

# Structure and Linearization in Disharmonic Word Orders

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## 1. Introduction

So-called “harmonic” word orders, which reflect either consistent head-initial or head-final order (cf. Hawkins 1983), have received much attention in both the generative and the typological literature. Thus, for example, it is now well-known that some of Greenberg’s “word order universals” represent robust generalisations which hold across the majority of languages surveyed to date (cf. Dryer 1992, Haspelmath et al. 2005). The generative account of these recurring patterns is also well-established: assuming (1a), the tendency for V(erb)-O(bject), Aux(iliary)-V(erb), C(omplementizer)-Sentence and prepositions to co-occur, while the opposite is true for OV languages, can, for example, be ascribed to different settings of the Head Parameter (1b):

- (1) a. Principle:  $X' \rightarrow \{X, YP\}$   
b. The Head Parameter:  $X > YP$  (head-initial languages)  
 $YP > X$  (head-final languages)

As noted i.a. by Dryer (1992: note 17), “disharmonic” systems or those exhibiting a mix of head-initial and head-final orders in fact outnumber harmonic ones among the world’s languages, raising questions as to the role of (1b) in these languages, and possibly also more generally. What has frequently been noted about disharmonic systems is that a small number of head-complement pairs are responsible for the majority of the inconsistencies, e.g. N(oun)-Rel(ative), which is the preferred order independently of the relative ordering of V and O and the consistency of the other dyads (Dryer, *ibid.*). OV plus N-Rel, then, is a very common disharmonic pattern. Barely remarked upon, however, is the fact that disharmonic systems also exhibit the opposite kind of asymmetry, namely a disharmonic pattern which consistently fails to surface and which therefore appears to constitute a gap in the range of structural options available in language. This latter asymmetry within disharmonic systems is the focus of the present paper. In short, our aims are to formulate and motivate a generalization about disharmonic systems which we conjecture has universal validity for word order typology, and to show how this generalization can be derived from current notions of cyclicity and linearization.

The following section introduces the generalization in descriptive terms. Section 3 then illustrates its operation on the basis of data from a range of synchronic and diachronic varieties, while section 4 focuses on apparent counterexamples. Section 5 presents a Minimalist analysis of both the generalization and the exceptions to it, and section 6 concludes.

## 2. The Final-Over-Final Constraint (FOFC)

Holmberg (2000: 124) states the following descriptive generalization about word order patterns:

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## (2) The Final-Over-Final Constraint (FOFC)

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.

(2), which we dub the *Final-Over-Final Constraint (FOFC)*, rules out structures like that in (3):

(3) \* $[_{\beta P} [_{\alpha P} \alpha \gamma P] \beta]$  where  $\alpha P$  is the complement of  $\beta$  and  $\gamma P$  is the complement of  $\alpha$ .

## 3. Empirical motivation for FOFC

### 3.1. Clausal word order gaps

Germanic varieties, both synchronically and diachronically, exhibit a mix of head-initial and head-final orders. Thus, for example, it is well-known that the elements O, V and Aux may be ordered in a range of ways relative to one another in these varieties. These are listed in (4) (cf. also Kiparsky 1996):

- (4) a. **O-V-Aux** or consistently head-final order in VP and TP: German and dialects of German, Dutch and its dialects, Afrikaans; Old English, Old Norse  
 b. **O-Aux-V** or so-called *verb-raising/VR* structures: Swiss German dialects, Dutch and its dialects, Afrikaans; Old English, Old Norse  
 c. **Aux-O-V** or so-called *verb projection-raising/VPR* structures which involve a head-initial TP and a head-final VP: Swiss German dialects, Dutch dialects, spoken Afrikaans; Middle Dutch, Old High German, Old English, Old Norse  
 d. **V-Aux-O**: required for CP-complements in German, Dutch, Afrikaans and their dialects; possible with PP-complements in Dutch and Afrikaans and, to a lesser extent, German; also possible with DPs in Old English and Old Norse  
 e. **Aux-V-O** or consistently head-initial order in VP and TP: English, Mainland Scandinavian, Icelandic; also possible in Old English and Old Norse

We see here that disharmonic orders are not excluded *per se*: the VPR ordering in (4c) requires a head-initial TP dominating a head-final VP and is frequently attested. This suggests that the Head Parameter needs to be relativized to categories. But then we see that the reverse pattern with head-final TP dominating head-initial VP fails to surface: **V-O-Aux** is a pattern which is strikingly absent among the attested ordering possibilities in Germanic (cf. i.a. den Besten 1986, Kiparsky 1996). This pattern is the one which violates FOFC for  $\alpha = V$  and  $\beta = T$ .

As noted by Holmberg (2000: 128), Finnish exhibits a similar gap to that found in Germanic. The unmarked ordering of V, O and Aux in this language is consistently head-initial Aux-V-O, but OV order is possible where a category is fronted by *wh*- or focus-movement. Thus, both disharmonic Aux-O-V orders and also harmonic O-V-Aux ones occur in focused and *wh*-structures, with the latter showing that VP fronting across Aux is available in Finnish. Significantly, however, VP fronting is unavailable in structures where the object has remained in situ/to the right of V. Thus, FOFC-violating V-O-Aux ordering is once again barred in Finnish. The relevant pattern is illustrated in (5) (object underlined; Aux **bold**; V *italic*):

- (5) a. Milloin Jussi **olisi** *kirjoittanut* romaanin? [Aux-V-O]  
 when Jussi would-have written novel-DEF  
 b. Milloin Jussi **olisi** romaanin *kirjoittanut?* [Aux-O-V]  
 when Jussi would-have novel-DEF written  
 c. Milloin Jussi romaanin *kirjoittanut* **olisi?** [O-V-Aux]  
 when Jussi novel-DEF written would-have  
 “When would Jussi have written a novel?”  
 d. \* Milloin Jussi *kirjoittanut* romaanin **olisi?** \*[V-O-Aux]  
 when Jussi written novel-DEF would-have

As illustrated in (6), Basque exhibits a similar pattern: (harmonic) V-Aux ordering in affirmative clauses (cf. (6a)) and (disharmonic) Aux-V ordering in their negative counterparts (cf. (6b)):

- (6) a. Jon-ek Miren-i egia *esan* **dio** [O-V-Aux]  
 Jon-ERG Miren-DAT truth say-PERF Aux  
 “Jon has told Miren the truth.”
- b. Jon-ek ez **dio** Miren-i egia *esan* [Aux-O-V]  
 Jon-ERG not Aux Miren-DAT truth say-PERF  
 “Jon has not told Miren the truth.”

In negative clauses, VO ordering is also a possibility, delivering a consistently head-initial Aux-V-O structure. In the affirmative, however, VO is impossible, as shown below:

- (7) a. Jon-ek ez **dio** *esan* Miren-i egia [Aux-V-O]  
 Jon-ERG not Aux say-PERF Miren-DAT truth  
 “Jon has not told Miren the truth ”
- b. \*Jon-ek *esan* Miren-i egia **dio** [V-O-Aux]  
 Jon-ERG say-PERF Miren-DAT truth Aux  
 “John has told Miren the truth.” (all data from Haddican 2004)

Thus, Basque, like Finnish and Germanic, permits both harmonic and disharmonic word orders, but systematically bars the FOFC-violating V-O-Aux ordering.

### 3.2. Ordering gaps in other domains

A frequently observed fact about VO languages is that they do not permit sentence-final complementizers (cf. i.a. Dryer 1992: 102, 2006: 30; Hawkins 1990: 256-7). The *World Atlas of Language Structures (WALS)*, for example, registers just 2 VO languages out of 599 showing final “adverbial subordinators”, and Zwart (2007) investigates 214 of these languages and finds no “true” final co-ordinating conjunctions at all (cf. his Table 3), noting that the few elements apparently serving as clause-final Cs are either comitative/instrumental markers (i.e. case markers or postpositional elements; see discussion in section 5 below) or summary/linking markers of some description (e.g. pronouns, quantifiers, plural or dual number markers, copulas, force markers, etc.).

Why should VO languages be incompatible with final complementizers? The constraint in (2) would only appear to rule out a head-final phrase which immediately dominates a head-initial one, and CP is not generally thought to directly dominate VP. Closer consideration, however, reveals that VO languages necessarily violate FOFC at some point in their structure. Consider (8) in this connection:

- (8) a. \* $[_{CP} [_{TP} [_{VP} V O ] T ] C ]$  -- violates FOFC ( $\alpha = V, \beta = T$ )  
 b. \* $[_{CP} [_{TP} T [_{VP} V O ] ] C ]$  -- violates FOFC ( $\alpha = T, \beta = C$ )

As shown in (8a), VO languages with a head-final TP and CP violate FOFC in the same way as the languages discussed in sections 3.1-3.3: head-final TP dominates head-initial VP in this case. Languages with head-initial TPs, like the one diagrammed in (8b), meanwhile, violate FOFC at the TP/CP level: head-final CP dominates head-initial TP. Therefore, regardless of the directionality of TP, there is no FOFC-compliant way for VO languages to feature clause-final complementizers. If one assumes “massive pied-piping” of a head-initial TP into Spec-CP, as Kayne (1994), for example, has, the impossible structure, of course, becomes derivable. We return to this point in section 5.

Looking beyond the clausal domain, we see parallel FOFC-related gaps in the nominal domain. Consider Finnish once again. This language features both prepositions and postpositions and also permits nominal complements to surface both pre- and postnominally. A range of orderings are therefore possible in the nominal domain, as illustrated in (9) (O = nominal complement here):

- (9) a. P N O: kohti kuvaa Stalinista [harmonic head-initial]  
 towards picture Stalin-ABL  
 “towards a picture of Stalin”
- b. P O N: kohti Stalinin kuvaa [disharmonic head-initial over head-final]  
 towards Stalin-GEN picture  
 “towards a picture of Stalin”
- c. O N P: Stalinin kuvaa kohti [harmonic head-final]  
 Stalin-GEN picture towards  
 “towards a picture of Stalin”
- d. N O P: \*kuvaa Stalinista kohti [disharmonic head-final over head-initial]  
 picture Stalin-ABL towards

As shown above, all orderings of P, N and O are possible, except the one which violates FOFC for  $\alpha = N$  and  $\beta = P$ .

Further, FOFC also seems to operate in the morphological domain. So-called bracketing paradoxes famously arise in the context of compound nominals, like *generative grammarian*, *historical linguist* and *rocket scientist*. As also noted by Ackema and Neeleman (2004: 164ff), bracketing paradoxes do not arise wherever the base form (*generative grammar*, *historical linguistics* and *rocket science* above) is N+complement. Consider (10) in this connection:

- (10) \*[history of science]ist]; \*[philosophy of science]ist]

If the suffix in (10) is  $\beta$  and the head-initial NP is  $\alpha$ , these examples all constitute FOFC-violations which are therefore expected to be ruled out.

Finally, it is also worth noting that FOFC makes very strong diachronic predictions: change from head-final to head-initial order must proceed “top-down” as given in (11a), while change in the opposite direction must follow the “bottom-up” route diagrammed in (11b):

- (11) a. [[[O V] T] C] → [C [[O V] T]] → [C [ T [ O V ]]] → [C [ T [ V O ]]]  
 b. [C [ T [ V O ]]] → [C [ T [ O V ]]] → [C [ [ O V ] T ]] → [[[O V] T] C]

Changes following any other course will violate FOFC at some level (cf. the discussion at the start of this section) and are therefore excluded. In contrast to Lightfoot’s (1999) proposal that syntactic change involves a “random walk through parametric space”, FOFC defines a “pathway” of diachronic changes which is determined by synchronically impossible stages. And to the extent that evidence is available to us at this stage, the predictions in (11) would seem to hold up. Thus, both the earliest attested stages of Germanic (Gothic, Old Norse and Old English) and of Romance (Latin) exhibit C-TP order, i.e. clause-initial complementizers surfacing while the TP and VP are (at least optionally) head-final. As noted in section 3.1, TP and VP also permitted mixed orderings, but the FOFC-violating V-O-Aux order is never attested, and furthermore, detailed studies of the history of English and the Scandinavian languages have also shown that mixed VP orderings were still possible at the stage at which IP had become consistently head-initial.

In sum, then, there appears to be a wide range of evidence pointing to the existence of a systematic gap in the range of word order patterns permitted in the world’s languages: while harmonic and non-FOFC-violating disharmonic orders surface readily, even in the same language, there appears to be one order which is not possible – that which violates FOFC. As the following section will show, this statement is not actually exceptionlessly true and therefore requires modification.

#### 4. (Apparent) counterexamples to FOFC

Many OV languages feature head-initial DPs and PPs which will therefore be dominated by head-final VPs wherever they occur as verbal complements. German is a very familiar case in point:

- (12) a. Johann hat [<sub>VP</sub> [<sub>DP</sub> den Mann] gesehen ]  
 John has the man seen  
 “John has seen the man.”



- b. Àsíbá zé kwé **dó** távò ló jí [Gungbe, cf. Aboh 2004: 117]  
 Asiba take-PERF money PREP table DET POSTP  
 “Asiba put the money on the table.”

In sum, then, it is clear that (2), as stated, cannot be viewed as an exceptionless constraint, even though it is also clear that it accurately characterizes a wide range of structures that are systematically absent from languages. The following section aims to propose a theoretical account of both the gaps and the fact that (2) appears to be too restrictive.

## 5. Accounting for FOFC

### 5.1. The FOFC-conforming cases

Our analysis rests on the following theoretical assumptions. First, (A) linearization is cyclically determined by phase heads in accordance with (the strict version of) the Phase Impenetrability Condition (PIC) given in (16):

- (16) The *Minimalist Inquiries* PIC (Chomsky 2000: 108)  
 In a phase  $\alpha$  with head H, the domain of H is not accessible to operations outside  $\alpha$ ; only H and its edge are accessible to such operations.  
 i.e.  $[Z^0 \dots Z^0 [X^0 \dots X^0 [H^0 \dots H^0 [Y^0 \dots Y^0 [W^0 \dots W^0 \dots$   
 where only **bold material** is accessible to  $X^0, Z^0$ , etc; material in *outline* font has already been sent to Spellout.

Crucially, we assume that completion of a phase leads to the *radical removal* of the material in the Spellout domain (VP, TP, etc.) from the computation. Thus, VP is, for example, no longer present in the computation after the completion of (nondefective) vP, with the result that it cannot be moved into the TP domain if vP undergoes movement to Spec-TP; it is sent to Spellout and is linearized immediately, i.e. it will be spelled out as a clause-final VO string.

Second, (B) Kayne’s (1994) Linear Correspondence Axiom (LCA) in terms of which asymmetric c-command determines linear precedence. Finally, (C) any head may independently have a movement-inducing feature, i.e. in current terminology, an obligatory EPP feature which ensures correct linearization and which is therefore distinct from whatever features trigger A’-movement (Edge Features, etc.). Against this theoretical background, we now propose (17) as a generalization aimed at capturing the constraint in (2):

- (17) If a phase head PH has an EPP feature, then all the heads in its complement domain must have an EPP feature.

Applying (17) to the vP phase, we arrive at the following:

- (18) a.  $v_{EPP} \quad V_{EPP} \quad \rightarrow \quad [ [v_P \ O \ V] \ v ]$  (consistent head-final order)  
 b.  $v \quad V_{EPP} \quad \rightarrow \quad [ v \ [v_P \ O \ V] ]$  (disharmonic non-FOFC-violating order)  
 c.  $v \quad V \quad \rightarrow \quad [ v \ [v_P \ V \ O] ]$  (consistent head-initial order)  
 d.  $*v_{EPP} \quad V \quad \rightarrow \quad [ [v_P \ V \ O] \ v ]$  (FOFC-violating order)

The FOFC violations in section 3.1 (\*VOAux) clearly fall under (18d): for  $[v_P \ V \ O]$  to precede an auxiliary, it must move either to or through the specifier of vP, i.e. v must have an EPP feature, while V does not, in violation of (17). If auxiliaries are exponents of v, VOAux therefore violates (18d) directly. If auxiliaries are exponents of T, (18d) and thus the structure in (19) above clearly cannot be an intermediate stage of the derivation. Therefore, the only possibility for deriving this species of VOAux ordering is via raising of a consistently head-initial vP as in (18c) to Spec-TP. This possibility is, however, precluded by the fact that, under (A) above, head-initial VP will be spelled out and linearized upon completion of (non-defective) vP. Wherever a consistently head-initial vP is attracted to Spec-TP, it will therefore no longer contain the head-initial VP that has already been linearized and that will therefore appear in clause-final position having been “frozen in place” by the PIC; the only

material that will undergo raising will be *v* and its edge.<sup>1</sup> VOAux therefore cannot be derived if (18d) and the assumption in (A) are to be respected, a desirable outcome in the context of section 3.1 above. We return below to the counterexamples discussed in section 4.

Turning to the case of clause-final complementizers: we saw in section 3.2 that these structures would necessarily involve a head-initial VP, with a TP which could then either be head-initial (FOFC violation involving CP and TP; cf. (8b)) or head-final (FOFC violation involving TP and VP; cf. (8a)). In the system assumed here, the latter violation is ruled out in the same way as that just outlined for SVOAux with Aux in T: unless a head-initial VP is fronted under A'-movement (cf. note 1), it will necessarily be spelled out and linearized string-finally wherever *vP* is consistently head-initial (VO). SVOAuxC languages are therefore underivable. SAuxVOC languages, or those featuring a head-initial TP, but final CP, are equally underivable as they once again require the head-initial VP to be available for raising to Spec-CP. Regardless of the superficial "headedness" of TP, therefore, the proposal outlined here will rule out final complementizers in VO languages, once again a welcome result. We return to the matter of the apparently clause-final C elements which nevertheless do occur in VO languages in section 5.2.

To conclude on the matter of the missing structures that we discussed in section 3.4, let us finally consider the nominal case exemplified by Finnish. The absence of NOP structures such as that illustrated in (9d) once again follows from (18d); the only difference here is that the categories in question are *n* and *N*. (9d) is therefore barred as it would, in the system proposed here, require an EPP-bearing *n* (the postposition; Finnish postpositions are distinctly nominal categories) which fails to determine the EPP property of the *N* in its complement domain.

In sum, then, the gaps highlighted in section 3 all appear to be amenable to an explanation which appeals to the very simple phase-based linearization system stated in (17). Obviously, however, it cannot account for the observed exceptions which were the focus of section 4 and to which we now turn.

## 5.2. The counterexamples

The central observation regarding the exceptions to (2) is that many of them appear to involve a categorical distinction between the phase head and the moved category. This is very clear for the German cases in (12): PP/DP are generally viewed as nominal categories, whereas *v* and *V* are verbal. Given this insight, let us modify the generalization in (17) as follows:

(17') If a phase head PH has an EPP feature, then all the heads in its complement domain **from which it is non-distinct in categorial features** must have an EPP feature.

It is worth noting that (17') is very much in the spirit of Chomsky's (2005) idea that the phase head determines many of the properties of the heads in its phasal domain, including their ability to act as probes and/or movement triggers. Here we specifically assume that phase heads determine the linearization properties of categorially like heads in their domain.

Given (17'), we would expect the following pattern of cases conforming and not conforming to FOFC (*n/N* and *v/V* are simply intended to indicate categorially like or unlike heads here):

- |      |    |                  |          |                   |
|------|----|------------------|----------|-------------------|
| (19) | a. | $n_{\text{EPP}}$ | <i>N</i> | -- FOFC violation |
|      | b. | $v_{\text{EPP}}$ | <i>V</i> | -- FOFC violation |
|      | c. | $n_{\text{EPP}}$ | <i>V</i> | -- allowed        |
|      | d. | $v_{\text{EPP}}$ | <i>N</i> | -- allowed        |

<sup>1</sup> Note that our assumption that phase heads determine the linearization properties of heads in their complement domain via features that are crucially distinct from the movement triggers associated with A'-movement means that we do not rule out the availability of VP-fronting in VO languages: VP fronting is possible where an A'-movement trigger (e.g. an Edge Feature – cf. Chomsky 2005) results in movement of the VP to an outer specifier of *vP*, from where it is then available for further movement operations in the manner usually assumed in phase-driven approaches. Our prediction is thus simply that VP-fronting structures in VO languages are necessarily associated with interpretive effects as the movement trigger would necessarily have to be an Edge Feature (cf. Chomsky 2005). This certainly appears to be correct for English.

With one obvious exception, all the counterexamples in section 4 would seem to fall (at least partially) under (19c,d). The German case in (12) is clearly an instance of (19d), where we would not expect EPP-bearing (= “head-final”)  $v$  to determine the linearization properties of nominal categories in its domain. As regards the clause-final force and other markers that appear to be final C elements occurring in VO languages (cf. (13) above), it is worth noting that it has previously been proposed that C may be either nominal or verbal in nature (cf. i.a. Holmberg 1986). We therefore predict FOFC violations wherever (i) C is nominal and the associated clause is clearly not, and (ii) wherever nominal categories are strictly head-final (i.e.  $n_{EPP}$ ) whereas verbal categories are not (i.e.  $v$ ). This latter state of affairs seems to hold in Mandarin and the other Chinese varieties that we have considered so far; therefore, the existence of a categorial distinction between the clause and the relevant C-particles could be the factor underlying this exception (although see below for further discussion). As regards the final negation elements surfacing in VO languages, many of these also seem to be good candidates for nominal status. In many cases where the final negator is part of a bipartite negation structure, it can be shown to be a polarity element (Bell 2004, Biberauer 2007), i.e. one which could very plausibly be viewed as nominal. Furthermore, it has also been observed that the final “auxiliaries” in at least some of the languages which permit VOAux ordering are uninflected elements which in fact have nominal origins (e.g. copulas derived from pronouns) and still reflect the “head-final” behavior of nominals in the language and/or express only part of the information usually encoded on the auxiliaries familiar from European languages (tense, agreement, mood, aspect, etc.; cf. the Ma’di auxiliaries which express only tense, but never agreement, as illustrated in (14)). These auxiliary elements therefore appear to be rather different in nature from the Germanic, Finnish and Basque auxiliaries discussed in section 3.1, all of which have their origins in inflecting elements expressing tense and agreement and, where relevant, mood, i.e. in full-fledged verbal elements. Given this, it seems plausible to propose that languages permitting SVOAux structures feature auxiliaries which are fundamentally different in nature from those found in the languages in which SVOAux is barred: sometimes these elements are nominal, sometimes they appear to be “deficient” in some sense, a matter to which we now turn.

The one structure for which postulating a nominal/verbal distinction does not appear to offer any obvious account is the circumpositional one in (15). Postulating a categorial distinction between the head-initial and head-final elements in these structures does not seem very plausible, particularly given the fact that postpositions frequently appear to be nominal elements (cf. the discussion of Finnish above). Worth noting, however, is the fact that the postpositions occurring in circumpositional constructions appear to be a rather non-uniform set of elements, with adverbial or particle-like intransitive prepositions featuring very prominently. According to Svenonius (to appear), these elements are very clearly not phase heads and, as such, we would not expect them to dictate the linearization properties of specific heads in their domain. Similarly, Aboh (2004: 120) explicitly analyzes the postpositional elements in Gungbe as “fake postpositions” which “fail to assign case”. Assuming circumpositional structures involve non-phase heads, we can then postulate a second reason for apparent nonconformity to FOFC, namely the presence of a lexical item which is not a phase head, but which nevertheless bears an EPP feature indicating that it is to be linearized to the right of its complement (cf. (18b) above). Alternatively, it could be that some of the relevant elements are defective phase heads which would then, once again, not necessarily be expected to dictate linearization properties. Clearly, if the particle-like elements, “deficient” auxiliaries, aspect markers and negation elements discussed above can also be shown to be non-phase heads, either of these explanations could also extend to those cases. These are, however, all matters requiring a great deal of further research. Nevertheless, it seems fair to say that they are matters which are highlighted in an interesting and potentially illuminating way by the phenomena with which we have been concerned here.

## 6. Conclusion

This paper has sought to highlight the widespread effects of a constraint which specifically relates to the word orders found in disharmonic systems. Properly formulated, this constraint (FOFC) bars the generation of structures in which a head-initial XP is immediately dominated by a categorially

identical head-final XP (cf. (17')). FOFC is therefore assumed to hold as an absolute principle across languages, with apparent counterexamples falling out under two possible circumstances: in the presence of a phase head which is categorially distinct from its complement, or in the presence of a non-phase head or a defective phase head which independently bears an EPP feature (=linearization instruction) which it need not pass onto the head(s) it dominates, regardless of whether these are categorially identical or not.

If the above is correct, the study of FOFC (both its violations and nonviolations) may, in addition to its obvious typological interest, tell us much about the linearization of syntactic structure. What already seems clear at this stage is that the LCA in some form must be assumed: FOFC cannot be stated by appealing to the Head Parameter as this can only rule out non-occurring patterns via stipulation, and it is also not obvious how a unified account of the violations and nonviolations could be formulated in terms of this parameter. Finally, the study of FOFC may provide an empirical basis for distinguishing those categories which are phase heads from those which are not and it may even provide a useful and previously unexplored basis for developing a greater understanding of the nature of syntactic categories.

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