DISHARMONIC WORD ORDER, QUIRKY MORPHOLOGY AND THE AFRIKAANS VERB CLUSTER∗
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1. Introduction

(1) The Final-over-Final Constraint (FOFC; Biberauer, Holmberg & Roberts 2007 et seq./BHR):
For all heads \( \{ \alpha, \beta, \ldots \} \) on a single projection line, if \( \alpha \) is a head-initial phrase and \( \beta \) is a phrase immediately dominating \( \alpha \), then \( \beta \) must be head-initial. If \( \alpha \) is a head-final phrase, and \( \beta \) is a phrase immediately dominating \( \alpha \), then \( \beta \) can be head-initial or head-final.

- (1) rules out structures like (2):

\[
\begin{array}{c}
\ast \beta P \alpha P \gamma P \beta \\
\ \beta' \\
\ \alpha P \ \\
\alpha \gamma P
\end{array}
\]

where \( \alpha P \) is the complement of \( \beta \) and \( \gamma P \) is the complement of \( \alpha \), and \( \alpha \) and \( \beta \) are part of the same projection line (cf. Grimshaw 1991 et seq.)


- Implications for word-order typology:

\[
\begin{array}{c}
\text{(a) Consistent head-final (harmonic)} \\
\beta' \\
\beta \\
\alpha P \\
\gamma P
\end{array}
\quad
\begin{array}{c}
\text{(b) Consistent head-initial (harmonic)} \\
\beta' \\
\beta \\
\alpha P \\
\gamma P
\end{array}
\quad
\begin{array}{c}
\text{(c) Initial-over-Final (disharmonic)} \\
\beta' \\
\beta \\
\alpha P \\
\gamma P
\end{array}
\quad
\begin{array}{c}
\text{(d) Final-over-Initial (disharmonic)} \\
\ast \\
\beta' \\
\beta \\
\alpha P \\
\gamma P
\end{array}
\]

This is the FOFC case.

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i.e. in the domain of word order, we expect to find a skewing in respect of the types of attested word orders: while both types of harmonic pattern should be readily attested, only one type of disharmony should surface.

- FOFC, Germanic, particularly Afrikaans, and this paper:
  - BUT: certain West Germanic varieties appear to permit FOFC-violating 3-verb clusters, with Afrikaans in particular being a serial offender ...
  - My objective
    a. to identify the relevant 3-verb clusters (Section 3);
    b. to consider their properties relative to “well-behaved” 3-verb clusters (Section 4 part I); and
    c. to establish whether the “badly behaved” clusters constitute a genuine challenge to the proposed universality of (1), or whether, instead, they represent data that may facilitate more fine-grained understanding of this constraint, the core notions it’s built on (e.g. notions of ‘head’, ‘category’, ‘extended projection’, etc.), and the nature of verb clusters more generally (Section 4 Part II)

2. Empirical motivation for FOFC: a Germanic-oriented perspective
2.1 Clausal word order in Germanic
- West Germanic permits a mix of head-initial and head-final orders in VP and IP:

  (4) O V AUX (“head-final” order in VP and IP, assuming auxiliaries are in I):

  ... dass Johann das Buch gelesen hat
  that John the book read has
  “… that John has read the book”

  (also found in Dutch, Afrikaans, all German and Dutch/Flemish dialects, Old English, Old Norse, Gothic)

  (5) O AUX V (“verb-raising”):

  a. ... dat Jan het boek wil lezen [Dutch]
      that John the book wants read-INF
      “... that John wants to read the book” (cf. Evers 1975 and subsequent work)

  b. ... þe æfre on gefeohte his handa wolde afylan [Old English (OE)]
      who ever in battle his hands would defile-INF
      “... whoever would defile his hands in battle”
      (Ælfric’s Lives of Saints 25.858; Pintzuk 1991: 102, 62)

  (also found in German and Dutch/Flemish dialects, Afrikaans, Old Norse)
(6) AUX O V (“verb projection raising”)

a. ... da Jan wilt een huus kopen [West Flemish]
   that Jan wants a house buy-INF
   “... that Jan wants to buy a house” (cf. Haegeman & van Riemsdijk 1986)

b. ... þæt hie mihton swa bealdlice Godes geleafan bodian [OE]
   that they could so boldly God’s faith preach
   “...that they could preach God’s faith so boldly”
   (The Homilies of the Anglo-Saxon Church I 232; van Kemenade 1987:179, 7b)

(7) V AUX O (“object extraposition”):

a. Obligatory with clausal complements¹ and possible with PPs in modern West
   Germanic, but not really with DPs (contrast older West Germanic):

   ... dat Jan verliefd is op Marie [PP] [Dutch]
   that John in-love is on Mary
   “... that John is in love with Mary” (Zwart 1997:38)

b. ... þæt ænig mon atellan mæge ealne þone demm [OE]
   that any man relate can all the misery
   “... that any man can relate all the misery”
   (Orosius 52.6 – 7; Pintzuk 2002: 283, 16b)

c. ... huan ér the frôdo man gifrumid habdi uualdandes uuilleon [Old Saxon]
   until the old man done had God’s will
   “... until the old man had done God’s will” (Heliand 105-106)

(also found in Swiss German, Afrikaans, Middle Dutch, Old High German, Old Norse – see
BHR for references)

¹ As Biberauer & Sheehan (2010) observe, this fact circumvents what would otherwise have been a FOFC
violation; owing to the fact that head-initial CPs are systematically “extraposed”, not just in Germanic, but in
OV languages with initial Cs more generally, the structure in (i) is systematically avoided:

(i) *  VP
    CP  V
    C   TP
(8) AUX V O (“verb raising” combined with “object extraposition”):

a. Hy laat val die bal  
   he let fall the ball  
   “He drops the ball”  

   [Afrikaans]

b. Ikh hob gezien Moishn  
   I have seen Moses  
   “I saw Moses”  

   [Yiddish]

(citation)


• The unattested order is the one which violates FOFC for $\alpha = V$, $\beta = Aux$ (whatever category Aux is):

(9) *  Aux’  
    VP       Aux  
    V        O

• Strikingly, VOAux does not even surface under plausible contact conditions (cf. Biberauer, Sheehan & Newton 2010):

e.g. South Africa: Afrikaans (OV; final AuxP and final VP) meets English (VO; initial AuxP and VP), but Kaapse Afrikaans/Kaaps:

(10) a. … dat ek [VP $R1400$ van die Revenue gekry] het  
    that I R1400 from the Revenue got  
    “… that I got R1400 from the Receiver of Revenue”

   [O-V-Aux]

b. … dat ek [VP R1400 van die Revenue gekry] het  
   [Aux-O-V]

c. … dat ek [VP gekry R1400 van die Revenue] het  
   [Aux-V-O]

d. … dat ek [VP gekry R1400 van die Revenue] het  
   [*V-O-Aux]

• By contrast, we readily find final-over-initial structures where the dominated XP is not on the same projection line as the dominating XP:

(10) a. … dat ek [VP DP die boek] lees  
    that I the book read  
    “… that I am reading the book”

   [Afrikaans]
b. ... dass i [VP [PP uf Berlin] gang] [Zürich German]
that I to Berlin go
“... that I went to Berlin” (example from Salzmann 2010)

Thus: FOFC clearly needs to be defined in such a way that it is sensitive to **projection lines** and the notion ‘extended projection’ (cf. BHR 2009, 2010 and Biberauer & Sheehan 2010 for detailed discussion; see also Section 4 below)

2.2 Diachronic developments in Germanic

(11) “If language change is constrained by grammatical structure, then synchronic assumptions have diachronic consequences” (Kiparsky 2008:23)

- If FOFC is an absolute universal, word-order change must proceed along certain pathways:
  o OV → VO (final to initial) change must go “top-down”:

(12) \[\text{[O V I]} \text{C} \rightarrow \text{[C \,[O V \,I]} \text{]} \rightarrow \text{[C [I \,[O V ]]} \text{]} \rightarrow \text{[C [I [O V ]]} \text{].}\]

  o VO → OV (initial to final) change must go “bottom-up”:

(13) \[\text{[C [I [V O ]]} \text{]} \rightarrow \text{[C [I [O V ]]} \text{]} \rightarrow \text{[C [O V \,I]} \text{]} \rightarrow \text{[[O V \,I]} \text{C}.]\]

Any other route will violate FOFC at some stage.

- See Biberauer, Newton & Sheehan (2009a,b) for detailed discussion of Germanic, Romance and Ethio-Semitic case studies corroborating the above pathways. Further evidence comes from Niger-Congo languages that have undergone a VO to OV change that is limited to VP and vP (cf. Nikitina 2008 for recent discussion and references) and the Sami languages within Finno-Ugric, which have undergone the reverse change.

Here, we offer only the most well-known case study (but cf. also the history of the Scandinavian languages (Hróarsdóttir 2000), Yiddish (Wallenberg 2009) and Afrikaans (Biberauer, Sheehan & Newton 2010)).

**English as a case study**

- Lightfoot (1991, 1999), building on Canale (1978) and van Kemenade (1987): “catastrophic” reanalysis in 12th century led to IP- and VP-final Old English (OE) being reanalysed as IP- and VP-initial Middle English (ME)

(14) a. er þånne þe heuene oðer eorðe shapen were [V-AUX]
before that heaven or earth created were
“before heaven or earth were created” (Trinity Homilies, 133.1776)
b. for ði ðat godd isæd hadde to Adame: Morte morieris! [V-AUX]
   "because God had said to Adam: “Dying, you will die!”"
   (Vices and Virtues, 105.1276)

c. þat þurh soð scrifte synnes ben forgeuene [AUX-V]
   "that sins are forgiven following sincere confession"
   (Trinity Homilies, 23.304)

d. ei wel ıtohe muð for scheome mahe seggen [AUX-V]
   "that any well-disciplined mouth may say for shame"
   (Hali Meiðhad, 146.262)

- sharp decline in OV order at the end of the OE period (cf. Lightfoot 1991, Pintzuk 1991/1999), but OV orderings remained until late ME, and:

(15) “there is a period when INFL-medial [i.e. I-initial – TB/GW] surface order is frequent. … The languages, therefore, has both OV and VO verb phrases, as well as both INFL-final and INFL-medial clauses. It is natural then to expect that the INFL-medial and OV options would combine. Of course, it is true that INFL-final and VO do not combine, but this failure seems to be due to some property of UG (Kiparsky 1996).” (Kroch & Taylor 2000: 153).

Thus, OE and ME permitted a range of word-order options in the clausal domain, but never FOFC-violating VOAux.

3. A Germanic challenge to FOFC?

3.1 Introduction

- Walkden (2009): West Flemish (WF) appears to permit a FOFC-violating structure (where 1,2,3 reflects the standardly employed West Germanic verb-cluster hierarchy-indicating notation in terms of which 1 signifies the least embedded verb [structurally highest] and 3 the most embedded [structurally lowest] one):

(16) a. ... da Valère willen2 dienen boek lezen3 eet1
     "... that Valère has wanted to read that book” (Haegeman 1998b: 634)

b.       AuxP
    ModP       eet1
    willen2  VP
    DP  V
    dienen boek lesen3
i.e. head-final VP dominated by head-initial ModalP (“permissible” disharmony); AND head-initial ModalP dominated by head-final AuxP ← **FOFC violation**!

And the same 231-structure is possible in infinitival structures:

(17) Willen en us kuopen een was en misse want.INF a house buy.INF have.INF was a mistake “Having wanted to buy a house was a mistake” (Haegeman 2001: 214)

### HOW WIDESPREAD ARE STRUCTURES OF THIS TYPE?

- On the distribution of (superficially) FOFC-violating 231 in Germanic more generally:
  - Wurmbrand (2005:8): 231 structures involving Mod₂-V₃-Aux₁ are restricted to West Flemish (WF) ... and Afrikaans *Infinitivus Pro Particípio (IPP)* structures
  - Barbiers (2005:245): 231 structures involving Mod₂-V₃-Aux₁ also occur in 26 locations within the area surveyed by the *Syntactic Atlas of the Dutch Dialects* (SAND) project
  - Schmid (2006): 231 structures occur in WF, Afrikaans and Zürich German (ZG), with the first two being the most “prolific” offenders; cf. also Salzmann (2010) on Bodensee Alemannic German

[By contrast, 213 is systematically missing ... the wrong gap from a FOFC perspective, but Abels (2009) suggests it’s the one we find generally in Germanic, and it’s also the one which Cinque (2005) highlights in the DP context in relation to Greenberg’s Universal 20.]

### THE QUESTION: Do 231 clusters in Germanic undermine the status of the Final-over-Final Constraint as a genuine hierarchical universal?

#### 3.2 231 clusters in Afrikaans

- See the Appendix and Biberauer & Walkden (2010) for more detailed discussion of 231 clusters in West Flemish, Dutch and Swiss German varieties:
- Our focus here: Afrikaans

##### 3.2.1. *Afrikaans*

- Afrikaans is the most prolific offender in relation to available 231 orders:

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2 Wurmbrand (2005: 8) observes that 231 is the obligatory order in infinitival structures; the same is not true in finite contexts; cf. Section 3.2 for further details

3 The data in this section are based on Biberauer’s judgements, which have been checked with further native speakers. Where noted, they depart from those reported in Schmid (2006).
(18) a. ... dat hy die medisyne kon drink het \[modal\]
    that he the medicine could.INF drink.INF have
    “... that he could drink the medicine”

b. ... dat hy hom die medisyne maak/laat drink het \[causative\]
    that he him the medicine make.INF let.INF drink.INF have
    “... that he made/let him drink the medicine”

c. ... dat hy haar hoor roep het \[perception\]
    that he her hear.INF call.INF have
    “... that he heard her call”

d. ... dat ek haar die bokse help dra het \[benefactive\]
    that I her the boxes help.INF carry.INF have
    “... that I helped her carry the boxes”

e. ... dat die mense bly staan het \[durative\]
    that the people remain.INF stand.INF have
    “... that the people remained standing”

f. ... dat dit ophou reën het \[inchoative\]
    that it stop.INF rain.INF have
    “... that it has stopped raining”

g. ... dat hy probeer voorgee het \[control\]
    that he try.INF pretend.INF have
    “... that he tried to pretend”

h. ... dat hy die boek gaan lees het \[motion\]
    that he the book go.INF buy.INF have
    “... that he went to buy the book”

i. ... dat hy die boek loop (en) koop het \[linking\]
    that he the book walk.INF and buy.INF have
    “... that he went and bought the book”

j. ... dat hy die boek sit en lees het \[linking\]
    that he the book sit and read have
    “... that he was sitting and reading the book”

Schmid (2006:43) has (i):

(i) ? ... dat ek dit altyd wil doen het
    that I it always want do have
    “... that I have always wanted to do it”

This structure is, however, not grammatical in modern Afrikaans. **Worth noting about the Afrikaans perfect auxiliary het: the finite and non-finite forms are identical.**

Schmid (2006:65) marks this example ?, but it is fully grammatical, even in standard Afrikaans.

Cf. de Vos (2005) for detailed discussion of the so-called *linking verb* construction that Afrikaans has innovated.
• Crucially, V₁ is subject to strict constraint, which also holds in the other West Germanic varieties, barring Bodensee Alemannic (where V₁ and V₂ have to be “the same verb” in some sense; see Appendix): it cannot be a modal or any auxiliary other than the present perfect auxiliary.

• Consequently, all of these 231 structures are *Infinitivus pro Participio* (IPP) structures.

• V₂ is a restructuring verb or one that participates in pseudo-coordination (cf. i.a. de Vos 2005, Kjeldahl 2010)

• 123 order is possible alongside 231 order in all of the above cases. Importantly, though, **231 order is the neutral order** in all cases, with 123 being colloquial (contra Schmid 2006), with the exception of inchoatives, where 123 is marginal:

(19) a. ... dat hy die medisyne het₁ kon₂ drink₃ [modal]  
that he the medicine have can.INF drink.INF  
“... that he could drink the medicine”

b. ??... dat dit het₁ ophou₂ reën₃ [inchoative]  
that it have stop.INF rain.INF  
“... that it has stopped raining”

BUT:

• 231 orders aren’t limited to IPP contexts in Afrikaans (contrast WF, Dutch and Swiss German, barring Bodensee Alemannic) – structures involving causative, perception, benefactive and, more marginally, durative and linking verbs also permit 231 orders where V₂ is a past participle; for inchoatives, this is very natural; for motion gaan, it is out (cf. also Schmid 2006 and Zwart 2007:95):

(20) a. ... dat hy hom die medisyne gemaak₂/ gelaat₂ drink₃ het₁ [causative]  
that he him the medicine make.PRT let.PRT drink.INF have  
“... that he made/let him drink the medicine”

b. ... dat hy haar gehoor₂ roep₃ het₁ [perception]  
that he her hear.PRT call.INF have  
“... that he heard her call”

c. ... dat ek haar die bokse gehelp₂ dra₃ het₁ [benefactive]  
that I her the boxes help.PRT carry.INF have  
“... that I helped her carry the boxes”

d. ??... dat die mense daar gebly₂ staan₃ het₁,⁷ [durative]  
that the people there remain.PRT stand.INF have  
“... that the people remained standing”

e. ... dat dit opgehou₂ reën₃ het₁ [inchoative]  
that it stop.PRT rain.INF have  
“... that it stopped raining”

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⁷ This is an extremely colloquial structure, significantly more so than (31a-c).
f. ??... dat hy dit geprobeer2 verkoop3 het1 that he it try.PRT sell.INF have “... that he tried to sell it”

g. ... dat hy die boek geloop2 (*en) koop3 het1 that he the book walk-PRT and buy.INF have “... that went to buy the book”

h. ... dat hy die boek gesit2 en lees3 het1 that he the book sit-PRT and read have “... that he was sitting and reading the book”

- *ge- might be semantically vacuous in these structures (spurious morphology), or ...  

- Again, 123 ordering is also possible in these cases, although this is the more colloquial structure, except in the case of the control verbs, i.e. 231 is the norm in a large number of Afrikaans constructions:

(21) a. ... dat hy hom die medisyne het1 gemaak2/gelaat2 drink3 that he the medicine could.PRET.INF can.PRES.INF drink.INF have “... that he could/was able to drink the medicine”

b. ... dat hy haar het1 gehoor2 roep3 that she the book must.PRET.INF must.PRES.INF read.INF have “... that she should have read the book”

c. ... dat sy die boek sou2/ *sal2 lees3 het1 that she the book should.PRET.INF /shall.PRES.INF read.INF have “... that she would have read the book”

- Also unique to Afrikaans is the behaviour of the modals in 231 structures:

(22) a. ... dat hy die medisyne kon2 /*kan2 drink3 het18 that he the medicine could.PRET.INF can.PRES.INF drink.INF have “... that he could/was able to drink the medicine”

b. ... dat sy die boek moes2 / *moet2 lees3 het1 that she the book must.PRET.INF must.PRES.INF read.INF have “... that she should have read the book”

c. ... dat sy die boek sou2/ *sal2 lees3 het1 that she the book should.PRET.INF /shall.PRES.INF read.INF have “... that she would have read the book”

- The perfective auxiliary triggers **preterite assimilation** (cf. Ponelis 1993 and Donaldson 1993)

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8 Schmid (2006:43) has (i):

(ii) ??... dat ek dit altyd wil doen het that I it always want do have “... that I have always wanted to do it”

This structure is, however, not grammatical. See the main text for further discussion of the form of Afrikaans modal-containing 231-structures.
Modals selecting modals optionally exhibit the same property, except these are necessarily 123 structures:

(23)  

a. ... dat sy die boek *sou*1 *wou*2 *lees*3  
that she the book *should.PRET want.PRET.INF read.INF  
“... that she would want to read the book”  
[finiteness test: *Sy sou*1 *die book wou*2 *lees*3 – *sou* undergoes Verb Second]

b. ... dat *hy* *dit* *moes*1 *kon*3 *gesien*4 *het*2  
that he *it* *must.PRET could.PRET.INF see.PRT *have.INF*  
“... that he must have been able to see it”  
[finiteness test: *Hy moes*1 *dit kon*3 *gesien*4 *het*2 – *moes* undergoes Verb Second]

NOT:  

b’. *... dat *hy* *dit* *moes*1 *het*2 *kon*3 *gesien*4  
that he *it* *must* *have*.*INF could*.*PRET see*.*PRT*  

i.e. the infinitival perfective auxiliary behaves like its WF counterpart in having to be final in relation to the verb it selects.

- Is the “extra” preterite morphology semantically vacuous? Or is infinitival *het* in Afrikaans defective in some sense, such that it lacks features which are, instead, expressed on the non-finite modal? In this connection, we might also want to view “extra” *ge-* as indicative of a deficiency associated with *het* (a multiply homophonous lexical item).
- In general, then, Afrikaans presents a range of superficially quirky morphology (cf. Kjeldahl 2010) in the complement of its perfective auxiliaries: IPP, “extra” *ge-* and preterite assimilation.

3.2.2. Summary

- 231 orders are certainly not unattested in Germanic, with Afrikaans being particularly prolific
- The structures that we do find are subject to striking constraints, however:
  (a) *V*1 must practically always be a perfective auxiliary (Bodensee-Alemannic is the only exception, where a different constraint holds on *V*1)
  (b) *V*2 must be a restructuring or a linking verb
- 231 order typically alternates with 123 order, although languages differ as to whether 231 or 123 is the neutral order.

4. Evaluating the data

- Germanic verb clusters and FOFC:
  - There are no ill-formed 2-verb clusters (*VOAux*)
  - Ill-formed 3-verb clusters are highly constrained in structure:

\[
(24) \text{Aux}_{PERF1} - \text{MOD/ASP}_{Restructuring-Inf2} - V_3
\]

- FOFC is a hierarchical universal (cf. Whitman 2008, BHR 2010), which is centrally concerned with projection (cf. (1))
4.1. West Germanic 231 and hierarchy

- Considering the hierarchical point first:
  - Svenonius (2007:273): West Germanic IPP orders can never be base-generated as material that surfaces to the left of the verbal cluster may only relate to lower parts of the cluster (the "clause-union" phenomenon)

(25) a. ... omdat Jan het probleem helemaal hebben begrepen, [Dutch] because John the problem completely must have understood

[helemaal is a low adverbial, which scopes over begrepen and not hebben or moet; cf. Cinque’s (1999) completive Aspect]

b. ... dat sy dikwels die skool gaan besoek, [Afrikaans] that she often went to visit the school

[dikwels scopes over besoek or maybe – see below – gaan besoek, but not het, and die skool is the complement of besoek]

- while objects may undergo leftward movement (scrambling, etc.), adverbs aren’t generally assumed to undergo independent movement.

Consequence: 231 structures can’t straightforwardly have the structure indicated in (16) above:

(16) a. ... da Valère willen dienen boek lezen eet, [French] that Valère wants that book read that eats

[Haegeman 1998b: 634]

b. 

```
  AuxP
    ModP  eet
    willen2 VP
      DP  V
    dienen boek lezen
```

- we have to assume movement of some kind to have taken place to generate these structures (even if we reject a Kaynean approach)

BUT: the structures still superficially violate FOFC, and movements creating FOFC-violating structures are ruled out by BHR (2010).

(26) *

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  AuxP
    VP  Aux'
      V  O  Aux  tVP
```

12
4.2. West Germanic 231 and projection

- Elements that have been said not to project often surface in (apparently) FOFC-violating structures – e.g. particles (cf. the papers in Biberauer & Sheehan (forthcoming), and Biberauer (forthcoming a,b) for further discussion):

\[(27)\]

a. \(Hulle\ het\ nie_1\ verstaan\ nie_2\) [clausal negation]
   they have not understood NEG
   “They didn’t understand”

b. \(Nie_1\ die\ boek\ nie_2,\ maar\ die\ koerant\ moet\ jy\ lees\) [DP constituent negation]
   not the book NEG but the newspaper must you read.INF
   “Not the book, but the newspaper is what you need to read”

c. \(Dit\ moet\ nie_1\ langer\ nie_2\ as\ 10\ 000\ woorde\ wees\) [AP constituent negation]
   it must no longer NEG than 10 000 words be.INF
   “It must be no longer than 10 000 words”

i.e. \(nie_2\) superficially violates FOFC as it can be shown to dominate a range of head-initial XPs (CP, DP and AP\(^9\)).

Biberauer (2008, 2009, 2010) proposes that this particle doesn’t violate FOFC by virtue of the fact that it is \textbf{acategorial}, i.e. lacks a categorial specification and, as result cannot select complements in the usual manner:

\[(28)\]

a. \(\text{PolP}\)
   \(\text{CP [+V]} \quad \text{Pol [-]}\)

b. \(\text{PolP}\)
   \(\text{DP [+N]} \quad \text{Pol [-]}\)

c. \(\text{PolP}\)
   \(\text{AP [+N +V]} \quad \text{Pol [-]}\)

Projection peculiarities in the 231-domain

4.2.1. WF present-perfect HAVE and extensions we might make to Afrikaans

- Present-perfect HAVE in WF doesn’t show the behaviour expected of a regular finite auxiliary in negative 231 structures (in the 123 alternative, though, it behaves normally):

\[(29)\]

a. \(\ldots\ \text{da\ Valère\ nooit\ willen}_2\ \text{de\ waste\ doen}_3\ \ast\text{en}\) - \(\text{eet}_1\)
   that Valère never want.INF the washing do.INF NEG-INF
   “... that Valère has never wanted to do the washing”

b. \(\ldots\ \text{da\ Valère\ nooit}\ \text{en-}\ \text{eel}_1\ \text{willen}_2\ \text{de\ waste\ doen}_3\)
   that Valère never NEG. has want.INF the washing do.INF
   “... that Valère has never wanted to do the washing” \textbf{(Haegeman 1998b:641)}

- The fact that \(\text{eet}\) is final is not a relevant consideration as \(\ast\text{en}\) is compatible with clause-final finite verbs:

\(\text{eet}\text{ is final is not a relevant consideration as}\ \ast\text{en}\text{ is compatible with clause-final finite verbs:}\)

\(\text{Unlike its German and Dutch counterparts, AP is essentially head-initial in modern colloquial Afrikaans.}\)
(30) ... da Valère Marie die boeken nie (en)- geeft
     that Valère Marie the books not NEG gives
     “... that Valère isn’t giving Marie the books”       (Haegeman 1998a:270)

• Haegeman (1998a): final HAVE (231 orders) is featurally distinct from initial HAVE
  (123 orders), lacking either tense or finiteness features and thus occupying a lower
  projection than initial HAVE (her F₂P – see (35) below)
• Afrikaans finite and non-finite het exhibit exactly the same positional properties, and
  it’s also not particularly clear that these are distinct lexical items (cf. the homophony
  observation in note 4).
• Our speculation: if a lack of [tense]/[finiteness] features can be established, final HAVE
  cannot project normally (see further below)

4.2.2. The quirky morphology associated with V₂ (infinitival i.p.o. participial)
• The unexpected infinitival form of V₂ may signal underlying (syntax-internal)
  defectivity, e.g. that there isn’t the usual projection relationship between V₁ (the
  present-perfect auxiliary) and its complement (superficially infinitival V₂), or that there
  is something unusual about the way in which V₁ and V₂ are merged together (cf.
  Kjeldahl 2010 on ‘clausal overcrowding’).
• Kjeldahl (2010: 53) highlights a case where IPP arises in Danish as a consequence of
  the fact that it is not possible for the required perfect auxiliary to be projected:

(31) a.  Louise er gået  ud [□] (*hentet) avisen
     Louise is walked out and buy.PART the.paper
     “Louise went and bought the paper”

b.  Louise er gået  ud [□] (*hentet) avisen
     Louise is walked out and buy.INF the.paper
     “Louise went and bought the paper”

Here the verbs have conflicting auxiliary-selection requirements, which cannot be resolved
by inserting an auxiliary for each verb (by virtue of the reduced structure associated with
pseudo-coordination structures) or by simply omitting the required auxiliary and employing
the required participle (31a).

4.2.3. The semantically vacuous participial morphology associated with V₂ in Afrikaans 231
structures
• Afrikaans ge- has independently been shown to have “a different status in Afrikaans
  than in the rest of Continental West-Germanic” (Zwart 2007:95 citing cf. de Vos 2002)
• De Vos (2002) proposes that ge- is a Tense marker, unrelated to perfectivity. Thus we
  have the same situation as that proposed by Zwart for the origins of IPP structures:
  present-perfect AUX selects [+past][perfect-] V₂, another case of “partial projection”.
• ... or maybe the morphology isn’t semantically vacuous and, instead, points to the fact
  that perfective het lacks a past specification (cf. Afrikaans’s “extra” ge- and preterite
  assimilation)
4.2.4. Cases where $V_2$ and $V_3$ can be shown to have an unusually close relationship

- $V_2$ and $V_3$ appear to constitute a structural unit in certain Afrikaans and Bodensee-Alemannic 231 structures:

  - 23-combinations may front as a constituent:

    (32) a. Hy het die boek darem sonder klagte **gaan$_2$ lees$_3$**
        he have the book PART without complaint go.INF read.INF
        “He (after all) went to read the book without complaint”

    b. **Gaan$_2$ lees$_3$** het$_1$ hy die boek darem sonder klagte
        go-INF read.INF have he the book PART without complaint
        “As for going to read, he went and read that book without claim”

    c. ***Lees$_3$** het$_1$ hy die boek darem sonder klagte **gaan$_2$**
        read.INF have he the book PART without complain go.INF

    Contrast:

    d. ***Kon$_2$ koop$_3$** sou$_1$ hy die boek darem sonder klagte
        could.INF buy.INF would he the book PART without complaint
        i.e. 23-combinations in 3-verb clusters that don’t have the 231-required AUX-MOD/ASP-V profile cannot undergo the fronting that is available to 23-combinations associated with some of the verbs creating 231 clusters (cf. (29) above).

- Bodensee-Alemannic permits the same option (Salzmann 2010:2):

  (33) **Go** poschte gan i nôd
      go.INF shop.INF go i not
      “As for (going) shopping, I didn’t go”

- In 2-verb clusters, causative, benefactive, durative, motion and linking $V_2$s may undergo “quirky Verb Second” (cf. de Vos 2005)

  (34) a. Hulle laat vaar daardie plan
        they let drift that plan
        “They put that plan aside”

    b. Ek **gaan haal** die drankies
        I go fetch.INF the drinks
        “I go fetch the drinks”

    c. Hy **loop koop** die braaihout
        he walk buy.INF the barbecue-wood
        “He goes to buy the barbecue wood”

    d. Sy **staan en lees** tydskrifte by die bushalte
        she stand and read magazines at the bus-stop
        “She is standing reading magazines at the bus-stop”

[Fake co-ordination ‘unexpected event’ structures also undergo quirky $V_2$, so we also have:
e. Sy gaan staan en vergeet toe die hotel se naam
   she go stand and forget then the hotel POSS name
   “She then went and forgot the hotel’s name [top off all the other silly things she
did that day!”"

- Some of these forms have become idioms (e.g. laat vaar, and numerous other forms
  with laat and maak in particular). Like other idioms, we might expect combinations
  of this sort not to project independently – they are unanalysed wholes.

4.2.5. The relation between \( V_2 \) and \( V_3 \) in IPP structures introduced by lexical restructuring verbs
- Wurmbrand (2001) distinguishes different types of restructuring triggers, including a
  class (control and perception verbs) which are lexical.
- If an extended projection may contain only one lexical head (see also van Riemsdijk
  1998, Emonds 2001 and Cardinaletti & Giusti 2001 below), IPP structures involving
  lexical restructuring verbs don’t involve a single extended projection and so don’t
  violate FOFC.

4.2.6. “Overcrowding” effects
- Kjeldahl (2010) proposes that structures exhibiting quirky morphology (including
  pseudo-coordination and IPP structures) always involve verbs being merged “too close”
  (effectively: a Merge counterpart of anti-locality in the movement domain) and
  consequently lacking the full functional structure that is ordinarily available to verbs.
  To the extent that these structures involve defective projections, we expect 231
  structures to be able to violate FOFC.

4.2.7. The close relationship between \( V_1 \) and \( V_2 \) in Bodensee-Alemannic (see Appendix)
- \( V_2 \) always has to be what appears to be a reduced (particle) form of \( V_1 \)
- Salzmann (2010:3) further observes that go (and la) are deficient in that they cannot
  inflect \( \rightarrow \) another potential case of a projection-related discrepancy

4.2.8. Conclusion
- All the 231 structures presented in Section 3 feature at least one verbal component
  that can be thought of as special/defective in some way.
- If this defectiveness relates to projection, we can understand why 231 structures are
  (superficially) able to violate FOFC: like other (superficially) FOFC-violating
  structures, the fact that they involve a projection-related complication means that we
  are not dealing with a head-final phrase which dominates a head-initial one which is
  part of the same projection line.

4.3. Previous analyses of IPP structures that further point to the feasibility of pursuing the
projection-oriented approach to West Germanic 231 structures
- Rizzi (1978):
  Restructuring verbs trigger processes of structural simplification, i.e. complex verb
  formation, which leads to various “transparency” effects, including clause-union of
  the sort illustrated in (25).
- Haegeman (1998a):
IPP structures parallel weak pronouns in Cardinaletti & Starke’s (1999) system, and are thus systematically required to move to a particular leftward specifier (her Spec-F₂P, i.e. the spec associated with infinitival auxiliaries).

The infinitival present-perfect auxiliary is necessarily final because IPP infinitives must move into its specifier. If this auxiliary lacks [tense], there may be a remarkable parallel with Afrikaans non-finite *het*.

The properly finite (tense-bearing) present-perfect auxiliary precedes IPP-infinitives (giving non-FOFC-violating 123 order) because it heads F₁.

(35)

```
F₁P
  ↓      F₂P
    Spec F₂’
      ↓     F₂ IPP-InfinitiveP
            ↓ [-fin] Aux
```

In projection terms:
- Finite perfect auxiliary: the IPP clause’s defective [-finite] projection (IPP-InfinitiveP above) may well not “qualify” as part of the same extended projection as the (cluster-final) [+finite] selecting perfect auxiliary (located in F₁)
- Non-finite perfect auxiliary: *een* (in F₂) seems deficient

Van Riemsdijk (1998):
- Categorial Identity Thesis (CIT): the categorial features of elements on the same projection line must be the same
- BUT: there are semi-lexical elements with specifications which allow them to “act as neutral, invisible, skippable elements with respect to the overall principle which forces categorial uniformity within a single projection” (41)
  → cf. the case of Afrikaans negation in this connection ((27))

Emonds (2001):
- Restructuring structures generally involve partially “flat” structures (V₂ and V₃ are part of a “flat structure”)
- “Flat” structures are triggered by the merger of semi-lexical heads, which cannot trigger extended projection (in the sense of Grimshaw 1991).
  → restructuring verbs (V₂) don’t project normally

Barbiers (2005): hierarchy and projection
- Recall that we already have evidence that 231 structures entail movement of some kind ((25))
- A Kaynean approach predicts the 5 attested 3-verb cluster orders, while ruling out the unattested one (Barbiers 2005:213)
- If we assume that movement necessarily entails Agree, it also allows us to understand why 231 orders must take the form in (36):

(36) \[ \text{Aux}_{\text{PERF}} \rightarrow \text{MOD/ASP}_{\text{Restructuring-inf}} \rightarrow V₃ \]
Consider MOD₁-MOD₂-V₃:

(37) \[
\begin{array}{ccc}
\text{MOD}_1 & \text{MOD}_2 & V_3 \\
[	ext{[uEvent]}] & [	ext{[uEvent]}] & [	ext{iEvent}]
\end{array}
\rightarrow \text{MOD}_1 \text{ and MOD}_2 \text{ don’t enter into an Agree relation, and so MOD}_1 \text{ can’t move the}
\text{XP containing MOD}_2 \text{ and } V_3 \text{ to its specifier.}
\]
i.e. 231 order is impossible

Consider MOD₁-AUX₂-V₃

(38) \[
\begin{array}{ccc}
\text{MOD}_1 & \text{AUX}_2 & V_3 \\
[	ext{[uEvent]}] & [	ext{[uEvent]}] & [	ext{iEvent}]
\end{array}
\rightarrow \text{MOD}_1 \text{ and AUX}_2 \text{ again don’t enter into Agree; thus no movement of 23 to the left}
\text{of 1 possible}
\]

Consider the attested 231 structures:

(39) \[
\begin{array}{ccc}
\text{Aux}_{\text{PERF}1} & \text{MOD/ASP}_{\text{Restructuring-inf2}} & V_3 \\
[	ext{[uPerf]}] & [	ext{[uEvent]}] & [	ext{iEvent}]
\end{array}
\rightarrow \text{all 3 verbs enter into Agree relations with one another}
\]
i.e. Aux₁ can attract the 23-complement, yielding 231.
If it doesn’t do so, we get 123.

Note the distribution of the [iF]-features on V₂ and V₃ in (39), but exclusively on V₃ in the other cases → the closer relation between these verbs that may in some cases render them a (non-projecting) unit of a type that cannot be formed in cases like (37) or (38).

Wallenberg (2009), chapter 6 derives the same facts via an alternative proposal which does not entail the rigid spec-head-comp structure assumed by Barbiers, but which, like Barbiers, assumes head-finality to be derived via Agree-driven movement.

5. Conclusion

• Undoubtedly 231 orders superficially violating FOFC in WGmc
• BUT: they’re subject to constraints of the type that have previously and independently been ascribed to hierarchy- and projection-related considerations
• SO:
  ▪ FOFC seems worth pursuing in something approaching its current conceptualisation (1); and
  ▪ it may even be that more in-depth research into West Germanic 231 might allow us to refine our understanding both of FOFC and of the long-standing mystery of the formal nature of IPP constructions.
References


3.2.1. West Flemish

- Possible in **perfect tenses** involving modals (16), causatives (1a), perception verbs (1b), benefactives (1c), duratives (1d), and epistemic verbs (1e).\(^\text{10}\)
  
  [cf. Haegeman 1998a,b and Schmid 2006]

\(1\)

a. ... da j’‘em die medicien **doen**$_2$ drienken$_3$ et$_1$  [causative]

that he him the medicine make.INF drink.INF has

“... that he has made him drink the medicine”  (Schmid 2006:38)

b. ... da’ j’‘eur **oaren**$_2$ roepen$_3$ ‘et$_1$  [perception]

that he her hear.INF call.INF has

“... that he heard her call”  (Schmid 2006:49)

c. ... da’ ‘k ‘eur de dozen **elpen**$_2$ dragen$_3$ ‘en$_1$  [benefactive]

that I her the boxes help.INF carry.INF have

“... that I helped her carry the boxes”  (Schmid 2006:54)

d. ... dan de mensen **bluven**$_2$ stoan$_3$ zyn$_1$\(^\text{11}\)  [durative]

that the people remain.INF stand.INF are

“... that the people remained standing”  (Schmid 2006:60)

e. ... da Valère Marie nog **weten**$_2$ dienen brief schryven eet$_1$

that Valère Marie still know.INF that letter write.INF has

“... that Valère remembers Marie writing the letter”  (Haegeman 1998a:273)

- A restriction on $V_1$:
  - $V_1$ must be the **present perfect auxiliary**; it cannot be a modal auxiliary (2) or a non-present perfect auxiliary (3-4):

\(2\)

a. *... da Valère keunen$_2$ Marie dienen boek geven$_3$ **wilt**$_1$

that Valère can.INF Marie that book give.INF wants

b. ... da Valère **wilt**$_1$ keunen$_2$ Marie dienen boek geven$_3$

that Valère wants can.INF Marie that book give.INF

“... that Valère wants to be able to give Marie that book”  (Haegeman 1998a:287)

\(^{10}\) WF also permits surface 231 with inchoative and control verbs, but in these cases V3 is associated with *te* or *me*, suggesting a more complex clause structure, which we therefore leave aside here. Example (i) illustrates (123 ordering is, once again, an alternative here):

(i) ... ?da’ j’‘et nooit proberen$_2$ (te) beweren$_3$, ‘et$_1$  

that he that never try.INF to pretend.INF has

“... that he has never tried to pretend that”

It is worth noting that the availability of these structures is very interesting in the context of the discussion of clausal placement (cf. Biberauer & Sheehan 2010 for overview discussion).

\(^\text{11}\) The AUX in this structure can also be HAVE, which is preferred by many speakers (Schmid 2006:60).
(3) a. *... da Valère willen
dienen boek lezen that Valère want.INF that book read.INF have (Haegeman 1998b:634)  
    b. ... da Valère oat
dienen boek lezen that Valère had want.INF that book read.INF  
       “... that Valère had wanted to read that book”

(4) a. *... da’ j’ em die medicien doen
drienken got that he him the medicine do.INF drink.INF go  
    b. ... da’ j’ em die medicien go
drienken that he him the medicine go do.INF drink.INF  
       “... that he will make him drink the medicine” (Schmid 2006:41)

• The generalisation: 123 ordering is obligatory except in the case of present-perfect auxiliaries, which have both 123 and 231 as options, with a preference for 231.

• (5) illustrates the availability of the 123 option for causatives and benefactives (cf. Haegeman 1998a and Schmid 2006 for exemplification of the other verbs given in (18)):

(5) a. ... da j’ ‘em die medicien ‘et
drienken [causative]  
       that he him the medicine has make.INF drink.INF  
       “... that he has made him drink the medicine” (Schmid 2006:38)  
    b. ... da’ k ‘eur de dozen ‘elpen
dragen [benefactive]  
       that I her the boxes help.INF carry.INF have  
       “... that I helped her to carry the boxes” (Schmid 2006:55)

• So we see that there is often an alternation between 231 and 123 order, with 123 being the more generally available pattern.

(6) a. INF$_2$ – INF$_3$ – AuxPERF$_1$  
    b. AuxPERF$_1$ – INF$_2$ – INF$_3$

• One case where there’s no alternation: where the perfect auxiliary is infinitival (Haegeman 1998a:276):

(7) a. ... dan ze toch moesten
dienen boek geven that they yet must want.INF Marie that book give.INF have  
       “... that they still should have wanted to give Marie that book”
    b. *... dan ze toch moesten een
dienen boek geven
- Present-perfect auxiliary infinitives pattern as in (8):

\[ (8) \]
\[
\begin{align*}
\text{INF}_2 – \text{INF}_3 – \text{AuxPERF.INF}_1 \\
\text{*AuxPERF.INF}_1 – \text{INF}_2 – \text{INF}_3
\end{align*}
\]

i.e. only the FOFC-violating order is permitted

- A further restriction on \( \text{V}_1 \):
  - It cannot host the negation-related clitic \( \text{en} \)-, which is restricted to finite verbs (Haegeman 1998a:277ff; cf. Breitbarth & Haegeman 2010 on the status of \( \text{en} \)- in relation to negation):

\[ (29) \]
\[
\begin{align*}
\text{a. } & \text{... da Valère nooit willen}_2 \text{ de waste doen}_3 (*\text{en}) - \text{ eet}_1 \\
& \text{that Valère never want.INF the washing do.INF NEG.- has} \\
& \text{“... that Valère has never wanted to do the washing”}
\end{align*}
\]

\[
\begin{align*}
\text{b. } & \text{... da Valère nooit (en)- ee}_1 \text{ willen}_2 \text{ de waste doen}_3 \\
& \text{that Valère never NEG. has want.INF the washing do.INF} \\
& \text{“... that Valère has never wanted to do the washing” (Haegeman 1998b:641)}
\end{align*}
\]

- The fact that \( \text{eet} \) is final is not a relevant consideration as–\( \text{en} \) is compatible with clause-final finite verbs:

\[ (10) \]
\[
\begin{align*}
\text{a. } & \text{... da Valère Marie die boeken nie (en)- geeft} \\
& \text{that Valère Marie the books not NEG gives} \\
& \text{“... that Valère isn’t giving Marie the books” (Haegeman 1998a:270)}
\end{align*}
\]

- A restriction on \( \text{V}_2 \):
  - \( \text{V}_2 \) necessarily belongs to the class of Infinitivus Pro Participio (IPP) triggers (cf. i.a. Haegeman 1998a, Wurmbrand 2001 and Hinterhölzl 2005 for discussion and references)
    - \( \text{V}_2 \) surfaces in unexpected form: infinitive instead of the past participle that we’d see when they select something other than a non-finite complement:

\[ (11) \]
\[
\begin{align*}
\text{a. } & \text{... da Valère [DP nen brief] gewild}_2/ *\text{willen}_2 \text{ eet}_1 \\
& \text{that Valère a letter want.PRT want.INF has} \\
& \text{“... that Valère has wanted a letter”}
\end{align*}
\]

\[
\begin{align*}
\text{b. } & \text{... da Valère gewild}_2/ \text{ willen}_2 \text{ eet}_1 \text{ [CP da ze dienen boek moet kuopen] } \\
& \text{that Valère want.PRT want.INF has they that book should buy} \\
& \text{“... that Valère wanted that they buy the book”}
\end{align*}
\]

\[
\begin{align*}
\text{c. } & \text{... da Valère nen brief willen}_2/ *\text{gewild}_2 \text{ schrijven}_3 \text{ eet}_1 \\
& \text{that Valère a letter want.INF want.PRT write.INF has} \\
& \text{“... that Valère has wanted to write a letter” (Haegeman 1998a: 272-3)}
\end{align*}
\]

- IPP triggers are restructuring verbs (cf. the references cited above and Cinque 2006), i.e. verbs which have an effect on the structure of their complements, e.g. clause-union of the type seen in (11c) (contrast (11b)). We return to this point below.
3.2.2. Dutch dialects (Barbiers 2005)

- 231 orders only found where:
  - $V_1 =$ perfect auxiliary (previously observed by den Dikken 1994, Zwart 1995 and Broekhuis 1997); and
  - $V_2 =$ modal or aspectual verb, a i.e. restructuring verb, which is also what we saw in WF (cf. (1))

3.2.4. Swiss German

- Swiss German doesn’t generally permit 231 orders, but Zürich German (ZG) is exceptional in this regard (Schmid 2006).
- ZG permits 231 orders occur with perception verbs (12a) and benefactives (12b):

  12 a. ? ... das er sie ghöore$_2$ rüeffe$_3$ hät$_1$ [perception] 
    that he her hear.INF call has 
    “... that he heard her call”

  b. ...das ich  er d Chischte hälfe$_2$ trääge$_3$ han$_1$ [benefactive] 
    that I     her the box help.INF carry have 
    “... that I helped her carry the box”

- 123 is the unmarked pattern for perception verbs, however, and 123 and 312 are alternative orders for benefactives.

- Like Afrikaans, ZG also permits 231 orders with participles for benefactives:

  13 a. ... das ich ere d Chishchte ghulfe$_2$ trääge$_2$ han$_1$ 
    that I    her the box help.PRT carry.INF have 
    “... that I helped her carry the box”

- Again, there is no semantic effect (vacuous morphology ... or see Section 4)

- The past participle-containing cluster has 3 alternative orders (but 2 of these overlap with the IPP options) 123, 132 and.

- Looking beyond ZG: the Bodensee-Alemannic variety described by Salzmann (2010; cf. also Brander & Salzmann 2009)
- 3-verb clusters are all well-behaved, except those featuring a motion verb $go$ (“go”) and a causative verb $la$ (“let”):

---

15 As in the case of WF, it also permits surface 231 orders with inchoatives, but since these require the presence of infinitive-marking $z$ (>zu), we leave these structures aside here – they may entail a more complex structure.
16 Despite appearances, ghöre is an infinitive and not a past participle, which would have had to be ghört in this case. The past participle structure requires 321 or 213 order (cf. Schmid 2006:47):

(i) ... das er si rüeffe$_3$ ghöört$_2$ hät$_1$ 
    that he her call.INF hear.PRT has 
    “... that he heard her call”

(ii) ... das er si ghöört$_2$ hät$_1$ rüeffe$_3$

See Section 4 for further discussion.
i.e. once again, $V_2 = a$ member of the class of restructuring verbs

- Although the perfective-auxiliary restriction on $V_1$ does not apply in Bodensee-Alemannic, there is clearly another restriction on $V_1$ in this variety: Salzmann (2010:3) describes the $V_2$ elements as particles which act as “some kind of double” of the finite verb, i.e. $V_1$ and $V_2$ must share certain core features