

Noun-Phrase Structure by Reprojection

Georgi and Müller (2010)

1 Outline

- According to a reprojection analysis a moved N does not adjoin to a functional category, rather it moves out of its projection and remerges with it.
- This movement is triggered by a certain kind of probe feature (Münchhausen feature).
- Advantage of the analysis: Conceptual problems of traditional head movement are avoided (Extension Condition, c-command of base position, recursive application).
- The reprojection approach weakens arguments in favour of the DP-over-NP-hypothesis: evidence for N movement is no longer evidence for DP on top of NP, rather it presents evidence for a NP-over-DP approach.

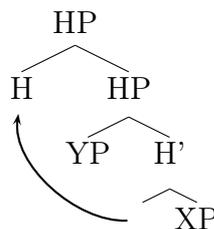
2 Introduction

2.1 The mechanism

Reprojection:

A head H moves out of a phrase α and remerges with α , projecting its category label in the derived position.

(1) *Reprojection*



2.2 Conceptual arguments for reprojection

Assuming reprojection solves a range of problems associated with head movement:

- An adjoined head does not c-command its base position (unless the definition of c-command is complicated as e.g. in Baker 1988)
- Head movement does not extend the tree as its root what violates the Extension Condition.

- Head movement cannot apply successive-cyclically because the Head Movement Constraint excludes excorporation of a head.

Reprojection instead:

- the remerged head c-commands its base position
- the movement operation extends the tree
- the operation may be applied recursively

3 The mechanism in detail

3.1 Underlying assumptions

- Derivational syntax according to which all syntactic operations (Agree, external Merge, internal Merge) are triggered by features:
 - external Merge: triggered by subcategorization features ([•F•])
 - internal Merge (movement): movement-type specific specifier features ([•F•])
 - Agree: triggered by probe features ([*F*])
- subcategorization features show up on stacks. Only the topmost item is accessible at any given point (the successively discharge of structure-building features leads to the existence of multiple specifiers).
- to ensure that all instances of subcategorization-driven structure-building features precede all instances of movement (in the domain of a given lexical item), the authors assume that movement-inducing features always show up *below* subcategorization features in [•F•] feature stacks of a head.
- probe features must find a matching goal under Agree; the Agree operation requires c-command.
- probe features and structure-building (subcategorization or movement inducing) features are located on different feature stacks of a lexical item
- *Strict Cycle Condition:*
Only the head of the present root can have features that trigger operations (([•F•] or [*F*]).
- *Last Resort:*
 - a. A syntactic operation must discharge (and delete) [•F•] or [*F*].
 - b. Only [•F•] or [*F*] features that are on top of a feature stack are accessible.
- Given that there are two feature stacks (one for [•F•] features and one for [*F*] features) - which operation applies first?

Agree over Merge:

If both [•F•] and [*F*] can be discharged, [*F*] is given preference.

- *Illustration of basic structure-building system with an NP*

- (2)
- a. N: {[•A•] > [•D•]} (numeration)
 - b. Merge (N: {[•A•] > [•D•]}, AP) → [_{N'} AP N: {[•D•]}]
 - c. Merge ([_{N'} AP N: {[•D•]}], DP) → [_{NP} DP [_{N'} AP N: {-}]]
 - d. Merge (X: {[•N•] > ...}, NP) → [_{X'} X: {...} NP] etc.

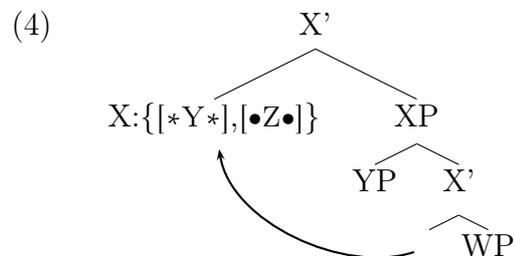
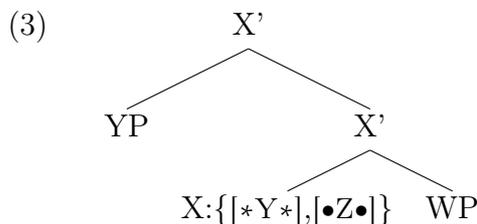
3.2 Münchhausen Features

*Münchhausen feature*¹:

A probe feature with a category label as its content that accompanies a structure-building feature with the same category label ([*F*] accompanies [•F•]).

Two possible scenarios:

- [•F•] may be topmost on the initial stack on a lexical item.
Consequence: it creates a complement with label F. Given Agree over Merge [*F*] can and must be discharged immediately afterwards (nothing special happens).
- [•F•] may *not* be topmost on the initial stack.
Consequence: it generates a specifier.
Arising problem: The accompanying probe feature [*F*] must be checked under c-command, but a head does not c-command its specifier.
Way out of this dilemma: The lexical item bearing the Münchhausen feature moves out of its projection and remerges with it, projecting anew. After this movement step, the moved head c-commands the specifier of the projection of which it was originally the head and Agree becomes possible.



Note:

Violation of *Last Resort* because reprojection movement is not directly feature driven.

Conclusion of the authors: Last Resort must be minimally violable (local optimization procedure in syntax). This violation is possible if the Münchhausen feature can be discharged in the next step, as a consequence of the movement (the system requires minimal *look ahead*).

¹Baron Münchhausen is both a historical and a literary character. He shows up in various German tall tales; in one of them he escapes from a swamp (where he is trapped on the back of his horse) by pulling himself up by his own hair.

3.3 The system at work

Sentence to be derived: ditransitive English VP

- (5) Mary gave it to John.
- (6) a. V's feature set:
 $\{[\bullet P \bullet] > [\bullet N \bullet] > [\bullet N \bullet], [*P *] > [*N *] > [*N *]\}$ (gave)
- b. Merge (V: $\{[\bullet P \bullet] > [\bullet N \bullet] > [\bullet N \bullet], [*P *] > [*N *] > [*N *]\}$, PP)
 $\rightarrow [{}_{V'} V: [\bullet N \bullet] > [\bullet N \bullet], [*P *] > [*N *] > [*N *]] PP$ (gave to John)
- c. Agree ($[*P *]$, PP)
 $\rightarrow [{}_{V'} V: [\bullet N \bullet] > [\bullet N \bullet], [*N *] > [*N *]] PP$
- d. Merge ($[{}_{V'} V: [\bullet N \bullet] > [\bullet N \bullet], [*N *] > [*N *]] PP$, NP₂)
 $\rightarrow [{}_{V'} NP_2 [{}_{V'} V: [\bullet N \bullet], [*N *] > [*N *]] PP]$ (it gave to John)
- e. Move (V: $[\bullet N \bullet]$, $[*N *] > [*N *]$) $[{}_{VP} NP_2 [{}_{V'} V PP]]$
 $\rightarrow [{}_{V'} V: [\bullet N \bullet], [*N *] > [*N *]] [{}_{VP} NP_2 [{}_{V'} - PP]]$ (gave it to John)
- f. Agree ($[*N *]$, NP₂)
 $\rightarrow [{}_{V'} V: [\bullet N \bullet], [*N *]] [{}_{VP} NP_2 [{}_{V'} - PP]]$
- g. Merge ($[{}_{V'} V: [\bullet N \bullet], [*N *]] [{}_{VP} NP_2 [{}_{V'} - PP]]$, NP₁)
 $\rightarrow [{}_{V'} NP_1 [{}_{V'} V: [*N *]] [{}_{VP} NP_2 [{}_{V'} - PP]]$ (Mary gave it to John)
- h. Move V: $[*N *]$, $[{}_{VP} NP_1 [{}_{V'} V: [*N *]] [{}_{VP} NP_2 [{}_{V'} - PP]]$
 $\rightarrow [{}_{V'} V: [*N *]] [{}_{VP} NP_1 [{}_{V'} - [{}_{VP} NP_2 [{}_{V'} - PP]]]]$ (gave Mary it to John)
- i. Agree ($[*N *]$, NP₁)
 $\rightarrow [{}_{VP} V: \{ \} [{}_{VP} NP_1 [{}_{V'} - [{}_{VP} NP_2 [{}_{V'} - PP]]]]$

(6-i) is the resulting structure. The external argument NP is moved to the subject position SpecTP in a subsequent movement step, yielding SVO order.

4 Reprojection as evidence against the DP-over-NP-hypothesis

4.1 N Movement in Italian

4.1.1 Longobardi (1994)

- (7) *Adjective merged between (overtly realized) D and N*
- a. $[{}_{DP} il [{}_{NP} [{}_{AP} mio] [{}_N Gianni]]]$ (unmarked order)
- b. $*[{}_{DP} mio [{}_{D'} il [{}_{NP} [{}_N Gianni]]]$
- c. $\#[{}_{DP} il [{}_{NP} t_1 [{}_N Gianni]] [{}_{AP} mio_1]]$ (only contrastive reading)
- (8) *Proper names without a determiner*
- a. $*[{}_{DP} D [{}_{NP} [{}_{AP} mio] [{}_N Gianni]]]$ (expected)
- b. $[{}_{DP} [{}_D [{}_N Gianni_1] D] [{}_{NP} [{}_{AP} mio] t_1]]$ (unmarked)

Conclusion:

The base structure of (8-b) must be as in (7-a). N moves out of its base position to a higher position (this accounts of the complementary distribution of N and D in the only position to the left of the adjective in the nominal projection).

Why is this evidence for the DP-over-NP-hypothesis?:

If N would be the head of the projection, there would be no position where it could move to. Hence, a higher X^0 must be available as a landing site for N. This category is D. D must thus be above NP. This analysis is incompatible with a NP-over-DP-hypothesis.

4.1.2 Georgi and Müller (2010)

Georgi and Müller (2010):

N Movement is no longer a strong argument for the DP-over-NP-hypothesis.

Assumptions:

- N always has a subcategorization feature $[\bullet D \bullet]$ which is accompanied by the probe feature $[*D*]$.
- N has a subcategorization feature $[\bullet A \bullet]$. $[\bullet A \bullet]$ is always higher on N's stack of structure-building features than $[\bullet D \bullet]$.

- (9)
- a. N's feature set:
 $\{[\bullet A \bullet] > [\bullet D \bullet], [*D*]\}$
 - b. Merge (N: $\{[\bullet A \bullet] > [\bullet D \bullet], [*D*]\}$, AP)
 $\rightarrow [{}_{N'} \text{ AP } N: [\bullet D \bullet], [*D*]]$ (mio Gianni)
 - c. Merge (${}_{N'} \text{ AP } N: [\bullet D \bullet], [*D*]$, DP)
 $\rightarrow [{}_{N'} \text{ DP } [{}_{N'} \text{ AP } N: [*D*]]]$ (D mio Gianni)
 - d. Move (N: $\{[*D*]\}$, $[{}_{NP} \text{ DP } [{}_{N'} \text{ AP } N]]$)
 $\rightarrow [{}_{N'} N: \{[*D*]\} [{}_{NP} \text{ DP } [{}_{N'} \text{ AP } -]]$ (Gianni D mio)
 - e. Agree (N: $\{[*D*]\}$, DP)
 $\rightarrow [{}_{NP} N: \{-\} [{}_{NP} \text{ DP } [{}_{N'} \text{ AP } -]]$

Conclusion:

Under a re-projection analysis DP has no longer to be above NP.

4.2 N Movement in Modern Hebrew

4.2.1 Ritter (1988)

- Modern Hebrew: Construct-state (CS) nominals arise when the head noun is immediately followed by a genitive phrase.
- The linear order in CS nominals must be NSO (S=subject, O=object).
- In CS-nominals, the definiteness marker *ha-* shows up postnominally as a proclitic to the genitive phrase (10-a). In non-CS nominals it appears in front of the head noun (10-b).

- (10)
- a. beyt ha-mora
house DEF-teacher
'the house of the teacher' (CS-nominal)
 - b. ha-bayit
DEF-house
'the house' (non-CS-nominal)

- Furthermore, definiteness spreading takes place in CS-nominals: *ha-* is realized in front of every item to the right of N.

- (11) a. harisat ha-oyev et ha-ir
destruction DEF-enemy OM DEF-city
‘the enemy’s destruction of the city’
b. beyt ha-mora ha-yefe
house DEF-teacher DEF-pretty
‘the pretty house of the teacher’

- *Postulated structures:*

- (12) a. [_{DP} N (ha-) XP-Gen ...] (CS)
b. [_{DP} (ha-)N ...] (non-SC)

Assumptions:

- CS nominals and non-CS-nominals are derived from the same underlying structure
- SNO is the base order

Conclusion:

In CS-nominals N must move to the left; the only position which is available for such movement is D. This analysis supports the DP-over-NP-hypothesis.

4.2.2 Georgi and Müller (2010)

Georgi and Müller (2010):

N Movement is no longer a strong argument for the DP-over-NP-hypothesis.

Assumptions:

N has a subcategorization feature [**•D•**] which is accompanied by the probe feature [***D***] in the presence of a genitive possessor (in the context for CS).

- (13) *Feature set of N in CS contexts*
N: { [**•N•**] > [**•D•**], [***D***] }

The probe feature [***D***] triggers movement of N because [***D***] cannot be checked in situ as N does not c-command its specifier DP. Therefore, reprojection movement of N is called for. This produces the N-initial word order.

- (14) [_{NP} [_N beyt₁] [_{NP} [_{DP} ha- [_{N'} [_{NP} mora₂] –]]]]
house DEF teacher
‘the house of the teacher’

Conclusion:

Under a reprojection analysis DP has no longer to be above NP.²

²For more evidence concerning the deriving of word-order variation in nominal projections see Georgi and Müller (2010)

5 Summary

- According to a reprojection analysis a moved N does not adjoin to a functional category, rather it moves out of its projection and remerges with it.
- This movement is triggered by a certain kind of probe feature (Münchhausen feature).
- Conceptual problems of traditional head movement are avoided (Extension Condition, c-command of base position, recursive application)
- The reprojection approach weakens arguments in favour of the DP-over-NP-hypothesis (evidence for N movement is no longer evidence for DP on top of NP).

References

- Georgi, Doreen and Gereon Müller (2010): ‘Noun Phrase Structure by Reprojection’, *Syntax* **13**(1), 1–36.
- Longobardi, G. (1994): ‘Reference and proper names: A theory of N-Movement in syntax and Logical Form’, *Linguistic Inquiry* **25**, 609–665.
- Ritter, E. (1988): ‘A head movement approach to construct state noun phrases’, *Linguistics* **26**, 909–929.