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The range of Tocharian *a*-umlaut

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Abstract

It is often easy to recognize the sound laws affecting frequent sounds in normal positions, but very difficult to know what happened in less prominent positions. E.g., it is well known that (Proto-)Tocharian **æ* (Proto-Indo-European **o*) underwent *a*-umlaut when followed by **a*: there are many examples for this process especially in the verbal system. In contrast to this, it is less than clear whether there was also an *a*-umlaut of **e* (Proto-Indo-European **e:*), since due to the relatively low frequency of this sound in certain structures there are no clear examples speaking for or against this change. Nevertheless there is an indirect argument for its assumption based on a parallel sound change in a different position. And the same argument suggests that even the third Proto-Tocharian mid-low vowel **o* (Proto-Indo-European **a:*) was subject to lowering by a following **a*; the internal reconstruction of some verbal morphonological patterns corroborates this view. If this sound law were to be accepted, it would have interesting consequences for the history of Tocharian morphology.

1 There is now universal agreement that the Proto-Tocharian vowel **æ*[1], the reflex of Proto-Indo-European **o* underwent umlaut to **a* by a

1 In the writing of the Proto-Tocharian vowels I follow Hackstein (1995: xviii and passim):
**ə* = Klingenschmitt, Pinault, Adams *ä* > B *a/ä*, A *ä*
**a* = Klingenschmitt, Pinault *ā*, Adams *ă̄* > B *ā/a*, A *ā*
**e* = Hilmarsson *æ*, Klingenschmitt *a*, Pinault *ă*, Adams *ĕ* > B *e*, A *a*
**æ* = Ringe *ë*, Klingenschmitt *e*, Pinault *ă*, Adams *e* > B *e*, A *e*

following Proto-Tocharian **a*. This umlaut seems to have worked in two stages: the first in Proto- or Common Tocharian, if **æ* was not accented, and the second only in Western Tocharian (B), when the vowel was accented (before the late TB accent shifts, cf. Ringe 1996: 160–2). It is not clear whether this umlaut also affected Proto-Tocharian **e*, the reflex of Proto-Indo-European **ē*, a vowel that eventually fell together with **æ* in nearly all other positions. There are neither really compelling examples nor solid counterexamples (see Ringe 1996: 162–3). Adams (1988: 25) assumes umlaut of **e* independent of accentuation; his main example is the Tocharian preterit type characterized by a root vowel **a* and palatalization of the initial consonant, e.g. TB *lyāka*, stem /lyaká-/ = TA imperfect *lyāk* 'saw' < Proto-Tocharian **lyaka-*, according to Adams (1988: 87–8) from an "*ē*-grade aorist" **lyeka-* < **l̥ēk-a-* ← **lēĝ-*. Unfortunately, this derivation of the type is problematic and cannot be assured, even though there seems to be no better explanation.

2 But help might come from elsewhere: there is one further, clear case in which Proto-Tocharian **æ* develops to **a*, namely in absolute auslaut of a monosyllable, e.g., TB *ksa* (unaccented */ksa/*) < **kʷsa* < **kʷsæ* < **kʷ(i)so* < **kʷis-so* (on which see Hackstein 2001: 32f.). And in this position **e* shows exactly the same development, as can be seen in the negation particle AB *mā* < Proto-Tocharian **ma* 'not' < **me* < **mē* 'not!' (vs. prohibitive TA *mar* < **mʸe-rV*). If both vowels are lowered to **a* in this same position, it is more than probable that the same lowering affected both vowels under the influence of a following low vowel, i.e. in the position of *a*-umlaut. So general arguments seem to speak for an *a*-umlaut of **e*, and we should consider this probable but unproven until evidence to the contrary shows up.

3 Now a parallel development in auslaut is found with the third Proto-Tocharian mid low vowel **å*, the normal reflex of (P)IE **ā* in Tocharian. IE **ā* in absolute auslaut (even in polysyllables) seems to yield Proto-Tocharian **a*, not Proto-Tocharian **å*, cf. the feminine pronoun **sáh₂* > **sā́* > Proto-Tocharian **sa* > B *sā* (Ringe 1996: 94–96). Since Proto-Tocharian **a* could go back to Pre-Tocharian short **ă*, Ringe assumes a shortening of the original **ā*, but why should there have been a shortening in an accented monosyllable? An alternative explanation is provided by Hackstein (2001: 28) who assumes loss of the

**å* = Ringe, Pinault *o*, Hilmarsson *å̄*, Adams *ǫ* > B *o*, A *a*

laryngeal in pausa **sá(h₂)* > **sá*. But there is no reason why pausa position should be so common for this pronoun (there is no reflex of **să* in any IE language), though the generalisation of such a variant cannot be excluded in view of Latin *-ă*. But there is a third way: **a* would regularly result from a two stage development, first generally **ā* > **å* and then, secondly, a lowering **å* > **a* in absolute auslaut as for **æ* and **e*: **sā́* > **så* > **sa* as **mḗ* > **me* > **ma*. Possibly **-å* was more prone to lowering than **-æ* (and probably **-e*, too), namely not only in monosyllables. This assumption would explain the polysyllabic forms of the feminine in **-a* from **-ā* < **-ah₂*, if they are not analogical (see Ringe 1996: 41). So we could formulate a general sound law for Proto-Tocharian: V[-high, -low] → [+low] /#C₀_#, with the possible generalisation V[-high, -low, +back] → [+low] /C₀_#.

4.1 If **å* behaves parallel to **e/æ* in this case of lowering or even surpasses them, the question arises whether it should not have partaken in the similar process of lowering that is called *a*-umlaut: If the lowest vowel could lower the non-back mid low vowels, why not also the back one, i.e., **å*? And indeed, the picture of synchronic vowel distribution in Tocharian verbal forms shows that **å* never occurs if an **a* follows. This is particularly evident in the case of the athematic subjunctives of class one and five. There we find an astonishing discrepancy in the behaviour of roots with **a* as their basic root vowel (BRV): in class one we have an ablauting stem with **å* in the strong and **a* in the weak stem, corresponding to **æ* : **ə* in non-*a*-roots with basic root vowel **ə*, but in class five there is no ablaut: strong and weak stem have the same root vowel **a*, in contradiction to the allomorphic alternation of **æ* (umlauted **a*) and **ə* in *a*-roots with basic root vowel **ə*. Cf. the following TB verbs:

non-*a*-roots with basic root vowel **a*: subjunctive *oräñ-ca* TT 46 (Š)a8 vs. infinitive *ārtsi* from */ar-/* 'to give up'; subjunctive act. *kowän* TT 29 (Š)b8 vs. infinitive *kautsi*, abstract *kāwälyñe** from */kaw-/* 'to kill'.

non-*a*-roots with basic root vowel **ə*: subjunctive *tekäṃ* vs. abstract *tákälyñe* from */tək-, tek-/* 'to touch'; subjunctive act. *kewu* vs. middle *kutär* from */ku-/* 'to pour'.

a-roots with basic root vowel **a*: subjunctive *āraṃ* as infinitive *āratsi* from */ara-/* 'to cease'; subjunctive *kārpaṃ* as infinitive *kārpatsi* from */karpa-/* 'to descend'.

a-roots with basic root vowel **ə*: subjunctive *kārsaṃ* vs. infinitive *kársatsi* from */kərsa-/* 'to know'; subjunctive *sraukaṃ* vs. abstract *srukalñe* from */sruka-/* 'to die'.

Schematically (phonological writing):

	class I (non-*a*-roots)		class V (*a*-roots)	
	strong	weak	strong	weak
roots with **ə*	*/ték-, kéw-/*	*/tək-, kú-/*	*/kársa-, sráuka-/*	*/kársa-, srúka-/*
roots with **a*	*/ór-, ków-/*	*/ár-, káw-/*	*/ára-, kárpa-/*	

This exceptional identity of the strong and the weak stem confined to *a*-roots with basic vowel **a* could be easily explained with the following hypothesis: The strong stem originally had the same ablaut vowel **å* as it had in non-*a*-roots, and this vowel was umlauted to **a* by the stem-final vowel, so that strong and weak stem fell together: **åra-*, **kårpa-* > **ara-*, **karpa-*.

4.2 In Tocharian A, the same phenomenon is difficult to observe, because relevant forms of athematic subjunctives to non-*a*-roots with basic root vowel **a* are not attested: of *kāw-* we only have the contracted 3s *koṣ* < **kå/awəṣə*, and *ār-* is not attested in the subjunctive. So we have no evidence whether these subjunctives had ablaut as in TB. But *a*-roots with basic root vowel **a* do not show ablaut, as in TB, thus differing from normal roots that show the same ablaut alternation in all forms of the subjunctive stem, cf. *āraṣ : āreñc, ārlune* vs. *krasaṣ : kärseñc, kärsālune*. If we would apply the same solution as in TB, this would presuppose that **å*, unlike **æ*, was also umlauted when accented. The generally stronger liability of **å* to lowering influence (see above) renders this a probable assumption.

4.3 The same difference seems to exist between disyllabic class I presents with *o* and their subjunctive or preterit stems with *a* before suffixal **a* in *kolokträ : kalākau* 'to follow'; *porośicer : parākatsi* 'be glad'; *sonopträ : sanāpatsi* 'to anoint'; and similarly *tsopaṃ°, tsopalle : tsatsāpauwa*, if both are from the same root 'to sting, to beat'. Also here *o* seems to have been umlauted by stem-final **a*.

4.4 In the same fashion one might explain the different behaviour of the contraction vowel in the imperatives TB *pokse* 'announce!' from */aks-/* vs. TB *pāsa* 'bear!' from */asa-/* (see Winter 1977: 155 for the observation): the contraction of **pə-a°* led to **pā°* > **på°*, and this remained before *-e* in *pokse*, but was umlauted before **a* in **påsa*.

5.1 In this case the origin of the **å* is easy to explain by contraction, but the **å* of the above mentioned subjunctives *or-*, *kow-* is less clear and has never been sufficiently explained. It is clear that this "*o*-grade" stands for the whole range of the Tocharian "*e*-grade", i.e., the reflexes of the Proto-Indo-European *o*-grade and *ē*-grade that practically merged in the Tocharian system (apart from palatalization). This is shown by the regular appearance of **å* in the *s*-preterits *orasta, orsa* from */ar-/* and *kowsa* (~ *kausa*) from */kaw-/*, where normally *e*-grade is to be expected; and here we also find a TA example, namely *asäs* < **åsəsa* from *āsā-* 'to become dry' (an unexpected formation to an *a*-root). The Proto-Tocharian roots with basic root vowel **a* apparently show the following ablaut schemata compared with the normal roots with basic root vowel **ə*:

basic root vowel	*ə*	*a*
ə-grade	*ə*	*a*
ˀə-grade	*ˀə*	*a*
e-grade	*æ*	*å*
ˀe-grade	*ˀe*	*å*

Since Proto-Tocharian roots with basic root vowel **a* do principally go back to Proto-Indo-European roots of the structure **(C)h_2aC(C)-* or **CeHC-*, **å* cannot be a regular reflex of the old *o*-grade, for this should have given either **(C)h_2oC(C)-* > Proto-Tocharian **(C)æC(C)-* or **CoHC-* > Proto-Tocharian **CaC-*. But in one common subtype, the roots with **ah₂*, the normal IE *e*-grade should have led to Proto-Tocharian **å*, e.g., **kah₂u̯-* > **kåw-* (in this case with analogical zero-grade **kh₂u̯-* > **kaw-*, cf. Hackstein 1995: 424; LIV² s.v.). The *o*-grade **Coh₂C-* > Proto-Tocharian **CaC-* would have fallen together with the zero-grade, so exactly those grades that normally remain distinct in Proto-Tocharian would have become indistinct. Consequently, these roots should have lost ablaut in Proto-Tocharian.

5.2 But it is questionable whether the regular *o*-grade in these cases would have survived long enough in Pre-Proto-Tocharian. The late IE ablaut of **eh₂ : *oh₂* > **ah₂ : *oh₂* > **ā : *ō* had become isolated in the

system and was subject to abolishment in other IE languages, too: e.g., in Greek even very old perfects of roots with basic *ā never show the expected *o*-grade with *ō but show *ā in the strong stem: cf. *δέδηε, τέτρηχε, γέγηθε, σέσηπε, λέληθε, λέληκε, πέπηγε, τέτηκε, ἔᾱγε* (Cowgill 19: 145f.; Sihler 1995: 573f.; the only exception seems to be presupposed by the Hesychian gloss *τέθωκται· τεθύμωται*, where the vocalism of the middle must have been taken from an active perfect **τέθωγα* to *θήγω*). This fact has even led to the erroneous assumption of a sound law *oh_2 > *ā in Proto-Indo-European (cf. Lindeman 1997: 45f. 70f. with lit.). If we assumed a parallel innovation of ablaut in Pre-Proto-Tocharian, this would have resulted in a morphonological alternation of strong grade *ah_2 > *ā > Proto-Tocharian *å vs. weak grade *h_2 > *a > Proto-Tocharian *a in all categories with Pre-Proto-Tocharian ablaut *o vs. *Ø. This is precisely what we find in Proto-Tocharian non-*a*-roots with basic root vowel *a. The new ablaut scheme might have been overtaken by those Proto-Tocharian roots with basic root vowel *a that had another source for this vowel, e.g., *ar- 'to give up, leave' < *$h_2$arH- or *h_3r̥- (cf. LIV² s.v. resp. Hackstein 1998: 227–31.), which got a new strong grade *år- (the existence of a reduplicated *h_2a-h_2r- > *ār- might have been helpful in this case). This is similar to what has to be assumed for the development of the sixth class of ablauting verbs in Proto-Germanic, where some old cases like (present : preterit/perfect) *ak-a/e- : *ōk- < *h_2aĝ-o/e- : *h_2ah_2(o)ĝ- or *haf-ja/e- : *hōf- </← *kh_2p-i̯o/e- : *(ke)koh_2p- were the source of a new ablaut scheme *a : *ō (cf. mutatis mutandis Meid 1971: 55f.; Bammesberger 1986: 51–53).

5.3 If this analysis of the morphonological behaviour of Tocharian non-*a*-roots with basic root vowel *a is correct, the same should apply to *a*-roots with the same basic root vowel, i.e., the basic vocalism of verbal stems affording Proto-Tocharian *e*-grade should have been *å. So the *a that is actually attested can only be understood as umlauted from that *å.

6.1 Unfortunately, clear examples of the same *a*-umlaut are not easy to find outside the verbal system. Some nouns (old neuter *u*-stems) show a superficially similar vowel alternation: cf. TB singular *or* 'wood', *yok* 'body hair' vs. plural *ārwa, yākwa*. But as the corresponding TA forms *or, yok* show, TB *o* in the singular is not Proto-Tocharian *å but *o that arose through *u*-umlaut from earlier *æ, and the plural shows regular *a*-umlaut of that *æ.

6.2 One noun of the same class seems to be a counterexample to the proposed umlaut: the plural of TB *ost* = TA *waṣt* 'house' < Proto-Tocharian **wåstə* < (Proto-)Indo-European **wā́stu* is TB *ostwa* = TA *waṣtu*, and this seems to presuppose a Proto-Tocharian **wåstwa* without umlaut of *å. But as the variant *ostuwa* and the TA reflex shows, the basic form here must have been **wåstuwa*. The interceding *u* would have prevented umlaut as it did in TB *mekwa* = TA *maku* < **mækuwa* 'fingernails' (see Ringe 1991: 143–46).

6.3 More problematic are the feminine plural forms of adjectives in TB *-o-na* (class I 2, II 4 in Krause & Thomas 1960) and *ponta* to *pont-* 'all'; all these certainly show a sequence where *a*-umlaut of *å might and should have worked. But *ponta* behaves exactly like *krenta* f. pl. to *krent-* 'good' and *-enta* to the adjectives in *-e_u*: There the *a*-umlaut of *æ was removed by analogy with the masculine (*-ent, -eñc, -entäṃ*). Of course the same may have happened in the case of *pont-*, where all other forms of the word had *po°. The same applies to nominal plurals in *-onta* (if they show old **-ånta*).

The same kind of intraparadigmatic levelling cannot be responsible for the forms in *-ona*, since *-o-* is confined to the plural: the singular always shows a different suffix **-ya, -yai*. Nevertheless, this state cannot be the original one: There once must have existed a corresponding singular in (oblique) **-å* identical with the old plural **-å* which only later was recharacterized with **-na*. The nouns *śana* 'wife' and *lāntsa* 'queen' with oblique singular *śano, lāntso* vs. pl. *śnona, lantsona* still show the original distribution. Through these processes there may have been a general rule in Proto-Tocharian: feminine plurals in °*a* were excepted from umlaut.

6.4 Outside the range of paradigmatic levelling, i.e., wherever °*a*- is root- or stem-final, there seem to be no old cases of */o/ ... /a/* < Proto-Tocharian **å ... a* in the TB material (as it was available to me): *okt-ār* 'eight (each)' has Proto-Tocharian **o* and is a transparent young formation; likewise */tótka/* 'little', presumably contracted from **tawæt-ka. olya* 'more' is no sure case of old **ål^{y}a*, because it stands beside *oly(a)-po* presupposing **ål^{y}ó*.

7 If the range of umlaut in Proto-Tocharian thus is wider than formerly thought, this might have far-reaching consequences for historical grammar. The situation of the presents of class IV is radically changed,

as it is no longer possible to be sure that their basic vowel is **a*: The **a* of the corresponding subjunctives and preterits might have been **å*, so that the *o* of the present need not have been a secondary development of **a* – it may have been **å* all the time. In fact the theory of "mutual rounding" or "ö-umlaut" (Ringe 1996: 121–124; 132f.) needed to explain **o* for **a* has always met phonetic difficulties: Why should a contraction of **a(i̯)e* or **a(i̯)o* lead to a rounded front vowel? Even if the contraction happened before the development of **e* and **o* to **ə* and **æ* ([ʌ]?): The contraction of two unrounded vowels can only result in an unrounded vowel, and the contraction of a central and a back vowel can hardly result in a front vowel. So the source for the rounding should rather be located in the root, and there is no phonological obstacle to assuming an original **å*.

Rather, we might assume a progressive rounding **å ... e_2 > *å ... å*, cf. the well-attested regressive *o*-umlaut **e ... å > *å ... å* (cf. *somo, ontsoytte*, Ringe 1987: 99f.; 1996: 163); the necessary assumption of progressive rather than regressive assimilation is certainly not worse than "mutual rounding". Even in this case **e_2* must be differentiated from normal **e* and **æ*, since *o ... e* is not altered in words like *procer, krośce* or *soye, soytte*.

8 Morphonologically this assumption is a little bit more complicated: One might say that class III normally has *ə*-grade, so class IV should also have the reduced grade, i.e., **a*. But it must not be forgotten that *e*-grade is well attested in class III (esp. in TA), e.g., TB *lyewe-, ñewe-, tseńke-*; TA *śama-, śalpa-, tsara-*. And the morphonologically corresponding vowel in *a*-roots should be **å*, as I hope to have shown.

Maybe there is some slight evidence that class IV presents pattern with these *e*-grade verbs rather than with the zero grade verbs of class III: subjunctives to zero grade class III presents mostly do not show ablaut and exhibit suffix accent: *k_ulātär, krämpālñe, triwātär, präṅkātsi, prutkātär, pläṅkātsi, mänkātär, maskälläññe, muskātsi, rittātär, lipātär, wikātär, sätkālñe, späntālñe, spärkoytär, tsrālñe, tsälpātär* (but *mārsaṃ ~ marsatsi; mītatsi; sraukaṃ ~ srukal(y)ñe; tsāmat ~ tsmāntär*). On the contrary the corresponding subjunctives to class IV presents normally have root accent: *āratsi; ārt(t)atär; kārpatsi; klāyalñe; klāpalñe; klaikatsi; träppalle; plāntatsi; yātatsi; laitalñe; klautkatsi; wāpatsi; spārttatsi*, as is the case for the subjunctives corresponding to *e*-grade class III presents: cf. *lāwaṃ; tsāṅkaṃ ~ tsaṅkoy*. But since the history of the accent rules for the subjunctives of class V is disputed (Eyþórsson 1993) and

the cases are not too numerous, this may be coincidental and we cannot build too much on it.

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