On the Extractability from Subjects in German

— An example for lexicalized constraints on UDCs —

Kordula De Kuthy

DFKI GmbH, Language Technology Lab
Stuhlsatzenhausweg 3, D-66123 Saarbrücken, Germany
kdk@dfki.de

1. Introduction

In current linguistic theory, subject-object asymmetries in German are a much discussed issue. One of the relevant test cases is the possibility of extraction from subjects. The traditional assumption is that German in this respect behaves parallel to English in the sense that extraction from subjects should be ungrammatical, while extraction out of objects are grammatical.

To support his non-traditional claim that subject-object asymmetries do *not* exist in German, Haider (1993) investigates the possibility to extract from subjects and provides the following grammatical example for an extraction from a subject NP:

(1) *Über Strauß*$_i$ hat [ein Witz $\__i$] die Runde gemacht.
About Strauß has a joke the round made
'A joke about Strauß went round.'

Nevertheless, it remains to be true that in a number of cases extractions from subjects are ungrammatical. In this paper we want to show how one can account for these cases without having to postulate subject-object asymmetries for extraction[1]. To do so, we provide an account that lexicalizes constraints on extraction for German instead of using structural devices like "barriers" as used in transformational movement theories.

2. The Data

In the following, we want to take a look at two cases where extractions from subjects are ungrammatical, namely complex NPs with verbal complements and finite verbal subjects.

Complex Noun Phrases In (1) we saw an example with an extraction from a complex subject NP: The PP complement of a subject NP can be topical-

[1]Note that we only discuss extraction phenomena here. We do not claim that there aren't any other cases of subject-object asymmetries in German.

ized; wh-topicalization[2] would also be grammatical. Complex NPs with a verbal complement behave differently, though:

(2) a. **Nach Afrika*$_i$ hätte ihn [das Angebot $\_i$ zu reisen]
To Africa would have for him the offer(nom.) to travel
gereizt.
tempting
'The offer to travel to Africa would have been very tempting for him.'

b. **Nach Afrika zu reisen*$_i$ hätte ihn [das Angebot $\_i$] sehr gereizt.

The subject NP *"das Angebot"* takes the infinitive *"zu reisen"* as its complement which itself selects the PP *"nach Afrika"*. Example (2a) shows that this PP complement cannot be topicalized from the complex NP and example (2b) shows that the whole embedded infinitive cannot be topicalized either.

But as shown in (3) the parallel extractions from an *object* NP selecting an infinitive are ungrammatical as well.

(3) a. **Nach Afrika*$_i$ hatte er [das Angebot $\_i$ zu reisen] abgelehnt.
to Africa had he the offer(acc.) to travel rejected
'He rejected the offer to travel to Africa.'

b. **Nach Afrika zu reisen*$_i$ hatte er [das Angebot $\_i$] abgelehnt.

In (3a) the NP *"das Angebot"* is the direct object of the sentence selecting the infinitive *"nach Afrika zu reisen"*. Again neither the PP complement alone nor the whole infinitive can be topicalized.

There are other examples which seem to show that these complex object NPs can contain a gap:

(4) a. Was hat der Mechaniker den Versuch unternommen
What has the mechanic the attempt made
zu reparieren?
to repair?
'What did the mechanic try to repair?'

b. Was zu reparieren hat der Mechaniker den Versuch unternommen?

[2]In all examples considered in this paper topicalization and wh-topicalization of a PP or an NP are equally possible. But there are other UDCs in German where topicalization and wh-topicalization exhibit different properties, as discussed in Müller and Sternefeld (1994).

What all these grammatical examples have in common though, is that the noun containing the gap and the governing verb, in the example above the main verb *"unternommen"* and the noun *"der Versuch"*, form a so called support verb construction that is generally analyzed as behaving like one predicate. A complement selected by the noun in such a construction behaves like a complement of the whole support verb construction. We conclude that support verb constructions have to be treated differently from other noun verb combinations (see for example Erbach and Krenn (1994)) and are not a counterexample to our generalization that any NP embedding an infinitive cannot contain a gap.

NPs selecting a finite sentential complement show the same kind of behavior: The whole sentential complement cannot be extracted and nothing can be extracted from this complement. Consider two examples for an extraction from the complement of a subject (5) or an object NP (6):

(5) *Wen_i hat Peter die Behauptung [daß Maria $\_i$ liebe]
Who has Peter the claim(acc.) that Maria loves
zurückgewiesen?
rejected?
'The claim that Mary loves whom did Peter reject?'

(6) *Wen_i hat Peter die Behauptung [daß Maria $\_i$ liebe] gewundert?
Who has Peter the claim(nom.) that Maria loves wondered?
'The claim that Mary loves whom did Peter wonder about?'

The noun *"die Behauptung"* selects the that-clause *"daß Maria liebe"*, which in our example contains a gap, filled by the topicalized wh-object *"wen"*. In both cases with *"die Behauptung"* as object or as subject the unbounded dependency construction involving a complement of the embedded clause is ungrammatical.

We conclude that NPs embedding a verbal complement, but not NPs embedding a PP complement, are barriers for unbounded dependencies and that no subject-object asymmetries arise in these cases.

Verbal Subjects After NP arguments, we now take a look at UDCs involving verbal arguments. Extraction from subject infinitives is possible in German:

(7) *Welches dieser $Klaviere_i$* würde [$\_i$ spielen zu dürfen] Dich
Which of these pianos would to be allowed to play $you_{acc.}$
reizen?
be tempting?
'To be allowed to play which of these pianos would be most tempting for you?'

The main verb *"reizen"* selects the infinitive *"spielen zu dürfen"* as its subject from which the object *"welches dieser Klaviere"* has been topicalized.

On the other hand, extraction from finite subjects is not possible (example from Lutz (1993)):

(8) **Wen*$_i$ hat Peter gestört [daß Hans bald $\_{i}$ besuchen will]?
Who has Peter(acc.) disturbed that Hans soon to visit wants?
'Who does it bother Peter that Hans wants to visit tomorrow?'

But there is a general restriction on the extraction from tensed clauses in German: Extraction from embedded complement clauses introduced by the complementizer *"daß"* are only possible if this complement clause is governed by a bridge verb, like *"behaupten"* in (9a) in contrast to *"vermuten"* in (9b).

(9) a. *Wen*$_i$ behauptet Hans [daß er gestern $\_{i}$ im Kino
Whom claims Hans that he yesterday in the cinema
getroffen hat]?
has met?
'Whom does Hans say that he met in the cinema yesterday?'

b. **Wen*$_i$ freut sich Hans [daß er gestern $\_{i}$ im Kino
Whom is happy Hans that he yesterday in the cinema
getroffen hat]?
has met?
'Whom is Hans happy that he met in the cinema yesterday?'

That extractions from sentential clauses in subject position are ungrammatical can therefore simply result from the fact that there are no bridge verbs in German which select a sentential subject. This claim is supported by the fact that if a bridge verb is passivized, it still licenses extraction from its sentential argument which is then in the subject position:

(10) *Wen*$_i$ wurde behauptet [daß Hans $\_{i}$ im Kino getroffen hat]?
Whom was claimed that Hans in the cinema met has?
'Whom was it claimed that Hans met in the cinema?'

Summing up, we have seen two cases where filler gap dependencies with the gap in a subject are ungrammatical. We have shown that these cases do not instantiate subject-object asymmetries, but can be explained on the basis of general constraints on extractions applying to all arguments.

3. Towards a lexicalized theory of constraints on extraction

In this section, we want to show how the generalizations drawn from the data in the last section can be formalized and integrated into a UDC theory for German.

The constraints on UDCs presented here can be integrated in any of the HPSG accounts of unbounded dependencies: a trace account (Pollard and Sag 1994, chapter 4), a traceless analysis (Pollard and Sag 1994, chapter 9) or the lexical amalgamation approach proposed by Sag (1997). Contrary to the proposals in transformational frameworks, the principles do not depend on structural properties of an unbounded dependency construction. Instead they impose restrictions on the distribution of SLASH values on lexical heads.

Complex Noun Phrases The first constraint we need is a kind of complex NP constraint which restricts the extraction of and from verbal complements embedded by a noun. Since we showed that subject NPs behave parallel to objects it suffices to specify that the SLASH list of a verbal complement on the ARG-S list of a noun must be empty.

(11) *Complex NPs with a verbal complement disallow gaps*

$$\begin{bmatrix} \textit{word} & \\ \text{SS|LOC|CAT|HEAD} & \textit{noun} \\ \text{ARG-S} & <...,\boxed{1}\begin{bmatrix}\text{LOC|CAT|HEAD} \ \textit{verb}\end{bmatrix},...> \end{bmatrix} \longrightarrow$$

$$\begin{bmatrix}\text{ARG-S} \ <...,\boxed{1}\begin{bmatrix}\text{NLOC|INH|SL} \ \textit{elist}\end{bmatrix},...>\end{bmatrix}$$

The Bridge Verb Effect We proposed to explain the subject-object asymmetry in extraction from finite verbal complements by the generalization that bridge verbs, the only verbs in German that can license extraction from finite clauses, select finite objects but never finite subjects.

A constraint that captures the generalization that extraction is only possible with bridge verbs needs to distinguish bridge verbs from other verbs. It is often assumed that all bridge verbs have some similar semantic properties which determine their special syntactic behavior. Therefore we introduce bridge verbs as a new subsort of the sort *qfpsoa* and specify the CONTENT|NUCLEUS value of every bridge verb accordingly. The following constraint allows gaps in finite complements only if the governing verb is a bridge verb:

(12) *Extraction from complement clauses is restricted to bridge verbs*

$$\begin{bmatrix} \textsc{ss}|\textsc{loc}|\textsc{cat}|\textsc{head} & \textit{verb} \\ \textsc{arg-s} & <\ldots, \begin{bmatrix} \textsc{loc} & \boxed{1}\begin{bmatrix}\textsc{cat}|\textsc{head} & \textit{fin}\end{bmatrix} \\ \textsc{nloc}|\textsc{inh}|\textsc{sl} & < \neg \boxed{1} > \end{bmatrix}, \ldots > \end{bmatrix} \longrightarrow$$

$$\begin{bmatrix}\textsc{ss}|\textsc{loc}|\textsc{cont}|\textsc{nucl} & \textit{bridgeverb}\end{bmatrix}$$

Note that in the antecedent the SLASH value of the complement is required to be different from the complement's LOCAL value $\boxed{1}$ because we do not want to rule out the possibility of topicalizing the whole finite complement. Finite *daß*-clauses can always be topicalized in German as the following examples, (13) for a subject clause, (14) for an object clause, show[3]:

(13) *Daß Hans kein Bier mag*$_i$ hat Peter $\_{}_i$ nicht gestört.
That Hans no beer likes has Peter not disturbed.
'That Hans doesn't like beer didn't bother Peter.'

(14) *Daß Hans kein Bier mag*$_i$ hat Peter $\_{}_i$ sehr bedauert.
That Hans no beer likes has Peter regretted.

4. Summing up

We started out with the hypothesis that subjects behave parallel to objects in German in that extraction from both is possible. We provided independent explanations for those cases contradicting this claim: Extractions from object NPs are just as ungrammatical as their subject counterparts. And extractions from finite subjects are ungrammatical because there are no bridge verbs selecting finite subjects. Finally we defined two lexical constraints on words which capture the relevant generalizations.

[3] Müller (1996) makes the same observation, but provides an entirely different approach to these phenomena.

References

Erbach, G. and B. Krenn (1994). Idioms and support verb constructions. In J. Nerbonne, K. Netter, and C. Pollard (Eds.), *German in Head-Driven Phrase Structure Grammar*, Number 46 in Lecture Notes, pp. 365–396. Stanford University: CSLI Publications.

Haider, H. (1993). *Deutsche Syntax - generativ.* Tübingen: Gunter Narr Verlag.

Lutz, U. (1993). Extraktion — Ein einführender Überblick. In F.-J. d'Avis, S. Beck, U. Lutz, J. Pafel, and S. Trissler (Eds.), *Extraktion im Deutschen I*, pp. 1–62. Universität Tübingen.

Müller, G. and W. Sternefeld (1994). Improper Movement and Unambiguous Binding. *Linguistic Inquiry 24*, 461–507.

Müller, S. (1996). Head-Driven Phrase Structure Grammar für das Deutsche. Unpubl. lecture notes, Humboldt University, Berlin.

Pollard, C. and I. A. Sag (1994). *Head-Driven Phrase Structure Grammar*. University of Chicago Press.

Sag, I. A. (1997). English Relative Clause Constructions. To appear in the Journal of Linguistics.