Headedness in Tocharian, and its implications for PIE reconstruction

Ryan Hearn, Cornell University
November 3, 2017

1 Introduction

• The study of constituent/phrase structure in the Indo-European languages is both a very old science and a very young one.
  - Age-old syntactic phenomena have only relatively recently seen rigorous theoretical analysis.
  - This has given us more detailed knowledge of the synchronic syntax of these ancient languages, as well as improved our syntactic reconstructions of the proto-language.
• The current paper is an attempt to continue this trend of underpinning robust word-order generalizations in the IE languages with syntactic theory.
  - Today, I will examine the evidence in favor of left-headedness within CP and right-headedness within TP for the Tocharian languages.
  - Further, I will briefly summarize the evidence for similar analyses of the other old IE languages.
  - Finally, I will discuss the implications of these similarities for the reconstruction of PIE.

2 Mixed Headedness in Tocharian

2.1 Left-headedness in CP

• Left-headedness within CP across the Indo-European languages is effectively the default stance taken in the literature.
  - However, let’s review support for this stance, in order to make this claim overtly.
  - Grammatical particles showing up in Wackernagel positions show behavior indicating that they likely head their own projections in the left periphery.
    - For example, Koller (2013) locates Tocharian A ne (as well as its Tocharian B cognate nai) in the head of FocP since it immediately follows Wh-phrases (which Koller places in spec-FocP) clause-initially.
• In addition, Hackstein (2013) compares the development of complementizer behavior from relative constructions across the ancient IE languages.
  - The most common means of marking complement clauses in Tocharian is with a null complementizer, which unfortunately does little to show us its syntactic location.
  - However, Tocharian kece, ce (B) and kucne (A), though only showing true complementizer behavior in a minority of complement-taking predicates, do occur clause-initially when used in this fashion.

2.2 Right-headedness in TP

• Adams (2015) claims that “neutral” word order in Tocharian B is SOV, based on the majority of clauses in the language showing this surface ordering of constituents.
• This is a good start when looking for right-headedness in general, but is far from conclusive, especially given the left-headed nature of CP in Tocharian. Let’s see what else we can find.

2.2.1 Auxiliary Evidence

• Tocharian possesses periphrastic perfect, future, necessitive, and potential constructions consisting of a participle/gerund and an inflected copula.
  - Notably, the overwhelming majority of these constructions cited by Adams place the auxiliary clause-finally, after the main verb.

(1) toyā aśiyana po lalāṃsva stāre
    these nuns all worked be.3pl.pret
    “These nuns have worked everything” (MSL.19.160) Adams (2015)

• Assuming right-headedness within the TP, here’s what the structure of this clause might look like after v to T movement (discussed below).

(2) CP
  - C
    \[\text{C'}\]
      \[\text{TP}\]
        T'
          T
            stāre have
              v'
                v
                  VP
                    DP
                      toyā aśiyana these nuns
                        po all
                          lalāṃsva worked
Headedness in Tocharian

The few exceptions to this generalization are straightforwardly derivable through topicalization of TP.

2.2.2 Negation Evidence

According to Adams (2015), our old friend mā is the most common clausal negator and prohibitive, by itself accounting for 87% of all negated sentences.

mā may occur either clause-initially or immediately before the inflected verb much lower in the clause.

I was able to find one instance of mā collocated with a verbal auxiliary complex in Adams (2015):

(3) tem yiknesa weveurī mā tākam
this way spoken not be.3SG.SUBJ
“(If) he has not spoken in this way” (331b3/4) Adams (2015)

Note how the negation appears precisely between the participle and the copula.

– With our posited right-headed TP domain, we would expect our right-headed NegP to be located between the TP and vP layers.

– At first glance, it looks like that’s exactly where we find it.
  * This would also count as evidence of v to T movement in Tocharian, as the main verb appears to the right of (above) negation.

(4)

CP
C'
TP
T'
T
vP
NegP
Neg
v
mā
not
v'

However, if Neg is a head in Tocharian, it should block verbal head movement to T.

But, we see evidence elsewhere that negation and the inflected verb act as a single constituent:

(5) ka[sic] mā weveser krent (reki)
why not say you good word
“Why do you not say the good (word)?” (20b6C) Adams (2015)

2.3 Headedness in other phrases

Slightly orthogonal to the otherwise clausal aim of the paper.


There are a few systematic exceptions to this, namely regarding adjectives and genitives referring to days and months.

According to Adams (2015), there are 23 postposition constructions in Tocharian, compared to only six prepositions.

It’s also worth noting the secondary case endings themselves as having developed from postpositional elements.

We see further synchronic head-final DP behavior evidenced by Gruppenflexion.

3 A brief look at mixed-headedness arguments across Indo-European

3.1 Anatolian

Most syntactic analyses in the Anatolian literature either avoid the topic of headedness, or seemingly default to a head-initial analysis (e.g. Garrett (1994), Huggard (2011)).

Sideltsev (2014) specifically argues instead for right-headedness within TP and left-headedness above TP for Hittite.

He bases this claim primarily on the “rigidity” of clause-final verbs, and the rarity of postverbal subjects and objects.

– He also notes the behavior of the auxiliaries ḥark- ‘have’ and ēš- ‘be’, which always follow the main verb, as seen below:

(6) [(našma)] ŠESAG kaiš ZI-it kīnu-an ḥar-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’)

3.2 Sanskrit

One of the most complete theoretical treatments of word order and local headedness is Schaufele (1991).

– He follows most of western scholarship in assuming base SOV word order, and claims that the majority of phrases are head-final.
3.3 Italic

The most thorough work on phrasal headedness in Italic is undoubtedly Ledgeway (2012), who describes in detail the gradual change from head-final to head-initial exhibited throughout Latin to the modern Romance languages.

Interestingly, however, the clausal argument seems to be that both TP and CP emerged over the (pre-)history of Latin and Romance.

– The CP argument originates in the idea that PIE lacked clausal embedding; see Probert (2014) for evidence to the contrary.
– This argument also seems odd since Ledgeway uses the left periphery to account for much of Latin’s free word order, which is mirrored by other IE languages.
– For our purposes, we see that complementizers seen in the Latin data appear clause-initially.

Ledgeway claims that the development of TP corresponds to the rise of the left-headed auxiliary constructions in later Romance.

– But, clause-final auxiliary constructions already existed in Latin itself, both with the copula and habere.

(8) cum cognitum habeas quod sit summī rectoris [...] numen
when known you have what is supreme.GEN ruler.GEN divine.will.ACC
“When you realize the will of the supreme lord” (Cic. Fin. 4.11, Ledgeway (2012))

3.4 Greek

– Like in the other old IE languages, the Greek complementizers ᵐᵦ and ᵥᵦ occur initially in their clauses.
– As Goldstein (2015) mentions, ”Ancient Greek is unique in its degree of word-order variation” (p. 18), which leads him to posit a flat VP structure for Ancient Greek as of Herodotus.

– However, according to Taylor (1994), Homeric Greek is primarily OV, with the younger Greek dialects developing more frequent VO word order later.
– Further, per Bentein (2012), the oldest periphrastic constructions composed of the copula + the perfect participle show up as early as Homer, and we find them primarily appearing clause-finally as late as Herodotus (Rosén (1957)).
– So, even if, as Goldstein states, there is not enough evidence to make an explicit decision about the behavior of TP in Herodotus, the older Greek evidence does favor a right-headed TP analysis.

3.5 Germanic

– Sapp (2016) presents a detailed argument for base SOV word order and head-final VPs in Old High German.
– He derives surface V2 word order in Germanic through raising of the verb.
– He mentions that his analysis is compatible with that of Lenerz (1984), who had earlier posited head-final TP structure for OHG.
– Weiβ (2007), on the other hand, argues for head-initial TP, and maintains that surface V2 word order is derived through movement of the finite verb into T itself.

– And then, of course, there’s Modern German, which many would consider the Paradebeispiel for left-headed CP/right-headed TP languages.

4 Mixed Headedness in PIE?

– Delbrück (1893) was the first to attempt an overall clause structure reconstruction for the Proto-language, concluding that PIE must have been SOV based mainly on Sanskrit word-order evidence.
– Here, I would like to go a step further, and tie this word order generalization to a specific underlying syntactic structure.

– Per Hackstein (2013), overt complementizer behavior seems to develop relatively late in the prehistory (or even history) of many of the IE daughter languages.
– Zero-embedding is the most securely reconstructible method of sentential embedding across the earliest attestations of the daughter languages.

– However, even though we cannot reconstruct any of the individual complementizers for the proto-language, I argue that we can reconstruct their shared underlying syntactic structure, especially given their overwhelming similarities when they do emerge in the daughter languages.

– Also, if, as Hale and others have suggested, Wackernagel clitics head their own projections in the left periphery, then we have further support that PIE CPs were left-headed.
Finally, we have Bresnan’s Complementizer Attraction Universal, mentioned above.

- With wh-movement (especially in question constructions) being so ubiquitous across the Indo-European languages, it makes sense to reconstruct this behavior for the proto-language as well.

- As far as right-headedness lower in the clause goes, I’m not the first to posit something like this.

- Sapp (2016) reconstructs head-final VPs for PIE due to the Germanic evidence when considered alongside the SOV word order of the other IE languages.

- He does not, however, so far as to reconstruct right-headedness for TP in PIE.

- Similarly, Krisch (2017) reconstructs head-final VPs due to SOV evidence from across the Indo-European languages, but does not reconstruct TP at all for the proto-language.

- I argue that even though we cannot reconstruct any of the individual periphrastic constructions present in the daughter languages for PIE, we can reconstruct their shared underlying syntactic structure, especially given their similarities when they do emerge in the daughter languages.

- Taken with the fact that we can and do reconstruct SOV word order and head-final VP behavior for PIE, the evidence in favor of going a theoretical step further and reconstructing a right-headed TP for the proto-language is worthy serious consideration.

5 Future research directions

- First and foremost, I’d like to undertake more detailed projects in the vein of this Tocharian analysis for each of the other old IE languages.

  - The end goal of this project being, of course, securely reconstructing mixed headedness for the proto-language in the manner argued here for Tocharian specifically.

  - To that end, I’d like to take a closer look at the behavior of negation specifically with regard to phrase structure for the rest of the IE languages.

  - Also, for many IE languages, exceptions to verb-final behavior (other than topicalization of the verb) largely consist of single elements extraposed to the right, commonly called “right-detachment” in the literature.

  - I plan to account for, and motivate, these apparent examples of rightward movement in a leftward manner.

  - Ideally, such a study would also give us a more secure reconstruction of these constructions for PIE.

References


Delbrück, Berthold. 1893. Vergleichende Syntax der indogermanischen Sprachen. 3.