An experimental investigation of reconstruction for Condition C in German A′-movement*

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1 Introduction

Reconstruction for Condition C as in (1) has played an important role in linguistic theory as a diagnostic for movement:

(1)   *[Which picture of John$_i$]$_1$ do you think he$_i$ likes __$_1$?

The ungrammaticality of (1) follows if the *wh*-phrase containing the R-expression *John* is interpreted in its pre-movement position; thus, it is ruled out by Condition C, just like *He$_i$ likes this picture of John$_i$*. It has been argued that Condition C effects only obtain with arguments, (2a), but not with adjuncts, (2b), the reason being that adjuncts but not arguments can be merged late (viz., after movement):

(2)   a.   *[Which claim that Mary had offended John$_i$]$_1$ did he$_i$ repeat __$_1$?
       b.   [Which claim that offended John$_i$]$_1$ did he$_i$ repeat __$_1$?

Safir (1999, 589)

Furthermore, it has been claimed that only R-expressions contained in predicates obligatorily reconstruct, while those inside arguments do not always reconstruct, see Huang (1993, 110):

(3)   a.   ?[How many pictures of John$_i$]$_1$ do you think that he$_i$ will like __$_1$?
       b.   *[How proud of John$_i$]$_1$ do you think he$_i$ should be __$_1$?

While these facts are frequently cited in the literature, they are in fact quite contested. Both the general reconstruction of arguments as well as the argument-adjunct asymmetry have been called into question, see, e.g., Safir (1999, 609), Fischer (2002) for counter-examples. Condition C Reconstruction has been subjected to experimental scrutiny only very recently, see the studies on English by Adger *et al.* (2017) and Bruening & Al Khalaf (2019). These works report weak or absent Condition C effects with DP-arguments and no evidence for an argument-adjunct asymmetry. Adger *et al.* (2017) furthermore show that Condition C effects are quite

robust with predicates and that reconstruction effects decrease with increasing distance between R-expression and coreferential pronoun. It is concluded in these works that only predicates and their complements reconstruct, while all modifiers inside DPs are adjuncts so that DP arguments generally do not cause Condition C effects. As for the distance effect, non-syntactic factors are taken to be responsible.

In this paper, we present the first experimental investigation of Condition C reconstruction in German A′-movement. While there is less discussion about it in the literature, the issue seems equally contested: For instance, Fischer (2002) argues that reconstruction is limited in German as well, while Salzmann (2017) claims that Condition C effects are robust. Consequently, careful empirical investigation is necessary in order to make progress in this area. In the experiments we report on below we investigated the major factors that played a role in the theoretical discussion as well as in the recent experimental work on English.

2 Experiments

We present four experiments in which we collected judgments concerning the coreference options in sentences with and without *wh*-movement of APs and DPs. In Experiments 1-2, we test local *wh*-movement (within a clause). Within Experiment 2, we compare the reconstruction behavior of PP arguments and PP adjuncts. In Experiment 3-4, we replicate the conditions with local *wh*-movement from the first two experiments, and we additionally test conditions involving long-distance *wh*-movement across a finite clause boundary to investigate the effect of distance. Our materials, results and analysis scripts are available at `osf.io/xfm6z/`. The experiments also included materials in which Condition A was tested, which are reported in Georgi *et al.* (2020). The design of our experiments is inspired by the study in Bruening & Al Khalaf (2019). To investigate Condition C reconstruction, they used embedded questions like *John told us which picture of Peter he liked best* with two possible referents for the pronoun: one in the matrix clause (the subject), and one within the *wh*-phrase. Unlike in Bruening & Al Khalaf (2019) where the participants had to answer a forced choice question (*Who liked the picture?*), in our experiments they had to decide for each R-expression whether it was a possible antecedent of the pronoun (as detailed below).

2.1 Experiments 1-2: local *wh*-movement of APs and DPs
2.1.1 Participants and procedure
Participants for Experiments 1-2 were recruited at the University of Potsdam. They received payment or course credit for participation. 32 native speakers of German took part in Experiment 1 and 48 in Experiment 2.

Web-based questionnaires were set up using SoSciSurvey (Leiner, 2018). Before beginning, participants read a text informing them that they were going to see one sentence and two questions on each following page of the questionnaire. They were instructed that the sentence might have more than one interpretation, and that they were going to be asked whether certain interpretations of the sentence are possible or not. The task was illustrated using the example *Maria hat Anna besucht, weil sie nett ist* 'Mary visited Anna because she is nice.' Participants were ex-

plicitly told that this sentence has two interpretations (even if one might be more readily available), and that in an example like this they should answer 'yes' to both presented questions ('Can the sentence be interpreted such that... (i) Mary is nice (ii) Anna is nice'). The instructions also stated that both potential interpretations should be carefully considered and that sometimes one, both, or neither of them might be available. Each following page of the questionnaire looked as follows:

(4)   [target sentence]
        Kann man den Satz so interpretieren, dass...
        'Can this sentence be interpreted such that...'

        ...[Q1]?   □ Ja 'yes'   □ Nein 'no'
        ...[Q2]?   □ Ja 'yes'   □ Nein 'no'

The order of presentation of the two questions was randomized. When discussing the critical items, we will use 'Q1' to refer to the question about coreference with the matrix R-expression and 'Q2' for the question about coreference with the embedded R-expression (in the conditions with movement: the one within the *wh*-phrase), irrespective of presentation order. In Experiment 1, 64 stimuli were presented to each participant (32 critical items, 32 fillers). In Experiment 2, 68 stimuli were presented (36 critical items, 32 fillers). For the critical items, 128 data points (four from each subject) were collected per condition and question in Experiment 1[1] and 144 (also four from each subject) in Experiment 2. On average, the questionnaires took about 20 (Experiment 1) / 25 minutes (Experiment 2) to complete.

2.1.2 Design and materials

Experiment 1 targeted APs and had a 2×2 design (factors: MOVEMENT, DISTANCE). An example item set for Experiment 1 is shown in (5). In the experiment, the stimuli were presented without highlighting, brackets, and gaps. (6) illustrates the two questions that participants had to answer.

(5)   Experiment 1: APs
        a.   AP in situ, short:
              Maria erzählt, dass sie sehr stolz auf **Anna** ist.
              'Mary tells (us) that she is very proud of Anna.'
        b.   AP moved, short:
              M. erzählt, [wie stolz auf **A.**] sie ___ ist.
              'Mary tells (us) how pround of Anna she is.'
        c.   AP in situ, coord(ination):
              M. erzählt, dass sie sehr stolz auf **A.** und die Mannschaften ist.
              'Mary tells (us) that she is very proud of Anna and the teams.'
        d.   AP moved, coord(ination):
              M. erzählt, [wie stolz auf **A.** und die Mannschaften] sie ___ ist.
              'Mary tells (us) how pround of Anna and the teams she is.'

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[1]Four out of the total 2048 data points for the critical items are missing for Experiment 1 due to two incomplete questionnaires.

(6)   Q1: Kann man den Satz so verstehen, dass **Maria** stolz ist?
          'Can this sentence be interpreted such that Mary is proud?'
    Q2: Kann man den Satz so verstehen, dass Anna stolz ist?
          'Can this sentence be interpreted such that Anna is proud?'

The target items consisted of a matrix clause and an embedded complement clause. The matrix clause contained a proper name subject (e.g., *Maria*) and the verb *erzählen* 'to tell'. The complement clause always contained a pronominal subject (*er/sie* 'he/she') and a proper name (e.g., *Anna*). Both proper names and the pronoun were of the same gender. The number of male and female proper names was balanced across items. The proper name in the embedded clause was included in an AP in a predicate construction, more precisely within a PP-complement of the adjective (e.g., *she is very proud of Anna*).

We manipulated MOVEMENT by constructing minimal pairs with/without *wh*-movement of the constituent containing the proper name in the embedded clause. In the in-situ conditions — illustrated in (5a/c) —, the subject pronoun c-commanded the proper name within the embedded clause. In the moved conditions — illustrated in (5b/d) —, there was no c-command relation between the two at the surface. Given the results in Adger *et al.* (2017), the second factor that we manipulated was the linear DISTANCE between the R-expression and the pronoun in the *moved* condition. We did this by adding a DP-coordination, as shown in (5c/d).[2]

Experiment 2 targeted DPs and had a 2×2×2 design. In addition to MOVEMENT and DISTANCE, we additionally manipulated the factor ARGUMENT/ADJUNCT. Part of an example item set along with the corresponding questions is shown in (7)–(8).

(7)   Experiment 2: DPs
    a.   DP in situ, argument PP, short:
         Maria erzählt, dass $\boxed{\text{sie}}$ die Statue von **Anna** gesehen hat.
         'Mary tells (us) that she saw the statue of Anna.'
    b.   DP moved, argument PP, short:
         M. erzählt, [welche Statue von $\boxed{\text{A.}}$] $\boxed{\text{sie}}$ ___ gesehen hat.
         'Mary tells (us) which statue of Anna she saw.'
    c.   DP in situ, argument PP, coord(ination)
         M. erzählt, dass $\boxed{\text{sie}}$ die Statue von **A.** und den Geschwistern gesehen hat. 'Mary tells (us) that she saw the statue of Anna and the siblings.'
    d.   DP moved, argument PP, coord(ination):
         M. erzählt, [welche Statue von $\boxed{\text{A.}}$ und den Geschwistern] $\boxed{\text{sie}}$ ___ gesehen hat. 'Mary tells (us) which statue of A. and the sibl. she saw.'

(8)   Q1: Kann man den Satz so verstehen, dass **Maria** eine Statue gesehen hat?
          'Can the sentence be interpreted such that Mary saw a statue?'
    Q2: Kann man den Satz so verstehen, dass Anna eine Statue gesehen hat?
          'Can the sentence be interpreted such that Mary saw a statue?'

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[2]We chose DP-coordination to increase the distance because it can easily be added to both DPs and APs, while other means, such as adjuncts, are not easily compatible with APs.

In Experiment 2, the R-expression was included in a DP, which was always the direct object of a transitive verb; more precisely, it was contained either in an argument PP of the noun or in a PP adjoined to the noun. (7) illustrates the design with an argument PP (*die Statue von Anna* 'the statue of Anna'). A corresponding example with an adjunct PP would be *die Statue auf dem Schreibtisch von Anna* 'the statue on Anna's desk'.[3]

The fillers consisted of a range of other constructions, including different kinds of structural ambiguities. They differed with respect to the possible number of yes-answers, i.e., while some of them were truly ambiguous, others only allowed one and some no yes-answer at all. This was intended to ensure that the subjects would not be biased towards a particular response behavior.

2.1.3 Hypotheses

If Condition C describes a correct generalization about coreference possibilities in German, we would expect close to 100% positive answers to Q1 (the question about coreference between the pronoun and the matrix R-expression) and close to 0% positive answers to Q2 (the question about coreference between the pronoun and the embedded R-expression) in the conditions without *wh*-movement. If there is reconstruction for Condition C, we would expect the same pattern in the conditions with *wh*-movement, i.e., there should be no effect of MOVEMENT. If there is no reconstruction, we would expect a higher proportion of positive answers to Q2 in the conditions with movement. If the hypothesis about an asymmetry between arguments and adjuncts with respect to reconstruction is correct, we would expect to see a two-way interaction between ARG/ADJ and MOVEMENT in Experiment 2: movement should have a stronger effect on Q2 with R-expressions contained in adjunct PPs than with R-expressions contained in argument PPs.

Note that we consider the responses to Q2 (coreference with the embedded R-expression) as the main indicator of the presence/absence of reconstruction. Coreference with the matrix R-expression should always be available, irrespective of movement in the embedded clause. Q1 is thus not directly informative with respect to the research question, but rather serves as a sanity check with respect to our methodology and our assumptions about Condition C. We will therefore only analyze the responses to Q2 statistically with respect to our hypotheses.

2.1.4 Results

The results are summarized in Figures 1-2 and in Tables 1-2.

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[3]About half of the nouns were event nominals (*ung*-derivations), while the other half was underived (e.g. 'statue', 'portrait', 'rumor') or verb-related ('anger', 'hate', 'attack'). To avoid a coreferential implicit PRO the nouns we used were either unaccusative or such that a potential implicit agent would be disjoint as, e.g., with 'rumor.' The PP-arguments mostly involved prepositions selected by the noun (*an* 'at/to', *über* 'about', *für* 'for'...) rather than just *von* 'of'. Of course, it is contested whether nouns take arguments at all. Our classification of argument vs. adjunct PP is based on the type of examples that have been argued to display the contrast.
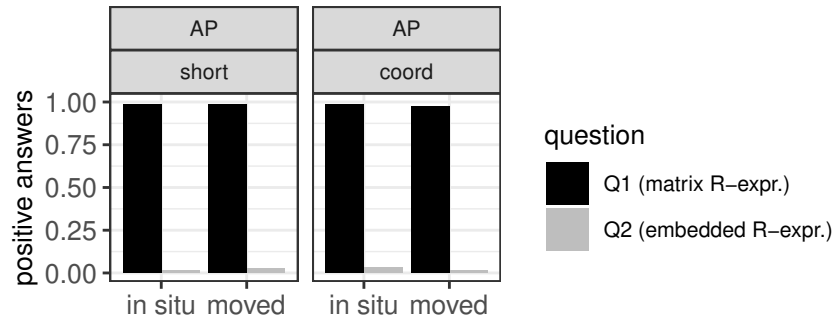
Figure 1: Proportion of positive answers to the questions in Experiment 1.

category	movement	dist.	Q1 (matrix R-expr.)	Q2 (emb. R-expr.)
AP	in situ	short	98.4%	1.6%
AP	moved	short	98.4%	2.4%
AP	in situ	coord	98.4%	3.1%
AP	moved	coord	97.8%	1.6%

Table 1: Proportion of positive answers to the questions in Experiment 1.
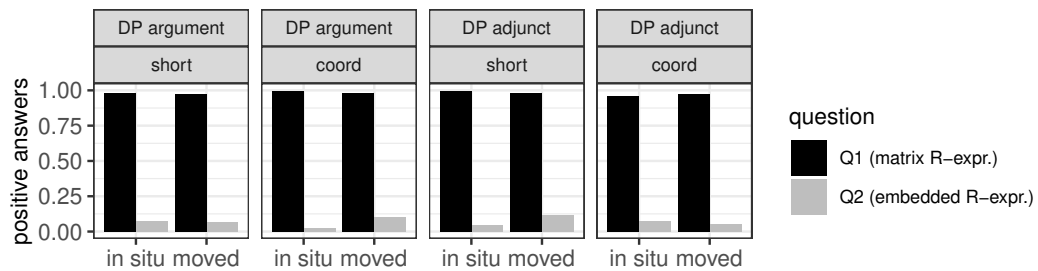

Figure 2: Proportion of positive answers to the questions in Experiment 2.

category	movement	dist.	Q1 (matrix R-expr.)	Q2 (emb. R-expr.)
DP argument	in situ	short	97.9%	7.6%
DP argument	moved	short	97.2%	6.9%
DP argument	in situ	coord	99.3%	2.8%
DP argument	moved	coord	97.9%	10.4%
DP adjunct	in situ	short	99.3%	4.9%
DP adjunct	moved	short	97.9%	11.8%
DP adjunct	in situ	coord	95.8%	7.6%
DP adjunct	moved	coord	97.2%	5.6%

Table 2: Proportion of positive answers to the questions in Experiment 2.

The statistical results reported here are based on generalized linear mixed models.[4]

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[4]The models were fit following the recommendations for identifying parsimonious models by

The factor MOVEMENT in both experiments and ARG/ADJ in Experiment 2 were sum-coded. DISTANCE was treatment-coded with *short* as the baseline. This type of contrast coding means that the model output for the other factors (MOVEMENT, ARG/ADJ) will represent simple effects: i.e., the difference between *in situ* and *moved / argument* and *adjunct* within the baseline level of DISTANCE (*short*). In the same way, the output for MOVEMENT*ARG/ADJ will represent a simple two-way interaction within the *short* baseline level. Interactions with DISTANCE will represent whether the pattern is different in *coord* in comparison to *short*.

In Experiment 1, there was no significant simple effect of MOVEMENT in the short baseline condition ($z = -0.52$, $p = 0.60$), no main effect of DISTANCE ($z = 0.28$, $p = 0.78$), and no significant interaction ($z = 1.05$, $p = 0.30$) wrt. to Q2.

In Experiment 2, no significant simple effects of MOVEMENT ($z = -1.59$, $p = 0.11$) nor ARG/ADJ ($z = -0.14$, $p = 0.89$) were found in the short baseline and there was no main effect of DISTANCE ($z = -1.22$, $p = 0.22$) on Q2. The DISTANCE×MOVEMENT and DISTANCE×ARG/ADJ interactions were not significant ($z = -0.29$, $p = 0.77$; $z = -0.44$, $p = 0.66$). There was a significant interaction between MOVEMENT and ARG/ADJ ($z = 2.03$, $p = 0.04$) in the short baseline, qualified by a three-way interaction between all three factors ($z = -3.44$, $p < 0.001$).

2.1.5 Discussion

We interpret the fact that the proportion of positive answers to Q1 is close to 100% throughout all conditions and that the proportion of positive answers to Q2 is below 10% in all in-situ conditions as compatible with the view that there is a robust Condition C effect in German. In Experiment 1, the patterns with/without *wh*-movement and with/without the intervening coordination are very similar, supporting the conclusion that there is robust reconstruction for Condition C in the case of APs, irrespective of the distance between pronoun and R-expression.

In Experiment 2, we find a significant interaction between MOVEMENT and ARG/ADJ. Given the contrast-coding we used for the factors, this two-way interaction is to be interpreted as follows: within the short conditions, there is indeed a difference between arguments and adjuncts in the direction predicted by the asymmetry hypothesis; the difference between in situ and moved is larger for adjuncts; this is compatible with the assumption that adjuncts reconstruct less robustly. This two-way interaction is qualified by a three-way interaction with distance: in the conditions with a coordination, we see the opposite pattern, i.e., a larger difference between in situ and moved for arguments. This means that overall (averaging over short and coord) the differences that we observe are not in line with the prediction of the argument/adjunct-asymmetry hypothesis, but within the short condition, the difference — though numerically small — does go in the predicted direction.

In a post-hoc inspection of the fillers, we found that the participants' behavior was in line with our expectations: In ambiguous constructions there was a high percentage of yes-answers to both questions (e.g., 64%/67% for ambiguous relative pronouns in fillers within Experiment 1). In those constructions were none of the

referents fit, the percentage of yes-answers to both questions was close to zero. This shows that there was no task-related bias for giving exactly one positive response.

2.2   Experiments 3-4: long-distance wh-movement of APs and DPs
2.2.1   Participants and procedure
Participants for Experiments 3-4 were recruited at the University of Potsdam. They received payment or course credit for participation. 36 native speakers of German took part in each of the experiments.

The procedure was the same as for Experiments 1-2 (web-based questionnaires using SoSciSurvey, Leiner 2018), with one difference. In addition to the two questions concerning coreference, participants were also asked to rate the sentences on a 1-7 scale.[5] The rating question was presented below the two coreference questions.

In Experiments 3-4, 77 stimuli were presented to each participant (36 critical items, 41 fillers). 108 data points per condition/question were collected for Experiments 3 and 4 (three from each subject).[6] On average, the questionnaires took about 40 (Experiment 3) / 45 minutes (Experiment 4) to complete.

2.2.2   Design and materials
We again tested APs (Experiment 3) and DPs (Experiment 4). In contrast to the first two experiments, we only tested conditions with *wh*-movement, leaving aside the in-situ conditions. This was done to reduce the number of conditions so that we could add two further levels of the factor DISTANCE (four levels were tested in total) without making the experiment too long. We also left out the argument/adjunct manipulation. Thus, both Experiment 3 and 4 had a 1×4 design.

In addition to the COORD condition with increased linear distance between the R-expression and the pronoun in the conditions with movement, we included two conditions with an intervening clause boundary to be able to tease apart linear from structural distance. In the first of these conditions, which we refer to as *embedded 1*, the R-expression and the pronoun are not clausemates underlyingly, whereas in *embedded 2*, they are. This is illustrated in (9). The structure of these conditions was adopted from Adger *et al.* (2017) and served to test the predictions of a vehicle change approach to A$'$-movement and reconstruction.

(9)   Experiment 3: APs
    a.   AP moved, short:
       Mary tells (us) [how proud of **Anna**] she is ___.
    b.   AP moved, coord:
       Mary tells (us) [how proud of **Anna** and the teams] she is ___.
    c.   AP moved, embedded 1:
       Mary tells (us) [how proud of **Anna**] she thinks that you are ___.
    d.   AP moved, embedded 2:
       Mary tells (us) [how proud of **Anna**] you think that she is ___.

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[5]The rating task was included because long-distance *wh*-movement is not equally accepted by all speakers of German, and we wanted to be able to check if this affected the coreference judgments.

[6]Seven out of 3888 data points for the critical items are missing for Experiment 3 and three for Experiment 4 due to one incomplete questionnaire in each experiment.

(10) Experiment 4: DPs
  a. DP moved, short:
      Mary tells (us) [which statue of **Anna**] $\boxed{\text{she}}$ saw ___.
  b. DP moved, coord:
      Mary tells (us) [which statue of **A.** and the siblings] $\boxed{\text{she}}$ saw ___.
  c. DP moved, embedded 1:
      Mary tells (us) [which statue of **Anna**] $\boxed{\text{she}}$ thinks that you saw ___.
  d. DP moved, embedded 2:
      Mary tells (us) [which statue of **Anna**] you think that $\boxed{\text{she}}$ saw ___.

For Experiment 4, the 36 items were taken over from Experiment 2 (adding the variants *embedded 1+2*, and removing the *in-situ* conditions). For Experiment 3, the 32 items from Experiment 1 were taken over, and four new items were constructed (involving new predicates and R-expressions). Of the 41 fillers, 32 were identical to those used in Experiments 1–2. 9 additional fillers were included to match the higher number of items.

2.2.3 Hypotheses

The factor structural distance was included to test the predictions of an approach in terms of vehicle change. Vehicle change refers to the observation that in ellipsis phenomena, an R-expression in the antecedent can correspond to a pronoun in the ellipsis site, as in (11).

(11) John likes Mary and she thinks that I do, too <like her>.

This idea has been extended to A′-movement chains (Safir, 1999), such that the R-expression in the higher copy can correspond to a pronoun in the lower copy. An expression like *statue of John* in SpecCP would thus correspond to *statue of him* in the base position. Following the argumentation of Adger *et al.* (2017), this predicts that the Condition C effect should vanish in our *embedded 1* structures with both DPs and APs since the pronoun would be separated from its antecedent by a clause boundary (cf. *She thinks that you saw a statue of her/She thinks that you are proud of her*). For the *embedded 2* structures, however, an asymmetry is predicted in that in Experiment 3 with APs, a Condition B effect should arise since the pronoun would be locally bound by the subject: **She is proud of her.* No Condition B effect is expected to arise in Experiment 4 with DPs as long as speakers accept coreferential pronouns within DPs: *She saw a statue of her.*

(12) a. ...[how proud of **Anna**] $\boxed{\text{she}}$ thinks that you are <how proud of her>.
  b. ...[how proud of **Anna**] you think that $\boxed{\text{she}}$ is <how proud of her> .

Thus, under a vehicle change approach, we would expect a difference with respect to Q2 between *embedded 1* and the *short* baseline in Experiments 3 and 4. *Embedded 2* should also differ from the baseline in Experiment 4 (DPs), but not necessarily in Experiment 3 (APs), at least if the Condition B effect is similar in strength as the Condition C effect. Within Experiment 3, the proportion of positive responses to Q2 should be higher in *embedded 1* than in *embedded 2*.

2.2.4 Results

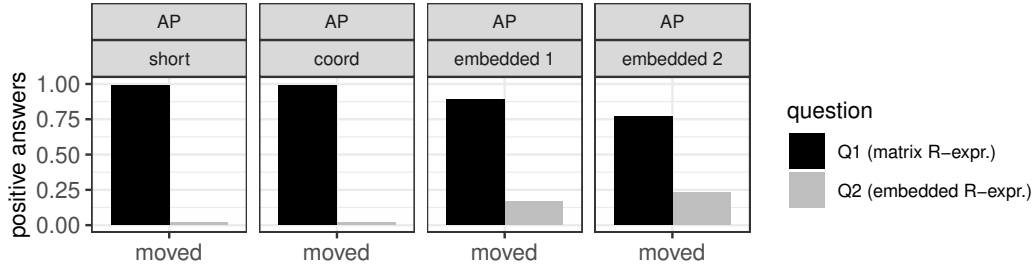The results are summarized in Figures 3-4 and in Tables 3-4.

Figure 3: Proportion of positive answers to the questions in Experiment 3.

category	movement	distance	rating	Q1	Q2
AP	moved	short	5	99.1%	1.9%
AP	moved	coord	5	99.1%	1.9%
AP	moved	embedded 1	3	88.8%	16.8%
AP	moved	embedded 2	3	76.9%	23.1%

Table 3: Proportion of positive answers to the questions and median acceptability ratings (1–7 scale) in Experiment 3.
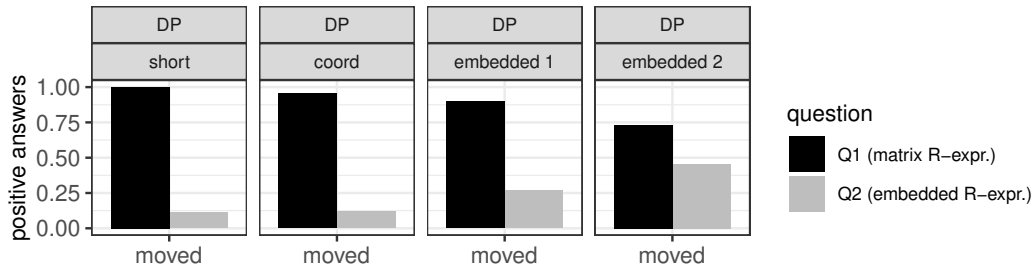

Figure 4: Proportion of positive answers to the questions in Experiment 4.

category	movement	distance	rating	Q1	Q2
DP argument	moved	short	6	100.0%	11.1%
DP argument	moved	coord	6	95.4%	12.0%
DP argument	moved	embedded 1	3	89.8%	26.9%
DP argument	moved	embedded 2	3	73.1%	45.4%

Table 4: Proportion of positive answers to the questions and median acceptability ratings (1–7 scale) in Experiment 4.

In both experiments, DISTANCE was treatment-coded with short as the baseline. Again, we consider the responses to Q2 as the main indicator of reconstruction and only include them in the statistical analysis.

In Experiment 3, there was no significant effect of DISTANCE when comparing

short to *coord* (z = -0.01, p = 0.99) with respect to Q2, but there was a significant effect when comparing *short* to *embedded 1* (z = 3.29, p = 0.001) and *embedded 2* (z = 3.34, p < 0.001). Similarly, in Experiment 4, there was no significant effect of DISTANCE when comparing *short* to *coord* (z = 0.24, p = 0.81) with respect to Q2, but there was a significant effect when comparing *short* to *embedded 1* (z = 3.17, p = 0.002) and *embedded 2* (z = 5.53, p < 0.001).

2.2.5 Discussion

The proportion of positive answers to Q1 was again close to 100% and close to 0% for Q2 in the conditions replicated from Exp. 1-2 (*short*, *coord*), lending further support to the conclusion that there is robust reconstruction for Condition C.

As for the additional conditions with increased structural distance, coreference with the embedded R-expression is indeed more available in the *embedded 1* structures in comparison to the baseline, with both APs and DPs. This is in line with the predictions of vehicle change. However, vehicle change also predicts a decrease in *embedded 2* with APs (due to a Condition B effect that should arise). This was not confirmed in our data. In fact, we see the opposite trend towards a further increase in *embedding 2*. Overall, the predictions of vehicle change were not borne out.

Visual inspection shows that there is not only an increase of positive responses to Q2 in the conditions with increased structural distance, but also a drop in the positive answers to Q1. This suggests that the additional level of embedding might be causing a more general problem. In a post-hoc inspection of the data, we found that the effect on Q2 is independent of how acceptable participants found the sentences: we divided the participants into three equal groups based on their rating for long *wh*-movement, and even the group who found the constructions most acceptable (median rating of 5-6 on a 7-point scale) showed a proportion of positive answers to Q2 ranging between 17% and 44% in the conditions with additional embedding, in comparison to 0% in the short condition. Thus, even though *wh*-movement across a clause boundary is not accepted by all speakers of German (Fanselow *et al.*, 2005), all participant groups reacted similarly to the structural distance manipulation. This is compatible with the view that the response patterns in *embedded 1/2* are caused by general processing difficulties (resulting in noisier data) rather than by uncertainty about structures that are not perceived as fully ungrammatical.

3 Conclusion

We have found that coreference with the embedded R-expression is mostly unavailable — with or without movement —, both with APs and DPs. This result is compatible with the assumption that A′-moved constituents reconstruct in German, with the caveat that this conclusion is based on a null effect (the lack of a difference between the in-situ and moved conditions). DPs/arguments show more positive responses to Q2 than APs/predicates. However, since they were not tested in the same experiment, no firm conclusions can be drawn. Our results do not provide conclusive evidence for an argument-adjunct asymmetry and thus, a late merger approach. There is a numerically small difference in the short condition in the predicted direction, but the effect is reversed in the coord condition, suggesting that other factors

may be at play. Finally, the distance effect we have found does not lend itself to an explanation in terms of vehicle change. The higher acceptability of coreference in the long-distance condition rather seems to reflect non-syntactic factors.

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