

**A. Introduction:** Recent work in the Minimalist Program argues that the design of the Language Faculty exhibits an “LF bias”, with the phonological component having to “make do” with the information fed to it from Narrow Syntax/NS (cf. i.a. Berwick & Chomsky 2008, Boeckx 2008). This paper notes a striking empirical asymmetry which suggests that this view may not be entirely justified; specifically, we argue that linearization information must be present NS-internally and that the way in which it is encoded does in fact conform to the Strong Minimalist Thesis (SMT) (Chomsky 2001 *et seq.*).

**B. The asymmetry:** Biberauer, Holmberg & Roberts (2007, 2008, 2009/BHR) show that the following constraint holds universally (cf. also Holmberg 2000 and Julien 2002):

- (1) *For all heads  $\{\alpha, \beta, \dots\}$  on a single projection line, 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.*

This **Final-Over-Final Constraint/FOFC** rules out ordered structures of the following type:

- (2)  $*[\text{BP } [\text{AP } \alpha \text{ } \gamma\text{P} ] \beta ]$  (still supposing  $\alpha$  and  $\beta$  are on the same projection line)

Excluded structures include i.a. \*VO-Aux, \*VO-C, \*NObject-Postposition, and \*PolTP-C. Further, languages with the potential to violate FOFC – e.g. OV languages with initial Cs, where a preverbal CP-complement would violate FOFC – systematically avoid doing so by employing a range of strategies such as extraposition or nominalisation (Sheehan 2008, Biberauer & Sheehan 2009). Additionally, Biberauer, Newton & Sheehan (2009) show that there is evidence that FOFC-violating structures fail to be borrowed despite a feasible contact situation, and Cecchetto (2009) observes that FOFC also holds in cross-modal contact situations involving Italian Sign Language. Finally, word-order changes appear to follow a FOFC-defined pathway, with changes in the clausal domain, for example, proceeding top-down for “OV-VO” (final-to-initial) changes and bottom-up for “VO-OV” (initial-to-final) changes. Crucially, however, FOFC does not rule out disharmonic word orders as such: right-branching disharmony  $[\text{AP } \alpha [\text{BP } \gamma\text{P } \beta ]]$  is not ruled out, which is correct as disharmonic word orders of this type are not uncommon – cf. Aux-OV in West Germanic, Finnish and Vata, and C-OV in West Germanic, Turkish and many Indo-Aryan languages. Furthermore, initial DPs are as likely to be dominated by final V/vPs as the other way round (cf. Haspelmath et al. 2008), and superficially FOFC-violating structures involving particles (e.g. VO-aspect/final force particles as in Sinitic) are also attested.

**C. Implications:** Taken together, these facts do not seem amenable to a processing explanation (John Hawkins, p.c.; cf. also Sheehan 2008). As the extended projections of object nominals are necessarily distinct from those of the lexical verbs at the base of the clausal spine, and since it has been argued that particles are not integrated into extended projections in the same way as “full” elements (either by virtue of failure to project – cf. i.a. Toivonen 2003 – or by virtue of lacking functional structure – cf. i.a. van Riemsdijk 1998, and much recent work by Svenonius), the formal constraint in (1) does, by contrast, appear to have the potential to account for the empirical skewings discussed in B. The question that now arises, however, is how this formal constraint can be understood. Postulating a Head Parameter/HP, even one operative at PF (cf. Richards 2004) and relativised to categories to allow for mixed orders, evidently cannot provide a principled explanation: without further stipulation, cross-categorical harmony is not predicted in preference to anything else, and, crucially in the present context, all (combinations of) disharmonic orders are likewise permitted. The same is naturally true for the simplest Kaynian reformulations of the HP in terms of (possibly differentiated) leftward movements of complements (cf. Baker 2008). An alternative formal account is thus required.

**D. The proposed account:** Within Probe-Goal theory (Chomsky 2001 *et seq.*), movement is standardly thought to be triggered by a generalised EPP-feature, a movement diacritic which we designate  $\wedge$ . Subject to parametric variation,  $\wedge$  may be associated with a probing feature, thus

delivering Agree-driven movement. It may also be associated with a lexical item's "generalised Merge" feature (EF in Chomsky 2006, 2008), giving rise to non-Agree-driven movement. Crucially, the empirical record indicates that both movements are leftwards (cf. Kayne 1994, Abels & Neeleman 2006, Abels 2009). Building on Rizzi's (2008) interpretation of Agree as Internal Search (i.e. Probe searches its c-command domain) vs Select as External Search (i.e. Probe searches the active Lexical Array; cf. also Cecchetto & Donati 2009), we propose a third species of movement, whose non-existence would, we argue, have to be stipulated: Select-driven movement. Like the other types, this type results in leftward movement, here specifically of the selected complement to the selector's specifier, i.e. comp-to-spec movement (cf. Holmberg 2000, Julien 2002 for earlier proposals along these lines). This mode of movt may in fact be thought of as L(inearization)-movt since it results in complements being spelled out to the left of their selectors (crucially, L-movement alone is predicted to violate anti-locality (cf. Abels 2003), Rmerge being the only way to satisfy c-selection-related  $\wedge$  (henceforth:  $\wedge$ )). If we accept the correctness of Kayne's proposal that heads lacking  $\wedge$  will be initial – i.e. in effect, that head-finality must be 'marked' while head-initiality is not (see below) – it emerges that FOFC can be understood as yet another consequence of Relativised Minimality (RM) (Rizzi 1990, 2001, 2004). Consider first the formal statement that captures FOFC:

(3) *If a non-lexical head  $X^n$  in the extended projection  $E$  of a lexical head  $L$  has  $\wedge$  associated with its c-selection feature for a lower head  $X^{n-1}$ , then so does  $X^{n-1}$ .*

In terms of (3), then,  $v$  cannot bear  $\wedge$  if  $V$  does not and, more generally, heads higher in a given extended projection cannot bear  $\wedge$  unless lower heads do. Head-finality, then, must start at the bottoms of trees, and L-movement can be seen to exhibit the same "no skipping" constraint observed in the more familiar domains of A, A' and head-movement. Since nominals have independent extended projections, their  $\wedge$ -profiles are expected to be distinct from those of the clausal spine. Particles, in turn, plausibly lack c-selection features, thus being unable to project (cf. Cecchetto & Donati 2009); they are therefore also unable to violate (3) in otherwise head-initial languages as their final character cannot be the consequence of a c-selection-related  $\wedge$ . By viewing head-finality as the consequence of NS-internal L-movement, the empirical asymmetry in B can therefore be accounted for.

At least two questions arise, namely (a) why  $\wedge$  should signal head-finality and (b) why (3) should reference the *bottom* of the extended projection (cf. BHR 2007, 2008 for a "top-down" approach to FOFC, rejected here). (b) follows, we argue, from the fact that derivations proceed bottom-up, with the elements at the bottoms of trees necessarily bearing c-selection features and thus being the first structures relevant to c-selection-related RM. Given that children acquire lexical structure prior to functional structure, this fact clearly also has important acquisitional consequences. In respect of (a), we argue that  $\wedge$  could in principle signal either initiality or finality, UG having no preference; the empirical record (the skewing in the distribution of word-order patterns), however, indicates that  $\wedge$  in fact signals head-finality: (3) could just as easily hold where  $\wedge$  signals "initial", but this would lead us to expect the opposite asymmetry to that which we actually observe. Worth noting here is that a movement-based approach to linearization of the kind advocated here leads us to expect linearization properties to be signalled via just a single diacritic, which may be present or absent, rather than by distinct "final" vs "initial" diacritics, arguably the most economical state of affairs.

**E. Conclusion:** Contra the most widely held view in minimalist circles, typological evidence suggests that linearization information must be present in NS. This fact does not, however, constitute an SMT violation since it would appear that the encoding of this information harnesses independently required elements (e.g.  $\wedge$ , which triggers leftward movement and, in association with c-selection features, results in head-finality) in a way that reflects third-factor economy considerations (e.g. RM). At least as far as linear order is concerned, then, PF does not simply need to "make do".