Constrained by the Final-Over-Final Condition: A shift back to head-finality in Alemannic

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1 Introduction

This project is about the diachrony of certain verb clusters in the German variety of Alemannic, specifically of Vorarlberg (= Austrian) Alemannic (henceforth ALS-V). Specifically, we look at clusters of three linearly adjacent elements: An auxiliary, a modal, and a lexical verb. For convenience, we label these 1, 2 and 3 in order of syntactic hierarchy (1).[1]

(1) *... dass dr händ künno goo*
... that you have.1 can.2 go.3

"... that you were able to go"

We hypothesize two contact languages: Standard German (GER) and Austrian-Bavarian (BAR): Like German Alemannic (Swabian and Badenian) and Swiss Alemannic ("Swiss German"), ALS-V is part of a media polyglossia. Specifically, ALS-V is part of a triglossia of ALS-V, Austrian GER, and BAR, with BAR and Austrian GER being the most widely spoken languages within Austrian state-wide media. The difference to Swiss ALS (in which this change does not seem to happen) is the stronger media diglossia, and the presence of another intelligble variety, BAR.

We sum up these geo-linguistic facts in the table below.

(2)

contact to ↓	ALS-V	ALS-DE	ALS-CH
GER	media diglossia	media diglossia	media diglossia
BAR	other contact	–	–
...			

We take as a base assumption that ALS has a head-initial verbal domain (unlike Standard German) in line with Diem (To appear). We assume here the LCA and that head-finality is derived from a feature ˆ on functional heads triggering comp-to-spec movement. This hypothesis is substantiated in the possibility of both the 123 and 321 orders in ALS-V, but not in GER nor BAR, which lack order 123. (3)[2].

(3) a. Head-final xVP in GER
... dass du gehen müssen wirst
... that you go.3 must.2 will.1

'...that you will have to go'

b. *Head-initial xVP in GER
**... dass du wirst müssen gehen*
... that will.1 must.2 go.3

'...that you will have to go'

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[1] As usual in the literature on German(-like) syntax, we show embedded clauses, in order to avoid verb-second effects of main clauses.

[2] For an overview, the above contrast shows the future tense with the auxiliary "will". In GER and BAR, the past tense with "have" is independently suppressed in favor of a preterite past version, a cluster of only two elements.

c. Head-final xVP in BAR
... dass du geh miassn wiast
... that you go.3 must.2 will.1

'...that you will have to go'

d. *Head-initial xVP in BAR
**... dass du wiast miassn geh*
... that you will.1 must.2 go.3

'...that you will have to go'

e. Head-final xVP in ALS-V
... dass du go müasa würsch
... that you go.3 must.2 will.1

'...that you will have to go'

f. Head-initial xVP in ALS-V
... dass du würsch müasa go
... that you will.1 must.2 go.3

'...that you will have to go'

Besides (3e-f), there is a remarkable variety of accepted orders in ALS-V verb clusters. Of six logically possible orders, as many as five are grammatical (4a,b,d,e,f) to us (David):

(4) a. 123
... dass dr händ künno goo
... that you have.1 can.2 go.3

"... that you could go"

b. 132
... dass dr händ goo künno
... that you have.1 go.3 can.2

"... that you could go"

c. *231
**... dass dr künno goo händ*
... that you can.2 go.3 have.1

"... that you could go"

d. 213
... dass dr künno händ goo
... that you can.2 have.1 go.3

"... that you could go"

e. 312
... dass dr goo händ künno
... that you go.3 have.1 can.2

"... that you could go"

f. 321
... dass dr goo künno händ
... that you go.3 can.2 have.1

"... that you could go"

2 Preliminary judgements and hypothesis

We hypothesize that the rates of acceptability of the orders appear to vary with age in ALS-V. Our preliminary grammaticality judgements and intuitions:

(5) a. 123 - accepted, preferred by older speakers
b. 132 - accepted by both groups
c. *231 - not attested or accepted[3]
d. 213 - less accepted or simply less frequent. Focussing of the modal
e. 312 - accepted. Focussing of the verb
f. 321 - accepted, preferred by younger speakers

This variability is potentially due to more contact with GER and BAR in younger speakers. Crucially, order c) which can have a structure violating the Final-Over-Final Condition (FOFC), is not accepted. We therefore believe FOFC to constrain a change in head-directionality from head-initial to head-final in ALS-V verb clusters.

In short, our two predictions are:

(6) a. (a) is more acceptable to older speakers, (f) is more acceptable to younger speakers.
b. As a mixed-directionality variant, (c) is ungrammatical for all speakers. Instead, (b) is accepted as the mixed-directionality variant by all.

We put aside the focussing orders of d) and e) as as it is a), b), c) and f) in competition with each other as the default order.

This argument is dependent on our assumption of head-initiality in ALS-V. Our diachronic account for the change we are suggesting is given later.

Lastly we present the results of our survey, carried out early January 2024, to collect further judgements and to cast light on this diachronic change.

3 Head-initiality in the Alemannic VP

Our base assumption that ALS has a head-initial verbal domain unlike GER and BAR is derived from two directions. First, the variety of orders is greater than in GER and BAR, as shown in (4). Second, the so-called doublets of verbs are analyzed as V heads in Diem (To appear); these must precede their complement, hinting at a head-initial VP.

(7) a. $[_{VP} DOUBLET [VP2]]$
b. $*[_{VP} [VP2] DOUBLET]$

4 The Final-Over-Final Condition

A formulation of FOFC is given below:

(8) A head-final phrase αP cannot dominate a head-initial phrase βP, where α and β are heads in the same extended projection. (Biberauer, Holmberg, & Roberts, 2014).

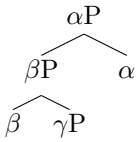

Figure 1: A FOFC-violating structure.

According to the account in (Biberauer et al., 2014), head-finality arises due to an EPP-like feature on functional heads: ˆ that triggers recursive roll-up of their complements to their specifiers. This is assuming the LCA (Kayne, 1994).

[3]Salzmann (2013), Schmid (2005) and Biberauer (2014) report to have found this order in Zurich German, West Flemish, and Afrikaans. Biberauer argues that this is only a superficial FOFC violation.

In the figure below, roll-up starts at the bottom with the lexical head V: V has ˆ meaning O as the complement of V rolls around to the spec of VP. VP recursively rolls around T because of T's ˆ .

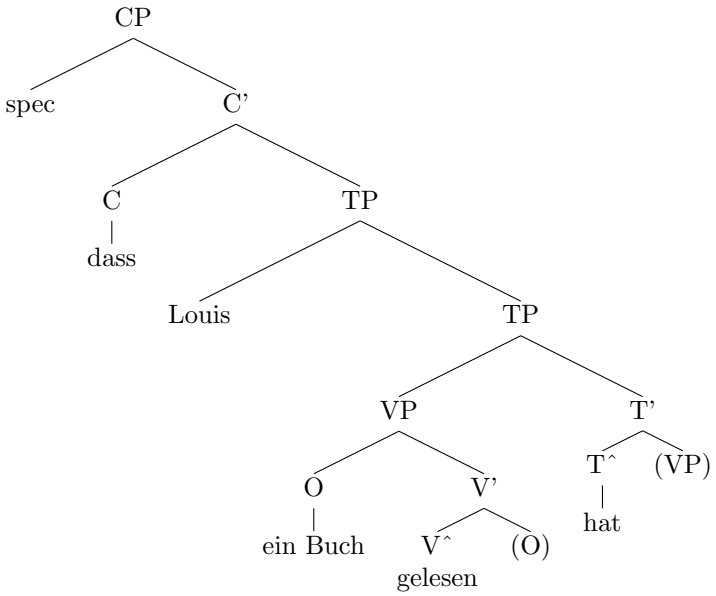

Figure 2: Recursive bottom-up roll-up movement due to the ˆ feature on the V and T heads.

Crucially for the diachronic change we suggest, this roll-up must start from the bottom of the extended projection (with the lexical head V) and not stop then start again: this is how FOFC-violating structures arise.

Diachronic consquences fall out from this: in a change from head-initial to head-final, heads must acquire ˆ from the bottom. Otherwise, FOFC is violated. We will see how the shift towards head-finality in the ALS-V verb clusters is indeed bottom-up, avoiding the FOFC-violating structure of c) (which would imply the beginning of a top-down change in directionality).

5 Head-initial to head-final

Due to more and more contact with GER and BAR, we propose such a gradual, bottom-up reanalysis from head-initial to head-final:

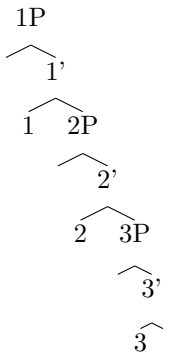

Figure 3: Grammar I: fully head-initial (no roll-up).

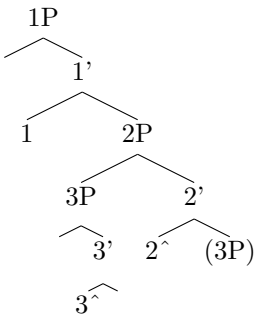

Figure 4: Grammar II: Mixed directionality: initial-over-final, roll-up of 3P to spec 2P.

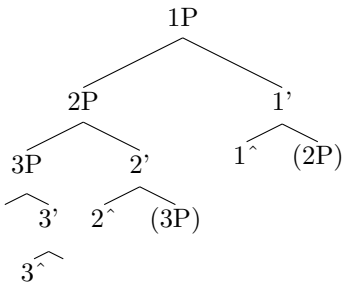

Figure 5: Grammar III: fully head-final. Roll-up of 3P to spec 2P and roll-up of 2P to spec 1P.

The change involves two reanalyses. Grammar I is fully head-initial, grammar II is mixed with head-final 3 and 2 but head-initial 1 and grammar III is fully head-final.

The full head directionality change we postulate in terms of word orders is:

a) 123 only $\Longrightarrow$ a) 123 and b) 132 $\Longrightarrow$ b) 132 and a) 123 $\Longrightarrow$ f) 321 only

We do not mean to suggest that each stage correlates to one generation, nor do we link any particular stage to a certain point in time.

In terms of parameters, we argue that head-directionality verb clusters pertain to a microparameter following (Roberts, 2019). Microparameters deal with microvariation and determine 'intricate local variation' that is somewhat unstable. This is compatible with the fact that the shift towards head-finality that we postulate is a rapid (as well as recent) shift.

5.1 Stage 1: a) 123 only

The ALS-V speakers of the first stage, with no contact with GER or BAR, have the fully head-initial grammar I. The structure of the verb cluster therefore exhibits no roll-up:

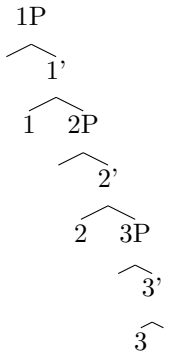

Figure 6: Grammar I: fully head-initial.

a) 123 is predicted to be the only accepted order, therefore.

5.2 Stage 2: a) 123 and b) 132

Contact with GER and BAR (with f) 321 order) begins.

We still expect to see order a) 123 at this point, but also b) 132, the latter of which is derived from the head-initial grammar I via head movement of 3 (V) to 2:

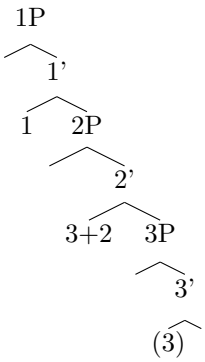

Figure 7: Derivation of b) 132 via head movement from grammar I.

5.3 Stage 3: b) 132 and a) 123

Reanalysis occurs with enough contact with GER and BAR from head-initial grammar I to a mixed directionality grammar II:

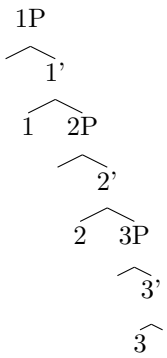

Figure 8: Grammar I: fully head-initial.

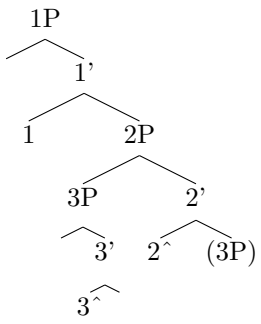

Figure 9: Grammar II: mixed directionality, initial-over-final.

The reanalysis starts at the bottom (3 switching to head-final before 2).
The other mixed-directionality grammar option is FOFC-violating:

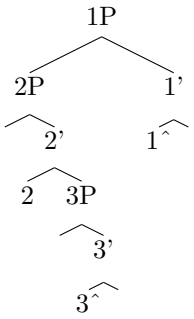

Figure 10: A final-over-initial structure: FOFC-violating.

This grammar would derive c) 231. Alternatively, some kind of phrasal movement plus head movement would be necessary to derive c) 231:

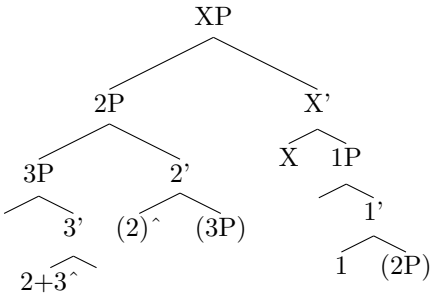

Figure 11: Deriving c) 231 from grammar II.

The much more likely candidate for the intermediate grammar is grammar II therefore, deriving order b) 132.

We also expect b) 132 to become more prevalent than a) 123 over time; a) 123 would require head movement:

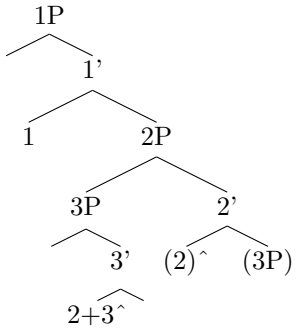

Figure 12: Deriving a) 123 from grammar II.

5.4 Stage 4: f) 321 only

With ongoing/further GER and BAR contact, reanalysis from a mixed directionality grammar II to fully head-final grammar III is triggered:

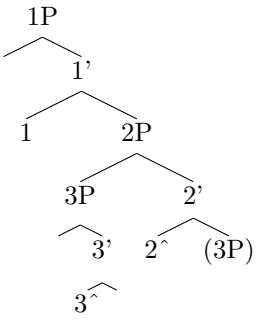

Figure 13: Grammar II: initial-over-final.

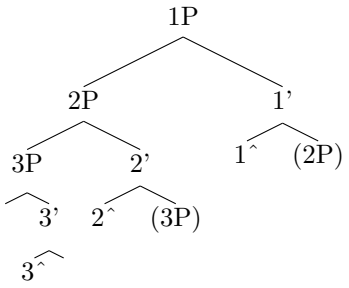

Figure 14: Grammar III: fully head-final.

Therefore, order f) 321 is expected as the prevalent order. Order b) 132 would require head movement of 1 across 2P:

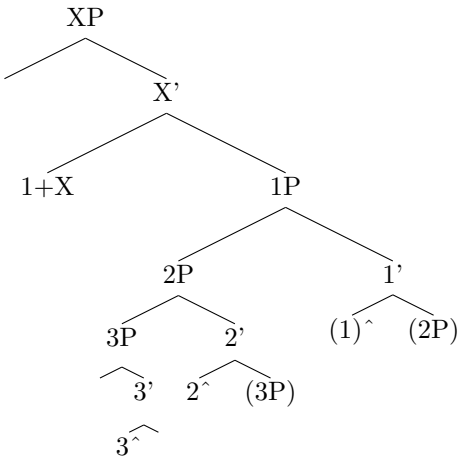

Figure 15: Deriving b) 132 from grammar III.

Likewise, deriving c) 231 from this fully head-final structure would require head movement of 2 across 3P:

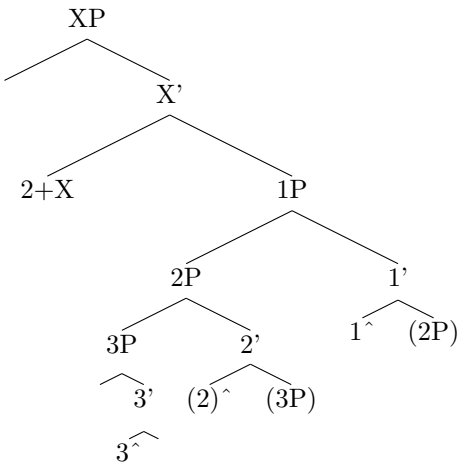

Figure 16: Deriving c) 231 from grammar III.

We therefore assume this final stage to exhibit f) 321 only.
To repeat the full directionality change in terms of these word order stages:

a) 123 only $\Longrightarrow$ a) 123 and b) 132 $\Longrightarrow$ b) 132 and a) 123 $\Longrightarrow$ f) only

In terms of our data, a) 123 is predicted to decrease in acceptability diachronically, f) 321 to increase, and b) 132 to increase then decrease. We predict c) 231 to be unacceptable: its structure is either the FOFC-violating structure or derived by would-be movements. At every stage, there is a simpler non-FOFC-violating order derived without movement.

We now present the design and results from our online judgement survey, conducted to test the extent to which these predictions are true.

6 Data collection and results

6.1 Data collection

We conducted an online survey, distributed via friends, family, and twitter. Thanks to people being helpful it reached over 330 people. We have filtered the results so as to only include those who incidated Lustenau (Austria) as the place they grew up, to eliminate regional variation.

- Each participant got three judgement taks
- They rated (a) to (f) word orders on a Likert-type scale from 1-5 (whole number)
- The V item was varied over the three tasks, Mod and Aux stayed the same.

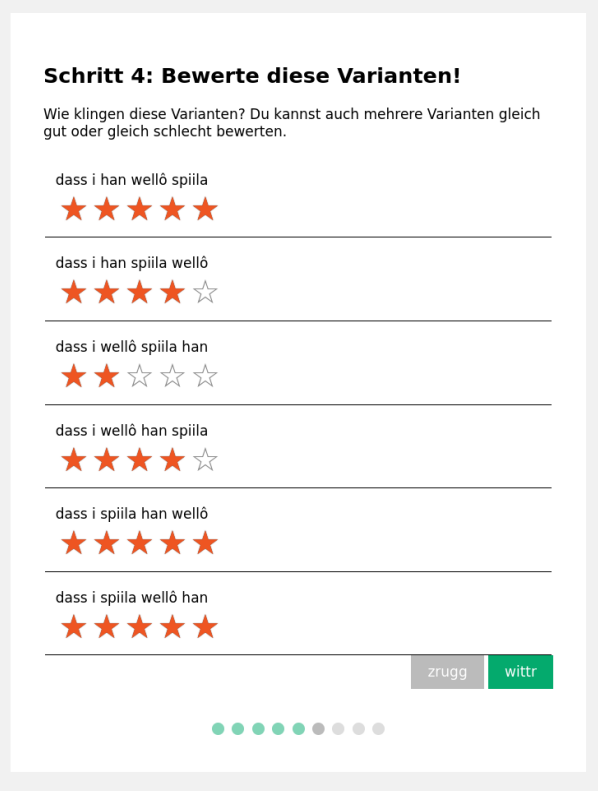

Figure 17: Example of a filled-in judgement task for (a) to (f) word orders

6.2 Data processing

- We analyze the mean score (decimal number) over three judgement tasks per participant and use linear interpolation (f(x) = m*x+q, fitting via m and q) to show increase/decrease in acceptability
- Additionally, we show the error range: The upper/lower boundary of the shaded areas shown is a smoothed curve (natural smoothing spline) interpolating the max/min values of each option over the three tasks.
- Calculations and graphing done in *gnuplot* and *Python*, code available for reproduction at `https://daviddiem.xyz/survey/data/auswertung.html` (raw data available to researchers on request, for participants' data protection).

6.3 Results

Our prediction of declining acceptability of order (a) (123) and increasing acceptability of order (f) (321) is borne out. There is a clear rise of (f), and a slight decrease (change by a value smaller than 1 on a Likert scale) for (a).

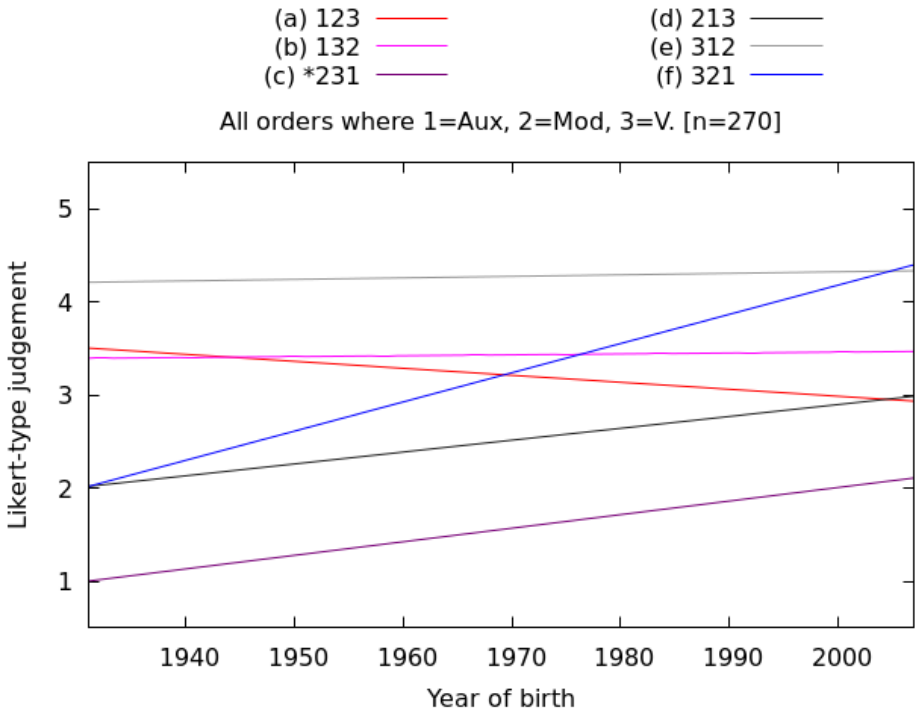

Figure 18: All orders (modelled linearly), n.b. red and blue.

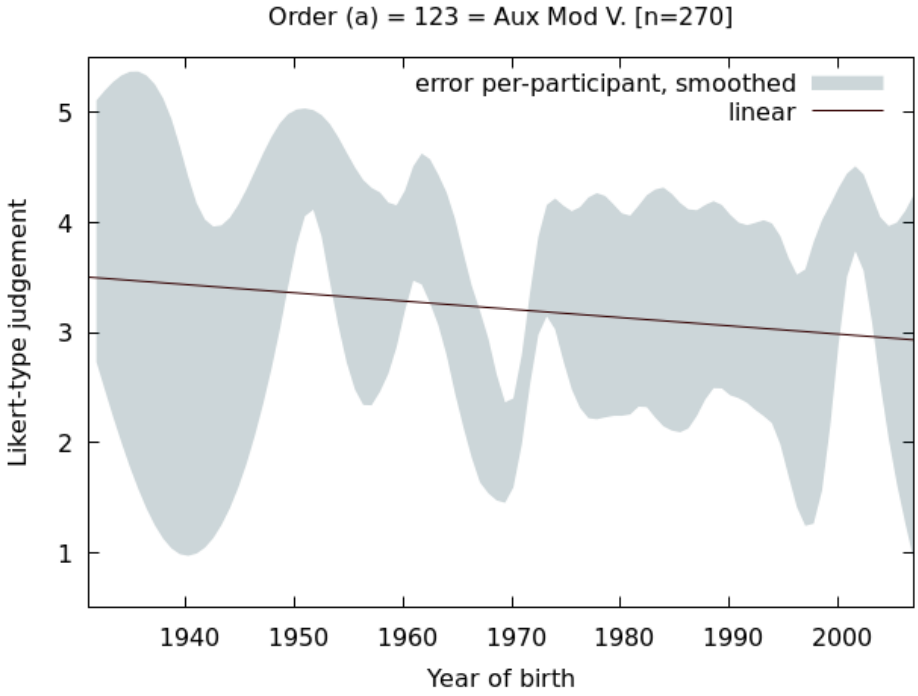

Figure 19: Order (a) (modelled linearly), and error range (polynomial interpolation of max/min values, shaded).

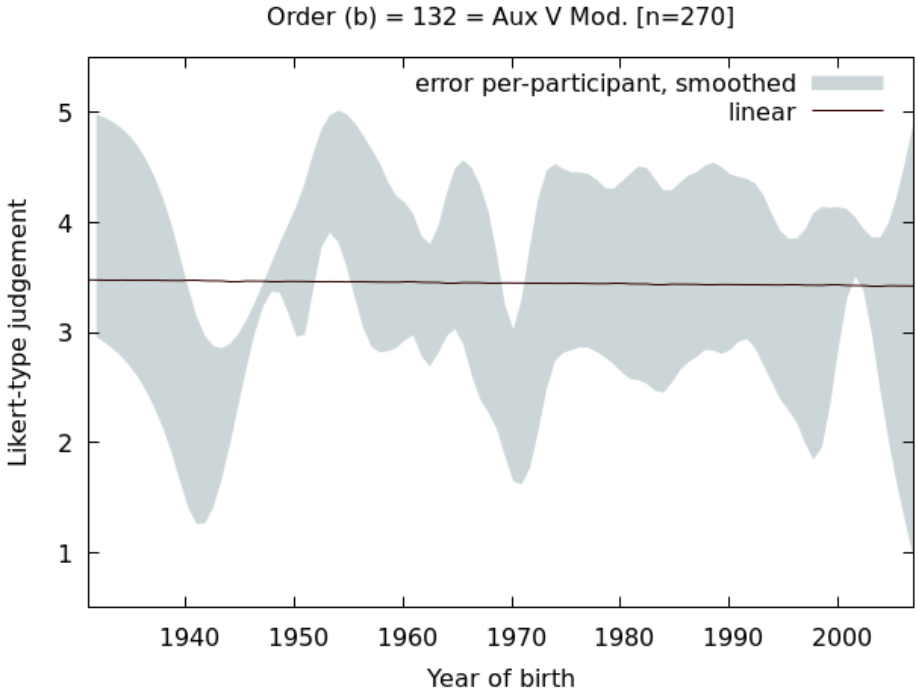

Figure 20: Order (b) (modelled linearly), and error range (polynomial interpolation of max/min values, shaded).

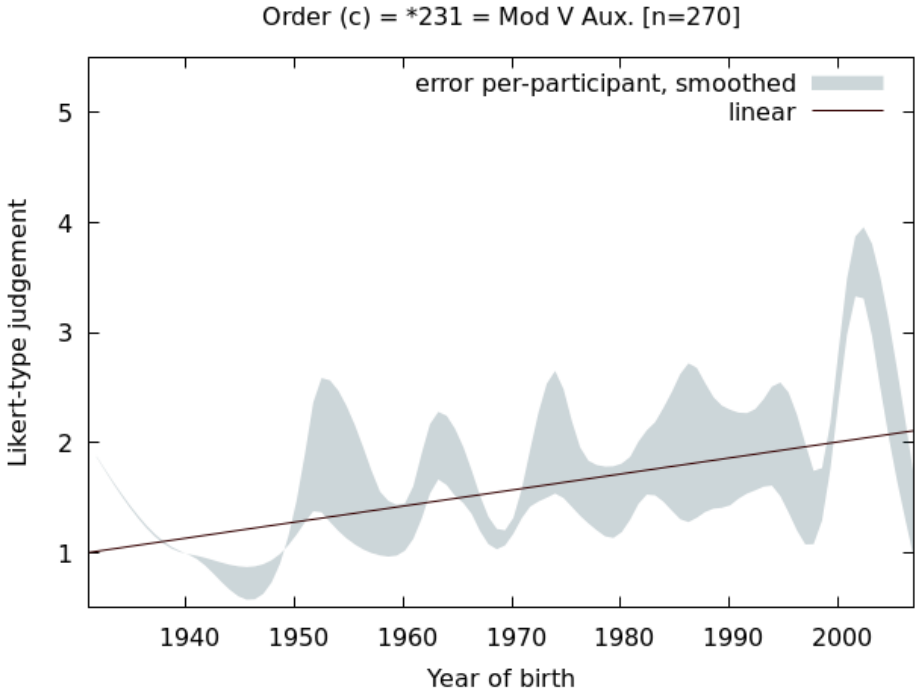

Figure 21: Order (c) (modelled linearly), and error range (polynomial interpolation of max/min values, shaded).

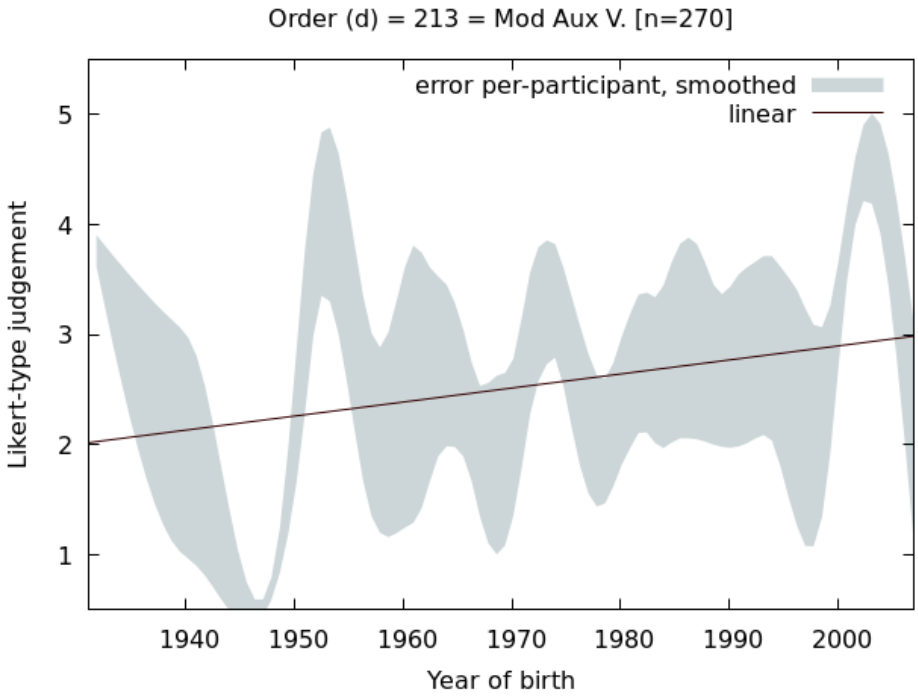

Figure 22: Order (d) (modelled linearly), and error range (polynomial interpolation of max/min values, shaded).

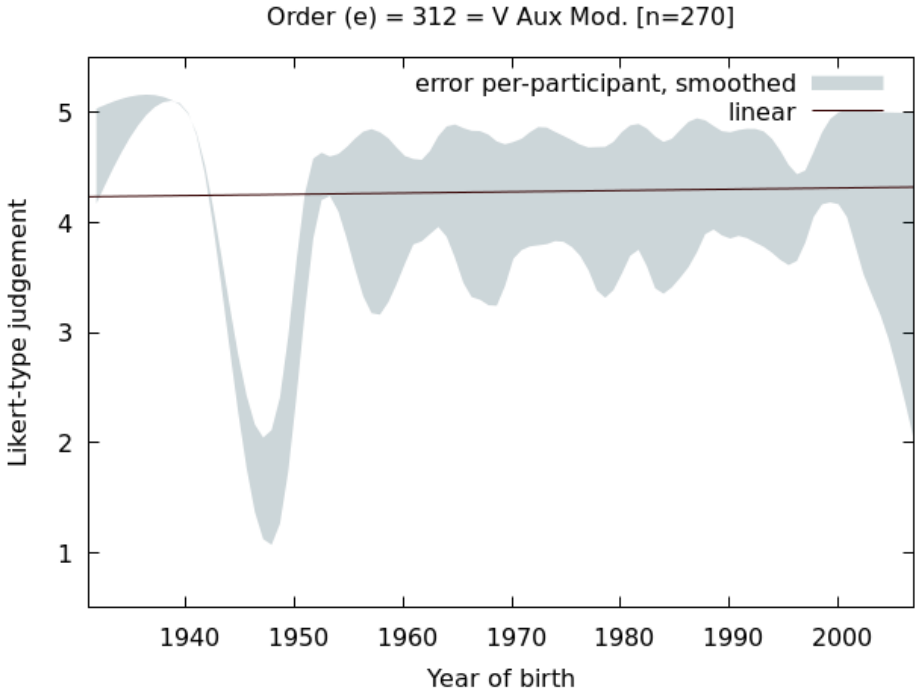

Figure 23: Order (e) (modelled linearly), and error range (polynomial interpolation of max/min values, shaded).

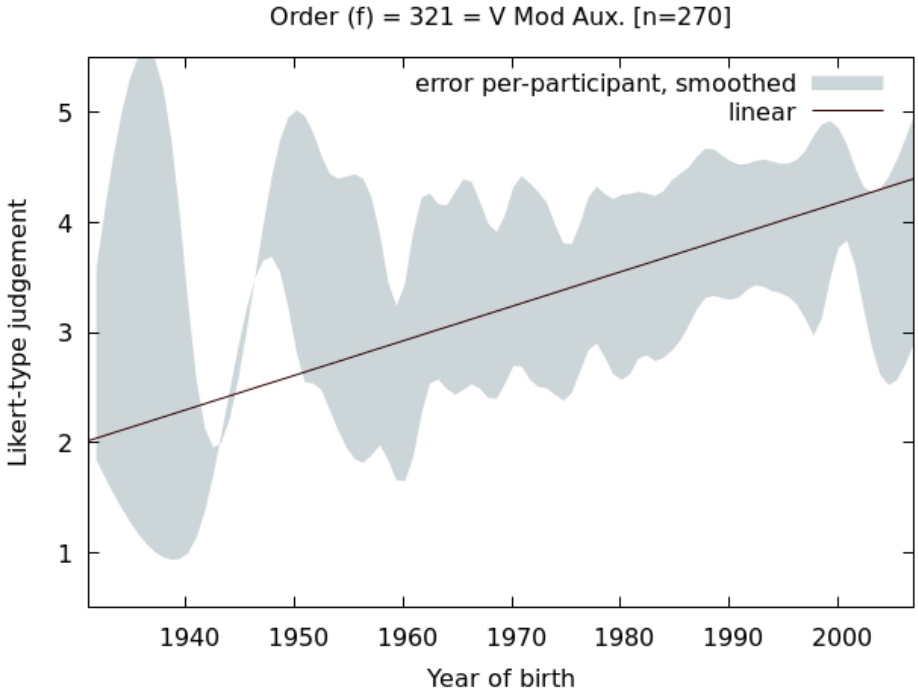

Figure 24: Order (f) (modelled linearly), and error range (polynomial interpolation of max/min values, shaded).

7 Conclusion

We hypothesized that there is a change back from 123 (head-initial) to 321 (head-final) word order in Aux/Mod/V(123) verb clusters in Vorarlberg Alemannic (ALS-V). We further hypothesized that the change goes incrementally via bottom-up addition of roll-up features. This predicts what intermediate (mixed-headedness) orders would occur, and that one order particularly would not occur (c) (231). In January 2024 we conducted a survey which so far confirms our first hypothesis, the change of preference from (a) to (f) from people born ca.1930 to ca.2008.

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