

Deriving Holmberg's Generalization as an optimal solution to a linearization paradox

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Abstract

This paper explores a particular theoretical framework for linearization with respect to Germanic Object Shift. OS is subject to Holmberg's Generalization: OS can only occur if the verb raises out of vP. I argue that OS is a type of PF-movement which serves to resolve a linearization paradox arising from the translation of a two-dimensional syntactic graph/tree into a one-dimensional linear string. The basic paradox arises because a head-moved verb must be immediately left-adjacent to both the Object and an adverbial under my assumptions. This results in two, equally optimal linearizations which represent the object-shifted and the non-object shifted constructions respectively. The approach also has important ramifications for head movement: it is shown that head-moved linearizations are more optimal than non-head-moved linearizations. Head-movement is thus a strategy for deriving more optimal linearizations and is not an imperfection.

Core Theoretical Proposal:

Word order is a function of syntactic relations

Assumptions about Syntactic relations

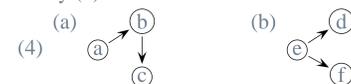
- Syntactic structure is the expression of syntactic relations: MERGE & AGREE.
- Syntactic relations are unambiguous, asymmetric, pairwise relationships between features where one is an antecedent and the other a dependent i.e. F checks/values uF & Selector checks/selects selectee.
- Syntactic relations can be expressed as partial orders (p,q).
- Syntactic operations (MERGE/AGREE) instantiate these feature pairs in particular structures/trees

Linearization Principles

- (1) **Relational Equivalence Axiom (REA):** All asymmetric, syntactic relations instantiated by MERGE/AGREE are treated as being formally equivalent i.e. there should be no separate treatment for different types of relation: a principle of methodological conservatism.
- (2) **Relational Precedence Axiom (RPA):** For any syntactic relation between categories p and q; if p → q then p precedes q. p and q may be any syntactic object: phrases, traces, feature bundles or features. The RPA is an absolute Principle.
- (3) **Relational Locality Condition (RLC):** p should precede q as 'closely' as possible; p is 0-close to q if p is immediately left-adjacent to q; p is 1-close to q if p if there is one category, r between p and q, etc. The RLC is a relative (violable) condition.
Crudely: selectors precede selectees; interpretable features precede uninterpretable counterparts. Once a particular relation has been linearized, that relation ceases to play a role in subsequent linearization decisions.

How does one linearize this?

Let's see how these principles apply to the two following basic sets of relationships: a transitive dependency (a) and a multivalued dependency (b).



- (5) Linearizing (4a) above. There is only one possible linearization (a).
a. a > b > c no RLC non-adjacency violations (3)
b. *b > a > c violation of RPA (2)

- (6) Linearizing (4b) above. There are two equally optimal linearizations (a,b).

- a. e > d > ⊗f 1 x RLC non-adjacency violation (3)
- b. e > f > ⊗d 1 x RLC non-adjacency violation (3)
- c. *f > e > d violation of RPA (2).

Morphological insertion: making PF sense of the linearization schema

- Spell out each feature (or groups of features) if there are morphological resources to do so (DM Marantz (1997); Harley and Noyer (1999)); insert the most highly specified form; the elsewhere condition applies.
- Repeated segments are organized into chains: spell out only the highest one (cf. Nunes (1999) or other chain interpretation theories).

Object Shift: The basic facts

- (7) Icelandic: Full DP objects can optionally move out of VP – if the verb does.

- a. *Jón keypti (bókina) ekki (bókina)*
Jón bought not book.the
'John didn't buy the book' (Zwart 1994:5,7)
- b. ...að *Jón keypti (bókina) ekki (bókina)*
...that Jón bought (book.the) not (book.the)

- (8) Swedish: Pronoun objects must move out of VP – if the verb does.

- a. *Jag kysste henne inte [vP_{henne}]*
I kissed her not
'I didn't kiss her'
- b. **Jag har henne inte [vP_{kysst} t_{henne}]*
I have her not kissed
'I haven't kissed her' (Holmberg 1999)
- c. *...att *jag henne inte kysste*
...that I her not kissed

Evidence for PF movement

- (9) Blocking effects: any material in VP blocks OS. (Holmberg 1999:2)

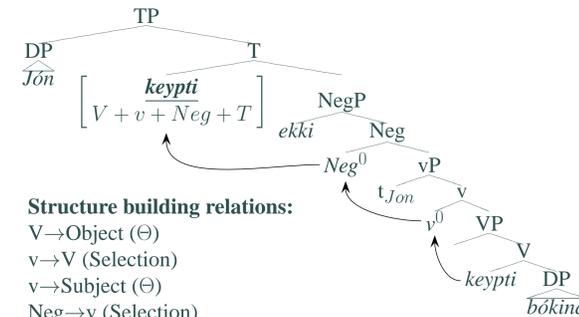
- a. **Jag gav den inte [vP_{Elsa} t_{den}]*
I gave it not Elsa t
'I didn't give it her Elsa'
- b. **Dom kastade mej inte ut t_{me}*
they threw me not out t
'The didn't throw me out'
- c. **Jag talade henne inte [vP_{med} t_{henne}]*
I talked her not with t
'I didn't talk with her'

Verb movement alone is not sufficient to license OS. And since overt material blocks it, OS is at heart a PF effect (Holmberg 1999).

- (10) Multiple OS Landing Sites suggest there is no single landing site.
Etter dette slo Guri (Per) heldigvis (?Per) ikke (Per) lenger
After this beat Guri Per fortunately not longer
(Per) alltid (Per) i sjakk
always in chess
'After this, Guri luckily didn't anymore always beat Per in chess' (Holmberg 1999:4)

Deriving optional OS for DPs

- (11) Derivation of (cf. (7)). Note, I make no assumptions about OS.



Structure building relations:

- V → Object (⊖)
- v → V (Selection)
- v → Subject (⊖)
- Neg → v (Selection)
- T → Neg (Selection)

Agreement relations (AGREE):

- T → Subject (Case AGREE)
- Subject → T (ϕ AGREE)

Narrow Syntax passes the relations implicit in (11) to the PF Linearization component.

- (12) Linearization schemas for DP objects (11/8a)

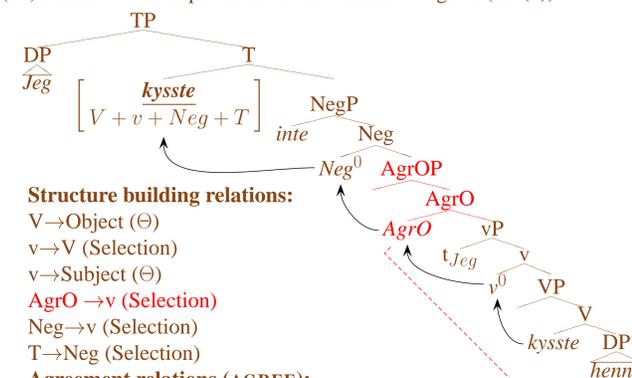
- a. S [V+v+Neg+T] Neg ⊗S ⊗O 2 x violations of RLC (3)
Jón keypti ekki t_{Jon} bókina
- b. S [V+v+Neg+T] O ⊗Neg ⊗S 2 x violations of RLC (3)
Jón keypti bókina ekki t_{Jon}
- c. S Neg O [V+v+Neg+T] S Impossible: violation of RPA (2)
Jón ekki bókina keypti t_{Jon}

Two equally optimal linearizations emerge corresponding to object shifted and non-object shifted orders respectively.

Deriving obligatory OS for pronouns

- Let's assume AgrO checks object pronouns (e.g. Topic/Definiteness, etc.) but make no further assumptions about movement.

- (13) I make no assumptions about movement to AgrOP.(cf. (8))



Structure building relations:

- V → Object (⊖)
- v → V (Selection)
- v → Subject (⊖)
- AgrO → v (Selection)
- Neg → v (Selection)
- T → Neg (Selection)

Agreement relations (AGREE):

- T → Subject (Case AGREE)
- Subject → T (ϕ AGREE)
- AgrO → Object (ϕ AGREE)

- (14) Linearization patterns for pronominal objects (13/7)

- a. S [V+v+AgrO+Neg+T] O ⊗Neg ⊗S 2 x violations of RLC (3)
Jag kysste henne inte t_{jag}
- b. S [V+v+AgrO+Neg+T] Neg ⊗S ⊗⊗O 3 x violations of RLC (3)
Jag kysste inte henne t_{jag}
- c. S Neg O [V+v+AgrO+Neg+T] S Impossible: violation of RPA (2)
*Jag inte henne kysste t_{jag}

- The object-moved linearization is the most optimal (14a).

Conclusions

- OS is the result of optimal resolution of a word-order paradox created when 2D graphs are mapped to 1D linearizations.
- OS follows from general principles of linearization of relations (De Vos 2009; De Vos 2008, 2013; De Vos 2014a,b).
- No additional requirements vis a vis domain extension, non-visibility of adjuncts at PF, semantic considerations at PF, etc. (Holmberg 1999).
- HG is reformulated, not as a condition on OS or HM, but rather as a canonical ordering between verb and object and has no special status.
- The requirements of the PF (linearization) interface constrain the types of representations (pairwise partial order relations) sent to it by Narrow Syntax.

Other papers with more information

- Visit the website:
<http://www.ru.ac.za/englishlanguageandlinguistics/people/markdevos/normalizationgrammar/>
- De Vos, M. (2014) "Head movement is an artefact of optimal solutions to linearization paradoxes". SPIL Plus (44):23-48.
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