***Repairing Final-Over-Final Constraint Violations: Evidence from Basque Verb Clusters***

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This paper discusses some implications of Basque for recent approaches to Final-Over-Final Constraint (FOFC) effects (Biberauer et al., to appear, henceforth "BHR"). We present evidence suggesting that FOFC violations are reparable by copy deletion, and that FOFC-violating structures are therefore derivable in the narrow syntax, contra BHR.

BHR state FOFC as in (1), summarizing their generalization that a phrase αP, ordered head-complement, cannot appear to the left of its selecting head (unless αP is A-bar moved). In approaches assuming a head-directonality parameter, this means that a left-headed phrase cannot be the complement of a right-headed phrase. On LCA-based approaches, this will mean that an XP cannot raise to a non-A-bar position, unless its complement has raised to its spec. Assuming the LCA, BHR propose that FOFC reflects constraints on the spreading of a feature, "^" which drives roll-up movement. BHR assume that ^ can spread up a spine, but never skip a head. The assumption of such monotonic spreading thus excludes unattested start-stop-start roll-up patterns that will produce FOFC violations as in (2). Importantly, on BHR's approach, FOFC effects are a narrow syntactic phenomenon, a suprprising result from the perspective of work that takes linearization to be interface driven (Nunes 2004).

(1) *[βP [αP α γP ] β ]  (2) *[X^ [ Y [Z^ ]]]

Below, we present evidence from Basque verb clusters suggesting that FOFC-violating structures are reparable by copy deletion, and hence derivable by merge, contra BHR. We focus on the word order variation in (3), where a non-finite complement of a modal can appear either to the left of the modal-auxiliary sequence as in (3a) or to the right as in (3b).

(3) a.Horrelakoak maiz-ago ikusi nahi nituzke b.Nahi nuke horrelakoak maiz-ago ikusi
like.that.PL often-more see want AUX.3PL want AUX.3S like.that.PL often-more see
'I'd like to see things like that more often.'(Etxepare and Uribe-Etxebarria 2009)

Etxepare and Uribe-Etxebarria (2009, henceforth "EU") argue that this word order variation is sensitive to the size of the non-finite constituent: when the infinitive appears to the left of the modal, as in (3a) it can be no bigger than vP; when it appears to the right as in (3b), however, it can be a TP or bigger. One kind of evidence to this effect comes from temporal modification. In (4a), the non-finite constituent contains *gaur* 'today' whose temporal value differs from that of the modal, and the result is poor. This temporal difference is fine in the (4b) word order. EU infer that the temporal independence of (4b) but not (4a) is attributable to the presence of a null tense head in the former but not the latter.

(4) a. *Jonek [(gaur) atzo egon] behar zuen (gaur) etxe-a-n
Jon-ERG today yesterday be need AUX today house-DEF-in
b. Jon-ek atzo behar zuen [gaur etxe-a-n egon.]
Jon-ERG yesterday need AUX today house-DEF-in be
'Yesterday Jon needed to be home today.' (EU)

Rightward infinitivals also block auxiliary agreement with the object (3b), obligatory in (3a).

We propose that the structure-sensitivity of this word order variation is a FOFC effect following BHR. Basque is a "mixed-head" language: heads in the clausal spine below T appear to the right of their complements, while heads above T, including Focus, and Neg/Σ appear to the left of their complements (de Rijk 1969, Ortiz de Urbina 1989, Laka 1990, Elordieta 2001). Authors assuming a head directionality parameter have traditionally taken T to be right-headed in Basque given that, in affirmative sentences, the complement verbal shell appears to the left of the auxiliary as in (5). In negative sentences, the negative morpheme *ez* appears left-adjacent to the auxiliary, and the VP appears to the right of the auxiliary as in (6). Laka (1990) and Elordieta (2001) propose that in negative sentences like (6), the auxiliary head raises and right-adjoins to Neg, which takes TP as a sister to its right, as in (7).

(5) Miren-ek Jon ikusi du. (6) Miren-ek ez du Jon ikusi.

Miren-ERG Jon.ABS see AUX Miren-ERG not AUX Jon.ABS see
'Miren has seen Jon.' 'Miren hasn't seen Jon.'

(7) [$_{XP}$ Mirenek [$_{NegP}$ ez-du [$_{TP}$ [$_{AspP}$ Jon ikusi] <du>]]]

An antisymmetric approach requires a different approach to the polarity-sensitive word order variation in (5) and (6). In particular, following Haddican (2001, 2004, 2005, 2008) we propose that the relative order of the verb, verbal dependents and modals is derived via roll-up. We further assume a FinP projection, with an EPP feature which attracts the negative morpheme *ez* in negative sentences. In neutral affirmatives, the complement of the auxiliary raises to this position, yielding the VP-Aux word order. From this perspective, TP is a left-headed projection that does not participate in roll-up movement; that is, the complement of T does not move to its spec:

(8) ***a. Affirmative orders*** ***b. Negative orders***

[$_{FinP}$ [$_{XP}$ Complement of T] Fin$_{[EPP]}$[$_{TP}$ T <XP>]] [$_{FinP}$ *ez* Fin$_{[EPP]}$ [$_{TP}$ T <*ez*> [$_{vP}$ …]]]

Assuming that non-finite T is like finite T in not participating in roll-up movement, the structure sensitivity of the word order variation in (3) is explained as a vanilla FOFC effect: what rules out a non-finite TP-layer in the (3a) order (infinitive - modal) is the presence of a head-complement structure in the spec of the modal head, in violation of (1). Specifically, the complement of the non-finite T head is not in the spec of the non-finite T, but rather the sister of T. The infinitival T itself then moves to the spec of the modal projection in violation of (1), as illustrated in (9a). In contrast, vP-sized infinitives will not run afoul of (1), since v's complement raises to its spec, as in (9b). The structure-sensitivity of the alternation in (3) is therefore straightforwardly predicted as a FOFC-effect on LCA approaches to Basque.

(9) a. ***FOFC-violating TP-raising*** ***b. FOFC-compliant vP-raising***

*[$_{ModalP}$ [$_{TP}$ T XP] Modal <TP>] [$_{ModalP}$ [$_{vP}$ XP [$_{v'}$ v <XP>]] Modal <vP>]

Unaddressed so far is why TP-sized modal complements are licit when they appear to the right of the modal as in (3b). The approach in (8) leads us to expect movement of the Modal phrase to its usual landing site in affirmative sentences, spec, FinP. In the (3b) order, the FOFC-offending infinitival TP then subextracts to a Focus phrase, followed by remnant topicalization. This yields an order in which the modal+Aux precedes the non-finite complement as in (10). Crucially, because the TP in (10) targets an A-bar position, this movement step is FOFC-exempt. (See BHR for discussion.)

(10) [[$_{FinP}$ nahi nuke] Top [$_{FocP}$ [$_{TP}$ horrelakoak maizago ikusi] Foc
<[$_{FinP}$<horrelakoak…>nahi nuke]> …]

Independent evidence that the modal in (3b) sits in a derived position comes from complex functional sequences preceding the non-finite constituent that cannot be generated in-situ:

(11) Nahi izan du beranduago etorri.
Want PERF AUX later come
'She/he has wanted to come earlier.'

In (11), the perfect head follows the modal, which it selects, and precedes the auxiliary, which in turn precedes the non-finite verb. The hierarchical relations among the different components of the sequence can be represented in terms of either a head final structure or roll-up movement, but the relative ordering of that sequence and the non-finite verb cannot: the modal verb selects the non-finite TP, but the two elements appear on opposite sides of the sequence, and separated by other clausal heads. Remnant movement provides a simple rationale for this ordering, and is well attested in other Basque focal constructions (EU).

To summarize, the analysis entails: (i) that FOFC-violating structures are indeed generable by the narrow syntax contra BHR; and (ii) that FOFC violations are reparable by subsequent movement. PF deletion of the intermediate copy of the infinitival TP in its FOFC-violating position in spec, ModalP rescues the derivation. This suggests that FOFC effects are

a PF interface phenomenon as proposed elsewhere for linearization constraints generally (Nunes 2004, Boeckx 2008).