

Forms of the West Tocharian copular verb *ste* and the Proto-Indo-European mediopassive endings

The mediopassive endings of the Tocharian B copula forms *ste*, *star-* (3 sg.) and *skente*, *skentar-* (3 pl.) are in complementary distribution: *-tar-* and *-ntar-* were used before suffixed pronouns, *-te* and *-nte* at the end of words. In this article an attempt is made to reconstruct the prehistory of the Tocharian mediopassive in a way that would make it possible to derive the difference between *-(n)tar-* (reflex of **-(n)tr-*) and *-(n)te* (going back to **-(n)to*) from a regular alternation. According to the proposed scenario, *r*-less secondary middle endings are innovations of several Indo-European dialects which developed after the split of the proto-language: these dialects lost **-r* at the end of finite verb forms after vowels (initially only in utterance-final position, where the verb was placed in line with the basic word order).

Keywords: Tocharian B language; West Tocharian language; Proto-Tocharian language; Proto-Indo-European language; mediopassive endings.

Introduction

The West Tocharian copular verb, used only in the 3rd person singular and plural present, is noted for its unusual alternation. Without suffixed pronouns it had the forms *ste* (3 sg.), *skente* (3 pl.), while in combinations with suffixed pronouns *star-* (3 sg.), *skentar-* (3 pl.)¹:

THT 107a9-10

sam rṣāke ñissa śpālmeṃ ste₁

‘This sage is₁ better than me’²

THT 12b4

srūkalñe ekñi star₁-me₂

‘Death is₁ our₂ (only certain) possession’

THT 18b5

kroścana toṃ nrainta skente₁ okt

‘There are₁ eight cold hells’

¹ All the forms stem from PIE **h₁s-ské-* (LIV² 241 s.v. 1. **h₁es-* ‘dasein, sein’; Adams 2013: 367; for a possible reconstruction of the PIE suffix *-ske-* with a plain velar, see Lubotsky 2001). Also attested is 3 pl. *stare*, possibly late form (Peyrot 2008: 141), used both before attached pronouns and independently. It is usually regarded as the result of a metanalysis in *s-tar-* → *st-ar-* and subsequent pluralization into *st-ar-e* on the model of the 3 pl. ending of the active preterite *-re* (Pinault 2008: 642f.) or as a word from a geographically or socially marginal dialect — a reflex of the proto-form **st(e)h₂-ró*, which once had a perfect meaning: ‘stood/have stood’ > ‘have been standing’ > ‘are’ (Adams 2013: 367; cf. a different version of this etymology in Jasanoff 2003: 52).

² Unless otherwise stated, the texts and translations published on the CEToM project website were used: <https://cetom.univie.ac.at> (accessed 03.01.2025).

THT 182a2

k_use ālaṃb(aṃ) skentar₁-ne₂ toy bāhyi weskentär

‘Welches ihm₂ Stützen sind₁, diese werden äußere genannt’ (Krause 1952: 62)

In forms without suffixal pronouns — *ste* and *skente* — the endings are identical to the ones of the mediopassive preterite *-te* and *-nte*, traditionally traced back to PIE **-to* and **-nto*. Forms used with pronouns — *star-* and *skentar-* — correspond to the normal conjugation of the present mediopassives in *-tär* and *-ntär*. These two endings, according to the prevailing opinion, are somehow historically connected with PIE **-tor* and **-ntor*, although they do not have the regular reflexes of the proto-language vowel: in Tocharian B one would expect **-ter* and **-nter*, respectively (see the overview in Malzahn 2010: 37; cf. Pinault 2017: 1348).

Several explanations have been proposed for this anomalous alternation:

1) The contradiction between the present tense meaning of *ste*, *skente* (from **h₁ssketo* and **h₁sskonto*) and the secondary endings of these forms is resolved if we consider the suffix **-sk-* in the verb stems as an inchoative marker and take into account that the Tocharian preterite could have a present perfect meaning (e.g., ‘I learned and now I know’). This allows us to derive *ste* ‘is’ and *skente* ‘are’ from ‘became’. Synonymous forms with primary endings — *star-* and *skentar-* — can be either the result of regularization (assimilation to standard forms of the present mediopassive) or reflexes of old present forms that have lost their inchoative meaning (Hackstein 1995: 274f., 281, 284).

2) The secondary endings in the middle present forms *ste* and *skente* appeared by analogy with the present inflections of the active forms of the verb of being, which presumably underwent irregular reduction **-ti* > **-t* (3 sg.), **-nti* > **-nt* (3 pl.) and were synchronically interpreted as secondary. It is also possible that they were formed due to an independent — and also irregular — reduction of the primary middle endings **-tor* > **-to* (3 sg.), **-ntor* > **-nto* (3 pl.), which can be seen as a parallel to the truncation of the active endings (Peters 2004: 439).

3) The form *skente* came from the middle injunctive; *skentar-* is the result of the development of **-ntro* (a contamination of **-ntor* and **-ro(r)*) > **-ntræ* → **-ntär* by analogy with the 3rd person plural of the active preterite, where, along with *-re* < **-ræ*, there was also the ending *-r*, especially used before suffixed pronouns. At the same time, *ste* acquired the doublet *star-*, a form that should not be projected into Proto-Indo-European (Pinault 2008: 641f.).

4) The forms *ste* and *skente* go back to the PIE stative, whereas *star-* and *skentar-* continue the PIE middle (Kortlandt 2021).

However, the complementary distribution of the morphemes *-(n)te* and *-(n)tar-* prompts to consider another possibility. Below, we present an attempt to make a reconstruction of the prehistory of the Tocharian mediopassive that would derive the difference between the forms of the copular verb from a regular alternation.

1. The initial form of endings and its changes

Obviously, the best starting points for this reconstruction are the endings **-tor* and **-ntor*, since all the alternating forms can be derived from them in the most economical way.

To move from them to the endings of the forms *ste* and *skente*, it is enough to assume the loss of **-r* at the end of the word at some stage of the transformation of **h₁ssketor* into *ste* and **h₁sskontor* into *skente* (leaving aside for now the reason for the disappearance of **-r*).

The transition to the endings of the forms *star-* and *skentar-* is also ensured by one putative change, namely, a syncope of the vowel preceding **-r* when adding final affixes: **h₁sskétor* >

$*h_1ssk\acute{e}t_r > *h_1ssk\acute{e}t_r > *st\acute{a}r^{-3} > star-$ and $*h_1ssk\acute{o}ntor > *h_1ssk\acute{o}nt_r > *h_1ssk\acute{o}nt_r > *sk\acute{a}nt\acute{a}r > skentar-$.

The most serious problem with this scenario is the loss of final $*-r$: as a general rule, the Tocharian languages retained it. Undoubtedly, this is the main reason why the possibility of positional alternation of proto-forms with and without $*r$ has, to my knowledge, never been considered by researchers.

The situation is different with the loss of $-o-$ in $*(n)tor$: a syncope in verb endings before suffixal pronouns, although not agreeing in detail with presumed syncope in the copular verb, is attested at least in Tocharian B.

For reasons that will become clear later, before determining the conditions for the dropping of the final $*-r$, one must discuss the loss of $*o$.

2. Syncope in endings before final suffixes

An approximate analogue of the transition $*(n)tor > *(n)tr$ is the disappearance of the final vowel in the 3 pl. active preterite ending $-re > -r$, attested in West Tocharian and also first occurring, apparently, before suffixal pronouns (Peyrot 2008: 132–136; Malzahn 2010: 35 n. 11, 43f., 137f.; Pinault 2017: 1349). In this case, as with the supposed syncope in the copular verb, when the pronouns were added, the vowel of the verbal ending was syncopated next to r . Although the vowel positions in these two cases are not identical (after r in TB $-re$ and before r in PT $*(n)tor$), contractions $*(n)tor > *(n)tr$ and $-re > -r$ may be manifestations of one general pattern⁴.

The assumption of such a syncope seems to be in poor agreement with the fact that it is precisely the endings of the forms *star-* and *skentar-*, combined with pronouns, that correspond to the standard paradigm of the present mediopassive with the inflections $-t\acute{a}r$ and $-nt\acute{a}r$, the use of which, at least in synchronic terms, is not conditioned by final suffixes in any way. However, an external comparison of the Tocharian middle present paradigm shows that from a historical point of view it can hardly be considered standard. And there are reasons to believe that its peculiarities, like the form of the endings in *star-* and *skentar-*, can be explained by syncope.

First, the 3rd person inflections $-t\acute{a}r$ and $-nt\acute{a}r$ can only be traced back to forms without $*o$ before $*-r$: theoretically possible variants are $*(n)tr$, $*(n)tri$ or $*(n)tru$ (Pinault 2008: 622; cf. Malzahn 2010: 37); this rules out a direct derivation of $-(n)t\acute{a}r$ from PIE $*(n)tor$.

Secondly, the West Tocharian ending 2 pl. $-t\acute{a}r$ is difficult to derive from PIE $*d^h(h_2)ue + r$ (for the history of this issue, see Malzahn 2010: 37f.; Kim 2019: 298ff.). Etymological problems have sometimes led researchers to conjecture the zero ablaut grade of the reconstructed ending — $*-d^hur$ (Adams 1988: 59f.). As in the case of the 3rd person inflections, here it is necessary to remove the vowel preceding $*-r$ — this time $*e$ — from the proto-form.

Thirdly, the vowels in the endings 1 sg. TA $-m\acute{a}r$, TB $-mar$ and 2 sg. TA $-t\acute{a}r$, TB $-tar$ can be reflexes of both $*h_2e$ and $*h_2$ (Pinault 2008: 623). The first of these options corresponds to PIE

³ At a stage preceding the formation of the late Proto-Tocharian language, a reduction of the combination $*sk\acute{e}t$ occurred; with unstressed $*e$, its result was reflected in Tocharian B as *st* (Ringe 2003: 359ff.; Peyrot 2008: 141f.).

⁴ With the reduction 3 pl. $-re > -r$ in Tocharian B, one can compare the situation in Tocharian A, where, in addition to the 3 pl. active present and subjunctive endings $-i\acute{n}c$ and $-e\acute{n}c$, we also observe their truncated variants $-i$ and $-e$, which are likely to have originally appeared before suffixed pronouns (Malzahn 2010: 34f.). But as one of the reviewers of this paper pointed out, TA truncated 3 pl. forms in $-i/-e$ are attested only before the 1 sg. pronoun $-ñi$ whereas no full forms can be found in the same position, and only full forms occur before all other attached pronouns; thus, the cause of this particular truncation may be the unwanted sequence $^+i\acute{n}c-ñi$ within one phonological word and not the pronoun itself (see Itkin 2002: 14 for more detail on TA 3 pl. forms without $-i\acute{n}c$).

1 sg. **-h₂er* and 2 sg. **-th₂er*, which are reconstructed mainly on the basis of Anatolian languages (with the addition of **-m-* in the Proto-Tocharian 1st person under the influence of the correlating active form, as in Greek $\mu\alpha\iota$). The second option gives 1 sg. **-mh₂r* and 2 sg. **-th₂r*; it has no correspondences in other languages and continues a series of forms with an omission of a vowel before **-r*.

Finally, in 1 pl. *-mtär* (from the proto-form, which included **-med^hh₂* and **r*) the element *är* (instead of the expected TA **är*, TB **ar*) is the consequence of reshaping by analogy with 3 sg. and 3 pl.

Thus, out of six forms of the paradigm, three require the assumption of the disappearance of a vowel before **-r*, while the other three do not contradict this assumption.

The hypothesis of the vowel syncope in the verbal desinence before a final affix suggests an explanation of this feature of Tocharian present middle: the *hic et nunc* marker **-i* was once attached to its endings by analogy with the active voice, and this led to the same consequences as the suffixation of the pronouns entailed in the copular verb (see Table 1).

	Early Proto-Tocharian	Late Proto-Tocharian	East Tocharian (Tocharian A)	West Tocharian (Tocharian B)
1 sg.	<i>*-mh₂ar + i > *-mh₂ri</i>	<i>*-mārā</i>	<i>-mār</i>	<i>-mar</i>
2 sg.	<i>*-th₂ar + i > *-th₂ri</i>	<i>*-tārā</i>	<i>-tār</i>	<i>-tar</i>
3 sg.	<i>*-tor + i > *-tri</i>	<i>*-trā</i>	<i>-tär</i>	<i>-tär</i>
1 pl.	<i>*-med^hh₂ + ri⁵ > *-med^hh₂ri</i>	<i>*-mätärā⁶</i>	<i>-mtär</i>	<i>-mtär</i>
2 pl.	<i>*-d^h(h₂)<u>u</u>e + ri⁷ > *-d^h(h₂)uri</i>	<i>*-tärā</i>	<i>-cär⁸</i>	<i>-tär</i>
3 pl.	<i>*-ntor + i > *-ntri</i>	<i>*-ntrā</i>	<i>-ntär</i>	<i>-ntär</i>

Table 1. The Tocharian present mediopassive endings

In the 1970s–1990s, the idea was widely accepted that the endings **-tri* and **-ntri* should be reconstructed for the 3rd person: it was believed that they were doublets of the endings **-tori* and **-ntori* reflected in Anatolian languages, and that from the 3rd person the element **-ri* was transferred to the 1st and 2nd persons (see, e.g., Pinault 1992: 155). This idea was later abandoned: the prevailing opinion now became that in Proto-Anatolian the addition of **-i* to **-r* was an innovation and not a feature inherited from Proto-Indo-European (Yoshida 1990: 103–119) and that there are no sufficient grounds to assume a parallel development in Proto-Tocharian just to explain the Tocharian endings (Pinault 2008: 622f.).

However, the hypothesis proposed here is not a return to this theory. This time, the suffixation of **-i* is surmised not only on the basis of approximate correspondences in other languages, but also because it accounts for the differences between the Tocharian forms and these external analogues (namely, the lack of vowel before **-r* in Proto-Tocharian middle endings). Besides, it should be noted that the refusal to trace the forms in **-ri* to Proto-Indo-European hardly precludes their reconstruction in separate branches. On the one hand, the element *(*)-ri* was part of the mediopassive endings of Anatolian languages, including Proto-Anatolian. On the other hand, combinations of vowels with *(*)-i* ended the mediopassive inflections in Indo-Iranian and Greek. This suggests that the addition of **-i* to the middle endings occurred repeatedly in different parts of the Indo-European language area.

⁵ Or *r + i*.

⁶ From **-mätärā* by analogy with 3 sg. and 3 pl.

⁷ Or *r + i*.

⁸ From **-t'ärä* ← **-tärä*: palatalization by analogy with 2 pl. present active **-t'ä* < PIE **-te* (cf. Pinault 2008: 624).

3. Loss of final **r*

The reconstruction proposed above has an important consequence. According to it, in the Proto-Tocharian language, from a very early stage there were no present mediopassives that ended with the combination “vowel + *r*” (**-Vr#*). If this is correct, then in no Indo-European language are there two opposed series of (medio)passive desinences, one of which could be directly traced back to Proto-Indo-European endings in **-Vr#*, and the other to the corresponding secondary endings without **r* (i.e. to the inflections in **-V#*) which, according to the generally accepted opinion, also date back to the Proto-Indo-European period.

In sections 3.1–3.3, it will be shown that a more radical assertion is also possible: in any Indo-European language, not only two series of such endings, but even individual endings from both of these series do not coexist; if, in any language, there is an ending in *-Vr#* that goes directly back to the middle form in **-Vr#*, then this language does not have an inflection that would descend from a secondary middle form in **-V#*.

This contradicts the common views on the origin of two grammatical morphemes: the Latin 2 sg. passive ending *-re* and the Old Irish 3 sg. imperfect ending of the active forms and dependent verbs *-d*. Both are considered to be reflexes of PIE secondary middle endings: Latin *-re* is usually derived from PIE **-so* (Sihler 1995: 476f.; Weiss 2009: 390; Meiser 2010: 218), Old Irish *-d* from PIE **-to* (Stüber 2017: 1212). Let us consider the etymology of these two affixes in more detail.

3.1. Latin 2 sg. passive ending *-re*

Among other inflections of the Latin passive, this ending looks like a strange exception. With 1 sg. *-or* and 3 sg. *-tur*, one would expect that the 2 sg. form would also, at least initially, be composed of two elements: the corresponding active ending (in this case **-s*) and the morpheme **(o)r*. However, it does not seem that anything like this is observable. It seems that if the form **-sor* had ever existed, the transition **s > r* between vowels in it would have been blocked by a subsequent *r*, as in *miser* ‘wretched’ (Sihler 1995: 172; Weiss 2009: 151; Meiser 2010: 95); in later Latin, the outcome would have been *ⁱ-sur*. Even if proximity to the old *r* had not prevented rhotacism, as it did not prevent it in *soror* ‘sister’ (from **s̥uesōr*)⁹ or in the oblique cases of *rōs* ‘dew’ (*rōris*, *rōrī*, etc.), then at first glance the reflex of **-sor* should have been *ⁱ-rur* and not *-re*. It is impossible not to conclude from this that *-re* comes from PIE **-so*.

However, in all the examples on which the above reasoning is based, both *s* and *r* are part of the stem. Meanwhile, in inflectional affixes, the same tendency toward dissimilation that stopped the transition *s > r* in *miser* can be expressed differently than in the stem, namely, through morphological haplology: the rightmost affix of the word is sometimes absent if the adjacent segment of the stem or the preceding inflectional affix is homophonous to it. Perhaps the best-known example of such a reduction is the absence of the possessive *s* in English word forms like *boys*’ (instead of *ⁱboys’s*), but the phenomenon has been studied in other languages as well (Stemberger 1981). In Latin, the dative singular form of nouns with stems in *i* was subject to morphological haplology, as the stem’s last segment **-ei-* was homophonous to the dative ending **-ei*: **-ei-ei > *-ei > -ī* (Weiss 2009: 242, 244f.; Meiser 2010: 139).

It can be assumed that a similar change formed the 2 sg. passive ending, where **-r*, the second segment of the passive marker **-or*, disappeared when the person and number marker **-s-* became homophonous to it due to rhotacism: **-e-sor > *-e-ror (?)*¹⁰ *> *-e-ro > -e-re*.

⁹ Presumably due to dissimilation with initial *s-* (Meiser 2010: 95).

¹⁰ Or immediately **-e-sor > *-e-ro*, if the disappearance of the final *r* was not a simplification of the sequence *r...r*, but occurred to prevent its formation already at the moment of the transition *s > r*.

If the 1 pl. passive desinence originally also consisted of the corresponding inflection of the active voice (*-mos) and the passive marker *-or, then its origin is probably haplological too: *-mosor > *-moror (?)¹¹ > *-mor > -mur.

The difference between the results of reducing these forms is apparently related to a particular kind of repetition which was eliminated by haplology in each case. In 1 pl. the repetition of *or* (*-or-or, maybe ⁺-or-or) was avoided, so the affix *or* at the end of words disappeared completely (*-os-or > *-or). In 2 sg. rhotacism led to the formation of a sequence in which only the consonant was repeated (*-eror, maybe ⁺-eror) and consequently omitted, so the vowel *o* preceding the final *r* was preserved (*-esor > *-ero) and later regularly changed to -e¹². In both cases — as in the dative singular of *i*-stem nouns — all the repeated segments, and only they, disappeared (or their repetition was prevented).

Thus, all desinences of the Latin passive, except 2 pl. -*minī*, can be traced back to combinations of the active voice endings with *-(o)r (see Table 2).

	Early Latin	Classical Latin
1 sg.	*-ō-r	-or
2 sg.	*-s-or > *-ror (?) > *-ro	-re, -ris
3 sg.	*-t-or	-tur
1 pl.	*-mos-or > *-moror (?) > *-mor	-mur
2 pl.	? ¹³	-minī
3 pl.	*-nt-or	-ntur

Table 2. The Latin present passive endings

3.2. Old Irish 3 sg. imperfect ending -d

This ending was used to form the imperfect of the active voice and deponent verbs:

3 sg. present active *berid*, -*beir* ‘carries’: 3 sg. imperfect -*bered* ‘carried’ < *-bereto

3 sg. present deponent *midithir*, -*midethar* ‘judges’: 3 sg. imperfect -*mided* ‘judged’ < *-medeto

Reflexes of the ending *-to, from which Old Irish -d is derived, are found in the 3 sg. active of the past tenses of several other ancient Indo-European languages, cf. Cuneiform Luvian -(t)ta, Lycian -te/-de, Venetic -to:

Cuneiform Luvian *āta* ‘made’, *lātta* ‘took’, *pīyatta* ‘gave’

Lycian *astte* ‘made’, *pijete* ‘gave’, *prñnawate* ‘built’

Venetic *dona.s.to* ‘gave’, *doto* ‘gave’, *vha.g.s.to* ‘dedicated’

¹¹ Or immediately *-mosor > *-mor, if the disappearance of the final *or* was not a simplification of the sequence *or-or*, but occurred to prevent its formation (cf. the previous note).

¹² The origin of this -e from *-o is indicated by two variants of the 2 sg. passive ending extended — by analogy with the active voice — with the 2 sg. marker -s: -*rus* and -*ris*. Their coexistence can only be explained by the fact that the addition of -s occurred both before and after the transition of the final *-o into -e: the result of the later process was -*ris* < *-res, the earlier one gave the ending -*rus* < *-ros, found mainly in inscriptions (Weiss 2009: 390; Meiser 2010: 218). The regularity of the development of final *-o into -e is apparently confirmed also by the pronoun *iste* < *is-to (Sihler 1995: 66; Meiser 2010: 163; de Vaan 2008: 310f. s.v. *iste, ista, istud*).

¹³ Most probably, 2 pl. -*minī* derives from *-mVnoi, final affixes of the mediopassive participle (which has since been lost) in the nominative plural, cf. Greek -μενοι. Apparently, this derivation is the result of reinterpretation of a once existing construction that included the middle participle and a finite form of the verb of being (Weiss 2009: 391; Meiser 2010: 219).

The endings of these forms, like Old Irish *-d*, are sometimes derived from the mediopassive (Yoshida 1993; Wallace 2018: 1835f.)¹⁴. However, parallel development in several languages at once, leading to the same non-trivial outcome — the integration of the mediopassive ending into the active paradigm — seems unlikely. A more plausible etymology would be one that presents these forms as examples not of several identical innovations, but of one common archaism. It can be assumed that the final vowels of their endings go back to the PIE affix **-o*, which, like the *hic et nunc* affix **-i*, was added to the markers of person and number, but, unlike **-i*, indicated the past tense. In other words, it was an analogue of the augment **(h₁)é*-¹⁵.

The following speaks in favor of the latter assumption. In Luvian and Lycian languages, the same vowels — respectively *a* and *e* — are final in the 3 pl. preterite active endings: cf. Cuneiform Luvian *-nta*, Lycian *-te/-ñte* (both from **-nto*). These affixes have a counterpart in the language of the Rigveda: the inflection *-anta*, which in some cases replaces the 3 pl. active secondary ending *-an*. Due to formal coincidence, *-anta* is identified with the corresponding mediopassive ending. However, the verb forms in which it is included are semantically indistinguishable from the active voice. In addition, in the attested conjugation of 17 verbs with this desinence there are no other mediopassives. In these same 17 verbs, *-anta* is never combined with the augment: this prefix is not present in any of the 26 examples of their use with *-anta* (Jamison 1979: 149f.). A possible explanation is that in this case *-anta* is an archaic active ending, the use of which made the augment redundant due to the coincidence of their grammatical meanings.

The main obstacle to accepting this hypothesis is the reconstruction of the PIE mediopassive endings **-to* and **-nto*: the formation of homophonous active endings seems impossible, since it would complicate the understanding of the verb forms. However, as will be shown in sections 3.3–3.5, there are reasons for another reconstruction of the PIE mediopassive inflections. Its necessary element is the presupposition that the Old Irish imperfect ending *-d* does not derive from the mediopassive.

3.3. Proto-Indo-European mediopassive endings and final *-r* in verb forms of ancient Indo-European languages

Some consequences of the above assumptions can be summarized with the help of Table 3. This will allow us to see the historical connection between the mediopassive endings in **-r* and their correlates without **-r* at the earliest stages achievable for reconstruction.

Table 3 shows how two types of mediopassive desinences were distributed across the Indo-European branches. These types are (1) inherited endings in *-r(i)* and (2) corresponding *r*-less set (in fact, inherited *r*-less secondary endings). Only singular and 3rd person plural forms are considered: on the one hand, reflexes of the forms in **-r* which existed in Proto-Indo-European (or at an early stage in the history of individual branches when some endings had been reshaped¹⁶) such as 1 sg. **(m)h₂er*, 2 sg. **-th₂er*, 3 sg. **-tor*, 3 pl. **-ntor*; on the other hand, forms looking like reflexes of **r*-less counterparts of this *r*-series such as 1 sg. **(m)h₂e*, 2 sg. **-th₂e*, 3 sg. **-to*, 3 pl. **-nto*; 1 and 2 pl. desinences are not relevant because they seem to have acquired **-r* only in some cases in post-Proto-Indo-European times by analogy with other forms.

¹⁴ In addition to Luvian *-(t)ta* and Lycian *-te/-de*, the Hittite 3 sg. preterite active ending *-tta* can be included among supposed Anatolian continuations of the middle **-to* (Kloekhorst 2022: 67).

¹⁵ It is difficult to say anything with certainty about the etymology of this **-o*. But if **-i* of the primary verbal endings has any relation to the PIE locative desinence **-i*, then **-o* of the past tense endings is possibly somehow connected with the Hittite allative and dative-locative inflection of some nominal stems *-a* (for arguments in favor of the origin of this ending from PIE **-o*, see: HIL 161 s.v. *-a*, *-ā*).

¹⁶ For the reshaping of the endings see Table 5 below.

Indo-European languages	Inherited mediopassive endings in <i>-r(i)</i> (1-3 sg. and 3 pl.)	Inherited mediopassive endings without <i>-r(i)</i> going back to preforms in <i>*-V</i> which are not derivable from ones in <i>*-Vr</i> by internal reconstruction (1-3 sg. and 3 pl.)
Anatolian	+	— ¹⁷
Celtic	+	— ¹⁸
Italic	+	— ¹⁹
Phrygian	+ (?) ²⁰	—
Tocharian	+	+
Greek	—	+
Indo-Iranian	—	+
Germanic	—	—
Albanian	—	—
Armenian	— (?) ²¹	—
Baltic	—	—
Slavic	—	—

Table 3. Distribution of two types of mediopassive endings by Indo-European languages

Table 3 reveals the unique position of the Tocharian languages: no other group has endings of both types. It follows that, in relation to the period in the history of the Proto-Tocharian language when the primary mediopassive desinences ended in **-ri* (see section 2 above), one can state a complementary distribution *sui generis* between the middle endings in *(*)-Vr#* and respective middle endings in *(*)-V#* in Indo-European languages.

In combination with these data, the West Tocharian alternations in *ste*, *star-* and *skente*, *skentar-* strongly suggest that the Indo-European proto-language — not taking into account 1st and 2nd plural — had only mediopassive endings in **-r* (used both in past and non-past tenses) while corresponding *r*-less ones were formed from them in some descendant languages due to the loss of final **-r* after a vowel.

The last-mentioned condition — a vowel preceding *r* — is presumptive but seems to be confirmed by evidences of the active voice. While an active form in *-Vr#* < PIE **-Vr#* is found only in a language with a minus in the right column of the Table 3 — this is the Hittite 3 pl. preterite active in *-ēr* < **-ēr* — the Avestan 3 pl. perfect active ending *-ar³* came from **-r₃*, so verb forms in **-Cr₃#* were also possible in a language with a plus on the right.

The dialects with *r*-less secondary endings are united by one more innovation: final **-i* was added to the non-past mediopassive forms. In Proto-Tocharian, unlike Proto-Greek and Proto-Indo-Iranian, the addition of **-i* occurred before the loss of **-r*, so *r* was preserved in the present endings.

¹⁷ Hittite preterit mediopassive endings 2 sg. *-tta* and 3 sg. *-tta* are late (Kassian & Sideltsev 2013: 54, notes 24, 25). Therefore, they can hardly have a common or identical origin with the secondary mediopassive endings of other Indo-European languages (pace Kapović 2017: 100, Table 1.42). Hittite and Palaic present mediopassive endings in *-a* go back to Proto-Anatolian inflections that lost the final **-r* when it was not immediately preceded by the accent (Yoshida 1990: 112–119).

¹⁸ For the 3 sg. imperfect ending in Old Irish, see section 3.2.

¹⁹ For the 2 sg. passive ending in Latin, see section 3.1.

²⁰ See Ligorio & Lubotsky 2018: 1828.

²¹ The origin of the 2 sg. present imperative ending *-r* is unclear but may not be related to the old Indo-European mediopassive in **-r* (pace Watkins 1969: 194). For possible variants, see Olsen 2017: 1091.

A special case is represented by the forms of the copular verb *ste* and *skente*. Their proto-forms (**h₁ssketor* and **h₁sskontor* respectively) did not add *-i, so their endings, like the mediopassive preterite ones, lost the final *-r. However, unlike the mediopassive preterites, the copula retained archaic endings in -r before suffixed pronouns: *star-* and *skentar-* were not supplanted by the variants *ste* and *skente*.

3.4. Conditions for the loss of final *-r in finite verb forms

The fate of the final *-r in verbs and nouns of languages with *r*-less secondary middle endings was different: verbs lost *-r, while nouns mostly retained it (an exception is the position after a long vowel in Indo-Iranian languages). The most likely explanation for this difference has to do with basic word order. In Proto-Indo-European and in the early stages of the history of its descendant languages, the utterance-final position of the finite verb was unmarked (Krisch 2017: 124; Keydana 2018: 2199). As a result, utterance-final effects of two types were preserved in verbs. The first is suprasegmental effects: accent retraction in Greek finite verbs, unaccented finite verbs of the main clauses in Vedic (Klein 1992: 96; Hock 2015: 69ff.). Second, segmental ones, which include **i*-apocope in finite verbs in Italic (Weiss 2009: 146f.; Hock 2015: 71f.). Apparently, in several languages a similar process led to the loss of *-r after vowels in finite verbs: the disappearance of this *-r, which initially occurred only at the end of utterance (before a pause)²², eventually spread to verbs in other syntactic positions.

It may be objected that the same loss of *-r should be expected in vocatives of *r*-stem nouns, where the final consonant of the stem also was in the position after a vowel and before a pause. However, in vocatives, the preservation and generalization of prepausal sandhi variants was hindered by the influence of other case forms and other declension types. For example, Greek and Vedic, the very languages where we see -*Vr*# in the vocative, have mostly eliminated the effect of Kuiper's law in vocatives of *ah₂*-stem nouns in various ways. In the case of *r*-stems, the analogies with *n*- and *i*-stems could have contributed to the survival of the final consonant:

nom./voc.pl. *-on-es : acc.sg. *-on-m̐ : voc.sg. *-on :: nom./voc.pl. *-or-es : acc.sg. *-or-m̐ :
voc.sg. X, X=-or

nom./voc.pl. *-eġ-es : voc.sg. *-eġ :: nom./voc.pl. *-er-es : voc.sg. X, X=-er

3.2. Trace of final *-r in Tocharian 2 pl. preterite middle endings

An indirect confirmation that the inflections of the Tocharian middle preterite once ended in *-r is provided by the form of the 2 pl. preterite middle endings: TA -c, TB -t. Several solutions have been proposed that would allow these endings to be traced back to PIE *-*d^hue*:

- 1) zero ablaut grade *-*d^hu* > *-*tä* > TB -t (Pedersen 1944: 6f.; Adams 1988: 59ff.; Szemerényi 1990: 256 n. 11);
- 2) reshaping under the influence of the present endings TA -*cär* and TB -*tär*, which, according to this version, were formed as a result of contraction from *-*täw'är* < *-*d^hu_{er}* (from *-*d^hu_{er}* by Sievers's law), with a "subtraction" of the primary marker -r (Pinault 2008: 624);
- 3) reduction of Proto-Tocharian *-*täw'ä* (from *-*d^hu_{ue}*) to the first syllable (Kim 2019: 304).

²² This prepausal sandhi has a well-studied modern parallel: the loss of utterance-final -r after vowels in the working-class sociolect of Scottish English (Lawson & Stuart-Smith 2021).

The hypothesis outlined above in sections 2–3.3 makes it possible to propose another scenario. In Proto-Indo-European, the 1 and 2 pl. mediopassive endings did not contain **-r* (since they were formed not by adding **-r* to the active endings, but in other ways). However, in some descendant languages the addition of **-r* also occurred in 1 and 2 pl. by analogy with other forms of the paradigm. Among these languages is early Proto-Tocharian, where the attachment of a new final element caused in the preterite 2 pl., as in the present tense, a syncope of the vowel preceding **r*; then **-r*, as in other preterite endings, disappeared: **-d^h(h₂)ue + r > **-d^h(h₂)ur > **-d^h(h₂)u > **-tä > TB -t* (and TA *-c < **-t'ä*: palatalization by analogy with 2 pl. active present **-t'ä < PIE **-te*, cf. Pinault 2008: 624).*****

In the 1 pl. middle preterite ending, neither the final **-r* nor its traces remained, since, like the corresponding form of the present, it was reshaped after 3 sg. and 3 pl.: **-med^hh₂ + r > **-med^hh₂r > **-mätār → **-mätæ > TA **-mät, TB -mte* (cp. 3 sg. **-tor > **-to > **-tæ > TA **-t, TB **-te* and 3 pl. **-ntor > **-nto > **-ntæ > TA **-nt, TB **-nte*).************

Conclusion

Several inferences can be drawn from the above that go beyond the explanation of irregular alternations in West Tocharian.

1. The proposed reconstruction forces one to rethink the original function of the formant **-r*: in the Indo-European proto-language it was not a means of forming primary mediopassive endings, similar to the affix **-i* in the endings of the active voice (pace Jasanoff 2003: 45f.)²³, but a marker of the mediopassive proper.

The early variant of the mediopassive paradigm apparently included combinations of *h₂e*-conjugation endings with the affix **-(o)r* in the singular and 3 pl. (the 1 and 2 pl. were formed by other morphemes), as shown in Table 4.

	<i>h₂e</i> -conjugation endings	Mediopassive endings
1 sg.	<i>*-h₂e</i>	<i>*-h₂er</i>
2 sg.	<i>*-th₂e</i>	<i>*-th₂er</i>
3 sg.	<i>*-e</i>	<i>*-er</i> ²⁴ → <i>*-or</i> ²⁵
1 pl.	<i>*-me</i>	<i>*-med^hh₂</i>
2 pl.	<i>*-e</i>	<i>*-d^hh₂<u>ue</u></i>
3 pl.	<i>*-(ē)r</i>	<i>*-(ē)r^{or}</i>

Table 4. The Proto-Indo-European endings: *h₂e*-conjugation and mediopassive

2. The subsequent history of the PIE and post-PIE mediopassive was a gradual penetration of *m*-conjugation elements into mediopassive endings: first everywhere in 3 sg. and 3 pl.,

²³ Cf. also suggestions that **-r* was originally a meaningless extension developed from a consequential particle (Watkins 1969: 194ff.) or the 3 pl. perfect ending transferred to the middle paradigm and added to its desinences (Rix 1988: 102).

²⁴ Cf. Umbrian *ier* ‘man geht’ < **h₁i-e-r* (LIV² 232f. s.v. **h₁ei-* ‘gehen’), Oscan *loufir* ‘oder’ < **leu^bh-e-r* ‘es beliebt’ (LIV² 414 s.v. **leu^bh-* ‘lieb sein, gefallen; betören, verwirren’).

²⁵ Probably by some analogical or regular phonological development already in Proto-Indo-European or later in separate branches where a similar change could take the form of replacing **e* with **a* (for details see Jasanoff 2003: 57; Lipp 2009: 305, 308).

later in 2 sg. of some dialects and finally in 1 sg. of Proto-Greek and Proto-Tocharian (see Table 5: the processes presented in it occurred at different times and affected different numbers of dialects, but expressed the same trend).

	<i>m</i> -conjugation endings	Mediopassive endings
1 sg.	*- <i>m</i>	*- <i>h₂er</i> → *- <i>mh₂er</i>
2 sg.	*- <i>s</i>	*- <i>th₂er</i> → *- <i>sor</i>
3 sg.	*- <i>t</i>	*- <i>or</i> → *- <i>tor</i>
3 pl.	*- <i>nt</i>	*- <i>ror</i> → *- <i>ntor</i>

Table 5. The Proto-Indo-European and early post-Proto-Indo-European endings: *m*-conjugation and mediopassive

Apparently, this reflects some changes in the active voice system. It can be assumed that at first the mediopassive in *-*r* (or its historical predecessor with a narrower grammatical meaning, for example the reflexive in *-*r*) was derived only from verbs or verb forms of a certain category which selected *h₂e*-conjugation endings. Later, the original functions of the *h₂e*-conjugation in all branches of the Indo-European family partially or completely passed to the *m*-conjugation, and the mediopassive adapted to this transition.

3. The loss of final *-*r* and the addition of *-*i* are among the relatively late innovations in the mediopassive which are shared by several Indo-European dialects. In Proto-Tocharian, unlike Proto-Greek and Proto-Indo-Iranian, the addition of *-*i* occurred earlier than the disappearance of *-*r* (see Tables 6 and 7).

	Proto-Indo-European	Proto-Greek and Proto-Indo-Iranian	
		Stage 1	Stage 2
3rd person mediopassive endings of non-past tenses	*-(<i>n</i>) <i>tor</i>	*-(<i>n</i>) <i>tor</i> > *-(<i>n</i>) <i>to</i>	*-(<i>n</i>) <i>to</i> + * <i>i</i> > *-(<i>n</i>) <i>toi</i> ²⁶
3rd person mediopassive endings of past tenses	*-(<i>n</i>) <i>tor</i>	*-(<i>n</i>) <i>tor</i> > *-(<i>n</i>) <i>to</i>	*-(<i>n</i>) <i>to</i>

Table 6. Third-person mediopassive endings in late Proto-Indo-European, early Proto-Greek and early Proto-Indo-Iranian

	Proto-Indo-European	Proto-Tocharian	
		Stage 1	Stage 2
3rd person mediopassive endings of non-past tenses	*-(<i>n</i>) <i>tor</i>	*-(<i>n</i>) <i>tor</i> + * <i>i</i> > *-(<i>n</i>) <i>tri</i>	*-(<i>n</i>) <i>tri</i>
3rd person mediopassive endings of past tenses	*-(<i>n</i>) <i>tor</i>	*-(<i>n</i>) <i>tor</i>	*-(<i>n</i>) <i>tor</i> > *-(<i>n</i>) <i>to</i>

Table 7. Third-person mediopassive endings in late Proto-Indo-European and early Proto-Tocharian

These changes may seem to be a degradation from a golden-age regularity in the proto-language to a less regular state in the descendant languages. In fact, it was a transition from a cross-linguistically common privative opposition between a zero-marked active and a non-

²⁶ The same occurred in Albanian and Germanic, judging by the protoforms of Albanian and Gothic endings (Matzinger & Schumacher 2018: 1761, 1763; Harðarson 2017: 942).

zero-marked mediopassive to a rare equipollent one between two indexing sets specialized for voice — that is, a replacing of one type of regularity by another (for more information on these types of distinguishing voices, see Zúñiga & Kittilä 2019: 91).

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Abbreviations

a = recto side of a manuscript; acc. = accusative; b = verso side of a manuscript; CEToM = A Comprehensive Edition of Tocharian Manuscripts; cf. = compare; e.g. = *exempli gratia* = for example; f. = and following page; ff. = and following pages; i.e. = *id est* = that is; n. = note; nom. = nominative; PIE = Proto-Indo-European; pl. = plural; PT = Proto-Tocharian; sg. = singular; s.v. = *sub voce* = under the heading; TA = Tocharian A; TB = Tocharian B; THT = *Tocharische Handschriften der Berliner Turfansammlung*; voc. = vocative

Symbols

- > becomes by regular phonological development
- < derives from by regular phonological development
- becomes by analogical development
- ← derives from by analogical development
- * a reconstructed form
- † a form which would have occurred if the historical development had been other than it actually was
- # a word boundary
- C a consonant
- V a vowel

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А. С. Безлепкин. Формы западнотохарского глагола-связки *ste* и окончания праиндоевропейского медиопассива

Медиопассивные окончания форм западнотохарского глагола-связки *ste*, *star-* (3 sg.) и *skente*, *skentar-* (3 pl.) находятся в дополнительном распределении: *-tar-* и *-ntar-* употребляются перед суффиксированными местоимениями, *-te* и *-nte* — на конце слова. В статье сделана попытка построить такую реконструкцию предыстории тохарского медиопассива, которая позволяет вывести различие между вариантами на *-(n)tar-* (рефлекс **-(n)tr-*) и на *-(n)te* (восходит к **-(n)to*) из регулярного чередования. Согласно предложенному сценарию, вторичные медиальные окончания без *-r* — инновации нескольких индоевропейских диалектов, образовавшихся после распада праязыка: эти диалекты утратили **-r* на конце личных глагольных форм в положении после гласного (первоначально — только в конце высказывания, где глагол находился в соответствии с базовым порядком слов).

Ключевые слова: тохарский В язык; западнотохарский язык; пратохарский язык; праиндоевропейский язык; окончания медиопассива.