

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

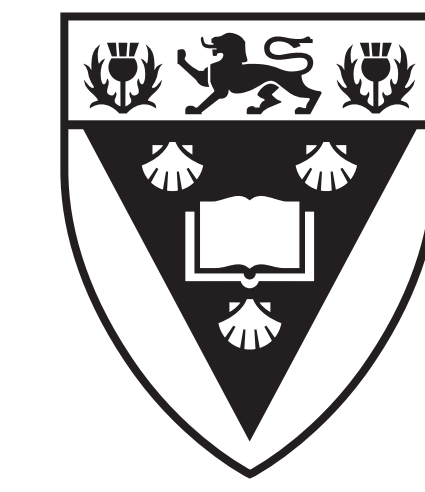
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Abstract

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

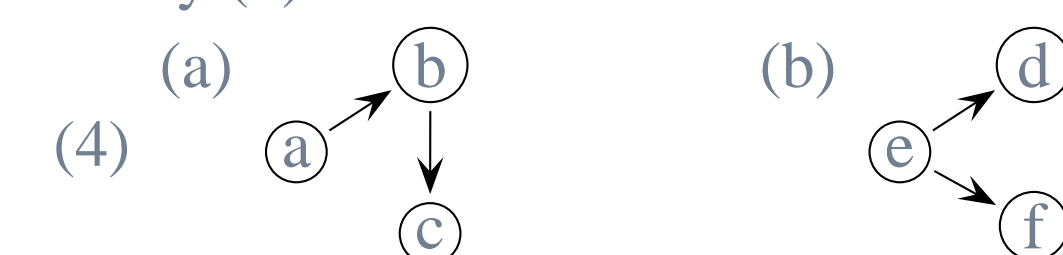
- Syntactic structure is the expression of syntactic relations: MERGE & AGREE.
- Syntactic relations are unambiguous, asymmetric, pairwise relationships between features where one is an antecedent and the other a dependent i.e. F checks/values uF & Selector checks/selects selectee.
- Syntactic relations 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).

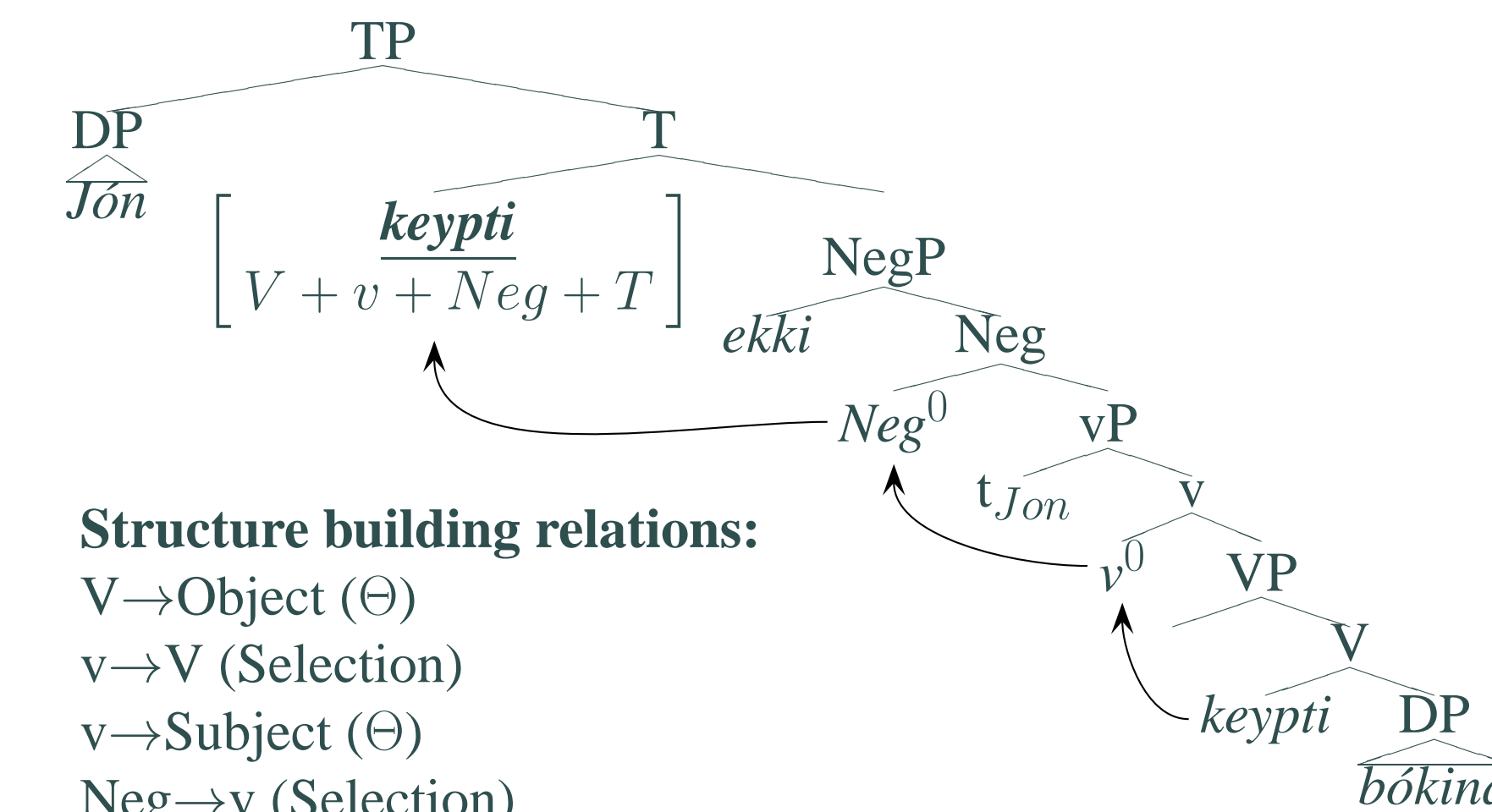
(10) Multiple OS Landing Sites suggest there is no single landing site.

- 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)

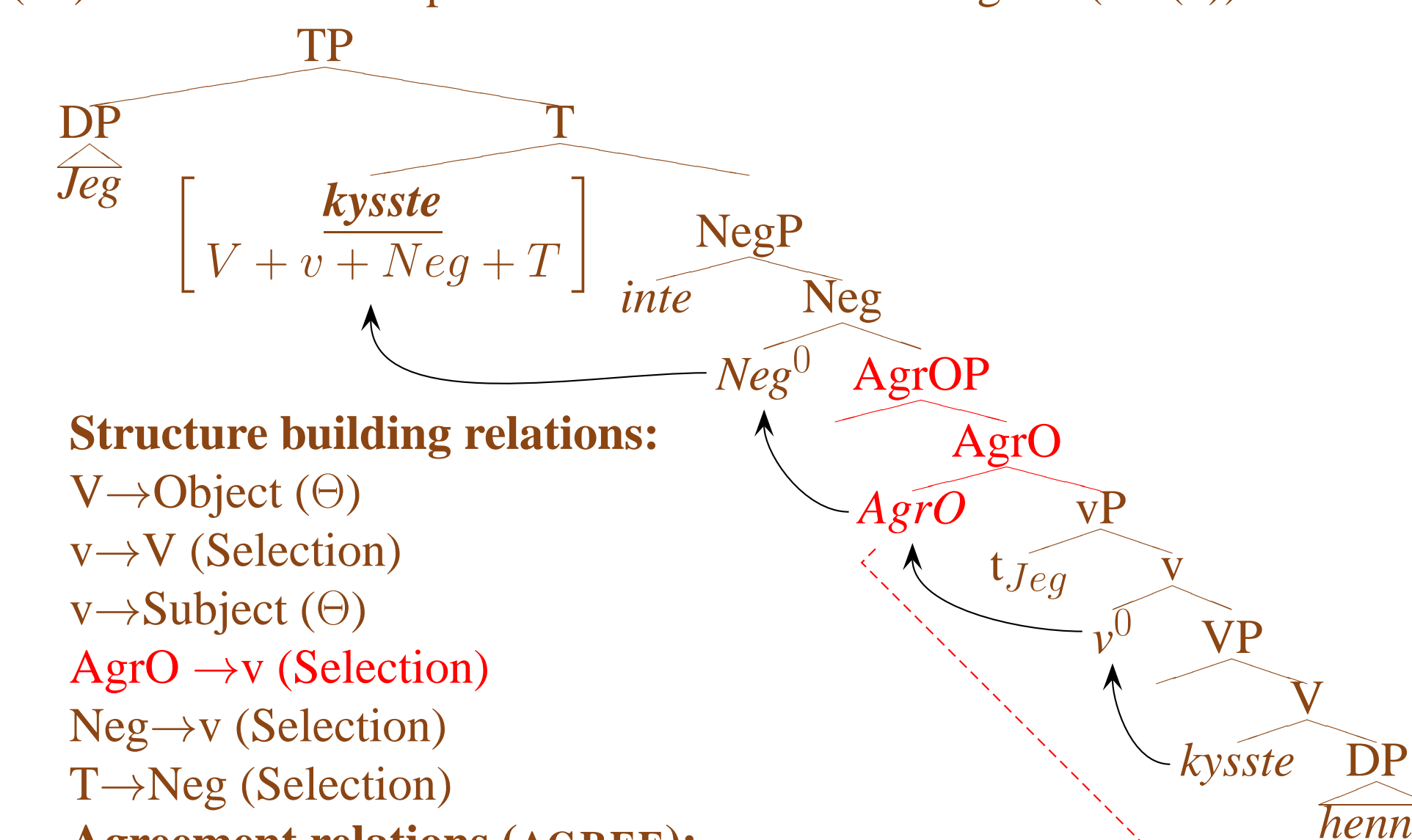
- a. S [V+v+Neg+T] Neg ⊗S ⊗O 2 x violations of RLC (3)
Jón keypti ekki t_{Jón} bókina
- b. S [V+v+Neg+T] O ⊗Neg ⊗S 2 x violations of RLC (3)
Jón keypti bókina ekki t_{Jón}
- c. S Neg O [V+v+Neg+T] S Impossible: violation of RPA (2)
Jón ekki bókina keypti t_{Jón}

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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