Empirical challenges to LFG:
The Final-Over-Final Constraint

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Greenberg's seminal (1963) work on word-order typology introduced the idea that languages may be either "harmonic", exhibiting consistent (initial or final) headedness, or "disharmonic", exhibiting mixed headedness. Building on these observations, Hawkins (1983) subsequently proposed a processing preference for cross-categorial harmony, in terms of which all heads are consistently initial or final, with researchers in the Principles and Parameters framework of the 1980s relating this to a parameter, the so-called Head Parameter (cf. i.a. Travis 1984). More recently, it has, however, become clear not only that harmonic languages are in fact less common than disharmonic ones (cf. Dryer 1992 for discussion), but also that the distribution of disharmonic languages exhibits a striking skewing: while languages in which head-initial structures dominating head-final ones are common, those instantiating the opposite disharmony – final over initial – are much rarer (cf. Holmberg 2000). Thus, the Germanic languages can, synchronically and diachronically, be shown to permit all permutations of V, O and Aux, barring *VOAux, and the same gap comes to light in Finnish and Basque. Similarly, the world's VO languages systematically lack complementiser-final structures (Hawkins 1983, Dryer 1992, 2009), while OV languages with initial complementisers systematically extrapose clausal complements (Sheehan 2008, Biberauer & Sheehan 2009). Similar effects can be shown to hold within the nominal domain (Biberauer, Holmberg & Roberts 2007) and also in the domain of inflectional morphology (Myler 2009). Final-over-initial orders are not, however, completely ruled out: OV languages may feature initial DPs and PPs (cf. West Germanic) and structures in which the final element is syntactically deficient – a particle – also occur (cf. i.a. clause-final force particles in languages like Chinese, the postpositional elements in West Germanic, and the tense, aspect and other particles found in Central African languages). Against this empirical backdrop, it is clear (i) that the Head Parameter cannot be maintained and (ii) that a processing-based account cannot account for the facts (cf. Sheehan 2008, Walkden 2009). Accordingly, Biberauer, Holmberg & Roberts (2009) postulate (1) as a universal constraint on syntactic structure:

(1)   **The Final-Over-Final Constraint (FOFC)**
        For all heads {α, β, ..} on a single projection line, if α is a head-initial phrase and β is a phrase immediately dominating α, then β must be head-initial. If α is a head-final phrase, and β is a phrase immediately dominating α, then β can be head-initial or head-final.

(1), a hierarchical universal in the terms of Whitman (2008), straightforwardly rules out *VOAux, *VOC and *[C-Sentence]V as the heads in question are all on a single projection line, namely that associated with the clausal spine. The non-existent orders in the nominal and inflectional domains are similarly ruled out. By contrast, final-over-initial disharmonies *between* spines are ruled in, thereby accounting for the occurrence of West Germanic-style
[$_{VP}$ [$_{DP}$ D NP] V] structures. Similarly, structures in which the final element can be shown to be isolated from the spine with which it is associated – for example, by virtue of being a non-projecting particle or by virtue of being acategorial or an element which lacks a c-selection specification – are expected to be possible. This would seem to account for many of apparent counter-examples featuring final particles. Others of this type can be shown to be structures involving final particles that form part of an elided structure which does not in fact dominate the initial structure; this appears to be the case with many final polarity-related elements (e.g. question particles; cf. Aldridge 2009, Bailey 2009). Given the robustness with which FOFC effects – both gaps of the *VOC type and compliance strategies such as initial CP-extraposition in OV languages – seem to be attested in the world's languages, and the unavailability of a processing-based explanation, we argue that the skewing in the domain of disharmonic word orders discussed in this abstract constitutes a crucial empirical testbed for any formal theory of syntactic structure.