Disharmonic headedness in functional categories in early Indo-European

In the past it has been suggested that older Indo-European (IE) languages were uniformly head-final (Lehmann 1974). Recent work on Hittite by Sideltsev (2014), however, demonstrates that at least the Anatolian branch of Indo-European showed mixed or disharmonic headedness much like that of modern German: head-initial CP and head-final TP. For CP, he bases this on landing sites for wh-pronouns and second position clitic data, and, for TP, on the "rigidity" of clause-final verbs, the rarity of postverbal subjects and objects, and the behavior of the auxiliaries *hark*- 'have' and $\bar{e}\tilde{s}$ - 'be', which always follow the participle clause-finally:

(1) [(našma)] ÉSAG kuiš ZI-it kīnu-an har-z[(i)] or granary somebody.NOM.SG.C by.his.will break-PRTC.NOM.SG.N have-3SG.PRS
"Or somebody has broken open a granary by his own will" (MH/MS (CTH 261.3) KUB 13.1(+) rev. iv 20'-23')

In this paper, I use a corpus-based analysis of Tocharian manuscripts from the CEToM corpus to show that it too had a disharmonic distribution mirroring that of Anatolian. We thus see that the two earliest branches (Anatolian and Tocharian) to break off from Proto-Indo-European (Weiss, in press) both show mixed headedness, making reconstructing disharmonic headedness for the proto-language much more likely. To bolster this argument, I cite preliminary data from Sanskrit, Latin, and Greek which indicate that, in fact, *all* of the earliestattrested IE branches show this behavior. Taken together, my Tocharian data and the other old IE data strongly support the conclusion that all of these languages inherited this disharmonic headedness from Proto-Indo-European (PIE).

Tocharian shows wh-movement to the left edge of the clause, a feature present throughout the IE languages. According to the Complementizer Attraction Universal of Bresnan (1972), the landing site of a Comp attraction transformation (i.e. wh-movement) must be adjacent to C, so C must be left-headed in Tocharian. Also, second-position clitics common across the IE languages likely head their own left periphery projections; for example, Koller (2013) locates Tocharian A clitic *ne* and its Tocharian B cognate *nai* 'indeed, then' in the head of FocP since they directly follow wh-question words clause-initially. Finally, though overt complementizers are rare in Tocharian, when they do appear, as in certain uses of Tocharian B $k_u ce$, *ce* and Tocharian A *kucne* 'who, what', they invariably occur in clause-initial position.

As far as right-headedness in the TP domain goes, Adams (2015) claims that "neutral" word order in Tocharian B is SOV, but this alone is far from conclusive. Tocharian also possesses periphrastic perfect, future, necessitive, and potential constructions consisting of a participle/gerund and inflected copula; of the many examples I've found in CEToM, the overwhelming majority occur clause-finally, after the main verb.

(2) toyä aśiyana po lalämsuwa stāre
these nuns all worked be.3PL.PRET
"These nuns have worked everything" (MSL.19.160)

Negation constitutes further evidence of this right-headedness within TP. The most common clausal negator is $m\bar{a}$, appearing both clause-initially and preverbally, much lower in the clause. The most likely explanation for this split behavior is that the lower position of $m\bar{a}$ is the base

position of Neg, which may then raise to clause-initial C, usually for negative commands. I was able to find one instance of negation collocated with a verbal auxiliary complex:

(3) tem yiknesa weweñu mā tākam this way spoken not be.3SG.SUBJ
"(If) he has not spoken in this way" (331b3/4^L)

Note that the negation appears precisely between the participle and the copula. With our posited right-headed TP domain, we would expect a right-headed NegP to be located between the TP and vP layers, and that's exactly where we find it.

Looking elsewhere in ancient Indo-European, it appears that the story is much the same. For Sanskrit, Hock (1984) notes that 97% of Vedic prose texts are verb-final, compared to 65% of poetic texts. The periphrastic constructions we see appearing in later Vedic constitute further evidence for right-headedness within TP, as the auxiliaries appear overwhelmingly clause-finally, after the participle. In Latin too, auxiliaries usually follow their participles. Finally, according to Taylor (1994), Homeric Greek is primarily OV, and, per Bentein (2012), the oldest periphrastic constructions are auxiliary-final as well. And, in addition to all this evidence for right-headedness in TP, all of these languages also show the wh-question movement, second position clitic behavior, and initial complementizers in embedded CPs that provide evidence for left-headedness in CP.

I argue, based on my Tocharian data and the other old IE language data, that left-headedness in CP and right-headedness in TP should be reconstructed for PIE, and that this clause structure was inherited by all of the earliest-attested IE daughter languages. Given the thousands of years that separate these languages from each other, the similarity of their overall clause structures is too remarkable to be chance; not to mention the fact that *not* reconstructing left-C and right-T for PIE would require multiple parallel innovations instead. Further, although these functional categories were disharmonic, at no stage of development did a right-headed projection dominate a left-headed one. As a result, I note also that the Final-Over-Final Constraint (Holmberg 2000), which states that a right-headed projection may not dominate a left-headed one, is indeed borne out within the oldest IE languages both synchronically by the data and diachronically by reconstruction, as predicted by Biberauer *et al.* (2014).

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