketched above. Thus it must be concluded that it cannot be the argument-adjunct distinction that accounts for reconstruction effects.¹

¹ Some of the ungrammatical sentences that are supposed to show that a sentence is ill-formed because the R-expression is contained in an argument seem to be deviant for independent reasons; cf., for instance, the following example, which is pragmatically strange anyway (as observed, for example, in Heycock 1995 and Lasnik 1998).

(i) *Which claim that John₁ was asleep was he₁ willing to discuss?

3. Analysis

3.1. Background

What we have seen so far is that the distinction between grammatical and ungrammatical reconstruction sentences cannot be put down to the argument-adjunct asymmetry. But still we find the asymmetrical pattern that sometimes an underlying Principle C configuration leads to ungrammaticality, while other sentences of that type are fully grammatical. The conclusion that suggests itself is that Principle C must be violable, that is, the phenomenon lends itself to an optimality-theoretic analysis, in which constraints are violable by definition. Thus it can be assumed that although Principle C is violated in all of the sentences considered so far, only in some of them does the violation lead to ungrammaticality. But the question that arises next is what it is that the grammatical reconstruction sentences have in common and that distinguishes them from the ungrammatical ones.

It has already been observed earlier in the literature that the depth of embedding plays a crucial role in determining the grammaticality of reconstruction sentences (cf., among others, van Riemsdijk & Williams 1981, Huang 1993). In fact, what the well-formed sentences seem to have in common is that the R-expression is relatively deeply embedded. In many cases it is embedded in a CP (cf., for instance, 2, 6-12), but as (13) (repeated in 14a) shows, this is not obligatory. Interestingly, (14a) becomes considerably worse if *Marias Strafe* ('Mary's punishment') is replaced with *die Strafe* ('the punishment'), as illustrated in (14b).

- (14) a. *Marias Strafe für Peters₁ Zuspätkommen hat er₁*
 Mary's punishment for Peter's being late has he
 akzeptiert.
 accepted
 'Peter accepted Mary's punishment for his being late.'
- b. **Die Strafe für Peters₁ Zuspätkommen hat er₁*
 the punishment for Peter's being late has he
 akzeptiert.
 accepted
 'Peter accepted the punishment for his being late.'
- c. **Er₁ hat Marias Strafe für Peters₁ Zuspätkommen*
 he has Mary's punishment for Peter's being late
 akzeptiert.
 accepted
 'Peter accepted Mary's punishment for his being late.'

If (14a) is compared to (14b) at the point in the derivation before movement takes place, the following difference can be observed. In (14a), *er* binds *Peter*, but the R-expression is not bound in its binding domain, since *Maria* is an intervening subject. This seems to be the relevant property that rescues the

sentence,² because in (14b) the pronoun binds the R-expression in its binding domain, which seems to be much worse.

As far as (14c) is concerned, it has the same underlying structure as (14a). However, it still violates Principle C after movement has taken place, which is fatal. On the other hand, the underlying structure of (14a) shows that Principle C can be violated in the course of the derivation. Thus I propose an optimality-theoretic analysis that does not hinge on the argument-adjunct distinction (and so I will no longer take into account the option of late merge either), but rather on the question in which domain the R-expression is bound in the course of the derivation.

As far as the theoretical assumptions that underly my analysis are concerned, I assume that syntactic structure is built up derivationally (cf. Chomsky 1995, 1999), and that it is subject to repeated local optimization as proposed in Heck & Müller (2000) or Fanselow & Āavar (2000). In particular, I propose that optimization takes place after the completion of each phrase.

Moreover, for the analysis to work it is necessary that vP-internal phrases that move later in the derivation do not have to move to the edge of vP in order to be accessible. Unlike Chomsky (1999) I will therefore not assume that vPs are phases (only CPs are). (At least it must be assumed that the Phase Impenetrability Condition only applies to CPs.) These assumptions are relevant for the derivation of sentences like (14b), as will be illustrated in the next section.

Finally, I assume that the input for the first optimization process is selected from the numeration, which also contains the indices. Later in the derivation the optimal output of the preceding optimization process plus further items from the numeration serve as input for the following optimization.

3.2. The derivation of (14a) and (14b)

In order to derive sentences like (14a) and (14b), the following constraints have to be introduced.

- (15) PRINCIPLE B* (Pr.B*):
Non-anaphors must not be bound in their binding domain.³
- (16) FAITH REFERENCE (FR):
If two NPs are coindexed in the input, they must also be coindexed in the output.
- (17) PRINCIPLE C (Pr.C):
R-expressions must be free.

² Note that with anaphors we find the opposite effect; cf. the Specified Subject Condition.

³ That Principle B of the binding theory should be extended to non-anaphors in general has also been proposed in Kuno (1987) and Sternefeld (1993).

T₁ and T₂ illustrate the derivation of (14a): *Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert*. The only difference between the two candidates in T₁ concerns the index of the subject pronoun, which has been changed in the second candidate, O₂. This change, however, results in a fatal violation of FAITH REFERENCE, thus candidate O₁ wins in T₁.

T₁: vP optimization

Input: [_{VP} Marias Strafe für Peters ₁ Z. akz.], {er ₁ , ...}	Pr.B*	FR	Pr.C
⇒ O ₁ : [_{VP} er ₁ [_{VP} Marias Strafe für Peters ₁ Z. akz.]]			*
O ₂ : [_{VP} er ₂ [_{VP} Marias Strafe für Peters ₁ Z. akz.]]		*!	

What is important to note is that once a structure has been optimized, this part of the derivation cannot be changed anymore. Thus later in the derivation, when CP is optimized (cf. T₂), it is no longer possible to change the index of the subject pronoun. There is only the option of moving either the object or the subject to SpecC. However, in the latter case PRINCIPLE C is fatally violated (cf. O₂), thus the candidate involving topicalization of the object NP wins in T₂.

T₂: CP optimization (simplified illustration)

Input: [_{TP} er ₁ [_{VP} t [_{VP} [_{NP} ... Peters ₁ Z.] akz.]] hat], ...	Pr.B*	FR	Pr.C
⇒ O ₁ : [_{CP} [_{NP} ... Peters ₁ Z.] [_{C'} hat [_{TP} er ₁ [_{VP} t [_{VP} t akz.]] t]]]			
O ₂ : [_{CP} Er ₁ [_{C'} hat [_{TP} t [_{VP} t [_{VP} [_{NP} ... Peters ₁ Z.] akz.]] t]]]			*!

T₃ illustrates the derivation of (14b): **Die Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert*. Here the situation is as follows. When vP is optimized, the first candidate fatally violates PRINCIPLE B*. So already at this point in the derivation candidate O₁ is ruled out, and the index of the subject pronoun is changed.

T₃: vP optimization

Input: [_{VP} die Strafe für Peters ₁ Z. akzeptiert], {er ₁ , ...}	Pr.B*	FR	Pr.C
O ₁ : [_{VP} er ₁ [_{VP} die Strafe für Peters ₁ Z. akzeptiert]]	*!		*
⇒ O ₂ : [_{VP} er ₂ [_{VP} die Strafe für Peters ₁ Z. akzeptiert]]		*	

In T₃ it also becomes clear why it is necessary to adopt a *local* optimization approach and why vPs must not count as phases (at least if the Phase Impenetrability Condition is adopted without further modification). If vP were a phase, the object NP would have to move to its specifier position in order to be accessible for further movement transformations (like topicalization in the sentences under discussion). However, in the resulting configuration PRINCIPLE B* would no longer be violated, which means that the violation of PRINCIPLE B* would not be taken into account when optimization would take place, and thus (14b) could no longer be distinguished from (14a). Exactly the same argument would hold if a global optimization approach were adopted, as illustrated in T₄.

T₄: Global optimization: wrong prediction

	Pr.B*	FR	Pr.C
⇒ *O ₁ : [_{CP} Die S. f. Peters ₁ Z. hat [_{TP} er ₁ [_{VP} t [_{VP} t akz.]] t]]			
O ₂ : [_{CP} Die S. f. Peters ₁ Z. hat [_{TP} er ₂ [_{VP} t [_{VP} t akz.]] t]]		*!	

Here again the fatal PRINCIPLE B* configuration would no longer hold at the point when the structure is optimized, and the first candidate would incorrectly be predicted to be optimal. The general conclusion that can be drawn is that the constraints must be checked before the fatal configurations are dissolved by further movement transformations, and thus local optimization is crucial.

As far as T₂ is concerned, it has already been mentioned that it is only a simplified illustration of CP optimization. Strictly speaking, at this point in the derivation another constraint, LAST RESORT, becomes relevant. However, this constraint has not been taken into account yet, because it has not played a crucial role in the derivation of the sentences above.

- (18) LAST RESORT (LR):
Movement must be feature-driven.

Since T₂ illustrates the derivation of sentence (14a) (*Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.*), it can be assumed that the object NP has a [+top] feature, whereas the subject NP is not associated with any feature that would motivate movement of the subject pronoun to SpecC. Thus, O₂ in T₂ has at least one further constraint violation: it violates LR. This fact is worth mentioning because the distribution of LAST RESORT violations is basically the only difference between the derivations of sentences like (14a) and (14c).

3.3. The derivation of Principle C effects that survive movement

In the previous section, the two reconstruction sentences (14a) and (14b) have been derived. What is left to show is how ‘normal’ Principle C effects as in (14c) (**Er₁ hat Marias Strafe für Peters₁ Zuspätkommen akzeptiert.*) can be accounted for within this approach.

Considering again the candidates in T₂, it can be seen that (14c) basically corresponds to the second candidate in this competition, which loses against the candidate involving topicalization. Thus it seems reasonable to assume that sentences like (14c) are generally beaten by the candidate in which the object is topicalized (cf. also the notion of Free Topicalization in Chomsky 1999:25, 39). However, the competition that aims at deriving (14c) differs from the one in T₁ and T₂ insofar as the object NP is marked [+top] only in the latter case, i.e., topicalization in the derivation of (14c) induces an additional violation of LAST RESORT. But since topicalization of the object should be the preferred option nevertheless, it must be concluded that a violation of LAST RESORT is cheaper than a PRINCIPLE C violation, i.e., Pr.C >> LR.

T₅ illustrates the derivation of (14c): *Er₁ hat Marias Strafe für Peters₁ Zuspätkommen akzeptiert. At the point in the derivation when CP is optimized, the candidate involving topicalization wins despite of its LAST RESORT violation, because the PRINCIPLE C violation of the second candidate is worse.

T₅: CP optimization

Input: [TP er ₁ ...[VP [NP [-top]...Peters ₁ Z.]...],...]	Pr.B*	FR	Pr.C	LR
⇒ O ₁ : [CP [NP [-top]...Peters ₁ Z.]...[TP er ₁ ...]]				*
O ₂ : [CP Er ₁ ...[VP [NP [-top]...Peters ₁ Z.]...]]			*!	

But if topicalization takes place in the derivation above in order to avoid a PRINCIPLE C violation, the question arises as to why the object NP is not moved over the pronoun in vP already. That is, why is the following phrase not the optimal output of vP optimization?

- (19) [_{vP} Marias Strafe für Peters₁ Zuspätkommen [_{v'} er₁ [_{vP} t akzeptiert]]]]

The problem that would arise if this were the case is the following. Sentences like (14b) (*Die Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.) could no longer be excluded, since PRINCIPLE B*, which rules out (14b), would no longer be violated when vP optimization takes place (cf. also the discussion above). Thus, (19) must be ruled out as a possible derivation.

This can be achieved if it is assumed that there is a general requirement that German pronouns move to the left edge of vP and do not allow any vP-internal non-pronominal overt material in front of them (cf. Müller 2000). That is, pronouns do not only want to be at the left edge of vP, but also at its phonological border. The following example corroborates this assumption. The German sentences in (20b) and (20c) contain double object constructions in which the direct object is pronominal, whereas the indirect object is not. Although the linear order indirect object-direct object is generally available (cf. 20a), object shift is obligatory if the second object is pronominalized, as the contrast between (20b) and (20c) shows.

- (20) a. Ich denke, dass [TP Hans [_{vP} Maria den Brief gegeben hat]]
 I think that John Mary the letter given has
 'I think that John gave Mary the letter.'
 b. *Ich denke, dass [TP Hans [_{vP} Maria ihn gegeben hat]]
 I think that John Mary him given has
 'I think that John gave it to Mary.'
 c. Ich denke, dass [TP Hans [_{vP} ihn Maria gegeben hat]]
 I think that John him Mary given has
 'I think that John gave it to Mary.'

If it is assumed that the constraint that captures this observation is higher ranked than FAITH REFERENCE,⁴ the candidate in (19) is ruled out immediately.

- (21) PRONOUNS AT EDGE(vP) (Pr-E(vP)):
Pronouns must occur both at the edge and at the phonological border of vP.

3.3.1. Embedded V2-clauses in German

Another question that arises is what happens if topicalization does not yield a grammatical structure either? Consider first topicalization in embedded V2-clauses in German. Here topicalization is only licensed in bridge contexts (cf. 22). This raises the question of how sentences like (22b), which involves a nonbridge verb and thus does not allow topicalization, can be ruled out.

- (22) a. Ich denke [_{CP} Marias Strafe für Peters₁ Zuspätkommen
I think Mary's punishment for Peter's being late
hat er₁ akzeptiert]
has he accepted
'I think Peter accepted Mary's punishment for his being late.'
- b. *Ich bezweifle [_{CP} Marias Strafe für Peters₁
I doubt Mary's punishment for Peter's
Zuspätkommen hat er₁ akzeptiert]
being late has he accepted
'I doubt that Peter accepted Mary's punishment for his being late.'

As far as the embedded CP in (22b) is concerned, it is well-formed as such, i.e., at this point in the derivation topicalization is not ruled out yet. Rather, the candidate involving topicalization wins CP optimization and thereby rules out the candidate in which the object stays in situ, i.e., the candidate with the 'real' Principle C configuration (**Ich denke/bezweifle, er₁ hat Marias Strafe für Peters₁ Zuspätkommen akzeptiert.*). Thus it can be concluded that (22b) is not ruled out until the matrix clause is built up.

Generally speaking, it can be assumed that whatever rules out topicalization in this context is captured by a constraint that is even higher ranked than AVOID NULL PARSE (ANP) (cf. Prince & Smolensky 1993). Thus, at some point in the derivation of sentences like (22b) the null parse, \emptyset , is the winner of the competition.

⁴ The necessity to rank PRONOUNS AT EDGE(vP) higher than FAITH REFERENCE follows if sentences like (14b) (**Die Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.*) are considered, where the winning candidate of vP optimization should involve an index change (cf. T₃). In order to rule out (19), which corresponds to a potential intermediate derivation of sentence (14a), it would have been sufficient to rank PRONOUNS AT EDGE(vP) higher than PRINCIPLE C, because here the winner of vP optimization does not violate FAITH REFERENCE.

- (23) AVOID NULL PARSE (ANP):
 Ø is prohibited.

As far as the German examples in (22) are concerned, it is usually assumed that in (22a) the embedded CP is L-marked and therefore no barrier for government, whereas the embedded CP in (22b) is not L-marked and thus blocks government by the embedding verb (cf., among others, Haider 1984, Kayne 1984, Cinque 1990, Frampton 1990, Kroch & Iatridou 1992). So it could be assumed that the following constraint captures this observation.

- (24) C_[+top]:
 C_[+top] must be minimally c-commanded by a governing head.⁵
- (25) *Extended ranking*:
 C_[+top] >> AVOID NULL PARSE >> PRONOUNS AT EDGE(vP),
 PRINCIPLE B* >> FAITH REFERENCE >> PRINCIPLE C >>
 LAST RESORT

To come back to example (22b) (**Ich bezweifle, Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.*), it can now be derived in the following way. When the matrix VP is optimized, the first candidate violates the highly ranked C_[+top] constraint, thus the null parse wins. So after having won the embedded CP optimization, the candidate involving topicalization can itself be ruled out in the next optimization process. T₆ illustrates the matrix VP optimization (only the two decisive constraints are taken into account).

T₆: Optimization of the matrix VP

Input: [CP [NP [+top] Marias Str. für Peters ₁ Z.]... [TP er ₁]], ...	C[+to]	ANP
O1: [VP bezweifle [CP [NP [+top]...Peters1	*!	
⇒ O2: Ø		*

3.3.2. Embedded that-clauses in German

What is still unclear is how sentences like the ones in (26) can be ruled out, because - in contrast to embedded V2-clauses - topicalization in embedded *that*-clauses is not possible in German, as illustrated in (27).⁶

⁵ Strictly speaking, C_[+top] does not only apply if the feature [+top] is involved but also if topicalization to SpecC induces a violation of LAST RESORT.

⁶ In contrast to English, topicalization to SpecT (between *dass* ('that') and the subject) is not possible in German. I assume that this possibility is ruled out by a high ranked constraint that might prohibit multiple TP specifiers in German in general.

- (26) a. *Ich denke, dass er₁ Marias Strafe für Peters₁
 I think that he Mary's punishment for Peter's
 Zuspätkommen akzeptiert hat.
 being late accepted has
 'I think that Peter accepted Mary's punishment for his being late.'
- b. *Ich bezweifle, dass er₁ Marias Strafe für Peters₁
 I doubt that he Mary's punishment for Peter's
 Zuspätkommen akzeptiert hat.
 being late accepted has
 'I doubt that Peter accepted Mary's punishment for his being late.'
- (27) *Ich denke, Marias Strafe dass er akzeptiert hat.
 I think Mary's punishment that he accepted has
 'I think that he accepted Mary's punishment.'

Let's assume that the following constraint captures this observation.

- (28) DOUBLY FILLED COMP FILTER (DCF):
 Overt complementizers must be at the phonological border of CP.

If it is further assumed that embedded *that*-clauses and embedded V2-clauses are candidates in the same competition, the sentences in (26) can also be ruled out because they lose against a candidate involving topicalization, namely the V2-candidate in which the object is topicalized. (29) is introduced as further constraint in order to punish those candidates that are unfaithful to the input.

- (29) FAITH LEX (FL):
 Realize exactly the lexical material that is present in the input.

T₇ illustrates the relevant competition. When the embedded CP is optimized, four candidates fatally violate PRINCIPLE C, and the third candidate is ruled out by the DOUBLY FILLED COMP FILTER. The only candidate that does not violate either of these two constraints is O₆, the V2-candidate with topicalization of the object.

T₇: Optimization of the embedded CP

Input: [_{TP} er ₁ [_{VP} t [_{VP} Marias Str. für Peters ₁ Z. akz.]] hat], {dass,...}	Pr.C	DCF	FL
O ₁ : [_{CP} dass [_{TP} subj ₁ [_{VP} t [_{VP} obj ₁]] V _{fin}]]	*!		
O ₂ : [_{CP} subj ₁ dass [_{TP} t [_{VP} t [_{VP} obj ₁]] V _{fin}]]	*!	*	
O ₃ : [_{CP} obj ₁ dass [_{TP} subj ₁ [_{VP} t [_{VP} t]] V _{fin}]]		*!	
O ₄ : [_{CP} V _{fin} [_{TP} subj ₁ [_{VP} t [_{VP} obj ₁]] t]]	*!		*
O ₅ : [_{CP} subj ₁ V _{fin} [_{TP} t [_{VP} t [_{VP} obj ₁]] t]]	*!		*
⇒ O ₆ : [_{CP} obj ₁ V _{fin} [_{TP} subj ₁ [_{VP} t [_{VP} t]] t]]			*

As far as the sentences in (26) are concerned, (26a) is ruled out because the embedded V2-clause O_6 has a better constraint profile when the embedded CP is optimized. Thus the derivation that wins corresponds to sentence (22a): *Ich denke, Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.*

When (26b) is derived, the situation is as follows. At the point in the derivation when the embedded CP is optimized, embedded topicalization is the preferred option as well (i.e., the winner is a V2-candidate). But when the matrix VP is optimized, the derivation crashes because it loses against the null parse, in analogy to the derivation of (22b): **Ich bezweifle, Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.*

4. Outlook

What is interesting is that ill-formed reconstruction sentences improve if a relative or complement clause is inserted in the NP that contains the coindexed R-expression (cf. 30, 31). This is unexpected since the additional CP does not seem to intervene syntactically between the pronoun and the R-expression in any relevant way.

- (30) a. *Die Strafe für Peters₁ Zuspätkommen hat er₁
 the punishment for Peter's being late has he
 akzeptiert.
 accepted
 'Peter accepted the punishment for his being late.'
- b. Die Strafe für Peters₁ Zuspätkommen, die Maria
 the punishment for Peter's being late that Mary
 sich ausgedacht hat, hat er₁ akzeptiert.
 REFL thought up has has he accepted
 'Peter accepted the punishment for his being late that Mary had
 thought up.'
- (31) a. *Marias₁ Aussage hat sie₁ inzwischen zurückgenommen.
 Mary's statement has she meanwhile taken back
 'Meanwhile, Mary has taken back her statement.'
- b. ?Marias₁ Aussage, dass Peter erst nach 11 Uhr
 Mary's statement that Peter only after 11 o'clock
 heimgekommen sei, hat sie₁ inzwischen zurückgenommen.
 come home would be has she meanwhile taken back
 'Meanwhile, Mary has taken back her statement that Peter had come
 home only after 11 o'clock.'

The contrasts in (30) and (31) indicate that there are probably more factors involved than those discussed so far.⁷ A detailed analysis of these data would

⁷ As Peter Sells pointed out to me, logophoricity might play a crucial role here.

be beyond the scope of this paper, but I still want to mention some aspects of this observation.

First, it should be pointed out that these data provide further evidence that the argument-adjunct approach is on the wrong track. If the a-sentences are ungrammatical because the R-expression is embedded in an argument and thus causes a Principle C violation, it is completely unclear why the b-sentences should be any better. However, in an optimality-theoretic analysis it is much easier to integrate all kinds of different factors that seem to have an impact on the construction under discussion.

Moreover, the contrast in (32) shows that the additional factors that are relevant in sentences like (30b) or (31b) are compatible with a derivational approach. In (32b) material has also been inserted between the R-expression and the pronoun, but the sentence remains ill-formed. The difference between (32a) and (32b) is that only in the a-sentence the additional material (a relative clause in this case) is present in the VP before movement takes place. In (32b) parentheticals have been inserted, which are not base-generated VP-internally. So it can be concluded that the relevant material that rescues sentences like (32a) is already visible at the point in the derivation when the subject pronoun is inserted and the decision in favour of or against coindexation must be made.

- (32) a. Die Strafe für Peter₁, die Maria sich ausgedacht
 the punishment for Peter that Mary REFL thought up
 hat, hat er₁ akzeptiert.
 has has he accepted
 ‘Peter accepted the punishment for himself that Mary had thought up.’
- b. *Die Strafe für Peter₁, das weiss ich von Maria, hat
 the punishment for Peter, that know I from Mary, has
 er₁ akzeptiert.
 he accepted
 ‘The punishment for himself, I know that from Mary, Peter accepted.’

5. Conclusion

According to the analysis presented above, the situation is as follows. Whether reconstruction sentences are well-formed or not is generally determined in the course of the syntactic derivation by local optimization procedures. Thus, using the term ‘reconstruction effects’ for the asymmetries that can be observed is actually misleading, because the ill-formed sentences are already excluded before the so-called reconstruction would take place.

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