Left and right: explaining FOFC and the left position of specifiers without the LCA

I. In the past years, various left-right asymmetries with respect to linearization have been discussed in the literature. However, the nature of these left-right asymmetries has remained subject to intensive debate. Kayne's (1994) Linear Correspondence Axiom (LCA) has been an anchor for long, but has recently been criticized by Abels & Neeleman (2012), in their account of Greenberg's Universal 20. They claim that a linearization mechanism that does not allude to the LCA, but only states that movement must always be leftward (for extra-grammatical reasons) fares equally well, if not better than the LCA. In this paper, we demonstrate that two other well-known left-right asymmetries, Biberauer, Holberg & Roberts' (2014) Final-over-Final Constraint and the ban on rightward specifiers, which both have been claimed to follow from the LCA, are better accounted for in the framework developed by Abels & Neeleman (2012). II. Biberauer et al. (2014) argue that languages universally rule out disharmonic structures as in (1a) (where a head-final projection embeds a head-initial one), but allow structures in (1b) (where a head-initial projection embeds a head-final one), provided that H and G belong to the same extended projection. They refer to this ban as the Final-over-Final Constraint (FOFC).

(1) a. *[GP[HXP]G] b. [G[HPXPH]]

Evidence for (1) comes, for instance, from the universal ban on inflected head-final auxiliaries in VO languages, the absence of clause-final complementizers in VO languages and from the absence of head-final complementizers in languages with a head-initial polarity particle (where for all examples the other three logically possible orders have been attested). Biberauer et al. account for this universal ban in terms of the LCA, which takes all non-derived orders to be head-initial. In short, they argue that the head every lexical projection (N or V) may, but does not have to have a diacritic ^ that forces its complement to raise into its specifier position. Functional projections may (but, again, don't have to) inherit this diacritic, but can only do so if the head that they immediately select has diacritic too. The inheritance of ^ thus applies in a bottom-up fashion only. Consequently, this diacritic may get lost in an extended projection, but never be introduced in any position higher than the lexical head (within the extended projection), and that derives FOFC. III. Biberauer et al.'s proposal has received a fair amount of criticism, both empirically and theoretically. Empirically, the biggest problem seems to be that many languages allow all kinds of particles (negative particles, interrogative particles and TAM particles) to appear at the end of VO clauses (cf. Philip 2013, Biberauer et al 2014, Sheehan 2014 for a number of different examples). Such configurations are counterexamples to (1a). Theoretically, as Sheehan (2014) points out, the explanation by Biberauer et al. in terms of the LCA is problematic, since it crucially relies on complement-to-spec movement, which is generally ruled out (cf. Abels 2003). Sheehan instead proposes an alternative version of the LCA, but this account still empirically yields the same kind of problems as Biberauer et al. face with respect to particles. Other accounts try to argue that FOFC-violating structures are not ungrammatical but rather create extra processing problems (e.g. Sheehan's implementation of Hawkins 1994) or claim that FOFC is generally an inadequate generalisation (e.g. Philip 2013). However, these accounts cannot explain the fact that various patterns follow FOFC (such as the universal ban on inflected head-final auxiliaries in VO languages), even though not all patterns do so. IV. In this paper we argue that the existence of certain FOFC-patterns as well as their apparent counterexamples are actually predicted once Abels & Neeleman's account of linearization (partly based on Cinque 1996 and Ackema & Neeleman 2002) is generalized. Abels & Neeleman argue that complements can either be linearized before or after the head, but that movement outside a particular phrase must always be leftward. Concretely, we take this to imply that FOFC-violating word orders as in (1a) are grammatical, unless G is a potential movement target, which follows directly from the ban on rightward movement). Being a potential movement target means that G may contain material that is raised into this position, but that it does

not always have to. Only in languages where no material at all can move into G, is (1a) a possible linearization pattern. The presented evidence in favour of FOFC, such as the ban on V-O-Aux_{infl} and the absence of V-O-C orders follow directly; the ban on V-O-Aux_{infl} follows straightforwardly from the standard assumption that inflectional elements are required to be adjacent to their host at PF. In V-O-Aux_{infl} constructions, this can only be derived by rightward movement of the auxiliary into the position where the agreement is realized, and therefore these constructions must be ruled out. Similarly, in languages with overt complementizers, the C-position is restricted to complementizers in subordinate clauses only. In main clauses it remains available as a target for verbal or other movement, e.g. in the formation of questions or imperatives. (Note that in languages where C can be occupied by a particle and where verb movement is not triggered, FOFC is not valid). At the same time, the counterexamples of FOFC are predicted as well: particles, by definition, are independent elements that do not trigger any verbal or other element to attach to them. Consequently, they can occupy head positions that are never the target of any instance of head movement, and are thus not subject to the FOFC generalisation in (1). Finally, the restriction of FOFC to extended projections immediately follows, as heads never raise out of them. V. However, apart from getting the distribution of FOFC configurations correct, our proposal also predicts the more general ban on the (almost) universal left-ness of specifiers. For example, whereas the distribution between VO and OV orders is almost 50-50, only very few languages (less than 3%) are VOS or VSO languages (cf. Dryer 2011). Such languages are generally analysed as either V- or VP-fronting languages (cf. Massam 2002, Coon 2010), suggesting that no language has underived orders with sentence-final subjects. Apart from the LCA, which trivially derives spec-initial orders, no other account in the functional or the formal literature has been able to derive this. However, if one inspects the behaviour of specifiers more closely, it turns out that they all share two properties: first, their presence is obligatory; second, they must immediately c-command the merger of the head and its complement (i.e. the must be (re)merged immediately after the head has been merged). Both properties follow once the presence of the specifier needs to fulfil a featural need of the head. Under standard Chomskyan Agree this is guaranteed by assigning a probing head an EPP-feature that makes some lower XP immediately raise when it Agrees with this head. Other Agree-frameworks yield the same result (e.g. Boskovic 2007, Zeijlstra 2012). However, if the obligatory presence of specifiers and the fact that they must immediately c-command the merger of their head and its complement follow from the fact that they have to raise into this specifier position, the fact that they always appear in front of their head (unless any of the two undergoes subsequent movement) follows directly from the ban on rightward movement. The claim that specifiers always raise into some position has been well attested for subjects (raised into Spec,TP from either vP or VP; raised into vP from VP in cases of unaccusatives or passives), wh-elements (raised into Spec, CP) and many more. By contrast, any phrasal element that may optionally or not immediately merge with the merger of a head and its complement does not have to be a raised element and can therefore be base-generated in this position. Consequently, no universal constraints on their word order position apply. Such elements, which go by the name of adjuncts, are indeed known to have a freer distribution and may easily appear to the right of their sister. VI. To conclude, two important and well-known left-right asymmetries in natural language (FOFC, to the extent that it applies, and the ban on rightward specifiers) follow directly as a result of the ban on rightward movement. As a consequence, they no longer form an argument to adopt the LCA as a linguistic axiom. In fact, given that any explanation of FOFC in terms of the LCA is both empirically and theoretically flawed, this alternative to the LCA fares better and thus forms a strong argument against the LCA.