Chapter 13

Apparent violations of the final-over-final constraint: The case of Gbe languages

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In a series of recent talks and articles, Theresa Biberauer, Anders Holmberg, Ian Roberts, and Michelle Sheehan argue that the final-over-final condition (FOFC) is an absolute universal regulating structure building. Yet, many languages deviate from FOFC thus suggesting that this condition is not "surface-true". The question therefore arises what factors make languages violate FOFC on the surface. In order to answer this question, we need a typology of FOFC-violating languages, as well as a detailed description of such violations. In this short essay, I describe FOFC violations in Gbe and some creoles, while relating the observed phenomena to some theoretical questions they raise.

1 Introduction

In a series of recent talks and articles, Theresa Biberauer, Anders Holmberg, Ian Roberts, and Michelle Sheehan, analyse a very strong tendency across human languages which appears to be indicative of an absolute universal regulating structure building: The final-over-final condition/constraint (FOFC) defined as in (1), and further discussed in Sheehan et al. (2017), henceforth SBRH.

(1) *The final-over-final condition (FOFC)*
    a. A head-final phrase αP cannot immediately dominate a head-initial phrase βP if α and β are members of the same extended projection.
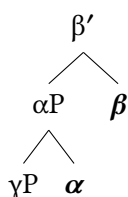
b. *[$_{\alpha P}$ [$_{\beta P}$ β γ] α], where β and γ are sisters and α and β are members of the same extended projection.

FOFC is not bidirectional since the reverse does not hold: "a head-initial phrase αP may dominate a phrase βP which is either head-initial or head-final, where α and β are heads in the same extended projection" (cf. Biberauer et al. 2014: 171).
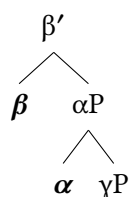
Accordingly, FOFC makes strict predictions both in terms of surface typological variation and possible outcomes of language change (cf. Biberauer et al. 2009). For instance, FOFC predicts the structures in (2a–c) to exist with the exclusion of the pattern in (2d) (cf. Biberauer et al. 2014: 171).

(2) Harmonic structures
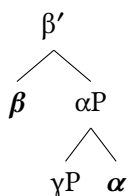   a. Consistent head-final   b. Consistent head-initial
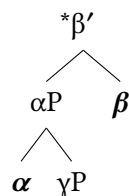

     Disharmonic structures
     c. Initial-over-final   d. Final-over-initial

In its strong version, the generalisation in (2) could suggest that the human mind "prefers" harmonic structures (2a,b), tolerates one type of disharmonic structure in (2c), and totally excludes the disharmonic structure in (2d). This view is obviously misleading since, looking at surface form only, disharmonic structures abound in languages. This is, for instance, the case in Kwa (see the discussion below), and in Sinitic (cf. Hsieh & Sybesma 2007, Sybesma & Li 2007, Chan 2013 and references therein). On the basis of his database, Dryer (1992) concludes that completely harmonic languages actually represent a minority. Instead, the common cross-linguistic pattern seems to be that languages are rigidly consistent in some domains, but less so in other domains. FOFC therefore seems to strictly constrain certain core structures only. Given its surface flexibility, one

could consider the FOFC effect to derive from processing constraints facilitating parsing. If one were to adopt Hawkins's (1983) *cross-category harmony*, defined in terms of head dependent order preferences, or his 1990 *early immediate constituent* principle suggesting fast recognition of the immediate constituents of a mother node, its seems intuitive that the parser would prefer orders in which heads and dependents can be easily identified. In this regard, learning biases seem to favour certain orders over others. Under this view, FOFC would be essentially a third factor phenomenon, required by "principles of efficient computation" in terms of Chomsky (2005) (cf. Walkden 2009 for discussion).

SBRH (2017) argue for a different view. FOFC is a property of structure building. At this point, the question arises how the notion of "harmony" relates to structure building and computation. If Merge applies to (categorial) features only, and embeds no spell-out specification, how can we decide that (2d) is computationally disharmonic compared to (2a)? If on the other hand, one assumes Grimshaw's (1991) extended projection and some version of Kayne's (1994) *linear correspondence axiom* (LCA), as SBRH (2017) do, then disharmonic structures can be understood as involving featural mismatches within a functional sequence. Under this latter view, the bulk of apparent counterexamples to FOFC would derive from movement: structures obey FOFC underlyingly, even though movement operations may lead to apparent surface violations.

It seems to me that two fundamental questions arise here that merit further investigation: The first question deals with the relation between the LCA and FOFC, and why the language faculty (in the narrow sense, cf. Hauser et al. 2002) would involve such apparently competing linearization mechanisms. The issue is not trivial as it relates to the question of the place of linearization within the human faculty of language (cf. Chomsky et al. 2019 and Kayne 2018 for discussion). I will not address this question any further in this essay. The second question I will be concerned with instead is of a typological nature. Why do some languages seem to violate FOFC massively on the surface form? If Dryer (1992) is right, such violations would be the norm, while FOFC compliant languages would be the exception. Why would this be if FOFC holds on structure building? Why would languages systematically diverge from core principles imposed by the computational system? For example, there does not seem to be such a massive violation of the extended projection principle, a potential universal of natural languages constraining structure building. In order to understand FOFC apparent violations therefore, we need to take a closer look at the empirical facts.

As I will show in the following paragraphs, the Gbe languages (and for that matter many Niger-Congo languages) involve apparent violations of FOFC. I

have discussed many of these patterns in previous work and proposed an analysis in terms of the LCA. Since its formulation in the early 2000s, the tenants of FOFC have also reported similar patterns cross-linguistically and have suggested various analyses to account for them (see SBRH 2017 and references therein). For instance, final negative markers, such as instantiated in the Fongbe example in (3a), can be analysed as not being merged within the functional sequence of TP (cf. Biberauer et al. 2014). That such a view is indeed adequate can be shown by the fact that the Fongbe yes-no question in (3b) displays a similar sentence-final particle, which Aboh (2010a,b) shows interacts with final negation in Gbe, as indicated by example (3c). In this example, the negative particle precedes a focus marker which in turn precedes the question particle.

(3) Fongbe

    a. Kɔ̀kú ná xɔ̀ àsɔ́n ɔ́ ǎ
       Koku FUT buy crab DET NEG
       'Koku will not buy the crab.'

    b. Kòfí ɖù àsɔ́n ɔ́   à?
       Kofi eat crab DET Q
       'Did Kofi eat the crab?'

    c. Kòfí ɖù àsɔ́n ɔ́   ǎ   wɛ̀ à?
       Kofi eat crab DET NEG FOC Q
       'Did Kofi not eat the crab?'

Facts like these led Aboh (2010a) to propose that the sentence-final negative particle belongs to the C-domain in Gbe. These data from the Gbe languages, already show that FOFC as formulated in (1) is certainly not "surface-true". Can we, however, claim that FOFC constrain the underlying structure? Given that SBRH (2017) adopt Grimshaw's (1991) notion of extended projection, we can answer this question only if we are able to characterize precisely the featural bundle of the different heads within the functional sequence of the left periphery in the Gbe languages. Though there is now a significant body of literature on the complementizer system of the Gbe (and other Kwa) languages, it is reasonable to say that we still do not have a fine-grained map of the featural specifications of C-type heads in these languages, and we do not know how learners acquire these features.

This last question becomes even more critical when considering acquisition in contact situations. Indeed, if FOFC is an inviolable condition, as suggested by

SBRH (2017), one could imagine that the primary linguistic data (PLD) that learners are exposed to would not generally contain systematic cues for them to derive FOFC-violating grammars. Put differently, learners must have a way of deducing underlying FOFC-compliant structures from massively FOFC-violating surface forms. One would therefore expect superficial FOFC-violating orders (e.g., VO-Aux, VO-question particle, VO-Neg) to be unstable and eventually lost in contact situations. This expectation, however, is not met in the case of certain creole languages. Indeed, creole languages which emerged in colonial settings involving enslaved Niger-Congo learners (i.e., speakers of Kwa and Kikongo) inherited typical Niger-Congo disharmonic structural properties and therefore display comparable FOFC surface violations.

Since the original formulations of FOFC, I have discussed some of these surface FOFC violations with Ian Roberts and Theresa Biberauer. I was therefore only partially surprised on June 3, 2016 at 3:45pm, when I received a mail from Ian, which read as follows:[1]

> I'm looking at languages with N-A-Num-Dem U20 order in the DP to see what (if any) clausal word orders they correlate with. Am I right in thinking that Gungbe has head-initial order in the clause? According to WALS, it has head-final question particles though. Is that correct? In that case it looks like an apparent FOFC-violator.

As suggested in Ian's message, the discussion on sentences under example (3) already indicated that the Gbe languages involve clause-final particles that encode negation (3a), interrogation (3b) or a combination thereof (3c). The following sentence further shows that these languages display noun-adjective-numeral-demonstrative order as illustrated in (4). Further note that within the DP, the determiner and the plural marker occur to the right edge (see Aboh 2004a,b and references therein for discussion):

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[1]I am always excited by mails from Ian who also happens to be one of my favourite teachers and now very good colleague and friend. Ian introduced me to diachronic syntax at a time I had no idea such a thing existed. Actually, he has in various ways inspired my recent work on language contact and change. In addition, as his student, I liked his French accent at a time when as a *Béninois* trying to make sense of *Français Genevois*, I wondered what French and African politicians meant by "la francophonie". What's the point if I have hard times understanding both *Genevois* and my French L2 speaker teacher of diachronic syntax? How can we account for such a variation in a principled manner? These questions obviously led me to my current work on *hybrid grammars*, a concept that is actually not very far from work that Ian has done in collaboration with Robin Clark in the early 90s. But let us return to our current topic of discussion.

(4) Gungbe
[Òxwé kpèví àwè éhè lɔ́   lɛ́] jró   mì.
   house small two DEM DET PL   please 1SG-ACC
'I like these two houses.', lit. 'These two houses please me.'

With regard to Ian's message therefore these examples indicate that Gbe languages may constitute counter-examples to FOFC. Sheehan (2013) claims that the number of such FOFC-violating languages is rather restricted. Since the Gbe languages exhibit right edge (or final) functional elements both in the nominal and clausal domain, it is important to look at the facts closely in order to determine whether these languages represent genuine FOFC violations or not. Given the importance of FOFC in the literature, we need to better understand such cases of apparent violations in order to find out whether the principle holds of structure building or whether it relates to surface phenomena deriving from processing (cf. Hawkins 1983; 1990; Walkden 2009). In order to make this first step, the following sections are meant to present more data from Gbe and some creoles which appear to be FOFC violations.

Recall from the formulation of FOFC in (1) that it excludes structure (2d): no language should exist in which a consistent head-initial structure is dominated by a head-final structure. Under FOFC therefore a structure like the one in (3b) cannot have the underlying representation (5a), but must be analysed as in (5b) in which the complement of the Interrogative functional projection InterP raises to its specifier position. In these representations, the sentence-final floating low tone expresses a question particle that takes the clause as complement. It is worth noting, however, that Aboh (2004a), Aboh & Pfau (2011) propose the same analysis under the LCA, hence the necessity to tease FOFC-related and LCA-related effects apart.
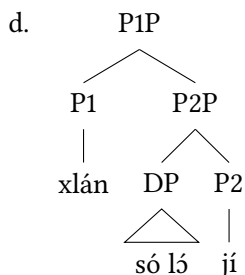
(5) a. b.
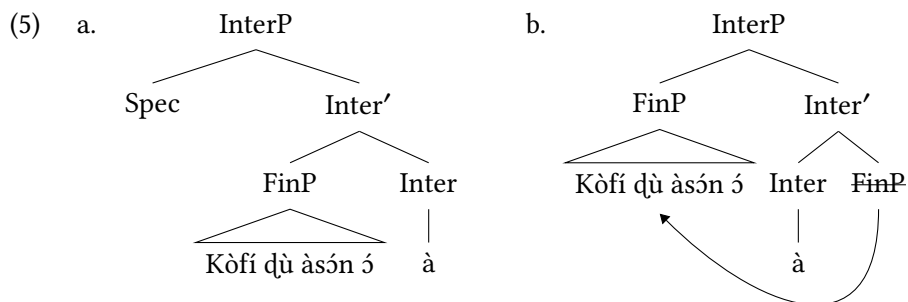
It appears from the examples in (3) and (4) that the Gbe languages, like many Niger-Congo, display disharmonic structures, as represented in (2c) and (2d), in various components of their grammar (e.g., TP, CP, PP). Likewise, studies on creole languages have shown that some creole languages, which emerged from the contact between Gbe languages and French (e.g., Haitian Creole), or Gbe languages and English (e.g., Sranan, Saramaccan), exhibit similar disharmonic structures in areas of their grammar. Together these facts suggest that such apparent violations of FOFC are not isolated phenomena, and therefore require some explanation. Such an explanation can only be based on a precise description of the facts. In what follows, I take this first step and illustrate the main contexts in which Gungbe apparently violates FOFC, and provide comparable examples in Haitian Creole and Suriname creoles (e.g., Sranan and Saramaccan). These creoles emerged in the 17th century colonial plantations in Suriname and Haiti where thousands of enslaved African speakers of Niger-Congo languages were deported to the Americas and came into contact with the languages of European their colonists, namely French in Haiti and English and Dutch in Suriname.

2 Initial-over-final in Gbe

Aboh (2010c) reports that Gungbe involves two types of adpositions labelled P1 and P2. Elements of the type P1 generally derive from posture or locative verbs, while items of the type P2 derive from nouns expressing landmarks or body-parts. P1 projects a head-initial structure as indicated in (6a). P2 on the other hand projects an apparent head-final structure as in (6b). When P1 and P2 co-occur, P1 must precede the phrase headed by P2, as indicated by example (6c) further described in (6d).

(6) Gungbe

a. Súrù zé   kwέ   [xlán mì].
   Suru take money   P1   1sg
   'Suru sent me some money.'

b. Súrù xέ   [só lɔ́   jí].
   Suru climb   hill DET P2
   'Suru climbed on top of the hill.'

c. Súrù nyìn àgán [xlán [só lɔ́   jí]].
   Suru throw stone   P1   hill DET P2
   'Suru threw a stone on top of the hill.'

d.
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            P1P
           /   \
         P1     P2P
          |    /   \
        xlán  DP    P2
             / \     |
           só ló    jí
```

Note that in this example, both the DP inside P2P and P2P itself display a head-final structure embedded under the head-initial P1P. Biberauer (2016) discusses these examples and concludes that the determining factors allowing these apparent FOFC violations could be the lower structural position of P2 compared to P1 as represented in (6d). Furthermore, P1 and P2 are categorially distinct: the former developed from verbs, while the latter developed from landmark nouns (cf. Aboh 2010c). While this view is plausible, one would need to find out how it squares with Aboh's (2010c) subsequent suggestions that elements of the type P2 should be analysed as heading a predicate within a possessive phrase (which according to him is typical of such locative expressions). The idea being that a sequence like *só ló jí* in (6b) should be analogised to *the mountain top* in English, in which *jí*, expressing P2, heads a possessive predicate. If this view is correct and if we maintain the notion of extended projection as argued for in SBRH (2017), then both P1 and P2 belong to the same extended projection, and we would have to demonstrate how they are categorially distinct.

3 Final-over-initial in Gbe

The discussion above about the yes–no question particle already showed that Gbe languages involve instances of final-over-initial disharmonic orders within the clausal left periphery (cf. Aboh 2016b for further discussion). In what follows, I show that similar disharmonic orders are found within the TP too. In Fongbe, for instance, the so-called completive aspect can be expressed by complex structures in which two apparent verbs circumvent an object (cf. da Cruz 1995; Aboh 2009; van den Berg & Aboh 2013).

(7) Fongbe (da Cruz 1995: 363)

a. Kɔ̀kú wà àzɔ̌ ɔ́ fó
   Koku do work DET finish
   'Koku finished doing the work.'

b. Kɔ̀kú ɖù mɔ̀lìnkún ɔ́ vɔ̀
   Koku eat rise DET finish
   'Koku finished eating the rice.'

Under the assumption that the final verb is comparable to an auxiliary or aspect marker of some sort, these sequences would be akin to [VO]-Aux order which is banned in Germanic (cf. Biberauer et al. 2014: 173). Da Cruz (1995) analysed these constructions as instances of serial verb constructions arguing that, in these constructions, the final V is a lexical verb with the same thematic properties as in the examples in (8) in which these verbs select for an internal argument.
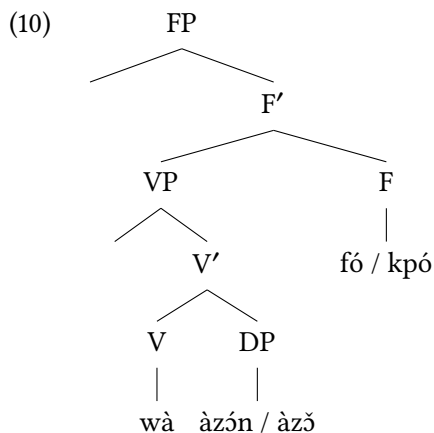
(8) Fongbe (da Cruz 1995: 363)

    a. Kɔ̀kú fó   àzɔ̌ ɔ́
       Koku finish work DET
       'Koku finished the work.'

    b. Kɔ̀kú vɔ̀   mɔ́lìnkún ɔ́
       Koku finish rice   DET
       'Koku finished the rice.'

In recent work, however, van den Berg & Aboh (2013) argue that these constructions should be analysed similarly to equivalent constructions in Gungbe which do not involve two apparent verbs and in which the final position is realised by the quantifier meaning *kpó* 'all'.
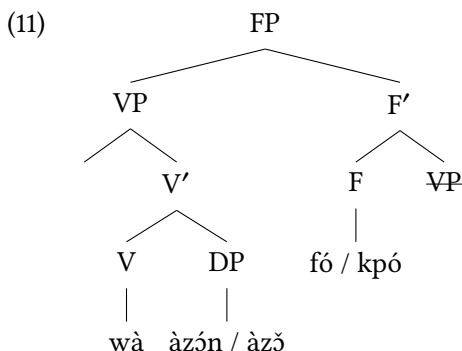
(9) Gungbe

    a. Dónà wà àzɔ́n kpó
       Dona do work all
       'Dona did the work completely.',
       'Dona did all the work.'

    b. Dónà ɖù lésì lɔ́ kpó
       Dona eat rice DET all
       'Dona ate the rice completely.',
       'Dona ate all the rice.'

In terms of this proposal, the Gbe languages involve a TP-internal functional projection that expresses event quantification and may be spelled out by a verb root or a quantifier root that merges in its head. Under this view therefore, the Fongbe and Gungbe sentences in (7a) and (9a), respectively, can be described as in (10) in which the event quantifier merges under F and takes a head-initial VP.

(10)

```
                    FP
                   /  \
                      F'
                     /  \
                  VP      F
                 /  \     |
                   V'    fó / kpó
                  /  \
                 V    DP
                 |    |
                wà  àzɔ́n / àzɔ̌
```

If representation (10) corresponded to the underlying structure then this and similar examples would be genuine violations of FOFC. Alternatively, however, one can argue along the lines of van den Berg & Aboh (2013) that the functional element heading event quantification is head-initial, but its complement must move leftward, presumably to its specifier position, as in (11). In terms of Aboh (2004a,b; 2010a), this event quantifier head belongs to the class of markers in Gbe whose complements must raise to their specifier position.

(11)

```
                    FP
            _____|_____
           |                 |
          VP                 F′
        ___|___           ___|___
       |       |         |       |
       V′      F        VP
    ___|___    |
   |       |   |
   V      DP  fó / kpó
   |       |
   wà   àzɔ́n / àzǎ
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Under this view and assuming that Gbe languages are underlyingly head-initial no issue arises, but this conclusion is not immediately obvious if we assume FOFC and if linearization is not part of core syntax.

4 FOFC in language contact and change

The examples discussed thus far indicate that Gbe languages involve the disharmonic orders in (2c) and (2d). These languages therefore seem to violate FOFC, on the surface. As suggested in previous paragraphs, one could hypothesise that such apparent violations of FOFC are unstable in contact situation because FOFC constrains structure building. Alternatively, one could also imagine that the process being so robust in Gbe (and other Kwa), prevails in contact situations involving Gbe or similar Niger-Congo languages and European languages such as French or English. It is the latter scenario that characterizes certain Atlantic creoles. These new languages display disharmonic orders in areas of their grammar in a way comparable to Gbe. This is the case in Haitian Creole spoken in Haiti, Sranan and Saramaccan spoken in Suriname. These languages developed in the Caribbean in the late 17th and early 18th century during European colonial expansion (cf. Aboh 2015 and references cited there). We now face the crucial question of why, during acquisition in such multilingual contexts, disharmonic structures win over harmonic ones even though the computational system favours the latter.

4.1 Initial-over-final within PP: Sranan

Just as Gbe languages exhibit P1 and P2 categories with apparent different headness properties, one finds equivalent adpositions in Early Sranan (12), as well as in other Suriname creoles (cf. Bruyn 2003 and references cited there).

(12)   Sranan (Bruyn 2003: 32)

Sinsi a   komm *na* hosso *inni* …
since 3SG come   P1 house P2
'Since she entered the house …'

The surface string in (12) indicates that like in Gbe, Sranan P1 is head-initial and takes a complement which is head-final. Aboh (2010c, 2015, 2016a, 2017) discusses these patterns as well as other varying word orders found within the PP in these creoles and shows how they derive from a recombination of syntactic features selected from Gbe-languages and from English.

4.2 Final-over-initial within the DP: Haitian Creole

Similar recombination is found within the DP in Haitian Creole (Aboh & DeGraff 2014; Aboh 2015). This language exhibits both prenominal and postnominal adjectives. The definite/specificity marker must follow the noun phrase, while the indefinite marker *yon* must precede:

(13)   Haitian Creole (DeGraff 2007: 117–118)

a. Nana vann gwo wòb la
Nana sell   big   dress DET
'Nana sold the big dress.'

b. Nana vann wòb jòn   la
Nana sell   dress yellow DET
'Nana sold the yellow dress.'

c. Mwen te   wè yon moun
1SG   ANT see DET person
'I saw someone.'

Clearly, the distribution of adjectives in Haitian Creole is similar to that of French adjectives. Under Cinque (2010), French and other Romance languages which exhibit similar distributive properties involve head-initial structures and the relative position of adjectives (i.e., pre- vs post-nominal adjective) is derived by N(P)-movement. Taking this as our starting point, it must be the case that the

post-nominal determiner-like element in Haitian Creole dominates a head-initial structure. This view is further corroborated by the fact that unlike adjectives, possessive pronouns, demonstratives as well as the number marker follow the Gbe head-final order as illustrated by example (14).

(14) a. Haitian (Lefebvre 1998: 78)

krab mwen sa   a   yo
crab 1.POSS DEM DET PL
'these crabs of mine'

b. Gungbe (Aboh 2004a,b)

àgásá cè   éhè lɔ́ lɛ́
crab 1.POSS DEM DET PL
'these crabs of mine'

Yet, example (13c) clearly shows that the indefinite determiner must precede the noun, suggesting a head-initial pattern similar to French *une personne* 'a person'. Again, what we see here is a recombination of the Gbe disharmonic order with French harmonic order with mixed headedness properties, leading to apparent FOFC-violations.

4.3 Final-over-initial within TP: Sranan

In the preceding paragraphs, I showed that Gungbe, and Gbe languages in general, involve event quantifiers which, on the surface, seem to exhibit a head-final structure, even though they select a head-initial VP complement. Similar constructions are found in the Suriname creoles as well. An example from early Sranan is given in (15) in which the so-called completive marker, *keba*, follows the verb.

(15) Sranan

yu syi tok, nownowdei mi leri *keba*   taki a   'oe' musu de ini
3SG see yet now.RED-day 1SG learn already that the 'oe' must be every
wan lo geval wan 'u'.
one LO case a   'u'
'You see, right, nowadays I have learned (I know) that the 'oe' must be (written) as 'u' in any case.'

These constructions are discussed in van den Berg & Aboh (2013) who propose an LCA account in the lines of representation (11) above. In terms of this analysis, *keba* (also realised sometimes as *kba*, *kaba*) is equivalent to the Gbe event

quantifiers, in that it heads a functional projection within TP that takes the VP preceding it as complement. The latter must raise to [spec FP] to be licensed as described in (11).

The preceding paragraphs show that the Gbe languages and some creoles involve a significant body of syntactic patterns which systematically violate FOFC on the surface. These patterns are found within the determiner phrases, adpositional phrases, tense or aspect phrases as well as within the complementizer system. With regard to aspect phrases, for instance, the discussion on event quantifiers suggests that these languages involve some event quantifier that can project above the VP and surface as head-final structure even though the embedded VP is head-initial. Assuming that these event quantifiers are aspectual in nature (as commonly accepted in the literature), they are comparable to aspect markers which, in many languages, are expressed by various auxiliaries. Accordingly, we reach the description that these languages appear to exhibit the order [VO]–Aux/Asp in which a head-initial VP precedes an aspect marker or auxiliary which appears to be head-final. Since it is the absence of the [VO]-Aux order in Germanic which led to the postulation of FOFC (cf. SBRH 2017), one wonders why these languages display a sequence in surface form that is banned in Germanic? If the ban in Germanic holds on surface form, why does it not apply to Gbe and similar languages as well? Given such sharp discrepancies between Gbe languages (Niger-Congo), some creoles, and Germanic, the question arises what fundamental aspect of Human Language Capacity explains FOFC, and the observed cross-linguistic variation. Theresa Biberauer's chapter in SBRH (2017) addresses some of these questions, but I hope that the data provided here will allow further research in this domain.

Abbreviations

1	first person		FUT	future
3	third person		LCA	linear correspondence axiom
ACC	accusative		NEG	negation
ANT	anterior		PL	plural
DEM	demonstrative		PLD	primary linguistic data
DET	determiner		POSS	possessive
FOC	focus		Q	question particle
FOFC	final-over-final condition/constraint		RED	reduplication
			SG	singular

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