The resolution of case conflicts. A pilot study[*]

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This paper reports the results of a pilot study on the resolution of case conflicts in German free relative constructions. Section 1 gives a brief introduction into the phenomenon, section 2 presents the experiment and its results, section 3 ends the paper with a brief more general discussion.

1 Introduction

The syntactic construction that we are exploring is exemplified by the clauses in (1):

(1)   a.   Wer   einmal lügt, <u>der</u>   lügt auch ein zweites Mal
          b.   <u>Wer</u>   <u>einmal lügt,</u>   lügt auch ein zweites Mal
             who-NOM once   lies   the-NOM lies also a   second time

The subjects of the matrix clauses in these examples are underlined. The sentence in (1-b) has a free relative clause in the subject position of the matrix clause. (1-a) differs from (1-b) in the use of a resumptive d-pronoun in the subject position of the matrix clause. The relative clause is dislocated. (1-a) is clas-

sified as a kind of *correlative* construction in Vogel (2002), while only (1-b) counts as an example of a free relative (FR) construction in the relevant sense.

The interesting feature of FRs is that there is only *one* element, the FR pronoun, '*wer*' in (1-b), that could fulfil the case requirements of *both* the matrix verb and the verb within the FR. In (1), both verbs require nominative on the FR pronoun. No conflict arises, the clause is well-formed. Many languages allow for FRs only under such circumstances. Other languages do not even allow for constructions like (1-b). They obligatorily require a resumptive pronoun as exemplified in (1-a).[1] It seems that languages that allow for the pattern in (1-b) also have a construction like (1-a), but not necessarily vice versa. From a typological perspective, the FR construction is marked as such.

FRs lead to complications whenever the case requirements of the two verbs differ: the FR pronoun has to 'decide' which of the two cases it surfaces with. Vogel (2001) shows that the solutions for this case conflict vary a lot cross-linguistically, but in a systematic way. For the majority of German speakers, the grammaticality contrast in (2) holds.[2] In both clauses, the FR functions as object of the matrix verb. The two verbs chosen in these examples differ in the case they require on their object: '*vertrauen*' requires dative, and '*einladen*' accusative:

(2)   a.   Ich lade ein, wem   ich vertraue
              I   invite   who-DAT I   trust

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[1] Languages that Vogel (2002) classifies as non-FR languages are Korean, Hindi and Tok Pisin.

[2] The properties of German FRs have been discussed by Groos and van Riemsdijk (1981), Pittner (1991), Vogel (2001, 2002), Müller (2002) and others.

      b.   *Ich vertraue, wen   ich einlade
         I   trust   who-ACC I   invite

In German FRs, the FR pronoun must realise the case assigned within the relative clause. Hence, (2-b) is also ungrammatical with the FR pronoun in the dative case required by the matrix verb:

(3)   *Ich vertraue, wem   ich einlade
       I   trust   who-DAT I   invite

(3) would be grammatical in Modern Greek, Romanian, Gothic, and Icelandic (See Vogel, 2002, for discussion and references). Romanian and Gothic would also display the contrast in (2), while both examples in (2) would be ungrammatical in Icelandic which obligatorily requires the FR pronoun to realise the case required by the matrix verb. The interesting details of the cross-linguistic typology are presented in Vogel (2002). In what follows, we will use the abbreviations 'm-case' (for the case required by the matrix verb) and 'r-case' (for the case required by the relative clause internal verb), as introduced in Vogel (2001).

Let us return to our examples in (2). The important observation about situations where the two required cases conflict is that some of these conflicts lead to ungrammaticality while others do not – accusative can be *suppressed* in favour of dative, but not vice versa.

Vogel (2001) found that German seems to be divided into three 'variants' that differ in which case conflicts they tolerate.

Example (1) is judged grammatical in all reported variants. A dialect called 'German A' in Vogel (2001) also considers both clauses in (4) as well-formed,

Vogel's (2001) 'German B' only allows for (4-a) and Vogel's (2001) 'German C' disallows both:

(4)   a.   Mich   läd ein, wen   ich nett finde
             me-ACC invites who-ACC I   nice find

       b.   Ich   lade ein, wer   nett zu mir ist
             I-NOM invite   who-NOM nice to me is

Here the case conflict is between nominative (`m-case` in (4-a), `r-case` in (4-b)) and accusative (`r-case` in (4-a), `m-case` in (4-b)). But note that the speakers from each of the three variants accept the following examples:

(5)   a.   Es wurde zerstört   was   sie   fanden
             It was   destroyed what-NOM/ACC they found

       b.   Er zerstörte   was   ihm   begegnete
             he destroyed what-NOM/ACC him-DAT met

From an abstract syntactic perspective, the situation in (4) and (5) is the same: in (4-a) and (5-a), `m-case` is nominative, and `r-case` is accusative; and vice versa for (4-b) and (5-b). The difference is that the inanimate *wh*-pronoun '*was*' is the same for both cases, and this seems to be sufficient to resolve the otherwise un-resolvable case conflict in German B and C. FR clauses where the FR pronoun fulfils both case requirements are called *matching* FRs. Another example of a matching FR is (1). German C only allows for matching FRs.

Non-matching FRs where dative case is involved (or any other oblique form) are treated alike in German A and B, in the way indicated in (2). Dative case may never be suppressed, and the FR pronoun must surface with `r-case`. There is

no way to satisfy these two constraints in the situation exemplified by (2-b). Pittner (1991) was the first to argue that a case hierarchy is at work in these examples. For the variant of German that she describes, Vogel's (2001) German B, a case in a non-matching FR can only be suppressed if it is suppressed in favour of a case that is higher on the following case hierarchy:

(6)   Case hierarchy for German B: (following Pittner (1991))

         nominative ≺ accusative ≺ oblique (dative, genitive, PP)

Vogel's German A is 'blind' for the difference between the two structural cases nominative and accusative:

(7)   Case hierarchy for German A: (following Vogel (2001))

         structural (nominative, accusative) ≺ oblique (dative, genitive, PP)

The observed variants of German can be ranked according to their 'tolerance' of case conflicts. German A is the most tolerant, followed by German B, and German C, which allows for no FRs in case of case conflicts. This ranking of the variants in terms of 'tolerance' is interesting insofar as it mirrors the *markedness* of the different FR types, in the way indicated in Table 1. Matching FRs are the least marked ones, and non-matching FRs with suppression of oblique case are most marked.

   The source of the three 'variants' is unclear. No dialectal or sociolectal factor could be discovered so far. It might very well be the case that they are an instance of inter-speaker variation along a general markedness metric that can be observed and should also be manifest in other constructions, and should in fact be expected within any language community.

	Matching FRs	possible in German A, B, C
≺	Non-matching FRs that suppress a lower case	possible in German A, B
≺	Non-matching FRs that suppress a higher structural case	possible in German A
≺	Non-matching FRs that suppress oblique case	impossible in German

Tab. 1: Markedness scale of FRs with case conflicts and how they relate to the observed variants of German

2   The present study

The experiment that we want to present focuses on the difference between matching and non-matching FRs, and acceptable and non-acceptable non-matching FRs. Our expectation is that increased markedness in terms of Table 1 should go along with decreased acceptability rates. We are first of all interested in the difference between German C on the one hand, and German A and B on the other. For this reason, we examine a case conflict that is treated uniformly in German A and B, the conflict between accusative and dative. Our expectations are:

1. Constructions with matching FRs should be judged as grammatical with a higher probability than constructions with non-matching FRs.

2. Constructions with non-matching FRs that suppress accusative should be

judged as grammatical with a higher probability than constructions with non-matching FRs that suppress dative.

2.1   Methods

Participants   24 students[3] participated in the experiment for course credits. They were all monolingual native speakers of German and had normal or corrected-to-normal vision. They were naive with respect to the goals of the study.

Materials   All sentences used consisted of a matrix clause followed by a free relative clause. Examples for each of the critical experimental conditions are given in (8) to (11) in the following (with literal English translations):

(8)   m-case = accusative, r-case = accusative (AA):

     Maria besuchte,   wen   sie mochte.
     Maria visited-[__$_{acc}$] who-ACC she liked-[__$_{acc}$]

(9)   m-case = dative, r-case = dative (DD):

     Maria half,   wem   sie vertraute.
     Maria helped-[__$_{dat}$] who-DAT she trusted-[__$_{dat}$]

(10)   m-case = accusative, r-case = dative (AD):

     Maria besuchte,   wem   sie vertraute.
     Maria visited-[__$_{acc}$] who-DAT she trusted-[__$_{dat}$]

(11)   m-case = dative, r-case = accusative (DA):

     Maria half,   wen   sie mochte.
     Maria helped-[__$_{dat}$] who-ACC she liked-[__$_{acc}$]

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[3] The total number of participants in the experiment was 36. We excluded 12 participants for the reason that they rejected nearly all of the test sentences, or acted at chance level.

The verb in the matrix clause subcategorized its object either for accusative (as in 1 and 3) or for dative (as in 2 and 4). The relative pronoun was unambiguously marked for either accusative (as in 1 and 4) or for dative case (as in 2 and 3). There were 8 sentences in each condition which were created out of 8 sets with a proper name and four verbs (two accusative and two dative verbs) in each set. The 32 experimental sentences were intermixed with 144 non-related filler sentences.

2.2   Procedure

The total of 176 sentences were randomly assigned to four blocks of 44 sentences in each block with the constraint that each condition should occur one to three times per block. Within the blocks, a randomised order was generated with the constraints that two sentences of one condition should not occur in immediate succession. All sentences were presented word-by-word with 250 ms presentation for each word. Each sentence was preceded by a star-shaped cue. 500 ms after the last word subjects were asked to judge the acceptability of the sentence.

2.3   Data analysis

Trials with response latencies longer than 3000 ms were excluded as timeouts (12.0% across critical conditions).[4] We then computed the mean percentages of rejections as well as the corresponding mean response latencies for each of

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[4] Subjects had significantly more timeouts in the mismatching conditions (16.4%) compared to the matching ones (7.6%) ($F1(1,23)=6.45$, $p < .05$; $F2(1,23)=23.25$, $p < .01$). No other comparisons were significant.

the critical conditions accumulated over subjects as well as over items. Differences between conditions were analysed statistically with a repeated measures ANOVA with the two factors MATCH (matching versus mismatching verb and relative pronoun) and MATRIX VERB (matrix verb accusative versus dative). An interaction was resolved by computing single comparisons between the two matching and mismatching conditions, respectively. All analyses were done separately for subjects (F1) and items (F2).

2.4 Results

Table 2 and figure 1 display the mean error percentages of rejected sentences for all 24 subjects in each of the four critical conditions. As can be seen, rejection percentages in the two matching conditions look rather similar, but subjects seem to have accepted such sentences more often than the sentences in which the verbs in matrix and relative clause mismatch. Comparing the two mismatching conditions, a dative verb in the matrix clause seems to induce more rejections compared to an accusative verb in matrix clause.

	MATRIX VERB	
MATCH	*accusative*	*dative*
match	28.1 (32.8)	26.0 (31.0)
mismatch	37.0 (32.7)	49.0 (23.6)

Tab. 2: Mean rejections (in %, with standard deviations in parentheses) in each of the four conditions (n = 24).

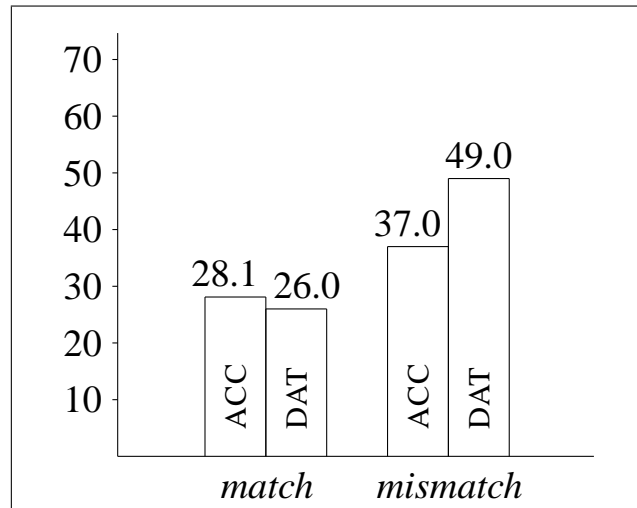The statistical analysis for the mean rejections revealed a main effect of

Fig. 1: Mean rejections in %. (Non-)Matching FRs relative to the
case required by the matrix verb

MATCH ($F1(1,23) = 17.83$, $p < .001$, $F2(1,7) = 102.15$, $p < .001$), due to more rejections in the mismatching (43.0%) compared to the matching conditions (27.1%). There was no main effect of MATRIX VERB ($F1(1,23) = 2.79$, $p = .10$, $F2(1,7) = 2.03$, $p = .20$), but we found an interaction between both factors ($F1(1,23) = 5.79$, $p < .05$, only marginal in the item analysis: $F2(1,7) = 3.85$, $p = .09$). Resolving this interaction revealed that there was no difference between the two matching conditions ($F1 < 1$, $F2 < 1$), but that subjects rejected mismatching sentences with a dative matrix verb significantly more often than mismatching sentences with an accusative verb in the matrix clause ($F1(1,23) = 5.57$, $p < .05$, $F2(1,7) = 6.72$, $p<.05$).

In order to exclude possible speed-accuracy trade-off effects, we also analysed the mean response latencies for the rejections in each critical condition which are displayed in Table 3 for all 24 subjects.

The statistical analysis for the mean latencies revealed neither a main effect

| | MATRIX VERB | |
MATCH	*accusative*	*dative*
match	1115 (545)	1107 (565)
mismatch	973 (400)	1125 (512)

Tab. 3: Mean response latencies (in ms, with standard deviations in parentheses) for the rejections in each of the four conditions (n = 24).

of Match (F1 < 1, F2 < 1), nor of Matrix verb (F1 < 1, F2(1,7) = 1.28, p = .30), nor did we find an interaction between both factors (F1 < 1, F2(1,7) = 1.18, p = .31).

Taken together, the results clearly show that free relative clauses in which the case assigned by the matrix verb and the case of the relative pronoun mismatch are more probably rejected compared to sentences matching in this respect. Furthermore, such a mismatch is more often judged as being unacceptable when the matrix verb assigns dative and the relative pronoun bears accusative case than vice versa.

3 Discussion

The significant differences in the relative probabilities of acceptance can be interpreted as a direct reflection of the markedness scale that we introduced in the first section. Having a case conflict is more marked than not having one, and suppressing dative is more marked than suppressing accusative.

In footnote 4 we briefly mentioned that the mismatching conditions pro-

duced significantly more timeouts among the participants. This result also reflects the relative markedness of the case conflict conditions. A natural explanation would be that case conflicts make the decision on the grammaticality of the example more difficult.

The relatively high number of rejections even for the matching conditions (27.1%), as well as the need to exclude one third of the initial participants (cf. footnote 3), might also be due to the overall markedness of the construction itself.

An open question is how our results relate to the concept of grammaticality. We found two significant differences between types of free relative clauses. Which of these, one might ask, reflects the threshold for grammaticality? Trying to answer such a question would force one to decide whether German either does not allow for non-matching FRs or only for FRs that suppress accusative, but not dative. Such a decision would appear purely normative, and might be impossible to justify on independent grounds.

But there is an alternative line of reasoning. The grammar of German might be designed in such a way that it *produces* this variation which is not arbitrary, but reflects the relative markedness of the constructions under examination. German A, B and C could be seen as *altogether* constituting the reality of the *single* German grammar. We would then need a theory of grammar that *predicts* such variation. A conception of grammaticality that is based on markedness, as it is used prominently in Optimality Theory, could presumably be (made) compatible with such a perspective on the empirical reality of grammars.

Future work will explore the nature of German A, B and C in more detail, with case conflicts both in FRs and in other syntactic constructions. An

attempt to answer the question whether the variants could have a sociological background will also be part of these studies.

References

Groos, Anneke and Henk van Riemsdijk (1981). 'Matching Effects with Free Relatives: a Parameter of Core Grammar.' *In* Belletti, Adriana, Luciana Brandi, and Luigi Rizzi, eds., *Theories of Markedness in Generative Grammar*, pp. 171–216. Pisa: Scuola Normale Superiore di Pisa.

Müller, Stefan (2002). 'An Extended and Revised HPSG-Analysis for Free Relative Clauses in German.' *Vm Report 225*, *Verbmobil* Verbundvorhaben, DfKI, Saarbrücken.

Pittner, Karin (1991). 'Freie Relativsätze und die Kasushierarchie.' *In* Feldbusch, Elisabeth, ed., *Neue Fragen der Linguistik*, pp. 341–347. Tübingen: Niemeyer.

Vogel, Ralf (2001). 'Case Conflict in German Free Relative Constructions. An Optimality Theoretic Treatment.' *In* Müller, Gereon and Wolfgang Sternefeld, eds., *Competition in Syntax*, pp. 341–375. Berlin: Mouton de Gruyter.

— (2002). 'Free Relative Constructions in OT Syntax.' *In* Fanselow, Gisbert and Caroline Féry, eds., *Resolving Conflicts in Grammars: Optimality Theory in Syntax, Morphology, and Phonology*, Linguistische Berichte Sonderheft 11, pp. 119–162. Hamburg: Helmut Buske Verlag.