

**Is the Tocharian Mule an “Iranian Horse” or a “Turkic Donkey”?  
Further examples for Proto-Turkic \*/t<sub>2</sub>/ [ts]**

Orçun Ünal\*

(Göttingen Academy of Sciences and Humanities in Lower  
Saxony)

**Abstract:** Tocharian B *etswe* ‘mule’ is a newly attested word. It has been identified as a loan from Iranian *\*atswa* (< Proto-Indo-European *\*h<sub>1</sub>ékʷos* ‘horse’). The present study proposes a Turkic etymology for the Tocharian word in question. It has been suggested that the Proto-Turkic form *\*ät<sub>2</sub>gä* [ɛts<sup>h</sup>ʷɛ] ‘donkey’, the origin of the Common Turkic *äšgäk* and Khalaj *äšgä*, is the source of the Tocharian B *etswe*. Tocharian /w/ is a substitution of the Proto-Turkic phoneme \*/g/.

An etymology has also been proposed for Proto-Turkic *\*ät<sub>2</sub>gä*. According to this, the form *\*ät<sub>2</sub>gä* originally denotes ‘eared (animal)’ and derives from the root *\*ät<sub>2</sub>i* ‘ear’, which is also the root of the verb *\*ät<sub>2</sub>id-* ‘to hear’ (> Common Turkic *äšid-*, Chuvash *ilt-*). The Proto-Turkic root *\*ät<sub>2</sub>i* ‘ear’ is related to the Akkadian *ḥasīsu(m)* /hatsītsu(m)/ ‘ear; wisdom’ and further Akkadian loanwords in Turkic are discussed.

**Keywords:** Proto-Turkic, Tocharian, Iranian, Akkadian, loanword, *äšgäk*, *etswe*

---

\* Dr., Research Associate, Göttingen Academy of Sciences and Humanities in Lower Saxony, orcununal@live.com; ORCID: 0000-0002-2591-9035.

**Özet: Toharca Katur bir “İran Atı” mı yoksa bir “Türk Eşeği” mi? Proto-Türkçe \*/t<sub>2</sub>/ [ts] için İlave Örnekler**

Toharca B *etswe* ‘katur’ yeni tanımlanmış bir kelimedir. Bu kelime, İnanca *\*atswa*’dan (< Proto-Hint-Avrupa *\*h<sub>1</sub>ék<sup>w</sup>os* ‘at’) bir alıntı olarak teşhis edilmiştir. Bu çalışma, söz konusu Toharca kelime için Türkçe bir etimoloji önermektedir. Genel Türkçe *äšgäk* ve Halaçça *äšgä* sözcüklerinin kökeni olan Proto-Türkçe *\*ät<sub>2</sub>gä* [ets<sup>h</sup>’<sup>1</sup>γε] ‘eşek’ biçiminin Toharca B *etswe*’nin kaynağı olduğu ileri sürülmüştür. Toharca /w/, Proto-Türkçe \*/g/ sesbiriminin bir ikamesidir.

Proto-Türkçe *\*ät<sub>2</sub>gä* için de bir etimoloji önerilmiştir. Buna göre, *\*ät<sub>2</sub>gä* biçimi aslen ‘kulaklı (hayvan)’ anlamına geliyor olup *\*ät<sub>2</sub>i* ‘kulak’ kökünden türemiştir ve bu kök *\*ät<sub>2</sub>id-* ‘duymak’ (> Genel Türkçe *äšid-*, Çuvaşça *ilt-*) fiilinin de köküdür. Proto-Türkçe *\*ät<sub>2</sub>i* ‘kulak’ kökü ise Akadca *ḥasīsu(m)* /hatsīsu(m)/ ‘kulak; bilgelik’ ile ilişkilendirilmiş ve Türkçedeki diğer Akadca alıntılar tartışılmıştır.

**Anahtar sözcükler:** Proto-Türkçe, Toharca, İnanca, Akadca, alıntı, *äšgäk*, *etswe*

**1. Various etymologies for CT *äšgäk* ‘donkey, ass’**

The Common Turkic word for ‘donkey, ass’ is attested in two main forms: Kh. *äšgä* ‘donkey’ (WCh 111; Doerfer 1987: 63 §95, 287) and CT *äšgäk* ‘donkey, ass’ (ED 260; ÉSTJa I: 317–318; Hauenschild 2003: 47–48). The historical and modern variants such as *äšyäk* in Dīwān Luyāt at-Turk, *eššäk* in Azerbaijani and *ešte* in Altai originate from CT *äšgäk*. Chuv. *ašak* (< *\*äšäk*) ‘donkey, ass’ (Fedotov 1996/II: 76) is a loanword from Tatar.

Proposed etymologies have been extensively dealt with by Severtjan (ÉSTJa I: 317), Eren (TDES 138–140) and Stachowski (KEWT 146). These can be divided into six groups:

1. CT *äšgäk* < CT *äš-* ‘to amble’ (ED 260; restated in OTWF 393 and UW Nb II.2: 303–304; endorsed by Hauenschild 2003: 48).

2. CT *äšgäk* < CT *eš* ‘companion’ (Bang 1934: 203–204, fn. 5; endorsed by ATG 62 §59, VEWT 51, TMEN II §486; rejected in OTWF 74, fn. 95, 393; doubted by Hauenschild 2003: 48).

3. CT *äšgäk* ← Arm. էշ *ēš*<sup>1</sup> ‘donkey’ (← Sum. *anšu* ‘donkey’) (Schrader 1901: 206, restated by Pedersen 1903: 561, Menges<sup>2</sup>1995: 98, 166, 178, implicitly rejected by Dankoff 1995: 160).

4. CT *äšgäk* < PT *\*älji* ~ *\*älci* ← Sum. *anšu* ‘donkey’ (Tekin 1971–1972: 357; still advocated by Parpola 2016: 18).

5. CT *äškäk* (sic) < Pre-Turkic *\*eljik-ek* and Kh. *ešge* < *\*eške* < Pre-Turkic *\*eljike* (KEWT 146).

6. CT *äšgäk* < CT *\*äši* ‘ear’ (> CT *äšid-* ‘to hear’) (Georg 1999/2000: 154, fn. 44).<sup>2</sup>

In my opinion, the form *äšgäk* is formed with the diminutive suffix *+(A)k* (Doerfer 1987: 63 §95; OTWF 41–42). The function of *+(A)k* in *äšgäk* is obscure. Similarly, CT *ivik*<sup>3</sup> ‘goitered gazelle (Gazella subgutturosa)’ is derived from *\*ivi* ‘deer, reindeer’ (> CT *ivi*). The former animal is somewhat smaller in size than the latter (see Hauenschild 2003: 100). It is possible that *äšgäk* originally denoted a donkey breed that is smaller than *äšgä*. The second syllable °*gA* of CT *äšgä* is likely to be *+gA*, which is a common marker for animal names (OTWF 83–85).<sup>4</sup> The same sequence of *+gA* and *+(A)k* is also found in *\*karinčga+k* > CT *karinčak* ‘ant’ (ED 662). The ultimate base of *äšgäk* is then CT *\*äš* or *\*äši*.

I would like to favour the etymology of Georg (1999/2000) and regard CT *\*äš(i)* ‘ear’ as the common base of CT *äšgä* ‘donkey’ and CT *äšid-* ‘to hear’ (Kh. *äšit-* ~ *ešit-* ~ *išit-* ~ *išüt-* ~ *ešit-* ~ *\*üšüt-*). Considering that the Chuvash cognate of CT *äšid-* is *ilt-* (< *\*elt-* <

<sup>1</sup> The Armenian word has been compared both with the cognates of PIE *\*h<sub>1</sub>ékwo-* ‘horse’ and Hurrian *ešši / išši* ‘horse’ (see Martirosyan 2010: 276–277). The Indo-Iranian origin of the Hurrian word and the Hurrian origin of the Armenian *ēš* ‘donkey’ are disputed by Winter (1997). Winter argues for the Armenian origin of the Hurrian word.

<sup>2</sup> Based on Doerfer’s (1988: 172) supposition that the original Turkic word for ‘ear’ may be hidden in *äši+d-* and it goes back to *\*älji-*, Georg (1999/2000: 154, fn. 44) suspected that *äšgäk* ‘donkey’ may have derived from the same base, namely CT *\*äši* ‘ear’.

<sup>3</sup> OU *yivik* ‘gazelle’ (Tezcan 1974: 107) rather suggests CT *\*hivik*.

<sup>4</sup> Erdal (OTWF 83) derived CT *karga* from CT *kara* ‘black’ and assumed a syncope from *\*kara+ga*. Considering that it rather goes back to *\*kariga* (cf. CM *\*kerie* ‘crow’), its base may be *\*karig* ‘bad voice’, which also underlies the verb *kar(i)g+a-* > *karga-* ‘to curse’ (ED 655).

\**älit-*), it is possible to reconstruct the Bulgar Turkic word for ‘donkey’ as \**älgä(k)*.

This etymology is perfectly plausible since donkeys stand out with their long ears, and it is certainly not unique. Mo. *čikitei*, which derives from *čikin* ‘ear’ and literally means ‘having ears, eared’, also denotes ‘wild ass of the Asiatic steppe, kulan, *Equus hemionus*’ (Lessing 1995: 182, 984). Man. *cihetei* ‘*Equus hemionus*: wild ass’ (Norman 2013: 55) is a borrowing from Mongolic *čikitei*. Moghol *urluchighalu* (recte *urtuchighatu*) (Weiers 1971: 165) and colloquial German *Langohr*, which literally mean ‘long-eared’ and ‘long ear’ respectively, signify ‘donkey’.

CT *kulan* ‘wild ass’ (ED 622; ÉSTJa VI: 127–128; Hauenschild 2003: 149–150) possibly represents a similar semantic derivation. Its base may be identified with \**kul* ‘ear’ (> CT *kulkak* ‘id.’) (Georg 1999/2000: 152–157; see also OTWF 75). Its second syllable is likely to be a marker for animal names. Numerous Old and Common Turkic opaque animal names end in °*An* and °*lAn*: *aplan* ‘type of rat’, *arslan* ‘lion’, *atan* ‘gelded camel’, *burslan* ‘tiger’, *čādan* ‘scorpion’, *ingän* ‘female camel’, *küzän* ‘type of rat, gerboa’, *tañan* ‘white-headed crow’, *yañan* ~ *yagan* ‘elephant’, *yamlan* ‘type of rat’, *yılan* ‘snake’. Ramstedt (KWb 196) already implied a connection between *kulan* and \**kulku-*, which gave *χulχvχv* ‘die ohren an den kopf legen’ [to put one’s ears back] in Kalmyk.

## 2. Possible Altaic connections of CT *äšgäk* ‘donkey, ass’

In the Altaistic literature, CT *äšgäk* has generally been considered cognate with Mo. *eljigen* ‘donkey’ and Man. *eihen* ‘donkey’ (Ramstedt 1903: 97; Gombocz 1912/13: 18; Poppe 1927: 114; KWb 119a, 130b; Ramstedt 1957: 177; Poppe 1960: 86, 140; EDAL 503). In this comparison, Mo. *-lj-* is argued to correspond to the Common Turkic \**-š-*<sup>5</sup> and the postconsonantal *-g-* is simply neglected.<sup>6</sup> In a

<sup>5</sup> There are indeed Turco-Mongolic cognates where Mo. *-lj-* corresponds to CT *-š-*, e.g., MM *qoryaljī* ‘lead’ (Gül 2016: 204), WM *qoryoljīn* ‘lead’ (Lessing 1995: 966) : CT *korgašin* (*korgošīn* ?) ‘lead’ (ED 656–657).

<sup>6</sup> Doerfer (TMEN II §486) reconstructed PT \**el’d’äcēn*, which doesn’t solve the problem. Gombocz (1914: 28) traced Mo. *elčigen* (sic) back to \**eltigen* and

few instances including Mo. *eljigen*, Mo. *-lj-* clearly corresponds to CT *-šg-*. These words are borrowed from Bulgar Turkic. Thus, Mo. *-lj-* is, in fact, a substitution for BT *\*-lg-*. We find this Turco-Mongolic correspondence in at least three Turkic loanwords in Mongolic.

1. CM *\*eljigen* ‘donkey’ (Nugteren 2011: 328) : CT *äšgäk* ‘donkey, ass’ (ED 260).

2. MM *qaljan* (= Chag. *qašqa*) ‘s plešinoj’ (Pope 1938: 289), WM *qaljan* ~ *qaljīn* ~ *yaljin* ‘bald-headed; blaze on the forehead (of a horse, ox, etc.)’ (Lessing 1995: 922–923, 1203) : OT *kašga* ‘(of an animal) with a white head and darker body or with a white blaze on the forehead’ (ED 671–672), OU *kīšga* ‘weißlich’ (Zieme 2015: 222).

3. MM *bolja-* ‘(e. Termin) verabreden, bestimmen (約會)’ (Haenisch 1939: 19), WM *bolja-* ~ *boljo-* ‘to agree on; to make an appointment; to determine beforehand, prearrange; to foresee, surmise, know beforehand’ (Lessing 1995: 119) : CT *\*bošgu-* ‘to learn’ > OT *bošgun-* ‘to learn, receive instruction’ (ED 379), OT *bošgur-* ‘to teach, instruct’ (ED 380), OT *bošgut* ‘instruction, teaching’ (ED 379).

Given the comparisons above, I propose explaining the Mongolic *\*-lj-* as having changed from an earlier *\*-lg-*, which corresponds to BT *\*-lg-*. For the change of *\*g* to *ǰ* in front of front vowels, there are many examples in Mongolic: MM *jam* ‘Post(stelle), Relais (站)’ (Haenisch 1939: 85), WM *jam* ‘route, road, way, pass’ (Lessing 1995: 1033) < Tabg. *\*yam* (cf. Man. *giyamun* ‘relay station, relay post’) (Vovin 2007: 195), Mo. *ǰida* ‘spear’ < *\*gida* (cf. Man. *gida*) (← Ch. *jiá* 戛 LMC *kja:t*) (MT 24; Pulleyblank 1991: 144), CM *\*kürjeg* ~ *\*kürje* ‘spade, shovel’ (Nugteren 2011: 436) < *\*kür(i)gä(k)* ← CT *kürgäk* ‘spade, shovel’ (ED 742–743), CM *ǰala-* ‘to invite’ (Lessing 1995: 1029) < *\*giala-* > Kit. *\*X(i)aL(i)-* ‘to invite (請)’ (Shimunek 2007: 100).

---

compared its assumed base *\*el-t-* with Shor and Teleut *äš-t-äk*. Menges (2019: 98) instead argued that the variant *äšyäk* might well be from an older *\*äšdäk*, which he further compared with Mo. *\*älji-gän* and *äštäk* (< *\*äšd'äk?*) in Teleut and Shor.

Thus, we can show the history of CM *\*eljigen* and Jurchenic *\*eliken* as follows:

CM *\*eljigen* ‘donkey’ (Nugteren 2011: 328) < *\*elgiken* < *\*elgeken* ← BT *\*älgäkä* (corresponding to CT *äšgäk*).

Man. *eihen* ‘1. donkey, ass; 2. brown’ (Norman 2013: 91), Jur. [額黑] *\*ehe*<sup>7</sup> ‘donkey (驢)’ (Kane 1989 §436), Jur. [厄恨] *eihen* ‘ass (驢)’ (Kiyose 1977: 105 §141), Xibe *'e'ixəv* ‘donkey, ass’ (Yamamoto 1969: 108) < *\*eyihen*<sup>8</sup> < *\*eliken* ← Mo. *\*eligen* ← BT *\*äligä* (corresponding to Kh. *äšgä*).

### 3. Two competing etymologies for Tocharian B *etswe* ‘mule’

#### 3.1. Tocharian B *etswe* ‘mule’ as an Iranian loanword

Tch. B *etswe* ‘mule’, which occurs in a Tocharian B–Old Uyghur bilingual text as *etswentsa* (perl. pl.), is first identified by Peyrot (2015: 222–223). The full edition of the bilingual is published by Peyrot, Pinault, and Wilkens (2019).

Peyrot (2015: 223; 2018) regarded Tch. B. *etswe* as a loanword from the Old Iranian *\*atswa-* ‘horse’ (cf. Avestan *aspa-*, Sogdian *'sp*, Khotanese *aśśa-*, Sanskrit *aśva-*). This etymology is restated in Peyrot–Pinault–Wilkens (2019: 84). According to Peyrot (2018: 272), the Tocharian word is borrowed from an Old Iranian dialect other than “Old Sakan”, in which *\*ću* was depalatalised to *\*tsw*. Another Iranian loanword that features the same depalatalization is Tch. B *tsain*<sup>9</sup>, pl. *tsainwa* ‘weapon’ < PTch. *\*tsainu* ← Old Iranian

<sup>7</sup> Kara (1991: 151) proposed emending this reading to *\*e[i]xe* or *e[l]xe*.

<sup>8</sup> The change of *\*Vli > Vyi* is also observed in Jurchenic *\*aličün ~ \*aličun* ‘gold’ > Jur. *\*alčün / alčuqu* (personal and place name) [金] (Sün 2004: 198–199), Jur. [安春温] *ančün* ‘gold (金)’ (Kiyose 1977: 128 §568), Jur. [安出] *\*anču* ‘gold (金)’ (Kane 1989: §1064), Man. *aisin* ‘gold’ (Norman 2013: 10), Spoken Manchu *'a'isün* [ʔaʃin] ‘gold (金)’ (Yamamoto 1969 §2118), Xibe *ajšin* [ajʃin] ‘gold (金)’ (Kim et al. 2008: 52), Bala [anʃʷugun] ‘gold’, Alchuka [anʃin] ‘gold’ (Mù 1987: 11). Note that Ligeti (1953: 225) reads Jur. *alčün*. Jurchenic *\*aličün ~ \*aličun* is clearly related to Mo. *altan* ‘gold’ and Tu. *altun* ‘gold’. See also Krippes (1992: 101–102).

<sup>9</sup> The Tocharian B noun was brought into connection with Chinese jiàn 箭 ‘arrow’ by Schuessler (2009: 248), which he reconstructed as *\*tsens* for Old Chinese.

\**dzainu*-<sup>10</sup> (cf. Avestan *zāena*- ‘weapon’, *zāenuš*- ‘baldric’) (Peyrot 2018: 270). Adams (HCHIL 2: 1369) mentioned Tch. B *tsaiññe* ‘ornament’ as a further instance, which he traced back to the Pre-Proto-Iranian \**dzai*-<sup>11</sup> ‘to equip’ (see also Adams 2013: 811).

Peyrot (2018: 280) concluded that this dialect may be the steppe Iranian, which he called “Scythian”. Peyrot’s proposal for the changes in Iranian and the borrowing from Iranian to Tocharian can be reproduced as follows: PIE \**h<sub>1</sub>ék<sub>w</sub>os* ‘horse’ > Proto-Indo-Iranian \**ác<sub>y</sub>a*- ‘horse’ (HCHIL 3: 1946) > Proto-Iranian \**át<sub>s</sub>ya*-<sup>12</sup> ‘horse’ (HCHIL 1: 574; see also ĒSIJa I: 243–246) > Old Iranian \**atswa* → PTch. \**ætswæ* > Tch. B *etswe* ‘mule’.

Although Peyrot’s etymology is convincing regarding its vocalism, it remains unclear in which Old Iranian dialect \**ć<sub>y</sub>* was depalatalised. Attested Old Iranian languages exhibit only /s/ and /θ/ as the reflex of \**ć*. Mayrhofer (2006: 25) emphasized that Scythian and its descendant languages such as Sarmatian and Ossetian reflect only a form in \**aspa*- ‘horse’ with \*/sp/. In this case, Tch. B *tsain*, *tsaiññe* and *etswe* must be better classified as Proto-Iranian loanwords in Tocharian. Adams already acknowledged that these loanwords “show very early, even pre-Proto-Iranian phonology” (HCHIL 2: 1369).

Semantics is the soft spot of Peyrot’s etymology. Iranian \**ás<sub>y</sub>a*- first and foremost denotes ‘horse’ and ‘steed’. In the Old and Middle Iranian periods, the meaning ‘mule’ is not attested (ĒSIJa I: 243). If Tch. B *etswe* is of Iranian origin, the meaning ‘mule’ must have emerged in Tocharian itself. Although semantic changes are generally trivialised in diachronic linguistics, it must be

<sup>10</sup> The Iranian word derives from the Proto-Iranian \**zai*- ‘to set in motion, impel’ < PIE \**ǵ<sup>h</sup>ei*- ‘to impel, to drive’ (Cheung 2007: 461–462).

<sup>11</sup> The Pre-Proto-Iranian \**dzai*- corresponds to \**zai*- ‘to equip, adorn’ in Cheung’s (2007: 462) reconstruction who noted that “this root is apparently exclusively Ir[anian] with no I[ndo-]E[uropean] cognates”.

<sup>12</sup> “In Proto-Iranian, the first series (\**ć*, \**j*, \**j<sup>h</sup>*) is widely held to have been composed of affricates, but their exact point of articulation cannot be decided [...] In the transition from Proto-Iranian to the Old Iranian languages, their treatment diverges. In all Iranian languages except the southwestern ones, the alveolar or prepalatal affricate /ts/ evolves to the corresponding alveolar sibilant /s/.” (HCHIL 1: 492)

demonstrable that the proposed semantic change is not only possible but also likely in the given cultural context. In summary, even though the Iranian origin of Tch. B *etswe* cannot be falsified, it leaves a question mark behind.

### 3.2. Tocharian B *etswe* ‘mule’ as a Turkic loanword

In a previous study (Ünal 2022), I demonstrated that CT /š/ and Chuv. /l/ go back to the Proto-Turkic \*/t<sub>2</sub>/ with the phonetic value of [ts]. Proto-Turkic \*/t<sub>2</sub>/ [ts] evolved to [θ] in Late Proto-Turkic and [θ] changed to [š] and [l] (or a similar lateral) in Common Turkic and Bulgar Turkic, respectively. According to this, CT *äšgä* and BT *\*älgä(k)* can be safely traced back to PT *\*ät<sub>2</sub>gä* [ɛts<sup>h</sup>ʷɛ].

In my view, Tch. B *etswe* ‘mule’ is a direct loanword from PT *\*ät<sub>2</sub>gä*, which later yielded CT *äšgä* and the more common *äšgäk*. If this is the case, Tch. B /w/ is a substitution for the Turkic \*/g/ [ɣ] because a voiced velar fricative was missing in Tocharian B. Yaqui, a Uto-Aztecan language of Mexico whose phonological system lacks /g/, substituted the same consonant in Spanish loanwords with /w/ (or /k/) (Fernández 2009: 834). From the semantic point of view, an evolution from ‘donkey, ass’ to ‘mule’ is more likely than from ‘horse, steed’ to ‘mule’. Russian *ишак* – a borrowing from Common Turkic – also means ‘donkey, ass’ as well as ‘mule’ (Fasmer 1986–1987/2: 146).

At this point, I would like to add one more piece of evidence for PT \*/t<sub>2</sub>/ [ts]. This piece of evidence stems from the Old Paekche language, which was spoken in the Paekche (百濟) Kingdom, one of the three kingdoms of Korea, which lasted for the first seven centuries of the common era. Old Paekche 俱知 *\*kuti* or *\*kutl* ‘bird name, falcon’ (Miller 1979: 36–42; To 1987: 458; Bentley 2000: 425–426; Vovin 2005: 128; Vovin 2013: 222) may be seen as an indirect loanword from PT *\*kut<sub>2</sub>ĩ* (or *\*gut<sub>2</sub>ĩ*) > CT *kuš* ‘bird (in general), bird of prey, eagle, falcon’ (ED 670; TMEN III: 547–548; ĚSTJa VI: 180–182). Miller (1979: 37–38) has already put forth that these two words are related. However, he could not establish the equation and solve the encountered problem because he stuck to the traditional Altaic reconstruction *\*kūl<sub>2</sub>*. Between Proto-Turkic and Old Paekche languages, Mo. *\*guti* or *\*kuti* must have served as an



intermediary.<sup>13</sup> The semantic change from ‘bird’ to ‘bird of prey, falcon’ is also found in the development of CM *\*sibaun* ‘bird’ to MNT *šibao’un* ‘small bird’ and Dag. *šəγɔː*, *šəwɔː* ‘falcon’ (Nugteren 2011: 488).

As a loanword from Turkic, Old Paekche 俱知 *\*kuti* or *\*kutl* ‘falcon’ is not isolated. More loanwords of ultimately Turkic origin can be found in Old Paekche. Only to name a few, the following examples may be given. Further research on this subject, however, lies beyond the scope and purpose of the present study.

1. Pkch. *\*arosi*, *\*arusi* ‘bottom, below’ (cf. MK *àlá*, *àláy* < *\*àlá-áy* ‘below, bottom’) (Bentley 2000: 424–425; Vovin 2005: 125–126) ← Tu. *\*al* or *\*āl* (DLT *altin*, Kh. *a:lt*, *alt*) ‘below, under’ > OU *al* ‘place beneath’ (GOT 182), OU *altin* ‘unten, unten befindlich, unter, untere(r, -s), Unter-; (mit Abl.) jünger (als); Nadir’ [below, situated below, under, lower, sub-; (with ablative) younger (than); nadir] (HWAU 38–39), OU *aldirti* ‘von unten, unten; nach unten; unter’ [from below, down; downwards; under] (HWAU 28), OU *aldirtin* ‘vorn, nach vorn; unten’ [in front, towards the front; below] (HWAU 28).

2. Pkch. *\*hol* ~ *\*kol* ‘valley’ (To 1987: 460) ← Tg. *\*gol* (cf. Man. *golo* ‘river bed; province, district’ [Norman 2013: 147]) ← Mo. *\*gol* ‘river, brook, streamlet, ditch’ (Nugteren 2011: 343) / Tuyuhun *\*kɔl* ~ *\*kʰɔl* ‘river (川)’ (Shimunek 2017: 175–177, 347) ← Tu. *kōl* (Tkm. *gōl*) ‘valley’ (ED 614–615).

3. Pkch. *\*soy* ‘iron’ (To 1987: 459) ← Mo. *†soi*<sup>14</sup> ← Tu. *čoy* ‘cast iron’<sup>15</sup> > Teleut *čoy* ~ *šoy*, Kumandy *čöy*, Sagai *soy*, Koibal *soy*, Tuvan *šoy* (TMEN III: 124; VEWT 113b).

<sup>13</sup> WM *γujī* (*taqai*) ‘a kind of a bird’ (Lessing 1995: 371) or WM *qučan qoular* ‘hawfinch, *Coccothraustes coccothraustes*’ (Lessing 1995: 979) may be a relic of Mo. *\*guti* or *\*kuti*. For the former, we can assume a change as follows: *γujī* < *\*gudi* < *\*guti*. For the latter, the following change is possible: *\*kučān* (spelt *qučan*) < *\*kuči+γan* < *\*kuči* < *\*kuti*.

<sup>14</sup> The change of onset *\*č-* > *s-* in Turkic loanwords in Mongolic is also attested in *\*sigai* ~ *\*sia* ‘anklebone; bone used in games’ (Nugteren 2011: 489) borrowed from Tu. *\*čikā* > CT *čik* ~ *čik* ‘a technical term in the game of knucklebones, the concave side of knucklebone’ (ED 413).

<sup>15</sup> It is uncertain whether Turkic *\*čoy* ‘cast iron’ und *čōdin* ‘bronze’ (ED 403) are related.

4. Pkch. *\*tumōn* ‘ten thousand’ (To 1987: 460) ← Jur. *\*tumen* ‘ten thousand’ (Krippes 1992: 104–105) ← Mo. *\*tümen* ‘ten thousand; multitude’ (Nugteren 2011: 527) ← Tu. *tümän* ‘ten thousand’ (ED 507–508).<sup>16</sup>

#### 4. An excursion on the Turkic loanwords in Tocharian

Turkic loanwords in Tocharian have been the subject of scientific studies since Pedersen (1944: 10–11) and Van Windekens (1964: 595–596). Only three of the proposed loanwords discussed in these studies can be deemed *probable* (Lubotsky–Starostin 2003: 257–262; Dybo 2003: 92–94).

1. Tch. B *ām* ‘silence; quietly, still’ [without IE etymology] (Adams 2013: 47) ← PT *\*am(ǂ)* ‘quiet, calm’ > *\*am+i-* > CT *\*amī-* (> *amīl*<sup>17</sup> ‘quiet, mild, peaceful’, *amīrt-* ‘to quieten, to calm’, *amrīl-* ‘to be at peace’) → Mo. *amu-*<sup>18</sup> ‘to rest, to relax’ (Ünal 2019: 522).

2. Tch. B *pārseri\** ~ *pārseri\** ‘(head-)louse’ (?) [without IE etymology] (Adams 2013: 401) ?← PT *\*birčä* (or *bīrča*) ‘flea’ (Tatar *borča*) (ED 362), Chuv. *pārša* ‘flea’ (Fedotov 1996/I: 402).

3. Tch. B *peške*<sup>19</sup> ‘clarified butter, ghee’ (Adams 2013: 430) ?← CT *\*bišig* < CT *\*biš-* ~ *\*biš-* ‘to stir, to churn; to smear’ (ED 377; ĘSTJa II: 309–310; Stachowski 1993: 61, s.v. *bis-*).<sup>20</sup>

Only two or three loanwords can be deemed certain. I formulated the first one in a previous study (Ünal 2022: 43, fn. 84, 66). The

<sup>16</sup> The Turkic numeral is probably a loanword from Tch. A *tmām* ‘ten thousand’ whose origin itself is uncertain.

<sup>17</sup> If OT *amīl* is cognate with Kh. *havul*, *ha-vul* ‘gut’ (WCh 127), the Proto-Turkic form must be reconstructed as *\*pam(ǂ)*. If this is the case, the Turco-Tocharian etymology must be discarded.

<sup>18</sup> Nugteren (2011: 348) reconstructed the same verb as *\*hamu-* ‘to rest’.

<sup>19</sup> Róna-Tas (1974: 502) regarded PT *biš-* as a borrowing from Proto-Tocharian B *\*peš-* (< PIE *\*bhei(ə)-*, *\*bhī-* ‘to beat’). Isebaert (1980: 162–163) considered Tch. B *peške* a loanword from Middle Iranian *\*pēšk* ‘milky’ < *\*payuška-*, derived from *\*payu-* or *\*payuš-* ‘fat; milk’. Having mentioned the possibility of separate borrowings from Iranian into Turkic and Tocharian, Reinhart (1994: 77–78) objected to the Tocharian or Iranian origin of the Turkic verb.

<sup>20</sup> CT *\*biš-* ~ *\*biš-* ‘to stir, to churn; to smear (tr.)’ (> DLT *biš-*, Kirghiz *biš-*, Kazakh *bis-*, Tuvan *biš-*, Yak. *bis-* etc.) is to be strictly distinguished from CT *\*biš-* ~ *\*biš-* ‘to come to maturity, ripen (intr.)’ (ED 376–377).

second one is the focus of the present study. The third one is a new comparison.

1. Tch. AB *tsit* ‘to touch’ [without IE etymology] (Malzahn 2010: 992–993; Adams 2013: 807) < CTch. *\*tsit* ← PT *\*d<sub>2</sub>et<sub>1</sub>ä-* [‘dzet<sup>h</sup>ε-] ‘to reach’ > *\*ǰet(ä)-* > CT *yet-* ‘to overtake, catch up with (someone Acc.); to reach’ (ED 884–885), Chuv. *šit-* ‘to reach; to arrive; to catch up, to overtake’ (Fedotov 1996/II: 123–124).

2. Tch. B *etswe* ‘mule’ ← PT *\*ät<sub>2</sub>gä* ‘donkey’ > Kh. *äšgä* ‘donkey’.

3. Tch. B *kärs-* (†*kärk-*) ‘to chop up’ (Malzahn 2010: 578–579), *kärs-* ‘to cut up’ (Peyrot 2013: 584, 734), *kärk-* (or *kärs-*) ‘to hack up’ (Adams 2013: 172)<sup>21</sup> ← PT *\*kirkä-* > CT *kirk-* (Tkm. *girk-*, Yak. *kirt-*, Kh. *qirq-*) ‘to shear (wool), to shorten (hair), to cut (paper etc.)’ (ED 651; VEWT 266; ÈSTJa VI: 236–237; HWAU 373),<sup>22</sup> Chuv. *xărăx-* (< *\*kirk-*) ‘1. česat’ (grebнем, ščëpkoj); 2. podrezat’ (napr. baxromu), podravniwat’ (kraja tkani)’ (ČRS 548), cf. CM *\*kirga-* ‘to shave, shear, scrape’ (Nugteren 2011: 413).

Regarding the chronology of the borrowings, I guess that these words entered Tocharian from Proto-Turkic in the 2<sup>nd</sup> century BCE. This dating approximately corresponds to the “Common Tocharian” of Carling (2005: 60, 64–66). The contact might have occurred between Xiongnu and the Lesser Yuezhi. Further research on the contact between Turkic and Tocharian can bring more loanwords to light. For example, Tch. B *patsa* ‘bottom’ (Adams 2013: 387) may turn out to be the origin of CT *\*(h)aš* > CT *ašāk* (Tkm. *ašāk*) ‘the foot of a mountain; low, below; humble’ (ED 259; ÈSTJa I: 214–216) and CT *\*aš+garu* > HS (5a11) <’šrw> *ašaru*<sup>23</sup> ‘downwards’<sup>24</sup>

<sup>21</sup> Aydemir (2014) equated this Tocharian verb to the Proto-Turkic *\*kär-* ‘to hack up, cut (a notch)’ > *\*kär-t-* ‘to gash, cut a notch’, *\*kär-k-* ‘to hack up’. Phonologically this equation is problematic because Tch. B <ä> renders the mid high vowel [i].

<sup>22</sup> As already noted by many scholars, CT *kirk-* might be related to CT *\*kür-* ‘to break, to smash, to crush; to annihilate; to scrape, to strip (hair)’ (ED 643; HWAU 373).

<sup>23</sup> Read as *aširi* by Şehsuvaroğlu (1961: 5) and *aširu* in TS (265).

<sup>24</sup> The context makes the meaning clear: *Götürdü kändözünü ol kuyudan ašaru attı* ‘[The dog] went and threw himself down into the well’.

(Şehsuvaroğlu 1961, Pl. V), Tt. dial. *ašari*<sup>25</sup> ‘[Zf.] ašağı’ [(adv.) downwards] (DD I: 120; Mollova 2003: 19) if the unattestedness of *\*h-* can be accounted for due to the scarcity of data. The borrowing of the Tocharian B word into Proto-Turkic and its change within Turkic can be shown as follows: Tch. B *patsa* ‘bottom’ → PT *\*pat₂ǎ* [‘pʰatsa] > *\*paθə* > CT *\*(h)aš* > *\*(h)aš+āk* ‘low, below’ (unattested in Kh.), *\*(h)aš+garu* ‘downwards’.<sup>26</sup>

### 5. On the Proto-Turkic word *\*ätzi* ‘ear’

As pointed out above, both CT *äšgä(k)* ‘donkey’ and CT *äšid-* (~ *ešid-*) ‘to hear’ derive from *\*äši* ‘ear’, which goes back to PT *\*ätzi*. CT *äšid-* ‘to hear’ must have been formed with *+(A)d-*, which forms only intransitive verbs (OTWF 485ff.).<sup>27</sup> Like all *+(A)d-* verbs, CT *äšid-* has /U/ in the converb and aorist (UW Nb I.2: 38). The adequate explanation for the unexpected transitivity would be that CT *äšid-* and Chuv. *ilt-* were originally intransitive (‘to have an ear’) and have secondarily become transitive.

One more word, namely *äšič* ‘cooking pot’ (ED 257), may have been formed from the same base unless it goes back to *\*häšič* (unattested in Kh.).<sup>28</sup> The formative *+(A)č* forms mostly opaque names for containers (Ünal 2022: 23). Regarding the semantic

<sup>25</sup> Severtjan’s (ĖSTJa I: 215) explanation for *ašāri* (sic) as coming from *ašak + ari* is unacceptable.

<sup>26</sup> In two other nominal Tocharian loanwords in Turkic, the coda vowels of the Tocharian forms entered Turkic as reduced vowels: (1) Tch. B *ñyātse* ~ *ñātse* ‘danger; plague, distress’ → PT *\*ñāsǎ* [‘ñɑ:sɑ] ~ *\*ñāt₂ǎ* [‘ñɑ:tsɑ] ‘loss, damage, death; mourning’ > CT *yās* ~ *yāš*, BT *\*jās*; (2) PTch. *\*jētse* ‘(outer) skin’ → PT *\*(i)āsǎ* [‘(i)ese] ~ *\*(i)ät₂ǎ* [‘(i)etse] ‘placenta’ > CT *\*ās* (in Tuvan *esteŋi*) ~ *äš* ‘id.’ (Ünal 2022: 43–44). This is clearly related to the fact that in Tocharian B disyllabic words retract the accent to the initial syllable (HCHIL 2: 1307).

<sup>27</sup> Bang (1925: 49), Severtjan (ĖSTJa I: 318–319), Johanson (1978: 129) and Stachowski (KEWT 189) regarded *äšid-* as a disguised causative of *\*äš-* (> Tatar dial. *iš-*, Kača *eš-*, Khakas *is-*, Kūerik *äš-*, Sagai *es-*, Koibal *es-*). Tekin (1986: 151) argued for “an intensive stem in *-d-* derived from the simplex *\*eš-* (< *\*el²-*)”. Doerfer (1971: 444–446), on the other hand, regarded *äšid-* as a simplex.

<sup>28</sup> Elsewhere (Ünal 2022: 23), I tentatively identified the unattested base of *äšič* with CM *\*hesi* ‘handle, grip’ (Nugteren 2011: 354) and PTg. *\*päsin* ‘Stiel, Griff’ (Benzing 1956: 44) provided that it had an onset *\*h-*.

relation of \**äši* ‘ear’ and *äšič* ‘cooking pot’, Tt. dial. *kulakli* (lit. having ears) ‘1. büyük tencere, kazan; 2. iki kulplu sahan, yumurta tavası’ [1. large pot, cauldron; 2. two-handled frying pan, egg pan] (DS 2994) offers a perfect parallel.<sup>29</sup>

I think that PT \**ätzi* is an indirect loanword from Akkadian: PT \**ätzi* [ɛ'ts<sup>h</sup>i] or [æ'ts<sup>h</sup>i] ‘ear’ < PPT \**ätzi* ← Akk. *ḥasīsu(m)* /*hatsīsu(m)*/ ‘ear; wisdom’ (CDA<sup>2</sup> 109–110). The Akkadian word is also the origin of Hitt. *ḥazzizzi-*, *ḥazzizzu-* ‘ear; wit(s), wisdom’ (HED 3: 284–286) and Hurr. *ḥazzizzi* ‘hearing, perception, mind, intelligence, wisdom’ (BGH 141). If PPT \**ätzi* had ever existed, it must have undergone haplology and been simplified to PT \**ätzi*.

PT \**ätzi* is not a single instance. Two more Akkadian loanwords can be found in Turkic.

1. CT *baltu* ~ *baldu* (br. <b<sup>h</sup>a ltu> *baltu*) ‘(battle) axe’ (ED 333; Maue 2015: 249–250) ← Akk. *pāštu(m)*, *pāltu*; j[ung]B[abylonisch] pl[ural] also *pālātu* ‘axe, adze’ (CDA<sup>2</sup> 270).<sup>30</sup>

2. CT *älti* ~ *eltü* ‘lady, wife; sister-in-law’ (Li 1999: 304–305), VB *elti* ~ *elči* ‘a title for women (wife of a Khawaja)’ (Erdal 1993: 126) < PT \**älti*<sup>31</sup> ← Akk. *aššatum*; st[atus] constr[uctus]

<sup>29</sup> Pinault (2003: 176) saw in Old Turkic “*išič* or *äšič*” a loanword from Tch. A \**išäc* ‘a kind of clay’. This etymology is neither phonetically nor semantically cogent. The resemblance is coincidental. Moreover, Adams (HCHIL 2: 1369) gave the same word as *išcem* ‘brick, tile’ (< Proto-Iranian \**ištyám*).

<sup>30</sup> First put forward by Poppe (1953: 24–25) and Menges (1953: 302–303). Tremblay’s (2005: 425) Iranian etymology for this word, i.e. \**palatu* or \**pađu*, is unconvincing. Wilkens (UW Nb III.1: 102–103) regards the Iranian etymology as likely.

<sup>31</sup> The Yeniseian languages have a similar word for ‘woman, wife’: Kott *alit*, *alit*, *alat*, Arin *älte*, Assan *alit* (Werner 2002/I: 25) < PY \**ʔalit* (~ -i-) ‘wife, woman’ (Starostin 1995: 180). Werner (2004: 99–100), instead, reconstructed PY \**al-at* ‘woman’. Werner (2006: 21, 71, 78) analysed Kott *alit* as a compound of *al* ‘half’ and *hit* ‘man, human’. Vovin (2003: 392) read the Xiongnu gloss *yānzhi* 闕氏, 闕氏 ‘*shan-yu*’s wife’ as *ʔat-tijʔ*, *ʔat-tejʔ*, *ʔen-tijʔ*, *ʔen-tejʔ* and connected the supposedly underlying \**alte* or \**elte* to the Yeniseian forms above. Schuessler (2014: 268), instead, gave *ʔian-kie* and interpreted it as \**Arke* ‘Queen of the Xiōngnú ruler’. Both OC *ʔian-kie* in Schuessler’s reconstruction and \**qeen-kje* in Zhèng Zhāng’s (2003: 463, 539) reconstruction is reminiscent of CT *yāngä* ~ *yāngä* ~ *yāñä* ‘the wife of one’s father’s younger brother; junior aunt-in-law, senior sister-in-law’ (ED 950; Li 1999: 273–276), which must better be read *yānkä* since the Oghuz forms retain the postconsonantal velar.

O[ld]/j[ung]B[abylonisch] also *ašti*, j[ung]/N[eo-]B[abylonian] freq[uent(ly)] *alti* ‘wife’ [DAM] (CDA<sup>2</sup> 29).

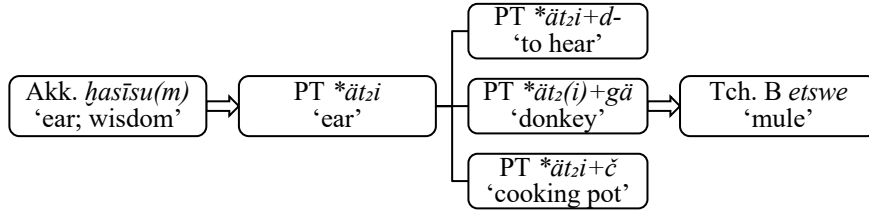
Doerfer (TMEN I §78) strongly doubted whether CT *baltu* ~ *baldu* is an Akkadian loanword since the word concerned does not occur in the vast linguistic area between Turkic and Akkadian. Róna-Tas (2022: 71) admitted that Turkic *balta* and Mongolian *haluka* < \**paluka* ‘(small) hammer’ can be traced back to a Semitic word but identified the latter with a form related to the Akkadian *pilakka* (stem: *p-l-k* ‘to cut’). He argued that the word was brought to the Turks and Mongols through the mediation of different Iranian languages at different times.

In the case of the Old Uyghur *käväl* ‘Zuchtpferd, Rennpferd’ [breeding horse, racehorse] (HWAU 359) and Qarakhanid *käväl* ‘a well-bred fast horse’ (ED 689), which are somehow related to the Latin *caballus* ‘horse, esp. workhorse’ (de Vaan 2008: 77), Greek *καβάλλης* ‘workhorse, nag, ἐργάτης ἵππος’ (Beekes 2010: 611), Modern Persian *kawal* ‘a baggage-horse, clumsy and slow’ (Steingass <sup>5</sup>1963: 1063), Proto-Slavic \**kobyła* ‘mare’ (Trubačev 1974–2013/10: 93–98) and perhaps to the Khotan Saka *kabä* ‘horse(?)’ (Bailey 1979: 52), we are faced with the same situation although the loanword character cannot be doubted. This group of words probably originated from PIE \**keb-* ~ \**kob-* ‘±horse’ (Simon 2005). Even if this is the case, the Old Turkic *käväl* can neither be a borrowing from the Khotan Saka *kabä* [kabə] nor the Modern Persian *kawal*. The Khotan Saka word does not fit phonetically,<sup>32</sup> and the first attestation of the New Persian word (*al-Sāmī fi’l-asāmī*, 1104) is later than that of the Turkic one (Zong 總 8782 T, 82 [Manichaean], 9<sup>th</sup>–11<sup>th</sup> c.; MaitrH, 1067; KB, 1069/1070; DLT, 1072–1074).<sup>33</sup> As regards *käväl* and the Turkic words of ultimately Akkadian origin, intermediary languages must be dead and unattested.

<sup>32</sup> Despite Simon (2005: 410–411), OT *käväl* cannot be explained as a derivation from \**káβə* with +(V)l. There is no denominal formative +(V)l in Old Turkic. The example given there is reinterpreted as belonging to +sll by Erdal (OTWF 99–100).

<sup>33</sup> Further occurrences of the word are listed by Zieme (2020: 67–69).

In conclusion, the borrowings and changes proposed in the study can be schematised as follows:



### Abbreviations

adv.	adverb
Akk.	Akkadian
Arm.	Armenian
br.	Brāhmī script
BT	Bulgar Turkic
c.	century
Ch.	Chinese
Chag.	Chaghatay
Chuv.	Chuvash
CM	Common Mongolic
CT	Common Turkic
CTch.	Common Tocharian
Dag.	Dagur
dial.	dialectal
DLT	Dīwān Luyāt at-Turk
fn.	footnote
Hitt.	Hittite
HS	Ḥazā' in as-Sa'ādāt (Ottoman Turkish, 15 <sup>th</sup> century CE)
Hurr.	Hurrian
IE	Indo-European
intr.	intransitive
Jur.	Jurchen
KB	Kutadgu Bilig
Kh.	Khalaj
Kit.	Kitan
lit.	literally

LMC	Late Middle Chinese
MaitrH	Maitrisimit (Hami)
Man.	Manchu
MK	Middle Korean
MM	Middle Mongol
MNT	Mongqolun Niuča Tobča’an (Secret History of the Mongols)
Mo.	Mongolic
OC	Old Chinese
OT	Old Turkic
OU	Old Uyghur
perl.	perlative
PIE	Proto-Indo-European
Pkch.	Paekche (Baekje)
pl.	plural
Pl.	Plate
PPT	Pre-Proto-Turkic
PT	Proto-Turkic
PTch.	Proto-Tocharian
PTg.	Proto-Tungusic
PY	Proto-Yeniseian
Sum.	Sumerian
Tabg.	Tabgač (Tuoba 拓跋)
Tch. A/B	Tocharian A/B
Tg.	Tungusic
Tkm.	Turkmen
tr.	transitive
Tt.	Turkish
Tu.	Turkic
VB	Volga Bulgar Turkic
WM	Written Mongol
Yak.	Yakut

### **Bibliography**

Adams, Douglas Q. (2013). *A Dictionary of Tocharian B. Revised and Greatly Enlarged*. Second Edition. Amsterdam–New York, NY: Rodopi.



- ATG = Gabain, A. von (<sup>3</sup>1974). *Alttürkische Grammatik* [Old Turkic Grammar]. 3. Auflage. (Porta Linguarum Orientalium, Neue Serie, 15). Wiesbaden: Harrassowitz.
- Aydemir, Hakan (2014). Tocharian-Turkic Lexical Correspondences, I. In: *Dil Araştırmaları* 15, 53–60.
- Bailey, H. W. (1979). *Dictionary of Khotan Saka*. Cambridge–London–New York–Melbourne: Cambridge University Press.
- Bang, W. (1925). Manichaeische Hymnen [Manichaean Hymns]. In: *Le Muséon* 38, 1–55.
- Bang, W. (1934). Turkologische Briefe aus dem Berliner Ungarischen Institut [Turkological Letters from the Berlin Hungarian Institute]. In: *Ungarische Jahrbücher* 14, 193–214.
- Beekes, Robert (2010). *Etymological Dictionary of Greek*. I–II. With the assistance of Lucien van Beek, (Leiden Indo-European Etymological Dictionary Series 10/1–2). Leiden–Boston: Brill.
- Bentley, John R. (2000). New Look at Paekche and Korean: Data from Nihon shoki. In: *Language Research* 36/2, 417–443.
- Benzing, Johannes (1956). *Die tungusischen Sprachen. Versuch einer vergleichenden Grammatik* [The Tungusic Languages. An Attempt at a Comparative Grammar]. (Akademie der Wissenschaften und der Literatur in Mainz, Abhandlungen der geistes- und sozialwissenschaftlichen Klasse, Jahrgang 1955, Nr. 11). Wiesbaden: Franz Steiner Verlag.
- BGH = Richter, Thomas (2012). *Bibliographisches Glossar des Hurritischen (BGH)* [Bibliographical Glossary of Hurrian (BGH)]. Wiesbaden: Harrassowitz.
- Carling, Gerd (2005). Proto-Tocharian, Common Tocharian, and Tocharian – On the Value of Linguistic Connections in a Reconstructed Language. In: *Proceedings of the Sixteenth Annual UCLA Indo-European Conference, Los Angeles, November 5–6, 2004*. Eds. Karlene Jones-Bley, Martin E. Huld, Angela Della Volpe, Miriam Robbins Dexter, (Journal of Indo-European Monograph Series 50). Washington, DC: Institute for the Study of Man, 47–71.
- CDA<sup>2</sup> = Black, Jeremy, George, Andrew and Postgate, Nicholas (eds.) (<sup>2</sup>2000). *A Concise Dictionary of Akkadian*. 2<sup>nd</sup> (corrected)

- printing. (SANTAG. Arbeiten und Untersuchungen zur Keilschriftkunde 5). Wiesbaden: Harrassowitz.
- Cheung, Johnny (2007). *Etymological Dictionary of the Iranian Verb*. (Leiden Indo-European Etymological Dictionary Series 2). Leiden–Boston: Brill.
- ČRS = Skvorcov, M. I. (1982). *Čuvaško-Russkij Slovar’* [Chuvash-Russian Dictionary]. Moskva: Russkij Jazyk.
- Dankoff, Robert (1995). *Armenian Loanwords in Turkish*. (Turcologica 21). Wiesbaden: Harrassowitz.
- DD I = *Türkiyede Halk Ağzından Söz Derleme Dergisi* [Journal of Compilation of Folk Speech in Turkey], Cilt: 1 (1939). İstanbul: Türk Dil Kurumu.
- de Vaan, Michiel (2008). *Etymological Dictionary of Latin and the Other Italic Languages*. (Leiden Indo-European Etymological Dictionary Series 7). Leiden–Boston: Brill.
- Doerfer, Gerhard (1971). Gedanken zur Gestaltung eines idealen Türkischen Etymologischen Wörterbuchs [Thoughts on the Design of an Ideal Etymological Dictionary of Turkic]. In: *Orientalische Literaturzeitung* 66/9–10, 437–454.
- Doerfer, Gerhard (1987). *Lexik und Sprachgeographie des Chaladsch. Textband und Kartenband* [Lexicon and Linguistic Geography of Khalaj. Text Volume and Map Volume]. Wiesbaden: Harrassowitz.
- Doerfer, Gerhard (1988). *Grundwort und Sprachmischung. Eine Untersuchung an Hand von Körperteilbezeichnungen* [Basic Word and Language Mixture. An Investigation on the Basis of Body Part Designations]. (Münchener Ostasiatische Studien 47). Stuttgart: Franz Steiner Verlag Wiesbaden.
- DS = *Türkiye’de Halk Ağzından Derleme Sözlüğü* [Compilation Dictionary from the Folk Speech in Turkey] I–XII (21993). 2. Baskı [2<sup>nd</sup> edition]. Ankara: Türk Dil Kurumu.
- Dybo, Anna (2003). Turco-Tocharica and Turco-Sakica Renewed. In: *Altaica Budapestinensia MMII (Proceedings of the 45th Permanent International Altaistic Conference [PIAC], Budapest, Hungary, June 23-28, 2002)*. Budapest: Research Group for Altaic Studies, Hungary Academy of Sciences & Department of Inner Asian Studies, Eötvös Loránd University, 86–97.

- ED = Clauson, Sir Gerard (1972). *An Etymological Dictionary of Pre-Thirteenth-Century Turkish*. Oxford: Clarendon Press.
- EDAL = Starostin, S. A., Dybo, A. V. and Mudrak, O. A. (2003). *An Etymological Dictionary of Altaic Languages*. I–III. With the assistance of I. Gruntov and V. Glumov. Leiden–Boston: Brill.
- Erdal, Marcel (1993). *Die Sprache der wolgabolarischen Inschriften* [The Language of the Volga Bulgarian Inscriptions]. (Turcologica 13). Wiesbaden: Harrassowitz.
- ÉSIJa I = Rastorgueva, V. S. and Édel'man, D. I. (2000). *Étimologičeskij Slovar' Iranskix Jazykov* [Etymological Dictionary of Iranian Languages]. Tom 1: a–ā. Moskva: Vostočnaja Literatura.
- ÉSTJa I = Sevortjan, Ė. V. (1974). *Étimologičeskij Slovar' Tjurkskix Jazykov. Obščetjurkskie i Mežtjurkskie Osnovy na Glasnye* [Etymological Dictionary of Turkic Languages. Common Turkic Bases Ended on Vowels]. Moskva: Nauka.
- ÉSTJa II = Sevortjan, Ė. V. (1978). *Étimologičeskij Slovar' Tjurkskix Jazykov. Obščetjurkskie i Mežtjurkskie Osnovy na Bukvu "B"* [Etymological Dictionary of Turkic Languages. Common Turkic Bases Ended on the Letter "B"]. Moskva: Nauka.
- ÉSTJa VI = Blagova, G. F. (ed.) (2000). *Étimologičeskij Slovar' Tjurkskix Jazykov. Obščetjurkskie i Mežtjurkskie Leksičeskie Osnovy na Bukvu "K". Vypusk Vtoroj* [Etymological Dictionary of Turkic Languages. Common Turkic Lexical Bases Ended on the Letter "K". Issue Two.]. Moskva: Indrik.
- Fasmer, Maks (1986–1987). *Étimologičeskij Slovar' Russkogo Jazyka* [Etymological Dictionary of the Russian Language]. I–IV. Moskva: Progress.
- Fedotov, M. R. (1996). *Étimologičeskij Slovar' Čuvaškogo Jazyka* [Etymological Dictionary of the Chuvash Language]. I–II. Čeboksary: Nauka.
- Fernández, Zarina Estrada (2009). Loanwords in Yaqui, a Uto-Aztecan language of Mexico. In: *Loanwords in the World's Languages. A Comparative Handbook*. Eds. Martin Haspelmath and Uri Tadmor, Berlin: De Gruyter Mouton, 823–847.
- Georg, Stefan (1999/2000). Haupt und Glieder der altaischen Hypothese: Die Körperteilbezeichnungen im Türkischen, Mon-

- golischen und Tungusischen [Head and Limbs of the Altaic Hypothesis: The Body Part Designations in Turkic, Mongolic and Tungusic]. In: *Ural-Altäische Jahrbücher N.F.* 16, 143–182.
- Gombocz, Zoltán (1912/13). Zur Lautgeschichte der altaischen Sprachen [On the Sound History of the Altaic Languages]. In: *Keleti Szemle* 13, 1–37.
- Gombocz, Zoltán (1914). Török jövevényszavaink hangtanához [For the Phonetics of our Turkish Foreign Words]. In: *Magyar Nyelv* 10/1, 27–28.
- GOT = Erdal, Marcel (2004). *A Grammar of Old Turkic*. (Handbook of Oriental Studies. Central Asia = Handbuch der Orientalistik. Achte Abteilung, Zentralasien 3). Leiden–Boston–Köln: Brill.
- Gül, Bülent (2016). *Moğolca İbni Mühennâ Lügati* [The Mongolian Dictionary of Ibn Muhanna]. Ankara: Türk Kültürünü Araştırma Enstitüsü.
- Haenisch, Erich (1939). *Wörterbuch zu Mangḥol un Niuca Tobca'an (Yüan-ch'ao Pi-shi) Geheime Geschichte der Mongolen* [Dictionary of Mangḥol un Niuca Tobca'an (Yüan-ch'ao Pi-shi) Secret History of the Mongols]. Leipzig: Harrassowitz.
- Hauenschield, Ingeborg (2003). *Die Tierbezeichnungen bei Mahmud al-Kaschgari. Eine Untersuchung aus sprach- und kulturhistorischer Sicht* [The Animal Names in Mahmud al-Kashgari. An Investigation from a Linguistic and Cultural-Historical Perspective]. (Turcologica 53). Wiesbaden: Harrassowitz.
- HCHIL 1–3 = Klein, Jared, Joseph, Brian and Fritz, Matthias (eds.) (2017–2018). *Handbook of Comparative and Historical Indo-European Linguistics*. 1–3. In cooperation with Mark Wenthe, (Handbücher zur Sprach- und Kommunikationswissenschaft 41.1–3). Berlin–Boston: De Gruyter Mouton.
- HED = Puhvel, Jaan (1984–2021). *Hittite Etymological Dictionary*. 1–11. (Trends in Linguistics. Documentation). Berlin–New York: Mouton de Gruyter.
- HWAU = Wilkens, Jens (2021). *Handwörterbuch des Altuigurischen. Altuigurisch-Deutsch-Türkisch. Eski Uyğurcanın El Sözlüğü. Eski Uyğurca-Almanca-Türkçe* [Concise Dictionary of

- Old Uyghur. Old Uyghur-German-Turkish]. Göttingen: Universitätsverlag Göttingen.
- Isebaert, Lambert (1980). *De Indo-Iraanse Bestanddelen in de tocharische Woordenschat: Vraagstukken van fonische productinterferentie, met bijzondere aandacht voor de Indo-Iraanse diafonen a, ā* [The Indo-Iranian Components in the Tocharian Vocabulary: Issues of Phonic Product Interference, with Particular Reference to the Indo-Iranian Diaphones a, ā]. Leuven: Katholieke Universiteit te Leuven.
- Johanson, Lars (1978). Die Ersetzung der türkischen *-t*-Kausativa [The Replacement of the Turkish *-t*-Causatives]. In: *Orientalia Suecana* 25–26 (1976–1977), 106–133.
- Kane, Daniel (1989). *The Sino-Jurchen Vocabulary of the Bureau of Interpreters*. Ed. Denis Sinor, (Uralic and Altaic Series 153). Indiana: Indiana University.
- Kara, G. (1991). Jurchin Notes. In: *Acta Orientalia Academiae Scientiarum Hungaricae* 45/1, 149–158.
- KEWT = Stachowski, Marek (2019). *Kurzgefaßtes etymologisches Wörterbuch der türkischen Sprache* [Concise Etymological Dictionary of the Turkish Language]. Kraków: Księgarnia Akademicka.
- Kim Juwon, Ko Dongho, Chaoke D. O., Han Youfeng, Piao Lianyu and Boldyrev, B. V. (2008). *Materials of Spoken Manchu*. (Altaic Languages Series 1). Seoul: Seoul National University Press.
- Kiyose, Gisaburo N. (1977). *A Study of the Jurchen Language and Script. Reconstruction and Decipherment*. Kyoto: Hōritsubunkasha.
- Krippes, Karl Anthony (1992). *The Reconstruction of Proto-Mongolian \*p-*. Ph.D. Thesis, Indiana University, Bloomington.
- KWb = Ramstedt, G. J. (1935). *Kalmückisches Wörterbuch* [Kalmyk Dictionary]. Helsinki: Suomalais-Ugrilainen Seura.
- Lessing, Ferdinand D. (ed.) (1995). *Mongolian-English Dictionary*. Compiled by Mattai Haltod, John Gombojab Hangin, Serge Kassatkin and Ferdinand D. Lessing, 3rd reprinting with minor type-corrections, Bloomington: Mongolia Society.

- Li, Yong-Sōng (1999). *Türk Dillerinde Akrabalık Adları* [Kinship Names in Turkic Languages]. (Türk Dilleri Araştırmaları Dizisi 15). Istanbul: Simurg.
- Ligeti, Louis (1953). Note Préliminaire sur le Déchiffrement des »Petits Caractères« Joutchen [Preliminary Note on the Deciphering of the »Small Script« Jurchen]. In: *Acta Orientalia Academiae Scientiarum Hungaricae* 3/3, 211–228.
- Lubotsky, Alexander and Starostin, Sergei (2003). Turkic and Chinese Loan Words in Tocharian. In: *Language in Time and Space. A Festschrift for Werner Winter on the Occasion of His 80th Birthday*. Eds. Brigitte L. M. Bauer and Georges-Jean Pinault, Berlin–New York: Mouton de Gruyter, 257–269.
- Malzahn, Melanie (2010). *The Tocharian Verbal System*. (Studies in Indo-European Languages & Linguistics 3). Leiden: Brill.
- Martirosyan, Hrach K. (2010). *Etymological Dictionary of the Armenian Inherited Lexicon*. (Leiden Indo-European Etymological Dictionary Series 8). London–Boston: Brill.
- Maue, Dieter (2015). *Alttürkische Handschriften* [Old Turkic Manuscripts]. Teil 19. *Dokumente in Brāhmī und tibetischer Schrift* [Documents in Brāhmī and Tibetan Script]. Teil 2. (Verzeichnis der Orientalischen Handschriften in Deutschland 13,27). Stuttgart: Franz Steiner Verlag.
- Mayrhofer, Manfred (2006). *Einiges zu den Skythen, ihrer Sprache, ihrem Nachleben* [A Little About the Scythians, Their Language, Their Afterlife]. (Österreichische Akademie der Wissenschaften, Philosophisch-Historische Klasse Sitzungsberichte 742, Veröffentlichungen zur Iranistik 36). Wien: Verlag der Österreichischen Akademie der Wissenschaften.
- Menges, Karl H. (1953). Zwei altmesopotamische Lehnwörter im Altajischen [Two Old Mesopotamian Loanwords in Altaic]. In: *Ural-Altäische Jahrbücher* 25, 299–304.
- Menges, Karl H. (²1995). *The Turkic Languages and Peoples. An Introduction to Turkic Studies*. (2<sup>nd</sup>, revised edition). Wiesbaden: Harrassowitz.
- Miller, Roy Andrew (1979). Some Old Paekche Fragments. In: *Journal of Korean Studies* 1, 3–69.

- Mollova, Mefküre Riza (2003). *Doğu Rodop Türk Ağzlarının Sözlüğü. Dictionnaire Dialectologique du Turc du Rhodope de l'Est-Turc-Français* [Dialectological Dictionary of Eastern Rhodope Turkish]. Ankara: Türk Dil Kurumu.
- MT = Doerfer, Gerhard (1985). *Mongolo-Tungusica*. (Tungusica 3). Wiesbaden: Harrassowitz.
- Mù Yèjùn 穆晔骏 (1987). Bālāyǔ 巴拉语 [Bala Language]. In: *Mǎnyǔ yánjiū* 满语研究 2, 2–31, 128.
- Norman, Jerry (2013). *A Comprehensive Manchu-English Dictionary*. With the assistance of Keith Dede and David Prager Branner, Cambridge (Massachusetts)-London: Harvard University Asia Center, Harvard University Press.
- Nugteren, Hans (2011). *Mongolic Phonology and Qinghai-Gansu Languages*. (Linguistics in Leiden). Utrecht: LOT (Landelijke Onderzoekschool Taalwetenschap).
- OTWF = Erdal, Marcel (1991). *Old Turkic Word Formation: A Functional Approach to the Lexicon*. I–II, (Turcologica 7). Wiesbaden: Harrassowitz.
- Parpola, Simo (2016). *Etymological Dictionary of the Sumerian Language. Part 1: Lexical Evidence*. (Publications of the Foundation for Finnish Assyriological Research 16/1). Indiana.
- Pedersen, Holger (1903). Türkische Lautgesetze [Turkic Sound Laws]. In: *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 57/3, 535–561.
- Pedersen, Holger (1944). *Zur tocharischen Sprachgeschichte* [On the History of the Tocharian Language]. (Det Kgl. Danske Videnskabernes Selskab., Historisk-Filologiske Meddelelser, 30, 2). København: Munksgaard.
- Peyrot, Michaël (2013). *The Tocharian Subjunctive. A Study in Syntax and Verbal Stem Formation*. (Brill's Studies in Indo-European Languages & Linguistics 8). Leiden–Boston: Brill.
- Peyrot, Michaël (2015). Review of Maue 2015. Alttürkische Handschriften Teil 19: Dokumente in Brāhmī und tibetischer Schrift Teil 2. In: *Tocharian and Indo-European Studies* 16, 215–226.
- Peyrot, Michaël (2018). Tocharian B *etswe* ‘mule’ and Eastern East Iranian. In: *Farnah. Indo-Iranian and Indo-European Studies in*

- Honor of Sasha Lubotsky*. Ann Arbor–New York: Beech Stave Press, 270–283.
- Peyrot, Michaël, Pinault, Georges-Jean and Wilkens, Jens (2019). Vernaculars of the Silk Road – A Tocharian B-Old Uyghur Bilingual. In: *Journal Asiatique* 307/1, 65–90.
- Pinault, Georges-Jean (2003). Une Nouvelle Connexion entre le Substrat Indo-Iranien et le Tokharien Commun [A New Connection between the Indo-Iranian Substrate and the Common Tokharian]. In: *Historische Sprachforschung* 116/2, 175–189.
- Poppe, N. (1927). Altaisch und Urtürkisch [Altaic and Proto-Turkic]. In: *Ungarische Jahrbücher* 6, 94–121.
- Poppe, N. N. (1938). *Mongol'skij Slovar' Mukaddimat al-Adab* [Mongolian Dictionary Muqaddimat al-Adab]. I–II. (Trudy Instituta Vostokovedenija 14). Moskva–Leningrad: Nauka.
- Poppe, N. (1953). Ein altes Kulturwort in den altaischen Sprachen [An Old Culture Word in the Altaic Languages]. In: *Studia Orientalia* 19/5, 23–25.
- Poppe, Nikolaus (1960). *Vergleichende Grammatik der altaischen Sprachen. Teil 1: Vergleichende Lautlehre* [Comparative Grammar of the Altaic Languages. Part 1: Comparative Phonology]. (Porta Linguarum Orientalium, Neue Serie 4). Wiesbaden: Harrassowitz.
- Pulleyblank, Edwin G. (1991). *Lexicon of Reconstructed Pronunciation in Early Middle Chinese, Late Middle Chinese, and Early Mandarin*. Vancouver: UBC Press.
- Ramstedt, G. J. (1903). *Über die Konjugation des Khalkha-Mongolischen* [On the Conjugation of Khalkha Mongolian]. (Mémoires de la Société Finno-Ougrienne 19). Helsingfors: Société Finno-Ougrienne. [Reprint: Osnabrück: Otto Zeller, 1968].
- Ramstedt, G. J. (1957). *Einführung in die altaische Sprachwissenschaft I: Lautlehre* [Introduction to Altaic Linguistics I: Phonology]. Ed. Pentti Aalto, (Mémoires de la Société Finno-Ougrienne 104:1). Helsinki: Suomalais-Ugrilainen Seura.
- Reinhart, Johannes (1994). Die tocharischen Entlehnungen im Altaischen und die Chronologie der tocharischen Lautgesetze [The Tocharian Borrowings in Altaic and the Chronology of the



- Tocharian Sound Laws]. In: *Tocharisch. Akten der Fachtagung der Indogermanischen Gesellschaft Berlin, September 1990*, Ed. Bernfried Schlerath, Reykjavík: Málvisindastofnun Háskóla Íslands, 73–92.
- Róna-Tas, András (1974). Tocharische Elemente in den altaischen Sprachen? [Tocharian Elements in the Altaic languages?] In: *Sprache, Geschichte und Kultur der altaischen Völker. Protokollband der XII. Tagung der Permanent International Altaistic Conference 1961 in Berlin*. (Schriften zur Geschichte und Kultur des Alten Orients 5). Berlin: Akademie Verlag, 499–504. [reprint: Róna-Tas, András (1986). *Language and History: Contributions to Comparative Altaistics*. Szeged.]
- Róna-Tas, András (2022). The Reconstruction of Proto-Turkic and the Genealogical Question. In: *Turkic Languages. Second Edition*, Eds. Lars Johanson and Éva Á. Csató, London–New York: Routledge.
- Schrader, O. (1901). *Reallexikon der indogermanischen Altertumskunde*. Strassburg: Karl J. Trübner.
- Schuessler, Axel (2009). *Minimal Old Chinese and Later Han Chinese. A Companion to Grammata Serica Recensa*. Honolulu: University of Hawai'i Press.
- Schuessler, Axel (2014). Phonological Notes on Hàn Period Transcriptions of Foreign Names and Words. In: *Studies in Chinese and Sino-Tibetan Linguistics: Dialect, Phonology, Transcription and Text*. Eds. Richard VanNess Simmons and Newell Ann Van Auken, (Language and Linguistics Monograph Series 53). Taipei, Taiwan: Institute of Linguistics, Academia Sinica, 249–292.
- Şehsuvaroğlu, Bedi N. (1961). *Eşref Bin Muhammed. Hazâ'inü's-Saâ'dât* (sic). 1460 (H. 864). Ankara: Türk Tarih Kurumu.
- Shimunek, Andrew E. (2007). *Towards a Reconstruction of the Kitan Language, with Notes on Northern Late Middle Chinese Phonology*. Unpublished M.A. Thesis, Indiana University.
- Shimunek, Andrew (2017). *Languages of Ancient Southern Mongolia and North China*. (Tunguso-Sibirica 40). Wiesbaden: Harrassowitz.

- Simon, Zsolt (2005). Die Etymologie von caballus [The Etymology of Caballus]. In: *Papers on Grammar IX 1, Latina Lingua! Proceedings of the Twelfth International Colloquium on Latin Linguistics* (Bologna, 9–14 June 2003). Ed. Gualtiero Calboli, Roma: Herder Editrice, 405–416.
- Stachowski, Marek (1993). *Dolganischer Wortschatz* [Dolgan Vocabulary]. Kraków: Uniwersytet Jagielloński.
- Starostin, S. A. (1995). Sravnitel’nyj Slovar’ Enisejskix Jazykov [Comparative Dictionary of the Yeniseian Languages]. In: *Ketskij Sbornik. Lingvistika*. Moskva: Vostočnaja Literatura, 176–315.
- Steingass, F. (1963). *A Comprehensive Persian-English Dictionary, including the Arabic words and phrases to be met with in Persian literature, being Johnson and Richardson’s Persian, Arabic, and English Dictionary Revised, Enlarged, and Entirely Reconstructed*. (Fifth impression). London: Routledge & Kegan Paul Limited.
- Sūn Bójūn 孙伯君 (2004). *Jīndài nǚzhēnyǔ* 金代女真语 [The Jurchen Language of Jin Dynasty]. Shěnyáng 沈阳: Liáoníng Mínzú Chūbǎnshè 辽宁民族出版社.
- TDES = Eren, Hasan (1999). *Türk Dilinin Etimolojik Sözlüğü* [Etymological Dictionary of the Turkish Language]. Ankara.
- Tekin, Talât (1971–1972). Notes on an Introduction to Turkic Studies. In: *Finnisch-Ugrische Forschungen* 39, 351–365.
- Tekin, Talât (1986). Zetacism and Sigmatism: Main Pillars of the Altaic Theory. In: *Central Asiatic Journal* 30, 141–160.
- Tezcan, Semih (1974). *Das uigurische Insadi-Sūtra* [The Uyghur Insadi-Sūtra]. (Berliner Turfantexte 3). Berlin: Akademie-Verlag.
- TMEN = Doerfer, Gerhard (1963–1975). *Türkische und mongolische Elemente im Neupersischen* [Turkic and Mongolian Elements in New Persian]. I–IV. Wiesbaden: Franz Steiner Verlag.
- To, Soo-hee (1987). *Paekcheŏ yŏn’gu* (I) [A Study of the Paekche Language (I)]. Seoul: Paekche Munhwa Kaebal Yŏn’guwŏn [Institute for the Development of Paekche Culture].
- Tremblay, Xavier (2005). Irano-Tocharica et Tocharo-Iranica. In: *Bulletin of the School of Oriental and African Studies* 68/3, 421–449.

- Trubačev, Oleg N. (ed.) (1974–2013). *Ėtimologičeskij Slovar' Slavjanskix Jazykov. Praslavjanskij Leksičeskij Fond* [Etymological Dictionary of the Slavic Languages. The Proto-Slavic Lexical Stock]. 1–39. since 2002 eds. O. Trubačev and A. Žuravlev, Moskva: Nauka.
- TS = XIII. *Yüzyıldan Beri Türkiye Türkçesiyle Yazılmış Kitaplardan Toplanan Tanıklarıyla Tarama Sözlüğü* [Survey Dictionary with Witnesses Collected from Books Written in Turkish Since the 13<sup>th</sup> Century] I–VIII. (²1996). 2. Baskı [2<sup>nd</sup> edition]. Ankara: Türk Dil Kurumu.
- UW Nb I.2 = Özertural, Zekine (2020). *Uigurisches Wörterbuch. Sprachmaterial der vorislamischen türkischen Texte aus Zentralasien. Neubearbeitung. I. Verben. Band 2: edäd- – iztä-* [Uyghur Dictionary. Language Material of the Pre-Islamic Turkic Texts from Central Asia. New Edition. I. Verbs. Volume 2: edäd- - iztä-]. Stuttgart: Franz Steiner Verlag.
- UW Nb II.2 = Röhrborn, Klaus (2017). *Uigurisches Wörterbuch. Sprachmaterial der vorislamischen türkischen Texte aus Zentralasien. Neubearbeitung. II. Nomina–Pronomina–Partikeln. Band 2: aš – äžük* [Uyghur Dictionary. Language Material of the Pre-Islamic Turkic Texts from Central Asia. New Edition. II. Nomina-Pronomina-Particles. Volume 2: aš – äžük]. Stuttgart: Franz Steiner Verlag.
- UW Nb III.1 = Wilkens, Jens (2021). *Uigurisches Wörterbuch. Sprachmaterial der vorislamischen türkischen Texte aus Zentralasien. III. Fremdelemente. Band 1: eč – bodis(a)v(a)tv* [Uyghur Dictionary. Linguistic Material of the Pre-Islamic Turkic Texts from Central Asia. III. Foreign Elements. Volume 1: eč - bodis(a)v(a)tv]. Stuttgart: Franz Steiner Verlag.
- Ünal, Orçun (2019). Klasik ve Orta Moğolca Söz Varlığında Türkçe Kökenli Kelimeler I (A-D) [Words of Turkish Origin in Written and Middle Mongol Vocabulary I (A-D)]. In: *Journal of Old Turkic Studies* 3/2, 502–615.
- Ünal, Orçun (2022). *On \*p- and Other Proto-Turkic Consonants.* (Sino-Platonic Papers 325).
- Van Windekens, A. J. (1964). Sur quelques mots tokhariens provenant de langues asiatiques indo-européennes et non-indo-

- européennes [On Some Tocharian Words from Indo-European and Non-Indo-European Asian Languages]. In: *Orbis* 13/2, 589–597.
- VEWT = Räsänen, Martti (1969). *Versuch eines etymologischen Wörterbuchs der Türksprachen* [Attempt at an Etymological Dictionary of Turkic Languages]. Helsinki: Suomalais-Ugrilainen Seura.
- Vovin, Alexander (2003). Did the Xiongnu Speak a Yeniseian Language? Part 2: Vocabulary. In: *Altaica Budapestinensia MMII (Proceedings of the 45th Permanent International Altaistic Conference [PIAC], Budapest, Hungary, June 23–28, 2002)*. Budapest: Research Group for Altaic Studies, Hungary Academy of Sciences & Department of Inner Asian Studies, Eötvös Loránd University, 389–394.
- Vovin, Alexander (2005). Koguryō and Paekche: Different Languages or Dialects of Old Korean? The Evidence from Texts and Neighbors. In: *Journal of Inner and East Asian Studies* 2/2, 108–140.
- Vovin, Alexander (2007). Once Again on the Tabgač Language. In: *Mongolian Studies* 29, 191–206.
- Vovin, Alexander (2013). From Koguryō to T’amna. Slowly riding to the South with speakers of Proto-Korean. In: *Korean Linguistics* 15/2, 217–235.
- WCh = Doerfer, Gerhard and Tezcan, Semih (1980). *Wörterbuch des Chaladsch (Dialekt von Xarrāb)* [Dictionary of Khalaj (Dialect of Xarrāb)]. Budapest: Akadémiai Kiadó.
- Weiers, Michael (1971). Das Moghol-Vokabular von W.R.H. Merk [The Moghol Vocabulary of W.R.H. Merk]. In: *Zentralasiatische Studien* 5, 157–189.
- Werner, Heinrich (2002). *Vergleichendes Wörterbuch der Jenissej-Sprachen* [Comparative Dictionary of the Yeniseian Languages]. 1–3. Wiesbaden: Harrassowitz.
- Werner, Heinrich (2004). *Zur jensejisch-indianischen Urverwandtschaft* [On the Yeniseian-Indian Ancestral Relationship]. Wiesbaden: Harrassowitz.
- Werner, Heinrich (2006). *Die Welt der Jenissejer im Lichte des Wortschatzes. Zur Rekonstruktion der jensejischen Protokultur*

- [The World of the Yeniseian People in the Light of Vocabulary. On the Reconstruction of the Yeniseian Protoculture]. (Veröffentlichungen der Societas Uralo-Altaica 69). Wiesbaden: Harrassowitz.
- Winter, Werner (1997). A Lone Loanword and Its Implications. In: *Language and Its Ecology. Essays in Memory of Einar Haugen*. Eds. Stig Eliasson and Ernst Håkon Jahr, (Trends in Linguistics, Studies and Monographs 100). Berlin–New York: Mouton de Gruyter.
- Yamamoto, Kengo (1969). *A Classified Dictionary of Spoken Manchu. With Manchu, English and Japanese Indexes*. Ed. by Institute for the Study of Languages and Cultures of Asia and Africa, Tokyo: Institute for the Study of Languages and Cultures of Asia and Africa, Tokyo Gaikokugo Daigaku.
- Zhèng Zhāng Shàngfāng 郑张尚芳 (2003). *Old Chinese Phonology 上古音系*. Shanghai: Shanghai Educational Publishing House.
- Zieme, Peter (2015). *Altuigurische Texte der Kirche des Ostens aus Zentralasien. Old Uigur Texts of the Church of the East from Central Asia*. Piscataway, NJ: Gorgias Press.
- Zieme, Peter (2020). *Uiguratorum Veterum Fragmenta Minora [Minora Fragmenta Veterorum Vigvrorvm]* [Minor Fragments of Ancient Uyghurs]. (Berliner Turfantexte 47). Turnhout: Brepols.