UNIVERSITÄT LEIPZIG

ConSOLE XXVI

iGRA INTERACTION OF GRAMMATICAL BUILDING BLOCKS

Tough-displacement without movement

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- *Tough*-constructions in German do exist and cannot be analyzed as modal passives.
- Their properties pose problems for existing accounts of TCs.
- A Structure Removal analysis can account for German TCs.
- Depletion of the infinitival CP shell allows a DP to be transported into matrix clause.

1 Background:

- *Tough*-constructions are structures in which a DP surfaces as the subject of a matrix predicate, but is interpreted as the object of an embedded predicate.

(1) a. John$_i$ is easy [to please $\__i$].
b. [Dieser leckere Käsekuchen]$_i$ ist leicht [zu backen $\__i$].
this tasty cheese.cake is easy to bake
"This tasty cheese cake is easy to bake."

- The association between the surface position and the interpretation site has been accounted for in different ways:
  - LONG MOVEMENT approaches (e.g. Rosenbaum 1967; Postal 1971; Sternefeld 1991; Brody 1993; Hornstein 2000; Hicks 2009; Hartman 2012; Longenbaugh 2017):
    - A DP *moves* from embedded object position into matrix subject position.

(2) [DP$_i$ *tough*-predicate [$_{CP}$ t_i embedded predicate t_i]]

  - BASE GENERATION approaches (e.g. Ross 1967; Fiengo 1980; Chomsky 1977; Stechow and Sternefeld 1988; Rezac 2006; Keine and Poole 2017):
    - An (empty) operator A′-moves in the embedded clause and is semantically linked to a subject that is base generated in the matrix clause.

(3) [DP *tough*-predicate [$_{CP}$ Op$_i$ embedded predicate t_i]]

  - PASSIVE approaches to TCs in German (Höhle 1978; Hawkins 1986; Demske-Neumann 1994; Comrie 1997):
    - monoclausal, *tough*-adjective is optional adverbial modifier

(4) [$_{VP}$ DP ... *tough*-adverbial ... infinitival predicate]

► I investigate a novel approach in terms of Structure Removal (5).

(5) [DP$_i$ *tough*-predicate [~~$_{CP}$~~ embedded predicate t_i]]

2 Previous accounts

2.1 Contra modal passive

- Traditional analysis for the construction in German (a.o. Höhle 1978; Demske-Neumann 1994; Holl 2010).
- The "*tough*-predicate" is an adverb modifying the infinitive.

(6) a. weil der Kuchen [$_{VP}$ schwer [$_{VP}$ zu backen ist]]
because the cake hard to bake is
"because the cake is hard to bake"
b. dass die Kälte jetzt [$_{VP}$ ∅ zu spüren war]
that the cold now to feel was
"that it was possible to feel the cold now" (Höhle, 1978)

- Ambiguous interpretation: possibility or necessity readings

Arguments against passive analyses:

- Verbs that cannot be passivized, *can* occur in TCs (Höhle, 1978).

(7) a. dass verschiedene Formen und Farben schwer zu bekommen waren
that different forms and colours hard to get.INF were
"that different form and colours were hard to get"
b. *dass verschiedene Formen und Farben schwer bekommen wurden
that different forms and colours hard get.PST.PTCL become.AUX.3PL
(Demske-Neumann 1994)

- Intransitive verbs that can be passivized, *cannot* occur in TC.

(8) a. dass getanzt/ gearbeitet/ geschlafen wurde
that danced worked slept was
"that there was dancing / working / sleeping"
b. *dass leicht zu tanzen/ zu arbeiten/ zu schlafen ist
that easy to dance to work to sleep is

►double dissocation

- VPs can be topicalized in German, while adjectives and their arguments generally can't:

(9) a. [$_{VP}$ Langusten gegessen] wurden nicht.
crawfish.NOM eaten become.AUX.3PL not
"Crawfish wasn't eaten."
b. *[$_{AP}$ Langusten lecker] sind nicht.
crawfish.NOM tasty are not

- A modal passive analysis predicts that the infinitive VP should be topicalizable, but it isn't:

(10) *[$_{VP}$ Linguisten leicht zu überzeugen] sind nicht.
linguists.NOM easy to convince are not
intended: *"Linguists are not easy to convince."*

- Even structures that don't contain an overt *tough*-adjective cannot be topicalized:

(11) *?[$_{VP}$ Briefbomben zuzustellen] sind nicht.
mail.bombs.NOM to.deliver are not
intended: *"Mail bombs should not be delivered."*

3 Standard LM approaches

Main arguments in favor of LM approaches:

- **reconstruction** of the *tough*-subject into a position inside the embedded clause
- **stranding of PPs**

- LM approaches predict the possibility of reconstruction for anaphor binding and scope (Pesetsky, 2013; Fleisher, 2013; Longenbaugh, 2017). This is borne out in German (and English):

(12) a. Bilder von sich selbst$_i$ sind für Max$_i$ schwierig _ zu verschenken.
pictures of himself self are for Max difficult to give.as.present
"Pictures of himself are hard for Max to give as a present."
b. Fünf Leute sind schwierig gleichzeitig _ zufriedenzustellen.
five people are hard simultaneously to.please
"Five people are hard to please at the same time."
(*hard* > *five*)

- It is possible to strand parts of a complex DP in the embedded clause:

(13) [Bücher]$_k$ sind leicht [[t_k über Vogelzug] zu lesen]
books are easy about bird.migration to read
"Books about bird migration are easy to read."

►There is evidence for Long Movement approaches in German.

3.1 Problems of LM accounts

Improper Movement violation:

- LM approaches face the problem of **violating the Improper Movement constraint** whereby an XP cannot move from an A′-position into an A-position.
- Improper Movement accounts for the ungrammaticality of sentences like (14):

(14) a. *Minnie seems [_ that _ adores custard].
b. *Minnie scheint [_ dass _ Windbeutel liebt].
Minnie seems that cream.puff loves

  - Longenbaugh (2017) proposes **composite movement** as a way to avoid an Improper Movement violation.
  - It was shown in Mahajan (1994) that there is no evidence for mixed A/A′ positions in German.

Empirical problems:

- *Tough*-constructions in German have certain properties that LM approaches cannot account for:
  - possibility of long distance scrambling
  - absence of Freezing effects in *was-für* splits

4 German *tough*-constructions

4.1 Scrambling

- Scrambling is generally clause bound in German (but see Grewendorf and Sabel 1994 for exceptions).

(15) *Es ist den Kuchen$_i$ leicht [_$_i$ zu backen].
it is the cake easy to bake

- However, in *tough*-constructions scrambling out of the embedded clause is allowed.

(16) a. Meine Nachbarin ist leicht [meinem neuen Freund vorzustellen].
my neighbor.NOM is easy my new boyfriend.DAT to.introduce
b. Meine Nachbarin ist meinem neuen Freund$_i$ leicht [_$_i$ vorzustellen].
my neighbor.NOM is my new boyfriend.DAT easy to.introduce
"It is easy to introduce my neighbor to my new boyfriend."

- This is unexpected in a LM (and in a BG) approach, where the clause boundary is still intact, but expected in a Structure Removal analysis where CP is removed.

4.2 Freezing and *was-für* splits

- If the step from the embedded clause into the matrix clause is movement, the *tough*-moved XP should be opaque for further extraction, according to the Freezing Principle (Ross, 1967; Wexler and Culicover, 1980).

- *Was-für* ('what kind') constructions can be split in some Germanic languages, as in (17).

(17) Was haben dich denn für Leute besucht?
what have you.ACC MOD.PART for people visited
"What kind of people have visited you?"

- Standard analysis for *was-für* splits: remnant movement (Abels 2003; Leu 2008)

(18) a. $[_{DP}$ was für Leute]
b. $[_{XP}$ für Leute$]_k \ldots [_{DP}$ was $t_k]$
c. $[_{DP}$ was $t_k]_i \ldots [_{XP}$ für Leute$]_k \ldots t_i$

- Remnant movement is subject to the Freezing Principle.

(19) *Was denkst du $[_{VP}$ _ gelesen] hat keiner?
what think you read.PTCL has no.one
intended: *"What do you think no one has read?"* (Müller 2015)

- In *tough*-constructions, a DP *can* be split after arriving in the matrix clause, violating the Freezing principle and suggesting that it is not transported there by movement:

(20) Was sind denn für Studenten leicht zu beeindrucken?
what are MOD.PART for students easy to impress
"What kind of students are easy to impress?"

- Alternative analysis for (20): *was* is the sole target of *tough*-movement and the rest of the DP scrambles up at a later point.
- This analysis predicts the possibility of leaving the PP in the embedded clause.
- This is not borne out (21). In this alternative analysis, scrambling would have to be obligatory.

(21) *Was sind denn einfach für Studenten zu beeindrucken?
what are MOD.PART easy for students to impress

4.3 Evidence for CP

- Scrambling behaviour indicates that there is a clause boundary in expletives (but not in TCs) (see (15) vs. (16)).
- The scope of embedded negation is in the embedded clause (cf. Haider 2010, see (22)).

(22) dass es schwer war [ihm das nicht zu versprechen]
that it hard was him that not to promise
"that it was hard not to promise that to him" (*schwer* » NEG)

- unstressed pronoun fronting (Müller, 2016a): *es* 'it' has to be fronted (to left periphery of vP); this fronting can only happen in the presence of a higher CP
- embedded *tough*-infinitives (23) pattern with control-infinitives (24-b) rather than with the complements of raising verbs (24-a)

(23) dass es möglich ist [**es** ihm morgen schon zu geben]
that it possible is it him.DAT tomorrow already to give

(24) a. *dass sie mir schon letzte Woche [**es** zu lesen] schien
that she.NOM me.DAT already last week it to read seemed
b. dass sie mir$_i$ schon letzte Woche [t$_i$ **es** zu geben] versucht hat
that she.NOM me.DAT already last week it to give tried has
(Müller, 2016a)

Interim summary: Paradox

- Evidence for LM: the same element that is merged in embedded object position shows up as the matrix subject

But: Long scrambling and lack of freezing effects suggest that the element does not *move* from one position to the other

5 Removal analysis

Main ideas:

- The CP shell is syntactically removed.
- The DP in former Spec,CP is reassociated into the structure in the matrix clause.

► no Improper Movement violation, properties of German TCs are accounted for

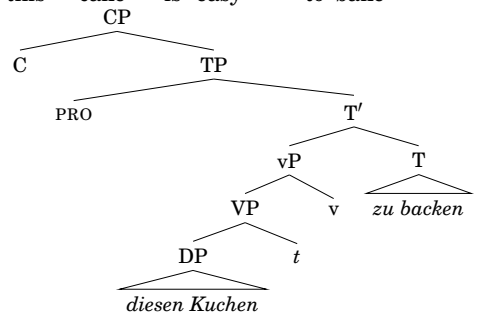
Structure Removal:

- Remove (Müller 2016b, 2017) deletes structure previously built by Merge from the derivation (similar to Tree pruning (Ross, 1967), exfoliation (Pesetsky, 2016)).
- triggered by $[-X_{0/2}-]$ features ordered on lexical heads
- If X_0 is removed, its complement and specifier have to be reintegrated into the structure, changing it minimally, respecting c-command relations.

Derivation

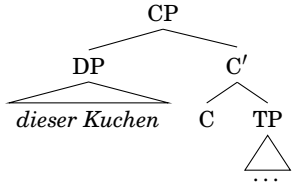
- DP is merged as the object of the embedded predicate.

(25) a. Dieser Kuchen ist einfach [*t* zu backen].
this cake is easy to bake
b.



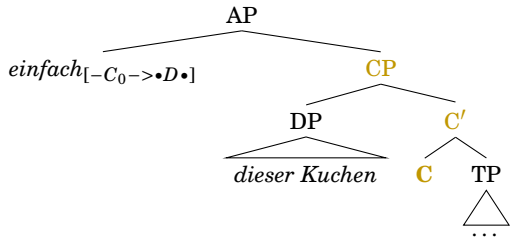
- DP A′-moves to the clause edge.

(26) *Intermediate A′ movement*



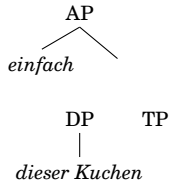
- In a next step, the *tough*-predicate is merged.
- It is a lexical property of *tough*-predicates to be able to remove the heads of their complements.
- ► The matrix predicate selects a CP complement and removes it again: *einfach* [•C_0•] > [−C_0−].

(27) *Structure before removal of C*



- When the CP shell is gone, the DP in former Spec,CP and the TP complement are briefly unassociated.

(28) *Structure after removal of C*



- Unassociated elements have to be reassociated with the structure.
- **Reassociation** is a byproduct of removal and independently motivated for complex prefields in German and restructuring in German and Russian (see Müller 2017; Dschaak 2017; Müller 2016a for details).

Note: Reassociation ≠ Merge (Reassociation is not feature-driven, cannot apply to heads)

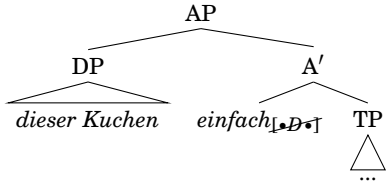
- Reassociation obeys the SCC in (29).

(29) **Strict Cyclicity Condition** (Chomsky 1973):
No rule may apply to a domain dominated by a cyclic node A in such a way as to affect solely a proper subdomain of A dominated by a node B which is also a cyclic node.

(30) **Domain** (Chomsky 1973):
The domain D of a given transformation is the minimal (i.e. 'lowest') category containing all the constituents affected by the rule.

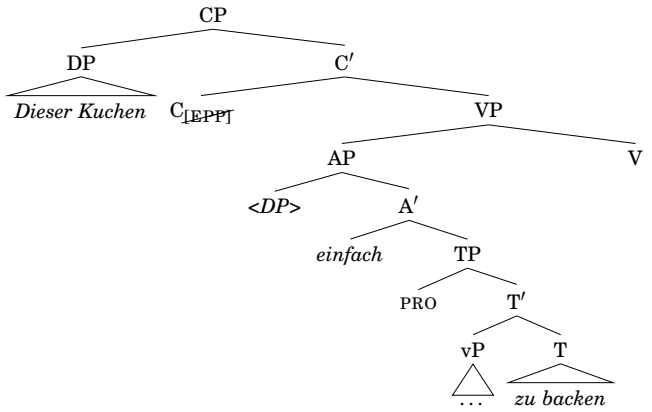
- Reassociation has to retain the original hierarchical and linear order of items: *"If α, β are in the minimal domain of YP, Y is subject to head removal, and α c-commands β, then α c-commands β after reassociation."* (Müller, 2017)
- ► There is only one possible way DP and TP can be reintegrated into the structure:

(31) *Reassociation*



- ► Crucially, the DP is **reassociated in matrix Spec,AP**, obeying the SCC.
- DP moves on to the prefield:

(32)



- ► Long scrambling is accounted for, since the clause boundary is removed.
- ► Items that are reassociated in a higher position are not expected to be subject to the Freezing Principle.
- ► All LM properties are still expected to be in place.

6 Conclusion

- I propose an analysis of German *tough*-constructions in terms of Structure Removal.
- An analysis that removes the clause boundary of the infinitival can account for A- and A′-properties of TCs without violating the Improper Movement constraint and in accordance with German data that suggest that no movement takes place from the embedded into the matrix clause.

References

Abels, K. (2003). *Successive cyclicity, anti-locality, and adposition stranding*. PhD thesis, University of Connecticut.

Brody, M. (1993). θ-theory and arguments. *Linguistic Inquiry*, 24:1–23.

Chomsky, N. (1973). Conditions on transformations. In Anderson, S. and Kiparsky, P., editors, *A Festschrift for Morris Hale*, pages 232–286. Academic Press.

Chomsky, N. (1977). On wh-movement. In Culicover, P., Wasow, T., and Akmajian, A., editors, *Formal Syntax*, pages 77–132. Academic Press, New York.

Comrie, B. (1997). Tough-movement and its analogues in germanic languages. In Winter, W., editor, *Language and its ecology: Essays in memory of Einar Haugen*. Mouton de Gruyter, Berlin.

Demske-Neumann, U. (1994). *Modales Passiv und tough movement: zur strukturellen Kausalität eines syntaktischen Wandels im Deutschen und Englischen*. Walter de Gruyter.

Dschaak, C. (2017). A structure removal approach to restructuring in russian. *Bachelor's thesis, University of Leipzig*.

Fiengo, R. (1980). *Surface Structure*. Harvard University Press, Cambridge, MA.

Fleisher, N. (2013). On the absence of scope reconstruction in tough-subject a-chains. *Language*, 91:73–108.

Grewendorf, G. and Sabel, J. (1994). Long scrambling and incorporation. *Linguistic Inquiry*, pages 263–308.

Haider, H. (2010). *The syntax of German*. Cambridge University Press, Cambridge.

Hartman, J. (2012). (non-)intervention in a-movement: Some cross-constructional and cross-linguistic consequences. *Linguistic Variation*, 11:121–148.

Hawkins, J. A. (1986). *A comparative typology of English and German: unifying the contrasts*. Croom Helm, London.

Hicks, G. (2009). Tough-constructions and their derivation. *Linguistic Inquiry*, 40:535–566.

Höhle, T. (1978). *Lexikalistische Syntax; Die Aktiv-Passiv-Relation und andere Infinitkonstruktionen im Deutschen*. Walter de Gruyter.

Holl, D. (2010). *Modale Infinitive und dispositionelle Modalität im Deutschen*, volume 71 of *studia grammatica*. Walter de Gruyter.

Hornstein, N. (2000). *Move! A Minimalist theory of construal*. Blackwell, Oxford.

Keine, S. and Poole, E. (2017). Intervention in tough-constructions revisited. *The Linguistic Review*, 34(2):295–329.

Leu, T. (2008). What for internally. *Syntax*, 11(1):1–25.

Longenbaugh, N. (2017). Composite a/a′ movement: Evidence from english *tough*-movement. *In review*.

Mahajan, A. (1994). Toward a unified theory of scrambling. *Studies in scrambling*, pages 301–330.

Müller, G. (2015). Remnant movement in local derivational grammar. In Grewendorf, G., editor, *Remnant Movement*, pages 53–92. De Gruyter Mouton, Berlin.

Müller, G. (2016a). Rethinking restructuring. *Ms., University of Leipzig*.

Müller, G. (2016b). The short life cycle of external arguments in german passive derivations. *Ms. Universität Leipzig*.

Müller, G. (2017). Structure removal in complex prefields. *Natural Language & Linguistic Theory*, pages 1–46.

Pesetsky, D. (2013). Phrasal movement and its discontents: Diseases and diagnostics. In Cheng, L. L.-S. and Corver, N., editors, *Diagnosing Syntax*, pages 123–157. Oxford University Press, Oxford.

Pesetsky, D. (2016). Exfoliation: Towards a derivational theory of clause size. talk given at Shrinking Trees Workshop, University of Leipzig.

Postal, P. (1971). *Cross-over phenomena*. Holt, Rinehart and Winston, New York.

Rezac, M. (2006). On tough-movement. In Boeckx, C., editor, *Minimalist essays*, pages 288–325. John Benjamins, Amsterdam.

Rosenbaum, P. (1967). *The grammar of English predicate complement constructions*. MIT Press, Cambridge, MA.

Ross, J. (1967). *Constraints on variables in syntax*. PhD thesis, Massachusetts Institute of Technology, Cambridge, MA.

Stechow, A. v. and Sternefeld, W. (1988). *Bausteine syntaktischen Wissens*. Westdeutscher Verlag, Opladen.

Sternefeld, W. (1991). Chain formation, reanalysis and the economy of levels. In Haider, H. and Netter, K., editors, *Representation and derivation in the theory of grammar*, pages 75–143. Kluwer, Dodrecht.

Wexler, K. and Culicover, P. (1980). *Formal principles of language acquisition*. MIT Press, Cambridge, MA.