On *p- and Other Proto-Turkic Consonants

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On *p- and Other Proto-Turkic Consonants

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ABSTRACT

The present study takes as a starting point the question of whether Proto-Turkic had an onset *h- or *p- and aims at reconstructing its consonantism. The answer to the initial question is searched for in the fourteen Turkic lexical loans of adjacent languages such as Mongolic, Kitan, Yeniseian, and Samoyedic. At first sight, the data provided by these loanwords seem ambiguous. However, once it is demonstrated that both the daughter languages of Proto-Turkic, namely Proto-Bulgar Turkic and Proto-Common Turkic, had the historically unattested initials *d- and *ñ-, these data can be taken to point to the existence of *p- in these languages as well as in Proto-Turkic. The discussion is extended with the question of rhotacism and lambdacism. As regards the rhotacism, Proto-Turkic is assumed to have two rhotic consonants, phonologically denoted as */r₁, r₂/. The lambdacism, on the other hand, turns out to be a tougher problem. Based on several lexical borrowings into and from Turkic, a further consonant */t₂/ is posited for Proto-Turkic. This consonant, originally of affricate and probably later of fricative pronunciation, yielded /š/ in Common Turkic and /l/ in Bulgar Turkic. Thus, the Proto-Turkic consonantism is reconstructed as having a series of consonants */t₂ d₂ r₂/ that underwent serious changes in historical Turkic. Finally, */k₂/ is added to this series to explain the correspondence of k- and vocalic onset between some Turco-Mongolic cognates. In addition, significant sound changes in the prehistory of Turkic are dated through external evidence.

Key words: Proto-Turkic, onset consonant, lexical borrowing, consonantism
To my first teacher in Mongolian,

Claus Schönig (1955–2019)
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ON *P- AND OTHER PROTO-TURKIC CONSONANTS
1. INTRODUCTION

One of the main pillars of the Altaic theory is the onset *p-. If some Tungusic languages are disregarded, this initial has been mainly reserved for "Proto-Altaic" and employed as an argument in support of a genetic relationship between the subfamilies (cf. Ramstedt 1916–1920, Pelliot 1925, Aalto 1955). The "Proto-Altaic" *p- is assumed to have been dropped in Turkic, yielded h- in Mongolic, and was partly preserved and partly changed to f- / h- / Ø in Tungusic.

As in earlier studies the reconstruction of Proto-Turkic was dealt with only in the framework of the Altaic theory, the question of whether Proto-Turkic had an onset *h- or *p- has not been scrutinized with the attention it deserves. In the rare cases, such as Poppe (1958: 96–97; 1965: 152–154), where this question was directly addressed, the existence of the onset *p- and *d- in Proto-Turkic has been strongly argued against, with the claim that these consonants cannot be reconstructed by means of inner-Turkic data.

Earlier attempts at the reconstruction of Proto-Turkic as an independent linguistic entity made it possible for such questions to be discussed separately. G. Doerfer, an eminent opponent of the Altaic theory, was the first scholar to explicitly reconstruct *p- for Proto-Turkic (what he called Urtürkisch in his German terminology) (TMEN I 97). He maintained this opinion also in his later works (KhM 163–165). Nevertheless, systematic studies on the subject are still lacking to date. Recent works have mostly put forward various assumptions without further discussion. A. Róna-Tas (1998; 2022: 64) postulated *p- for Proto-Turkic, whereas M. Erdal (2004: 80–81, 101–102) posited *h-. These assumptions in their given formulations do not go beyond educated guesses.

The difficulty arises from the shallow time-depth of the extant historical texts of Turkic in contrast to the antiquity of the protolanguage. Even in its earliest written records, Turkic exhibits no p-, f- or h- in word-initial position. Some Turkic names and titles preserved in Tibetan, Chinese and Bactrian transcriptions provide us with early instances of h- (Venturi 2008; Sims-Williams 2002; Kasai 2014). The Old Uyghur texts written in 'Phags-pa also show examples of the Turkic h- (Zieme 1998). Otherwise, we

1 See also hòulóufuléi 候婁匐勒 *hulug bûgräk ‘Great Son of Heaven (大天子),’ a title assumed by Āfûzhiluo 阿伏至羅 of the Gāochê 高車 (Ligeti 1986: 431).
find the Turkic onset *h- only in Khaladj as systematically preserved although there are also a few secondary cases. Kabul Afshar, a south Oghuz language spoken in Afghanistan, also seems to have preserved the initial *h- in many cases (Doerfer 1985b). In some modern Turkic languages such as New Uyghur or the Anatolian dialects of Turkish, *h- has been sporadically retained. The alternation of the onset vowel and the consonant *y- in Old Turkic is also considered an indirect indication of an earlier *h-. All this material has largely been collected and discussed by Doerfer (1981, 1982). For a list of verbs with the initial alternation of Ø- ~ *y- in Old Turkic, see Erdal (OTWF 858b–859a; 2004: 81).

We can safely assume that the Turkic *h- that appears scattered temporally and spatially goes back to a prehistoric *p- although we have no direct sources that confirm this suggestion. Four facts strengthen this assumption:

1. **Phonological gap in Turkic:** Although /b/ [v] and /p/ [b p] stand in phonological contrast in word-medial position, we find word-initial /b/ realized as [b] only in native words. Thus, we may conclude that the onset *h- and non-initial -p- were in complementary distribution in Early Common Turkic and Early Bulgar Turkic.²

2. **Areal sound change:** The sound change of *p- > *f- > *h- is very common in the language families of the area. It is directly observable in Mongolic (if Kitan included), Tungusic, Samoyedic and Yeniseian.

3. **Universal sound change:** The sound change of *p > h is universally common, e.g., PIE *p- > Arm. *h-/Ø- (Olsen 2017: 426), Common Celtic Ø- (P. Sims-Williams 2017: 363); Proto-Dravidian *p- > Classical Kannada *p- > Modern Kannada h-/Ø- (Andronov 2003: 54–55, 81).

4. **Secondary nature of */h/:** The glottal fricative */h/ is a weak segment and often a result of lenition of stronger obstruents such as /p s k/ (Lass 1976: 156–163).

The main purpose of this paper is to bring together the linguistic material that attests to the prehistoric Turkic *p- and to answer the question whether the Proto-Turkic language had an initial *p-, *h- or another consonant.

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² Erdal (2004: 102n.) was skeptical of this distribution and suggested that the Proto-Turkic */h/ may have been the primary sound. This supposition raises many questions as to how */h/ developed in medial and final position and what */p/ yielded in the onset.
The only possible way to answer this question properly is to demonstrate that one of the two main branches of Turkic, namely Common Turkic and Bulgar Turkic, or both, had the initial *p-. This can be shown only if it is supported by the external evidence provided by the adjacent languages. In particular, the loanwords whose reconstructed donor forms correspond to the Common Turkic words containing /š/ and /z/ are of special importance for us. If the existence of *p- in one or both branches of Turkic cannot be proved successfully, then it should be assumed that Proto-Turkic had only an onset *h- as Common Turkic does.

If we can prove that Proto-Turkic had a *p-, there arises one more question: Why do the daughter languages of Proto-Turkic lack any trace of this onset consonant?
2. TURKIC LOANWORDS IN ADJACENT LANGUAGES INDICATING AN ONSET *P-

In the following section, the linguistic material that is relevant to the prehistoric Turkic *p- is given in a random order. There is a total of fourteen lexical comparisons in differing degrees of reliability. In most cases, these comparisons present “borrowing chains” from Turkic to Tungusic via Mongolic. In others, they hint at ancient ties between Turkic and Yeniseian or Turkic and Samoyedic without any intermediary. Where needed, commentaries are added.

Borrowings of different periods and/or into different recipient languages are numbered successively. Possible scenarios pertaining to the same loan process are marked with the same number followed by different letters.

In this section, <ř> is used to denote the consonant that surfaces as /r/ in Chuvash and in related loanwords but as /z/ in Common Turkic. Avoiding the traditional <r>, it is intended to keep the neutrality of the notation with regard to the question of rhotacism and zetacism. The same applies to <l> which replaces <₁>. It is used to denote the consonant that surfaces as /l/ in Chuvash and in related loanwords but as /š/ in Common Turkic. In rare cases, <R> is used to signal the uncertainty of whether the phoneme should be identified with /r/ or /ř/.

The vowel signs */ă a ̆ ĭ ï ̆ ŏ o ̆ ŭ u ̆/, which appear at coda position in reconstructed Turkic forms throughout the study, do not necessarily signal phonetically reduced vowels. They indicate (probably unstressed) vowels that were dropped in the course of time and were completely lost in historical Turkic. In medial position, on the other hand, the vowel signs */ă a/ stand for vowels that gave the archphoneme /X/ in historical Turkic and /A/ in Mongolic.

LEXICAL COMPARISON 1

Tu.: CT öküz ~ höküz ‘ox’ (ED 120; ĖSTJa I 521–523; TMEN §397) < CT *höküz; Chuv. văkăr (Müll. wukor) ‘byk’ (ChuvRSI 68) < BT *(h)ökün.

Mo.: PM *hïker ‘bovine, ox’ (N 367; K 143; PhM 311) < PPM *pökür, cf. Bu 9 pü[ker] ‘ox’ (Vovin 2019: 126).

Kit.: Ø
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Remaining lgs.: Hung. ökör ‘ox’ (TLH 663–667).

Borrowing(s):
Tu. *pökü ṛ → PPM *pökür > PM *hüker → *hökör → PEvk. *hökör

Commentary: The Turkic word can be analyzed as a compound of *pög and *kūr. The Common Turkic cognate of the latter, i.e., *kūz may be linked to PY *ku? ‘lošad’ (Starostin 1995: 240), *ku?’ / *ku’s ‘Pferd’ (Werner 2002: I/457), *kus ‘horse’ (Fortescue-Vajda 2022: 268). Tuhan hös ‘cow’ (Ragagnin 2013: 359) and WYug. kus ‘bovine’ (contaminated with CT höküz) (Roos 2000: 313) can be regarded as survivals of CT *kūz ‘cow’. *pög survives in CT ög ‘four-year-old (animal)’ (ED 99) and CT *högäč ‘two-/three-year-old ram or sheep’ (Li 2003: 568). The initial *h- is preserved in Tt. dial. högeč, högič ‘1. baharda bir yaşında olan koyun, toklu; 2. iki, üç yaşındaki erkek koyun’ (DS 2428), höveč ‘1. yaşına girmiş enenmiş erkek koyun; 2. üç yaşında erkek koyun’ (DS 2439) as well as in Arm. hogač ‘gelded ram’ (Dankoff 1995: 183) and Kurd. hōgāč, hōgič, o̧gāč ‘dvuxgodovalyj baran, jalovaja ovca’ (ĖSKJa I 445). DLT ög at ‘four-year-old horse’ shows that ög was used mainly adjectivally. The Late Proto-Turkic form may have emerged as a result of the simplification of the consonant cluster */gk/: *pökgür > *pökür. See Berta (2005: 191–196) for another possible etymology of CT *höküz.

3 Cf. MT (§156) and SS (II 341) for the other Tungusic forms.
4 Cf. Kmg. üker ~ ökör ‘1. krupnyj rogatyj skot; 2. vol, kastrirovannyj byk; 3. korova’ (KmgRSl 301) for a similar alternation.
5 The word has come to mean ‘cow’ in Ket. The Xiongnu juéti 駃騠 *kuti ‘horse’ must be somehow related to the Yeniseian word family (Vovin 2000: 91). The same transcription is reconstructed as kuet-dei < *kwêt-de by Schuessler (2014: 273).
6 In Khaladj, we only find forms without h-: eyäč (ügaţ, ügač, öwgač) ‘dreijähriges (männliches) Lamm’ (WCh 112), ögäč, o̧gäč, o̧gäč ‘Schaf, 2–3 Jahre alt’ (LSpCh 303–304). As terms of animal husbandry, they must have been borrowed from Azerbaijani (Doerfer 1981: 98). The relationship of Alb. hokoč (with variants hakoč and harkoč) ‘uncastrated boar’ (Orel 1998: 150) to the Turkic word is also questionable.
LEXICAL COMPARISON 2

Tu.: CT oz- ‘to outstrip, to escape, to surpass, to precede, to flee’ (ED 279; ÕSTJa I 425; Wilkens 2021a: 520), Kh. q’z- ‘verlassen’ (LSpCh 304), Kh. hozzujq ‘Durchgang’ (LSpCh 293) < CT *hoz-.
Mo.: PM *horgu- ‘to flee’ (N 360; K 149, 158) < PPM *poruku-.
Kit.: Ø
Tg.: Ø
Remaining lgs.: Ø

Borrowing(s):
Tu. *porukū- (> CT *ozuk-) → PPM *poruku- > PM *horgu-

Commentary: Unexpectedly, the Khaladj verb q’z- does not exhibit *h-. It must be a loanword from Oghuz languages (cf. Tkm. oz-). The noun hozz-ujq, however, secures the initial *h-. If Chuv. vara ‘potom, posle; popozže, nemnogo pogodja’ (ChuvRSl 64) goes back to *(h)or-a, it also belongs here. Its Common Turkic equivalent oza, on the contrary, means ‘formerly, before’ (ED 280). 7

As no verbal formative *-gU- is known in Mongolic, the loanword must have originated from an unattested -(X)k- derivative of the Turkic verb. Note that Chuvash has numerous -Ăx- derivatives with no counterparts in Common Turkic (Levitskaja 1976: 172–174). This formative must have been more productive in prehistoric times.

LEXICAL COMPARISON 3

Tu.: CT üz- ‘to tear, to pull apart or to pieces’ (ED 279–280; ÕSTJa I 621–622), OU üz- ‘abschneiden,’ yüz- ‘zerreißen’ (Wilkens 2016: 1099, 1121), Kh. hź- ‘hiz- ‘zerreißen’ (WCh 133), Kh. hüz- ‘zerreißen’ (LSpCh 293) < CT *hüz-.

7 Räsänen (1923: 119) sought the origin of Chuv. vara in a form cognate with Tat. arī ‘jenseitig; nach, hinter.’ In this etymology, the onset v- remains inexplicable. Ramstedt (1922–1923: 14), on the other hand, equated it to the Old Turkic özä ‘oben’ which has later come to be transcribed as üzä (ED 280–281).
Mo.: PM *hürtesün 'scrap, rag, shred; piece, morsel' (K 158; Khabtagaeva 2017: 141) < PPM *pürüte.

Kit.: Ø

Tg.: Nercha Evk. urtasun, urtahan 'rags' (Khabtagaeva 2017: 141) (← Mo. ürtesün).

Remaining lgs.: Ø

Borrowing(s):
Tu. *püřütä (-ő ?) → PPM *pürüte > PM *hürtesün > ürtesün → Evk. urtasun, urtahan

Commentary: In the Altaistic tradition, CT *hüz- is commonly linked to the Mongolic *hürü- ‘to rub off (with the hands), to grind, to sharpen, to grate, to file’ (N 371; K 145) (see KwB 459; Ramstedt 1957: 149; Poppe 1960: 12, 111, 132). Poppe (1927: 113), however, compared it earlier with Mo. üre- ‘untergehen,’ which can be identified with WM üre- ‘to waste, squander; to destroy, ruin, erase, eliminate’ (L 1011). Tekin (1995: 175) also equated the Turkic verb with Mo. üre- ‘to destroy, ruin.’ Although both comparisons are phonetically satisfying, the semantic discrepancies are conspicuous. Furthermore, WM üre- may underlie a phonetic *(üre)- (cf. Ord. uure-), which is the causative of the intransitive base *(üre)- ‘to perish, to be destroyed’ (cf. Oir. üre-, Kalm. ürçə).

If we leave the older comparisons aside, we can see that the Common Turkic nominal derivative üzük *(broken, torn; piece, fragment’ (ED 285) is more similar in meaning with SH hürtesün ‘(geschnitten) Seidenstreifen, Seidenlappen (碎裁帛)’ (Haenisch 1939: 79) and ZY hürdesü ‘morceaux (d’argent)/(silver) morsels’ (Kara 1990: 300) than the verbs mentioned above. The base of CT üzük is certainly *hüz-. Yet, it is disputable whether PM *hürtesün is derived from the aforementioned *hürü- or *(h)üre-. Kara (1990: 300) is in favor of the former whereas Khabtagaeva (2017: 141) favors the latter. Interestingly, CT *hüz- has also similar secondary meanings as *(h)üre- (see ÈSTJa I 621–622). As plausible as Khabtagaeva’s etymology may seem, it fails to be convincing because the initial *(h)- of

8 Bur. üri- and Khal. ürex, both of which are transitive, contradict this assumption. Either we have a secondary shortening in these languages, or we must posit *(üre- both as a transitive and intransitive verb.

9 Also cf. Tt. dial. üzük ‘yüpramış kumaş ve elbise’ (AD 406), Kaz. üzük ‘1. interruption, break, intermission; 2. narrow part of a river; 3. river connecting two lakes; 4. thick felt covering yurt; 5. strait, sound; 6. ragged, torn-off, alienaged (from), cut off (from)’ (Shnitnikov 1966: 285), Tel. üzük ‘ein abgerissenes Stück, Zwischenraum’ (R I 1895).
*(h)üre- cannot be established." Furthermore, in both etymologies, it remains inexplicable why the second vowel got syncopated.

After long consideration, I am convinced that PPM *püri-te 'rags' was borrowed from Turkic as a derived noun. This form formally corresponds to CT *hüz-üt, which is preserved in Tuv. üzüt 'razobščennyj' (TuvRSl 446)." Semantically, however, it matches better with üzük 'torn off' as attested in İrk Bitig (Tekin 1993a: 67). A similar borrowing from Turkic into Mongolic, which contains the formative -(U)t, is PM *dalda 'hidden, concealed, secret' < PPM *daluta ← Tu. *dalută (-ö ?), cf. CT yaš-ut 'hidden, secretly' (ED 977).

PPM *püri-te 'rags' yielded *hürte.sün in Proto-Mongolic, and this form got contaminated with *hürüdesün 'filings, sawdust,' a derivative from *hüri- with -dAsUn (Poppe 1991 §144) and the synonym of *hürütestün. As regards PM *hürü-, it cannot be linked to PTg. *puru- 'to cut, to chop, to grind, to break' (SS II 354) as is done by many scholars of Altaistic tendency. The Tungusic word is clearly back-vocalic as is signaled by Man. furungga 'finely cut' (Norman 2013: 126).

LEXICAL COMPARISON 4

Tu.: CT ayāz 'bright, cloudless' (ED 276; VEWT 11), WYug. (aq) xayas 'jasnoe nebo' (Malov 1957: 134), Kh. hayāz ‘wolkenloser Tag, wolkenloser Wetter’ (WCh 127) < CT *hayāz; Chuv. uyar 'jasnaja pogoda; vëdro; jasnyj, vedrennyj; yasno; vedrenno' (ChuvRSl 521) < BT *hayăr.

Mo.: Ø

Kit.: Ø

Tg.: Ø

10 Kara's (2009: 323) equation of the preclassical WM üre- with Dag. xur- 'to scatter, to sow (seeds)' is unacceptable. The Dagur verb is probably an analogical formation from the noun xur 'seed.'

11 CT üzüt 'soul' (ED 281), attested since Old Uyghur, is probably a metaphorical use of the same word. See Özertural (2018: 65–69) for an argumentation in favor of a derivation from öz 'self, spirit' with +(X)t.

12 See also Nan. nöpiypî 'pîlit', raspilivat’ (Protod’jakonov 1901: 331), Spoken Man. furuma [furum] 'to chop, to cleave' (Yamamoto 1969 §1730), fulum [fuˈlum] 'cut (切)' (Kim et al. 2008: 71), Bala pʼurun, Alchuka pʼalun ‘丝、菜肉丝’ [shreds, shredded pork with preserved vegetable (a dish)] (Mù Yèjùn 1987: 9).
Remaining lgs.: PY *puˀr ‘jasnyj (o pogode)’ (Starostin 1995: 75), PY *pʰəˀλ¹³ ‘klar, schön, heiter (vom Wetter)’ (Werner 2002: I/344).

Borrowing(s):
Tu. *payā → PY *pʰəˀλ

Commentary: The vocalism of the Proto-Yeniseian form is at first sight problematic. Nevertheless, a contraction of the sequence /aya/ is possible. Moksha aepa ‘1. rezkij, pronizvajuščij (o vetre); 2. vetreno, proxladno’ (MRSl 26), which is a loanword from Old Chuvash (Paasonen 1897 §6), exhibits a similar weakening of this sequence. Imbat (C) hyel, hyel’ and Yugh (C),fyer ‘heiter, klar’ (Werner 2003: 132) might also point to a disyllabic origin.

Lexical comparison 5

Mo.: Bur. ühee ‘1. zatjažnoj dožd’; 2. atr.; ühee boroo prolivnoj dožd” (BurRSI II 361) (← Yak. *ösän).
Kit.: Ø
Tg.: Orok nyp mẽ ‘morosit’ (o dožde)’ (SS II 44), nyp mê ‘morosit’, sejat’sja (o dožde)’ (OrokRSI 274), nypaj ‘dožd’ (melkij)’ (SS II 44), nypaj ‘melkij dožd” (OrokRSI 275) < STg. *pərəgä--; perhaps related to the Mankova Ev. ur’o ‘sypat’sja, posypat’sja’ (EEW §12170), Barguzin Evk. urö ‘sypat’sja’ (EEW §12171) < NTg. *pərō- (?).

¹³ Considering the correspondence of PY *pʰəˀλ ‘Fischblase, Blase’ (Werner 2002: I/342) and PS *për ‘Blase’ (SW 114), it is clear that the Proto-Yeniseian */λ/ was originally a rhotic consonant. Note that the same lexeme is reconstructed as *pər’ (~ -r) ‘puzyr’ (rybij)’ by Starostin (1995: 247).

¹⁴ Perhaps related to CT ögrän ~ örgän ‘river, brook’ (Róna-Tas 1999) and özän ‘river, brook’ (see ESTJa I 510–512).
Commentary: The Old Uyghur alternation of the vocalic onset and /y/ is a clear indication of the Common Turkic *h-. Yak. öksüön comes from a metathesized *öksân < *ögzân whereas öhuön goes back to the more original form *ösän < *özgân. The latter proves that the velar in this word was originally voiced. /ö/ is secured by the Tofan and Yakut forms. All these point to an Early Common Turkic *hözgân.

As regards the formation of this noun, it is likely to be a derivative with the suffix -(X)n. This formative mostly has a dominant vowel in Old Uyghur. However, there are contrary cases such as OU (Maitrisimit) yaru-n ‘dawn, daybreak’ and (Kšanti Kıl guluk Nom Bitig) kišä-n ‘horse’s hobble, fetters’ where the archiphoneme of the suffix is non-dominant. *hözgân must be one of these cases. If so, its verbal base has the form *hözgâ- ‘to rain.’ This form is, in my opinion, related to STg. *pörägä-, which surfaces as пурэ̄- in Orok.

Although the relevant words in Turkic and Southern Tungusic are poorly attested, the comparison is phonologically and semantically impeccable.

Regarding the Northern Tungusic forms, it is difficult to identify their origin. If they indeed go back to *pörô-, they may be related to the base of *hözgâ-, which is to be analyzed as *höz-üg+â-, cf. kur(u)g+a- and tat(ı)g+a- as similar derivatives (OTWF 421, 423–424). DLT öüzüK ‘any land that is swampy or flooded’ (CTD I 11) may be the otherwise unattested base of *hözgâ-. If so, it must be read as öüzüg and separated from üzük sūw ‘an arm of a river’ given under the same entry.
Lexical Comparison 6

Tu.: Talas ʒə̂oʃ ‘vnutр‘ (Batmanov 1971: 12–13, 51), İrk Bitig oʃ ‘abdomen, internal organs, intestines‘ (Tekin 1993a: 61), DLT ʃə̂o “the heart, centre (qalb) of a tree-trunk, branch or horn” (ED 255), FZG ʃy oʃ “intestines (iʃkanbeh)” (Dankoff 1987: 12), Yak. osoyos (< *oʃakaʃ) ‘Bauch, Darm’ (Böhtlingk 1851: 26), ot is (< *ʃiʃ iʃ) ‘čast černyx vnutrennostej u konnago skota‘ (Pek. II 1894), is-əʃ (< *iʃ oʃ) ‘život’ (Pek. I 961) < CT *(h)oʃ.

Mo.: Ø
Kit.: Ø
Tg.: Ø


Borrowing(s):
Tu. *polə → PY *pʰolə

Commentary: For the Proto-Yeniseian word, a semantic development of ‘stomach, intestines’ > ‘fat, fatty’ must be assumed. Seeing Latin aruīna ‘fat, lard’ going back to the Proto-Italic *arow-i- ‘entrails’ (de Vaan 2008: 56) as well as Old Prussian instran ‘fat’ related to the Proto-Slavic *četrə ‘liver, entrails’ and Sanskrit āntrā- ‘intestine’ (Derksen 2015: 558–559), such a change would not be unparalleled. The weakest point of this comparison is, however, that the Turkic word has not been attested with *(h)-.

Lexical Comparison 7

Tu.: CT *kuнaʃ ‘the blazing heat of the (midday) sun, the sun’ (ED 679) < CT kun ‘sun’ + *(h)əʃ ‘heat,’ Chuv. xεvel (Str. kuell, Müll. chwel) ‘X propisnoe Solnce, solnečnyj; solnce, solnečnyj’ (ChuvRSl 551) < BT

15 Read as oʃ ‘the core (qalb) of a tree or branch or horn’ by Dankoff & Kelly (CTD I 89).
16 The word must be regarded as a 3SG possessive form.
*kuñāš < BT *kūn ‘sun’ + *(h)āš ‘heat’; CT *čōgāš (later assimilated to *čōgāč) (Yak. suos) ‘heat (of the sun)’ (Kalużyński 1962: 189) < CT čög ‘heat’ + *(h)āš ‘heat.’

Mo.: WM asa- ‘to burn, catch fire, ignite, burn’ (L 55), CM asa- ‘to catch fire, burn, flame up’ (Sūn 1990: 121), Kmg. asaxu ‘zažigatˊsja, zagoratˊsja, oxvatyvatˊ – o plameni’ (KmgRSl 28).

Kit.: Ø

Tg.: Ø

Remaining lgs.: PY *pʼal ‘heiš, warm’ (Werner 2002: I/276).\(^7\)

**Borrowing(s):**

1. Tu. *pāl → PY *pʼal
2. CT *(h)āš+a- → Mo. asa-

**Commentary:** In this comparison, a nominal root that has never been directly attested is assumed to have existed. It probably lives on in CT *kuñāš and *čōgāš. Berta (1997) asserted that the former goes back to a compound of kūn ‘sun’ and *yaš(i) ‘heat.’ This cannot be true if *čōgāš is also taken into account as a similar compound.\(^8\) Instead, I presume that the second part was *(h)āš with the meaning of ‘heat.’ The palatalization of /n/ may have arisen as a compensation for the assimilation of /ū/ to /u/ due to vowel harmony.\(^9\) For the same reason, kūnāš, a variant of *kuñāš in which the assimilation was progressive, does not exhibit any palatalization.

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\(^7\) Including the Ket and Yugh words into the word family, Werner (2002: II/56) gave a completely different reconstruction, namely *apʼən(l). This comes near to Starostin’s (1995: 182) reconstruction *apVˊŻara, żar; pot’ (further *apVˊlˊteplyj, żarkij’ for Kott and Arin). Instead of assuming an irregular aphaeresis in Kott, Assan and Arin, it is more appropriate to assume two distinct roots.

\(^8\) Seeing that its verbal derivatives yaš(i)- and yaša- revolve around the idea of ‘light’ and not the ‘heat,’ *yaš must have rather signified ‘shine, light, illumination.’

\(^9\) Eren (1999: 97a) considered čogač as the primary form and +ač as a suffix. Tezcan (2020: 86) instead remarks that the morphology of the word is obscure.

\(^*\) *(h)āš might have had an early variant in *yaš which palatalized the coda consonant of kūn. The examples of such a palatalization of *h- in front of /a ā/ are very rare: OU amrak ‘lieb; Liebe; Geliebte(r), Liebe(r)’ ~ yımрак ‘liebenswürdig’
Even though its onset *h- cannot be confirmed, this root agrees with the Proto-Yeniseian *pʰal. A verbal derivative of the Common Turkic noun formed with the denominal formative +A- may be the origin of the Mongolic verb asa- ‘to catch fire, to burn’ attested in Written Mongol and modern central Mongolic languages.  

There is, however, a problem regarding the Bulgar Turkic *kuńā. This form, in my opinion, must have been influenced by its Common Turkic cognate. Otherwise, it must be surmised that the Proto-Turkic form *kün paX(i) has developed almost identically in Common Turkic and Bulgar Turkic independently of each other. Considering the emergence of the palatal nasal in both branches, this scenario seems quite unlikely to me. The assumption of an early contact between both branches is inevitable.

**Lexical Comparison 8**

Tu.: CT īdiš ‘cup, vessel’ (ED 72, ÊSTJa I 328–329), KB īdiš ‘kap’ ~ īdiš ‘kadeh, tas, bardak, içki’ (Arat 1979: 182, 188), Kaz. īdiš ‘vessel, plates and dishes, kitchen utensils’ (Shnitnikov 1966: 241), Kklp. īdiš ‘posuda; tara’ (KklpRSI 753), Yak. isit (< *itis) ‘Gefäss’ (Böhtlingk 1851: 39), Kh. hidiš ‘Gefäß, Behälter’ (WCh 131) < CT *hidiš.


1) tapelka; 2) čaška, miska’ (SS I 303) < PTg. *pïla ~ *pïlïa ~ *pïlaï ‘wooden vessel, formed like a cask’ (EEW §5045).

Remaining lgs.: PS *petô ‘(irdenes) Gefäss’ (SW 122).

Borrowing(s):
1. Tu. *pïdâ ľă → Kit. *pïdalâ > *pïlalâ > *pïla > PTg. *pïla (~ *pïlia ~ *pïlaï) > Man. fila → WM pïla
2. Tu. *pïdâ ľă > *pïdalâ → PPS *petôl(’e) > PS *petô

Commentary: The change of the intervocalic /d/ to /l/ in Kitan has to date remained unnoticed. It occurs at least in three Kitan words in Chinese transcription and in the Kitan Small Script.

Kit. 雅魯 *ńalu ‘to bow and dance (拜舞)’ (Vovin 2003a: 241; Shimunek 2007: 86) < *ńâdu-, cf. PM naad- ‘to play’ (Mog. nâtl- ‘to dance’) (N 459).

Kit. 札剌 *ǰala, 只剌里 *ǰîlar(i), 闸腊 *ǰala ‘行人，通事’ [pedestrian, interpreter] (Sûn & Niè 2008: 124–125) < *ǰadag, cf. OT yadag ‘pedestrian, on foot’ (ED 887).

Kit. 絲毛 [028.067.041] *šeur ‘dew (露)’ < *šiɣüler < *sigüder(i), cf. PM *siüderi(n) ‘dew’ (N 498).

Indirect evidence is also offered by PTg. *nurga (Man. nuǰan) ‘fist’ (MT §197) that relates to Mo. *nûdurga ‘id.’ and Tu. yïdruk ~ yudruk ‘id.’ The loss of /d/ must have taken place in Kitan following its change to /l/: Tu. *nûdurukâ → Kit. *nûdurga > *nulurga > *nurga → PTg. *nurga.22

This sound change also explains how the Kitan *pïdalâ became *pïla. After the change of /d/ to /l/, the intermediate form *pïlalâ has been simplified through haplology.

PS *petô, without any Uralic etymology, probably goes over *petôj ultimately back to *petôl(’e). I assume that this form was borrowed from the palatal variant of *pïdâlă. Tu. *piďâ-, possibly the verbal root from which Tu. *pïdâlă is derived, may be related to PS *pât- ~ *pâts- ‘in den Topf legen’ (SW 118).

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22 Doerfer (1988: 220) explained the loss of the intervocalic /d/ in Manchu as an assimilation (*nudurga > *nudruga > *nurga > nujan) whereas Doerfer (2001: 201) as an analogy to or a contamination with Tg. čurga ‘fist’ (SS II 416).
Lexical Comparison 9

Tu.: CT *hkuš ~ ãkuš ~ yikusš ‘many’ (ED 118), Osm. ügüš ~ yıgüš ‘çok’ (TS 3069–3072), IM yıkuš ‘mnogočislenjy, mnogo’ (Melioranskij 1900: 118), RH yikusš ‘much’ (KD 268), Tt. dial. ögüš ‘çok’ (DS 3323) < CT *hüküš, VB ekil ‘viel’ (Erdal 1993: 143) < BT *hüküš, cf. OU ‹WYSWD› üšüd- (recte üšüt-) ‘(for stream) to grow bigger, to get stronger’ (Zieme 1975: 113); Tuñ. 8 üš(u)g ‘grown in number’ < CT *hüküš.

Mo.: PM *nüle ‘to remain, to be left’ (N 368; K 140), PM *nüleü ‘nülü ‘superfluous, more than; surplus, excess’ (N 368) < PPM *pülü-.


Tg.: PTg. *pülä- ‘to remain, to be in excess’ (SS II 364–365; MT §98; EEW §1656), cf. Man. funče- (< *fule-če-) ‘to be left over, to be in excess’ (Norman 2013: 125), Jur. funče- (< *fule-če-) ‘to remain’ (Kiyose 1977: 137), Jur. *puli ‘強、优、有余’ [extra, abundant, surplus] (Sün 2004: 243).

Remaining lgs.: PS *pů- ‘laichen’ (SW 132).

Borrowing(s):

1. Tu. *půlů- → PPM *půlů- (> PM *hule-) → PTg. *pülä-

2. Tu. *půlů- → PPS *půlů- > PS *pů-

Commentary: The voiceless velar in CT ükuš is secured by the runiform, Tibetan and Brāhmī spellings of the word. The base of ükuš ~ yıkuš has been mistakenly assumed to be †(h)ük- ‘to heap up, to accumulate’ (ED 118; OTWF 267). However, Doerfer (1981: 120, 134) and Tekin (1993b) demonstrated that this verb should be read as (h)üg- with a short vowel (cf. Tkm. üv-) and pointed out that ükuš cannot be derived from it. DLT ükuš (only once), Osm. ügüš ~ yıgüš, IM yıkuš, RH yıkuš and Tt. dial. ögüš, on the other hand, point to a long vowel with an onset *hr-, namely *hüküš. Doerfer (1981: 134) also gave this word as ükaš and stated that its base must be reconstructed as *ük- or *hük-.[23]

[23] Unfortunately, Shor üktü ‘sich vermehren’ cannot be segmented as ük-tü- as Doerfer did. It is simply a survival of OT
CT *hūkiš is, in my opinion, metathesized from *hūšük whose base is *hūšü- ‘to grow, to increase.’ This root may have been preserved in OU (Ernte 24) üšü-d-24 ‘(for stream) to grow bigger’ Zieme (1975: 142) and, following him, Wilkens (2021: 830) read and interpreted this verb as üšüt- ‘vereinigen (?)’; assuming that it might be a causative form of üš- ‘to crowd together, collect in a crowd’ (ED 256). Röhrborn (UW 81b; UW Nb II/1: 80, s.v. akan) read and translated the verb as üšütmiş ‘gekühlt’ and so identified it with üšüt- ‘to chill (someone or something)’ (ED 258). Erdal (OTWF 792) agreed with Röhrborn on this identification. Ayazlı (2016: 424n.), on the other hand, emphasized that the verb must have signified ‘büyütmek, çoğaltmak’ and embraced the interpretation ös-öt- ‘wachsen lassen’ proposed by Semih Tezcan and mentioned by Zieme (1975: 142). Identically spelled and occurring in a similar context, which involves flowing of waters, another instance of üšüd- is found in the fragment SI 5594 (Kr IV 267), albeit interpreted as ‘kühlen’ by Zieme (2020: 650): (1) //kămiš săvinălig akm[i]š s[u]-l-[ar] baş-[ar] y[uu]-l-[ar] (2) //y tőkăni tőkăni ušütü turur [...].

Another word derived from the verbal root *hūšü- may be hidden in the eighth line of the Tuñukuk inscription if the square-shaped letter is interpreted as having the sound value of ŵš: ¥Ø üš(ü)g ‘grown in number, increased.’ Elsewhere (Ünal 2013), I interpreted weƙk in the same line as očuk ‘diminished, decreased’ and linked it to the DLT (Oghuz) źč (read: oč) ‘the depletion (nafāḏ) of a thing’ (CTD I 94) and Yak. uohn- (< *oču-n-) ‘1. allmählich verschwinden (z.B. Reichtum); 2. erlöschen, nachlassen, zu Ende gehen (z.B. Geist, Interesse, Geduld usw.)’ (Monastyřjew 2006: 184). The whole sentence in Tuñ. 8 can be then interpreted as follows: ‘The enemies around (us) were as if they were diminished [but] we [instead] have grown in number.’ The Old Turkic üš(ü)g corresponds exactly to PM *hüleü, which goes back to PPM *pülügü.25

VB ekil is unexpected. If the initial form were *hūkū, its regular reflex would be *wekil. A sporadic unrounding of the vowel in the first syllable may account for ekil if the initial form is

üklı- (ED 107).

24 -(X)d- is added in one further instance, namely uygad- ‘to be ashamed,’ to a disyllabic verbal base (OTWF 643–644).

25 Another possible reading for ¥Ø is (a)š(i)g, which could be related to the common base of Tat. išlē ‘numerous,’ išāy- ‘to multiply’ and Yak. ihugūy ‘generous, virtuous.’ Its Bulgar Turkic equivalent may be the source of Hung. elég ‘enough, sufficient.’ However, if the letter ¥ simply had the sound value of š, it becomes unclear why particularly this rare letter was used here.
reconstructed as *hükü with a short vowel. As already implied under (7), the parallel metathesis points to an early contact between Bulgar Turkic and Common Turkic.

The semantic difference between the Turkic and Mongolo-Tungusic forms is obvious. For the polysemy of ‘to grow, to increase’ and ‘to remain, to be left over,’ the Turkic verb *art- may be given as an example. The Uyghur instances of the verb clearly attest to both meanings (UW Nb I/1: 76–77). See Röhrborn (2006) and Erdal (2012) for a different interpretation of the semantic change.

The Proto-Samoyedic *pü- has no Uralic etymology. Nonetheless, some phonological and semantical difficulties arise if we wish to consider it a loanword from Turkic. Yet it may still be related if it goes back to PPS *pülü-

**Lexical Comparison**

**Tu.** CT *arïš (~ arïč ~ arač ~ ärč ~ eriš ~ əriš) ‘1. oglobli, ogoblja; dyšlo; bokovoj šest na kuzove telega; verxjaja čast’ arby vmeste s ogobljami; ostov (telegi); seredina dvuxkolesnoj arby, gde sidit čelovek; 2. vysšaja stupen’ plemennogo delenija; krupnoe rodovoe ob’edinienie, gruppa rodov, ob’edinennyx obščim proisxoždeniem; otdel plemeni; 3. lestnica; 4. pograničnyj kamen’, pograničnyj znak; 5. suprugi’ (êSTJa I 189–193), Krmch. iriš ‘shaft / ogoblja’ (Ianbay 2016: 100) < CT *hariš (hâriš ?).

**Mo.** PM *aral ‘shaft of a cart’ (N 271); Dag. p‘ára ‘sani’ (Ivanovskiy 1982: 41), Dag. pár ‘爬犁、雪橇’ [sledge, sleigh] (Enkhbat 1984: 89).

**Kit.:** Ø


**Remaining lgs.:** Tabg. bálièlán 拔列蘭 拔烈蘭 *parialan ‘beam, joists (梁)’ (Chen Hao 2020: 533).

**Borrowing(s):**

1. Tu. *parâütá → Tabg. *parialan
3. Tu. *harü (or *harâüt) → PPM *aral
Commentary: Clauson (1962: 234n.; ED 239) regarded the Turkic word as a loanword from the Arabic ‘ʿarīš ‘bewachsene Laube, Gartenlaube; Hütte aus Zweigen; Bude; Geländer (für Weinstöcke); Deichsel’ (Wehr 1985: 827). It is true that the word occurs only in those languages that had direct or indirect contact with Arabic. However, Doerfer (TMEN §454) argued against Clauson and deemed a borrowing from Arabic unlikely because of the short vowel in Turkmen and the spelling of the word with ‘alif’ in Turkic sources written in Arabic script.

Even though the Turkmen form does not contain a long vowel in the first syllable, the Common Turkic form may be reconstructed as *hārīš if it is taken to be cognate with *hāra ‘between’ that yielded Kh. ħāra ‘Abstand, Intervall, Zeitspanne, Zwischenraum’ (WCh 122). Another derivative from the same hypothetical base *hār- surfaces as arīt ‘Entfernung’ in Yakut (Stachowski 1993: 42) and arīt ‘1. *Zwischenraum; 2. dünnstehend, gelichtet [Wald], licht [Bäume]’ in Dolgan (Stachowski 1998: 34).

Shimunek (2017: 135, 361) considered the Tabgač surname disyllabic as is given by Eberhard (1949: 317) and reconstructed it as pary-al, which he connected to the Mongolic verb *bari- ‘to build, to construct.’ Chen Hao (2020: 533n.), however, remarks that the sources other than Weishu 魏書 give the Tabgač surname as bālièlán 拔列蘭 and bālièlán 拔烈蘭. The Later Han pronunciation of both transcriptions is bat-liat-lan26 (Schuessler 2007: 153, 343, 357–358), which obviously renders the Tabgač form *parialan.27 The Chinese Liáng 梁 that replaced this surname offers only an approximate meaning. In my view, the Tabgač form means ‘shaft,’ and it originates from the Turkic *parālā (> CT *harīš).

26 The Old Northwest Chinese pronunciation of 拔 is given as *bāt- by Coblin (1994a §662). It is employed to transcribe the Indic syllable -bal- in the translation of T 1 completed at Chang’an in 413 (Coblin 1994b: 167 §25.1). The rendering of the Tabgač *p- by the Chinese initial b- is unexpected. The same character is also used in the transcription of the ethnonym Tuòbá 拓拔 which surfaces as Tavgač in Old Turkic. This also points to an earlier /b/. Even though the Northwestern Medieval Chinese exhibits a change of b- > p- (Anderl & Osterkamp 2017: 223), its emergence, as far as we can trace it, is more recent. The choice of the character 拔 ‘to pull up; to pull out’ in the transcription of the surname may be explained through its semantics. Another possible explanation is that the opposition of strong and weak consonants in the onset was weakened in Tabgač.

27 Concerning the Chinese final consonants, I follow the reasoning put forward by Vovin (2007 §11, §13).
As regards the Proto-Tungusic form, it cannot be reconstructed as *(pāral as is done by Benzing (B 18). The attested forms can only be traced back to *para. This may have been borrowed from a second Tabgač form in *para going back to *paral whose origin lies in a younger Turkic *(parā. (< *parālā).

The loss of coda liquids in Tabgač can be exemplified by *(mukolo (rather *(mokolo) ‘bald head, baldy’ (Vovin 2007: 200–202), which comes from an older *(mukulor and corresponds to SH muqular ‘hornlos, ungehörnt, Stumpfhorn (Rind)’ (Haenisch 1939: 111), related in turn to PM *(muka-r ‘blunt, hornless’ (N 449).²⁸ Tabg. *(mukolo is the donor form of Man. *moholo ‘a hornless castrated bovine’ (Norman 2013: 267). Shimunek (2017: 148) is right when he sees a constraint against *(lVr in Tabgač which probably also applied to the reverse sequence *(rVl and changed *(paral to *(para. In all Mongolic languages of the Qinghai-Gansu region, the very same sequence leads to simplifications when it is found in the middle of words (N 42n.).

**LEXICAL COMPARISON 11**

Tu.: DLT üśā- ‘to search carefully’ (CTD II 281), TİEM 73 üšā- ‘1. eşelenmek; 2. dalmak’ (Kök 2004: 642; Ünlü 2004: 716), RQ üšā- ‘eşmek, eşelemek’ (Ata 2004: 728), Tuu. üše- ‘to search’ (Anderson & Harrison 2003: 98), Kh. huşā- ~ hišā- ~ šā- ~ şō- ‘wollen; lieben’ (WCh 194; LSpCh 293, 311) < CT *(hūšā-; RQ üš-²⁹ ‘aramak, araştırmak’ (Ata 2004: 728), Tt. dial. üş- ‘eşmek, kazmak’ (DS 4078), Tt. dial. hušgü et- ‘bir şeyi karıştırmak, altını üstüne getirmek’ (DS 2452) < CT *(hūš-.

Mo.: Ø

Kit.: Ø

Tg.: Ø

Remaining lgs.: PS *(pe- (? *pej-) ~ *(pō-~ *(pū- (? *pūj-) ‘suchen’ (SW 119; Helimski 1997 §308).

**Borrowing(s):**

Tu. *(pū.ā- > PPS *(pūl’e- > PS *(pūj- ~ *(pū-

²⁸ Shimunek (2017: 147–148, 354) also related the Tabgač word, albeit given as *(moqol, to the same Middle Mongol word.

²⁹ Eckmann (1976: 316) read and translated this verb as üšā- ‘to search, seek, inquire curiously, spy.’
Commentary: For the Proto-Samoyedic word, no Uralic etymology has been proposed yet. The comparison of the Turkic and Proto-Samoyedic forms is phonetically and semantically unproblematic. I regard CT *hüšä- as a derivation from CT *hüš-. The best instance of the rare verbal formative -A- in Old Turkic is tara- ‘to disperse; to be dispersed’ (CTD II 285; Zieme & Kara 1979: 110; Zhang & Zieme 2011: 146) derived from tār- ‘to disperse’ (ED 529). The possible existence of an ‘-A- expansion’ has already been discussed by Erdal (OTWF 524, 675). Erdal rightly stated that this remains only a possibility until a certain example of the Uygur tara- is attested. We now have such an example in Zhang & Zieme (2011: 138) and may firmly posit an unproductive -A- in prehistoric Turkic. CT īra- ‘to be distant; to keep away (from something Abl.)’ (ED 190) may also contain the very same formative if its base is taken to be CT īr- ‘to part, to separate, to send away,’ which is attested since Middle Turkic and best preserved in Osm. īr- ‘1. ayrmak, küda kilmak; 2. ayrılmak, geçmek, uzaklaşmak’ (TS 1969–1972) and Tt. dial. īr- ‘uzaklaştırır, ayırmak, kovmak’ (DS 2488).

Lexical Comparison 12


Mo.: PM *hesi ‘handle, grip; stalk’ (N 354; K 139), cf. WM esi – isi ‘trunk of a tree, stem of a plant, stalk, slip, graft, shoot, scion; grip, handle’ (L 334) < PPM *pesi.

Kit.: Ø

Tg.: PTg. *pāsin ‘handle’ (SS II 371; B 44; EEW §3581, §3715, §8385, §9001).

Remaining lgs.: Ø

Borrowing(s):

Tu. *pāšin → PPM *pesi → PTg. *pāsin
Commentary: The Mongolo-Tungusic cognate set has been compared with *äs in CT äski ‘old’ and Chuv. aslä (< *äsliŋ) ‘big, old’ by Ramstedt (1916–1920 §13). Pelliot (1925: 246) rightly deemed this comparison as “moins sûr.” Röhrborn (UW Nb II/2: 304), on the other hand, connected the very same cognate set with the Old Uyghur hapax äšin. As the Old Uyghur word occurs with kuluŋa ‘offshoot,’ it is also possible to interpret it as ‘offshoot,’ and not as ‘stalk (of plants),’ and to relate it to Osm. iškin. The correspondence of the Ottoman Turkish /i/ to the Old Uyghur /ä/ is irregular. The Ottoman form also exhibits an additional /k/ whose origin is unknown. Even if it may be regarded as a derivative from the same base, the identity of the bases is far from being certain. On the other hand, the occurrence of iškin ‘Mönchsrhabarber’ in Evliya Çelebi’s Seyahatname (Boeschoten 2012: 32), which goes back to the Old Turkic išgun ‘rhubarb’ (ED 259), proves that iškin ‘tendril’ is not identical with it.

As is already noted by Röhrborn (UW Nb II/2: 304), the possibility that the Old Uyghur hapax may simply be a scribal error should also be taken into account.30 Even if this is the case, a Turkic noun corresponding to the Mongolo-Tungusic cognate set can be found elsewhere. I think that CT ešič ~ äšič ‘an (earthenware) cooking pot’ (ED 257), without any solid etymology, may have been derived from *äši ‘handle, grip.’31 Tt. dial. kulplu ‘dibi geniş, üstü dar, iki kulplu toprak kap’ (DS 4571), derived from kulp ‘handle, grip,’ is a good semantic parallel. There are also other transparent and opaque names for containers and utensils ending in +(A)č, e.g., CT bak(i)rač (< bakīr ‘copper’) ‘small copper pail, copper tray’ (see ESTJa II 45–47), OT bukač ‘a jar or cooking pot of clay’ (ED 312), kamīč ‘ladle’ (ED 626), kütāč ‘a jug or a vessel’ (ED 757), cf. MP qzw /küz/ ‘jug’ (?) (Durkin-Meisterernst 2004: 215). Tt. dial. išle- ‘fidan sürgün vermek, fidanın filizleri sürmek’ (Aksoy 1945–1946: III/435), which is a hapax, might be related to the hypothetical *äši provided that it also meant ‘shoot, sprout, scion’ as WM esi ~ isi does. Unfortunately, neither the given etymology of ešič nor its onset *h- can be confirmed.

30 The word has already been emended to ičinin by Bang & Gabain (1928: 252) and Çetin (2023: 281, 399) and to ičiniŋ by Tezcan (BTT 3: 731.).
31 See also OU ešič ‘Kessel, Topf’ (Wilkins 2021a: 264), QA äšič ‘cooking pot (hung in the tannūr)’ (Boeschoten & O’Kane 2015: 606), FZG äšič ‘earthen pot (dig-i gilin)’ (Dankoff 1987: 5), RH isič ‘cooking pot’ (KD 146, 278).
32 Stachowski (1993: 62–63) derived his Proto-Turkic *âšič from *aš ~ *aš ‘food’ and assumed a secondary palatalization because of /š č/.

23
Lexical Comparison 13

Tu.: CT āš- ‘to dig; to row’ (ED 255–256), Kh. hāšū- ‘graben, ausgraben’ (WCh 130) < CT *hāš(ū)-; Chuv. dial. al- ‘paxat’ nov’ (ChuvRSl 29) < BT *āł-, Chuv. alt- ‘1. kopat’, ryt’; 2. dolbit’, vydalblivat’ (ChuvRSl 31) < BT *āł-it-.

Mo.: precl. WM ete- ‘to extirpate (?)’ (Cleaves 1949: 85, 108), WM ete- ‘to pick, to pluck out’ (L 335), WM etege- ‘to scratch’ (L 1222), Khal. etex ‘to pick or pluck out; to dig out; to instigate’ (Hangin 1986: 863–864), Bur. etexe ‘otgrebat’; otmetat’ (BurRSl II 681), Kalm. etya ‘kratzen od. in der erde graben (nicht tief), schaufen, pflügen’ (Kwb 128), Kmg. ete- ‘otgrebat’; otmetat” (KmgRSl 357), FYug. hte- ‘掏’ [to dig] (Bolčuluu et al. 1984: 60) < PM *hete- (cf. Ramstedt 1916–1920 §14; MT §696) < PPM *pēte-.

Kit.: Ø

Tg.: Man. ḥet-‘1. to dig, to dig out, to dig up; 2. to criticize; 3. to analyze, to scrutinize’ (Norman 2013: 112), Spoken Man. ḥetmə [fatəm] ‘to dig’ (Yamamoto 1969 §1743), ḥetm [faˈtəm] ‘dig (фа)’ (Kim et al. 2008: 70), Nan. (Bikin, Kur-Urmi) ḥet- ‘kopat’ (SS II 305) < PTg. *pätä-

Remaining lgs.: Ø

Borrowing(s):

1a. Tu. *pāšā- → PPM *pese- > *pete- → PTg. *pätä-

1b. Tu. *pāt,ā- → PPM *pete- → PTg. *pätä-

Commentary: The correspondence of the Mongolic /t/ to the Turkic /s š/ is also attested in the following words: PM *itege- ‘to believe, trust’ (N 377) ← Tu. *išā- > CT išän- ‘to trust, believe in, rely on’ (ED 264), PM *budāj ‘mist’ (N 289) < *butaŋ ← Tu. *būsaŋ > Tt. dial. pusaŋ ‘sis’ (DS 3489), cf. CT būs ‘mist, fog’ (ED 379), Chuv. pās ‘par, parovoj’ (ChuvRSl 280).

Elsewhere (Ünal 2017: 32–33), I have argued for a change of */s/ to /t/ in prehistoric Mongolic. As this might still be true, I consider it possible that in this case we may be dealing with a transitory sound in Turkic. The consonant that I transcribed as t₂ above is likely to be the missing link between /l/ ____________

33 Despite Doerfer (WCh 130), KB 5412 āšū- (Arat 1947: 519) cannot be identified with CT hāš(ū)- ‘to dig.’ It is certainly an instance of CT āšū- ‘to cover, envelop’ (ED 256).
and /ʃ/. PY *kətə ‘winter’ (Werner 2002: I/475; Werner 2006: 126), a possible loanword from a cognate form of CT kïš ‘winter’ and Chuv. xël ‘id.’ makes this assumption even more likely. Otherwise, we must assume independent fortitions in Mongolic and Proto-Yeniseian. The Bulgar Turkic form of the same word is borrowed into Proto-Samoyedic as *ke̮ (< *ke̮lˊ) ‘winter’ (Helimski 1997 §522).

It is worth noting that the Bulgaric *(h)älün, the equivalent of Osm. (sixteenth c.) äšin ‘çukur, hendek, mezar’ (TS 1555), derived from the same verb, entered Mongolic as elü ‘hole, cave, den, burrow, lair’ (L 310).

**Lexical Comparison 14**

**Tu.:** DLT išil- (-mǟk) ~ yišil- (-yân) ‘to become accustomed (hand to work)’ (lit. ‘to be smoothed’) (CTD I 193; CTD II 176, 188), CT iš – yiš ‘1. (na)teretˊ – vo vcex istočnikax rubrik; potiratˊ; stiratˊ; 2. sledatˊ gladkim, otpolirovatˊ, vystrugatˊ; 3. seč (sablej)’ (ÈSTJa I 667–668), CT iši~yiši ‘1. (na)teretˊ – vo vcex istočnikax rubrik; massirovatˊ; 2. otčiščatˊ; skoblitˊ, strogatˊ 3. česatˊ; 4. gladit” (ÈSTJa I 667–668), Alt. yiš ‘steretˊ, sgladitˊ (řez’u s metalla i t. p.)’ (Verbickij 1884: 473), Yak. ihĩ (< *iš̱g) ‘Meißel’ (Monastyrjew 2006: 207), Tt. dial. hiški’ağҔ yontmaya yaran, iki tarafinda tutulacag yeri olan, ortasi madeni bir çeşitli bucak’ (DS 2379), DLT üšän~yüšän35 (recte üšũn~yüšũn) ‘smooth (rock)’ (CTD I 156), Tt. dial. hüšuntü ‘rendeden dökülen kırıntı, talaş’ (DS 2452), Tt. dial. hüšküre ~ hüšgüre36 ‘rende’ (DS 2452) < CT *hiš(i)~*hiš~*hüš-.  

**Mo.:** WM ili~ile~ele ‘to caress, stroke with one’s hand; to rub, massage’ (L 407–408), IM ili-be ‘düzeldi, düzeltti, düz oldu, eşitledi’ (Ar. (أستوى) (Gül 2016: 142), Khal. ilex ‘to caress, stroke with the hand; to rub, massage; to iron, press, press with a pressing iron; to plaster; to cement’ (Hangin 1986: 275–276), Kalm.

34 The Proto-Samoyedic form is reconstructed as *kilˊ ‘winter’ by Róna-Tas (1988: 743). See Donner (1924: 5), Joki (1946: 211–213; 1952: 175–176), Hajdú (1953: 77–78), Doerfer (TMEN III 481), Ligeti (1986: 497) and Róna-Tas (1988: 743) for the discussion concerning the direction of borrowing. It is important to note that Joki regarded the Samoyedic word as a loanword from Yeniseian whereas Hajdú maintained that Samoyedic is the donor language. Róna-Tas has agreed with Hajdú.

35 The forms in question are written as ‘USANK’ and ‘YUŞAUNK’ in fol. 80 and as ‘YUŞANK’ in fol. 607.

36 Tt. dial. küştüre ~ köstere ~ köstere ~ küstüre ~ kürtür ~ küştüne ~ küšderi ‘tahta rendesi’ (DS 3052) probably represent aberrant variants of the same word.
ilə‘glätten, streicheln’ (KWb 207), ilx (ウソ) ‘1. gladit‘; razglażivat‘; 2. massirovat‘, delat’ massaž; 3. laskat’ (KalmRSI 269) < PM *(h)ile- ~ *(h)ili-; WM ileo̱r – ileür – iligür‘flatiron, iron for pressing’ (L 408), Khal. ilüür ‘1. float (plasterwork); 2. long-handled smoothing tool used in needlework; 3. drag-harrow’ (Bawden 1997: 194), Ord. ilüür ‘glatt, eben,’ ilə‘glätteisen (der schneider)’ (KWb 207), EYug. helə‘rub’ (Stary 1990: 26) < Jurc. *pise-.

Remaining lgs.: PS *picə- (~ *püćə-) ‘scheren, rasieren’ (SW 124; Helimski 1997 §293) (< PU *pečkə- ?).

Borrowing(s):
1. Tu. *pit,ə- ~ *püt,ə- (~ *pü̯t,ə-) → PS *picə- (~ *püćə-)
2. Tu. *pi̱t,ə- (~ *pi̱ü̯t,ə-) → PPM *pile- ~ *pili- > PM *hile- ~ *hili-
3. Tu. *pü̱t,ə- (~ *pi̱ü̯t,ə-) → PPM *pü̱li- > PM *hüli-
4. CT *pi̱šä- (~ *pi̱šə- ~ *pü̱šə- ) → (Mo. →) Jurc. *pise- > Spoken Man. fise-

Commentary: The Turkic and Mongolic verbs have already been considered as cognates by Ramstedt (KWb 207) and Tekin (1975: 280). DLT išil- ~ yı̱sil- and CT iš(i)- ~ yı̱ş(i)- clearly point to an older *hiš- ~ hüš(i)-. The verb appears in a variety of meanings such as ‘to scrape, to plane (wood); to comb (textile); massage’ [to tan, to knead, to massage] (Chén Nǎixióng 1985: 56), Bao. fəl-dəʑi略微 ua-’scrape, rub, grate harshly (over); wash’ (Sūn 1990: 508), Bao. fəl-‘to soften, tan; knead’ (Sūn 1990: 256), Bao. fəl-‘rub between hands (揉)’ (Li & Dwyer 2020: 70), Kgj. fəl-li-’rub’ (Sečenčogt 1999: 285a), Dgx. hulu- [χulu-]‘揉搓’ [to rub, to stroke] (Mā & Chén 2012: 185b) < PM *hüli-

Kit.: Ø

Tg.: Spoken Man. fise- ‘rasieren’ (Stary 1990: 26) < Jurc. *pise-.

37 I am indebted to Dr. Hans Nugteren (Göttingen) who kindly shared with me his unpublished collected data and opinion on PM *hüli-.

38 Mgr. ful-‘1. 犁地, 2. 套(车等)’ [to plow (the ground); to harness (a cart etc.)] (Khasbaatar 1985: 62), fuli-‘1. 犁, 犁地, 2. 拳’ [to plow, to plow (the ground); to rout (as a pig with its snout)] (Li Kèyù 1988: 111) is likely to be a further cognate of the same Mongolic verb.
to rub; to cut with a sword.' The basic meaning, however, seems to have been ‘to smooth (out), to scrape something to make it smoother,’ which is also confirmed by the Mongolic *hile-~*hili-.

Despite Clauson (ED 263) and Erdal (OTWF 337), DLT üšäŋ ~ yüşäŋ ‘smooth (rock)’ cannot be derived from üšä- ‘to search’ (see No. 11 above) for semantical reasons. Even though üšä- may also have meant ‘to scratch about,’ the signified action has the intention of searching and not of smoothing. I think that this adjective is a corruption of *uš-üŋ ~ yuš-üŋ, which is derived from *hüš-, a variant of *hiš-. This variant also serves as the base of Tt. dial. hušüntü ‘wood shavings’ and hušküre ~ hušgüre ‘plane (tool).’ The formal equivalent of the former found in Bashkir dialects, yıšïndï ‘stružka’ (DSBJa 131), proves that we are dealing with the same verbal root.

The connection between PPM *pile-~*pili- and PPM *püli- is only tenable if the latter is not considered as a secondary form of the former but as a distinct borrowing. So, the vowel fluctuation originates from the donor language. The semantic discrepancy can be explained in the same way. The meanings of both verbs lie within the range of that of the Turkic one.

Sammallahti (1979: 34 §146) and Rédei (UEW 367–368) related the Proto-Samoyedic verb with Saamic and Volga-Finnic forms and derived it from the Proto-Uralic *pečkä- (*päčkä-) ‘schneiden.’ Prof. Juha Janhunen (pers. comm.) pointed out that this etymology involves irregularities particularly regarding its vocalism. Despite the irregularity, he deemed the correspondence between Mordvinic and Samoyedetic relatively good both semantically and phonologically and suggested an original *pečkä-, in which case only the second-syllable vowel in Samoyedic would be secondary.39 Filippova (1986: 46), on the other hand, considered the Samoyedic verb a loanword from the Turkic bïč- ~ bič- ‘to cut’ (ED 292–293).

In my opinion, we are dealing here with a possible loanword from the Turkic *pit,ä-~*püt,ä-. Considering its central meaning, ‘to scrape,’ the Turkic form can easily be linked to the Proto-Samoyedic verb that signifies ‘to shave beard, to cut hair.’ In many languages, a single verb is used to signify both actions, e.g., Tat. kïr- 1. schaben; 2. rasieren; 3. reiben; scheuern’ (TDW 141).

39 PM *hečke- ‘to cut’ (N 351–352), which can be traced back to *pečke-, is strongly reminiscent of Erzya pečkems and Moksha pečkoms, both meaning ‘to slaughter; to cut off,’ although these languages never had direct contact in ancient times. The similarity is probably coincidental.
The Proto-Samoyedic */c/ is preserved only in part of the Selkup dialects where it is realized as a dental affricate or a retroflex stop. In other Samoyedic languages, it has indistinguishably merged with */t/ (Janhunen 1998: 462). Under the entry of püče-, Alatalo (2004 §461) gives the Selkup infinitives pōdžgu, pūtšəgu and pūttšəgu. In view of these sound values, we may conclude that the Turkic */tʃ/, whether it may have an archaic or innovative origin, was also realized close to the affricate [ts].

The Spoken Manchu verb fise- ‘to shave’ is rarely attested. If it is genuine, it may well be an indirect loanword from the Early Common Turkic *pišä-. 
3. DISCUSSION

The most important piece of information that can be inferred from the comparative material presented above is that in the earliest Turkic loanwords of the neighboring languages the onset *p- never occurs with non-initial *-z(-) but only with *-ʀ(-). On the other hand, *p- occurs in six cases with medial *-ʟ- and only in three ambiguous cases with medial *-š- although two of the latter hint at a possibly related *-tš-.
Table 1  Turkic loanwords in adjacent languages indicating *p-

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<th>Reference Forms</th>
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<td>2</td>
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<td>PM *horgu-</td>
<td>hoz- (<em>hozuk</em>)</td>
</tr>
<tr>
<td>3</td>
<td>*p – *r</td>
<td>*püküütä</td>
<td>PM *hürtesün</td>
<td>hüz- (<em>hüzüt</em>)</td>
</tr>
<tr>
<td>4</td>
<td>*p – *r</td>
<td>*payār</td>
<td>PY *p’aλ</td>
<td>hayāz</td>
</tr>
<tr>
<td>5</td>
<td>*p – *r</td>
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<tr>
<td>6</td>
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<td>7</td>
<td>*p – *l</td>
<td>*pāl</td>
<td>PY *p’al</td>
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</tr>
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<td>8</td>
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<td>Kit. *pilia</td>
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<td>PTg. *pîla</td>
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<td>PS *petô</td>
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<td>*p – *l</td>
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<td>PTg. *pûlâ-</td>
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<td>*p – *l</td>
<td>*parâlā &gt; *parâl.</td>
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<td>PTg. *para</td>
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<td>11</td>
<td>*p – *l</td>
<td>*pûlā-</td>
<td>PS *pûj-</td>
<td>*hûš-</td>
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<tr>
<td>12</td>
<td>*p – *ş</td>
<td>*pâšin (or *pâšî)</td>
<td>PM *hesî</td>
<td>(h)âšin (or *(h)âšî)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>PTg. *pâsîn</td>
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</tr>
<tr>
<td>13</td>
<td>*p – *ş (*t₂)</td>
<td>*pâšâ- / *pât,â-</td>
<td>PM *hete-</td>
<td>hâš(ü)-</td>
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<td>PTg. *pâtâ-</td>
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</tr>
<tr>
<td>14</td>
<td>*p – *ş (*t₂)</td>
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<td>PS *picô- (~ *püçô-)</td>
<td>*hîš- ~ *hûš- ~ *hîš(i)-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*pit,â- ~ *pütt,â-</td>
<td>PM *hîle- ~ *hîli-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>*pütt,â-</td>
<td>PM *hûli-</td>
<td></td>
</tr>
</tbody>
</table>
This information can be interpreted in two different ways. Accordingly, two tentative scenarios are proposed below.

1. The corpus of Turkic loanwords that indicates an initial *p- is borrowed from a stage before the split of Bulgar Turkic and Common Turkic, or, to formulate this differently, from Late Proto-Turkic. Thus, Late Proto-Turkic was a language with onset *p- and non-initial opposition of *r: *r₂ and *ɬ: *ɬ₁. The aberrant *š and *t₂ are either due to false comparisons or were genuine but younger developments.

2. The loanwords in which *p- and *-r(·) and *p- and *-ɬ(·) co-occur are borrowed from Proto-Bulgar Turkic. Those that exhibit *p- and *-š together are borrowed from Proto-Common Turkic.

From the typological point of view, the first scenario would not be surprising at all. The presence of two rhotic phonemes is attested in many languages, e.g., in Albanian, Armenian, Basque, Catalan and Spanish (all have a tap and a trill). Czech and Nivkh are two languages that have two trills. The change of a rhotic to a voiced sibilant is exceedingly rare but quite real (Kümmel 2007: 76, 162–163). In the world’s languages, the co-existence of two lateral phonemes is not uncommon either. For instance, Proto-Yeniseian is also reconstructed as having two lateral phonemes, a dental and a palatal one (Werner 2005b: 204–205). Regarding our central question, in both scenarios it can safely be assumed that Proto-Turkic had an initial *p- that yielded the Common Turkic *h-.  

Even though the main question of this study is already answered, we need to determine which scenario is closer to the truth. Unfortunately, the answer does not lie in the data treated above and no direct evidence in favor of the first or the second scenario can be found. If we adopt a broader perspective, however, we can discern that there is indirect compelling evidence for the second scenario. This evidence comes from two other ancient initial consonants preserved in the Turkic loanwords of adjacent languages. The base and a nominal derivative of the Common Turkic verb yašï ‘to be weak, emaciated, lazy, calm’ (VEWT 192; ÈSTJa IV 20–21; TMEN §1865), which must have had an initial *ń- in

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40 The third possible scenario in which *p- is attributed to Pre-Proto-Turkic is chronologically inadmissible.
prehistoric times, occur in Mongolic both with -l- and -s-. This leads us to the conclusion that it entered Mongolic once from Bulgar Turkic and once from Common Turkic.

\[
\text{BT } *\text{n}i\text{a}l\text{ā} (\text{CT } *\text{ya}ʃ^\text{v}) \rightarrow \text{Mo. } *\text{nala} > *\text{nalai}^\text{42} > \text{WM } \text{nalai} \text{ ‘to be quiet; to be good-natured; to be carefree; to be slow, sluggish, careless’ (L 561), Khal. } \text{nalayx ‘to be quiet, to be calm, to be relaxed, to be at peace’ (Bawden 1997: 229), Bur. } \text{nalayxa}^\text{43} ‘1. otkidyvatˊsja (nazad); 2. spokojno raspolagatˊsja; 3. bytˊ spokojnym; bytˊ udovletvorënnym (ilí dovol’nym) čem- \l ; 4. naklonjatˊsja’ (BurRSI I 588).}^\text{44}
\]

\[
\text{CT } *\text{n}a\text{s}íkā^\text{45} (\text{CT } \text{ya}ʃık) \rightarrow \text{Mo. } *\text{nasîgai’slow, lazy (N 452).}
\]

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41 The only remnants of this root might be Tt. dial. yaʃ ‘çürük, güvenilmез’ (DS 496) and Yak. dial. sis (kîhi) ‘nastojaččij, real’nýj čelovek’ (DSJaS 171). CT yaʃık-, as reflected in Bashk. dial. yaʃık- ‘poxudetˊ, obessiletˊ’ and Khak. čazîx- ‘oslabet’, rasslabnut” (ÉSTJa IV 21), must be seen as a separate derivation from yaʃ with +Xk- (OTWF 492–499).

42 For the denominal verbal suffix +yi-, see Ramstedt (1912: 56) and Khabtagaeva (2001: 127). WM doboi- ~ toboi- ‘to be convex, protuberant, prominent, or protruding; to swell up, puff up’ (L 255), derived from dobo ‘hill, mound, knoll’ (L 255), is another good example for this suffix.

43 In Buryat, the verb is semantically contaminated with nalaxa, which goes back to WM nalıu- ‘to lean against something with one’s back; to lean over, bend over, incline’ (L 562).

44 In Mongolic, two further Bulgar Turkic loanwords with onset *italic的小* are found. The former is newly established by the author of these lines whereas the latter is an older comparison. BT *nĩɾɨ́ (OU [BTT 7: 32] yiz ‘spine,’ Yak. sis ‘back, spine, backbone,’ Dolg. his ‘id.’) → Mo. *nɨɾɨyun > *nɨɾuun ‘back’ (N 457–458); BT *nĩɾətə (CT yaʃ ‘young’)) → Mo. *nilka ‘the youngest (child of a family), baby, young and tender, delicate’ (N 457) and perhaps also Mo. *nɨɾaí ‘newly-born’ (N 457) if it goes back to *nɨlaraï. For *ka in *nîlka, cf. Mo. sɨɾ-kə ‘wound’ (N 493), which is borrowed from the Bulgaric cognate of CT sɨz ‘ache, pain’ (ED 863; ÉSTJa VII 393–394). Ev. nîlba ‘newborn’ (Sotavalta 1978: 164) and the word nîa ‘幼嫩的 [tender, delicate] in the language of the Kitan descendants of Yün-nán 云南 (Mèng 1995: 213) are interesting parallels to Mo. *nilka.

45 The only other reconstructible Common Turkic word where *italic小- and *italic-ş- co-occur is *nāšə, which entered Mongolic as *nasun ‘(year of) age’ (N 452). The form *nāšə has yielded yaʃ ‘a year of one’s life’ (ED 975–976). In the Altaistic tradition, it has been falsely accepted that the Mongolic form goes back to *nalsun or *nalˇ-sun and this form is in turn cognate with the Turkic yaʃ < *nala (Ramstedt 1957: 75, 119).
Based on this doublet, we can deduce that Common Turkic and Bulgar Turkic both had the ancient onset consonant *ń- which is otherwise totally absent in historical and modern Turkic languages.\(^{46}\)

The same also applies to the onset *ḏ-. For Proto-Turkic as well as Proto-Bulgar Turkic, two voiced dental onsets must be differentiated. The reconstructed near-minimal pair *ḏ.o르ă 'birchbark' > CT tŏz 'id.' (ED 571), cf. Mo. durusun 'shell, bark, specif. bark of the birch tree' (L 276; Sûn 1990: 239) and *ḏ.oră 'weak, impotent; barren' > CT yoz 'barren; weak, frail; having poor quality'\(^{47}\) (ED 985), cf. WM doro (< *dora)\(^{48}\) 'weak, impotent, incapable, incompetent; having no good qualities' (L 263) point to the phonemic contrast of two dentals.\(^{49}\) *ḏ.agĭ ῥă 'dark brown,' *ḏ.ǟڕă 'a plant,' *ḏ.avută 'hidden' and *ḏ.ṳĭ 'complexion, face' are further rhotacistic forms with onset *ḏ- that can be reconstructed by means of the Mongolic data (see Appendix 1 for details).

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\(^{46}\) Hung. nyár 'summer' is probably the only evidence suggesting that *ń- may still have been present in the language of the Bulgar Turks who arrived at Caucasus in the fifth century CE (cf. CT yâz 'spring, summer') (Berta 2016: 128). Moór's (1960: 393–394) theory that the Hungarian ny- must be a substitution for the Bulgar Turkic *d’ is also quite plausible. See TLH (1206–1210) for other possible etymologies of the Hungarian word.

\(^{47}\) The basic meaning of the word is ‘barren,’ cf. DLT yoză- ‘to be barren (ewe)’ (CTD II 192), IH yozladĭ ‘kısır kaldı’ (İzbudak 1936: 32) and Turkmen yoz (ёз) ’jalovyj’ (TkmRSl 313). The Turkish dialects, on the other hand, exhibit various further meanings: Tt. yoz (I) 1. kısır; 2. kısır ve erkek davardan oluşan sürü; 3. yazın kırda kalıp otlatılan davar; 4. civcivlerini büyütüp bırakan tavuk; 5. kart keklik; 6. zayıf (hayvan için); 7. başıboş (hayvan için); 8. besili; 9. bir, iki yaşında tay; 10. bir, iki yaşlarındaki manda, inek, öküz, eşek, at sürüsü; 11. değeri düşük, niteliksiz, cinsi bozuk,' yoz (II) ‘meyvesiz ağac; yoz (III) ‘işlenmemiş verimsiz toprak; yoz (IV) ‘1. yaban; 2. kaba (kimse); 3. rahat, başıboş, özgür; 4. tembel (kimse)’ (DS 4301–4302).

\(^{48}\) Also cf. WM doro-‘weak, feeble, emaciated; weak-minded; suppressed, worth nothing; backward, uncultured’ (L 263), Mo. doro- ‘weak, slow, feeble; backward’ (Sûn 1990: 226), Ord. dorọ’tọ- ‘tomber en décadence, devenir pire, dégénérer, empirer; tomber dans le malheur, dans la misère; devenir pauvre, être ruiné’ (Mostaert 1968: 153). Mgr. durce-: (< *doro-yi-) ‘1. 没有精神, 2. 没有力气, 3. 变懒’ [to lack vigor; to lack strength; to become lazy] (Khasbaatar 1985: 231).

\(^{49}\) For a similar reason, Poppe (1927: 132) posited two dental phonemes for Proto-Altaic.

\(^{50}\) The Xiongnu word tíhú醍醐, tíhú醍醐 de-ya ‘clarified butter’ (Pulleyblank 1962: 255; Schuessler 2014: 277) may serve as independent evidence for the Turkic *ḏ- in the first century CE if it renders Tu. *ḏ.ágă > CT yăg ‘fat, oil, grease,’ Chuv. șu ‘butter, fat.’ The Proto-Circassian *dağă ‘lard, fat’ (Kuipers 1975: 69), without cognates in other West Caucasian languages, is likely to be a borrowing from Early Bulgar Turkic. The common base *yu (~ *yö) of CT yuk ~ yok ‘residues of food in a pot’ and yok ~ yok- ‘to stick to’ (ED 895, 897–898; ĖSTJa IV 211) may be a loanword from Ch. 濃 OC *[ts] ‘id., LHC tsou ‘sediment; dregs; distillers grains’ (Baxter & Sagart 2014; Schuessler 2009: 181) (cf. Sino-Korean 조 jo [ts̚] ‘id.’ given that it goes back to
Apart from the Turkic loanwords in Mongolic, a similar initial is attested only in Turkic inscriptions, texts, and glosses in Greek and Cyrillic alphabets, such as the Nagyszentmiklós inscription in Greek letters, early Turkic glosses in Byzantine sources and the so-called Bulgarische Fürstenliste (Nominalia of the Bulgarian Khans) as well as Turkic loanwords in Slavic.\(^5\) In all these cases, it is not certain whether the Greek δ or Cyrillic д rendered a voiced dental obstruent or a voiced postalveolar affricate. Even if some of the instances indeed stood for a dental obstruent, this sound was rare and rather archaizing than archaic.

The doublet relevant to \(^*d_2\) is distributed between Proto-Samoyedic and Proto-Yeniseian. It involves the earlier forms of CT ٧٠٠ and Chuv. šēr ‘100.’ Whereas Proto-Samoyedic has borrowed the Bulgar Turkic form, Proto-Yeniseian has borrowed the Common Turkic one.

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\[^*d_2\]
\[^*d_2\]u [dzu ~ ðu]. The identical derivational pattern is also found in Tu. \(^*č(=\text{OU š})?\) ‘moisture’ (ED 393) > \(^*čik\) ‘rosa; 2. inej; 3. syrost’, vlag, vlažnost’; syroj, vlažnýj, mokryj; 4. lug, lugovoj’ (Leksika 38–39), \(^*čik\) ‘to get moist’ (OTWF 494). The base may have originated from Ch. shī ‘wet, damp, moist’ (Zieme & Kara 1979: 64n.). See further the Proto-Turkic reconstructions \(^*d_2\)akâ- and \(^*d_2\)irâ- \(^*d_2\)irâ- as possible loanwords from Tocharian (or Chinese) in Appendix 1 as well as the Xiongnu čúqí, tuqí 居者 \(^*dâ\)ghi / \(^*d̜a\)-ghi ‘title given to the crown prince of the Xiongnu; (lit.) virtuous, worthy (賢)’ (Schuessler 2014: 276) possibly corresponding to the Avar title iugurrus ‘yugur’ ‘co-ruler of the khagan’ in Appendix 2. The phoneme \(^*d_2\) may also be used to explain the Mongolic \(^*kada\) ‘rock; overhanging rock; ravine’ (N 398) and \(^*eddie\) (> \(^*\text{ejen}\)) ‘master, owner, boss’ (N 326; MT §5; EEW §3748), which are the sources of PTg. kadā ‘Fels’ (B 49) and PTg. \(^*\text{ädǟ}\) (> \(^*\text{ädǟ.i}\) > \(^*\text{ädī}\)) ‘Mann, Herr’ (B 66) respectively. Their Turkic donor forms can be reconstructed as \(^*kad,a\) and \(^*äd,iä\). These correspond to CT ٧٠٠ ‘rock’ (ED 674–675) and CT ٧٠٠ ‘master, owner’ (Leksika 325–326).

\(^5\) All of these words originate from areas under Bulgaric influence: Δαξ, Δαξ ‘Ural river’ (CT Yayık) by Ptolemy and Menander Protector, δόγαι ~ δόξα ‘wake, funeral’ (CT yöğ) by Menander Protector, дяломь ‘(year of) snake’ (CT yılan), a name for the year in the Bulgarische Fürstenliste, дюймь ‘pillow’ (CT yöду ~ yösto), a Bulgaric loanword in Slavic languages, δύε (‘düer-’) ‘to carry’ (CT yöğ), a Bulgaric verb in the Nagyszentmiklós inscription in Greek letters.
BT *d₁ûr ‘100’ → PS *jür²⁵ ‘100’ (SW 50).⁵³

CT *d₂ůz ‘100’ → PY *λ₃us / *λ₃ut ‘100’ (Werner 2005a: 201), *hus ‘100’ (Werner 2005b: 219) > Kott (Str.) dus (= d’us), Pump. útamsa, útamssa (< *ut + *tamsa).⁵⁵

The Common Turkic *d₂ and Bulgar Turkic *d₂ must have been pronounced as a voiced dental fricative, perhaps alternating with a voiced palatalized alveolar stop in some vernaculars. Since Proto-

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52 Based on a lexicostatistical model which dates the disintegration of Samoyedic to the third century BCE, Blažek (2016: 83) regarded PS *jür as a loanword from the Proto-Turkic *yür. The second Proto-Samoyedic word of Turkic origin with onset *j- is *junt (“junt”) ‘Pferd’ (SW 49). It was borrowed from Tu. *d₂undâ > CT yund ~ yund (WYug.yunt ~ yot) ‘horse’ (ED 946; ESTJa I 253–254). This form, in turn, may be related to the Xiongnu táotá 騊駘 ‘a kind of horse’ (Yán Shīgōu: 桃塗) (Schuessler 2014: 265) if the latter renders a foreign *duda or *duđa (see Sagart 1999: 31 for the chronology of OC *l- > MC d-). The absence of /n/ in the Chinese transcription, however, weakens this equation. The insertion of the parasitical /n/ may have taken place in Turkic. Can the enigmatic first part of OU yuy kuš ‘Pfau’ (Wilkens 2021: 922) be traced back to *d₂udâ, the older form of *d₂undâ without /n/? Osm. yund kuši ‘kuyruk sallayan kuşu, peygamber kuşu’ [wagtail] (TS 4730) is worth comparing here. Note that both birds have conspicuous tails, which have given them their names in some languages.

53 The borrowing of the Bulgar Turkic forms *bōš (cf. CT bōz ‘grey’), *kūš (cf. CT kīš ‘sable’) and *ûr (cf. CT ūz ‘fat’) into Proto-Samoyedic as *pūro ‘grey, wolf-grey, wolf-grey dog’ (Róna-Tas 1988: 744), *kēl > *kē ‘winter’ (Helimski 1997 §522), *kīl > *kij > *ki ‘sable’ (SW 69) and *jür ‘fat’ (SW 50) is an additional evidence in favor of the argument that Proto-Samoyedic had primarily contact with Proto-Bulgar Turkic. On PS *ki, see also Helimski (1991: 263; 1995: 75–76) for an argumentation of the opposite direction of borrowing.

54 The Common Turkic d₂ is further reflected in PM *dabusay ‘(urinary) bladder, abdomen’ (N 310) and *dusu ‘to drip, drop’ (N 320), which were borrowed from CT *d₂amūžā (→ yamūž) ‘groin, flank’ (ED 940) and *d₂aštā (→ ywš ~ ywš- ‘to pour out’ (ED 976), cf. Bashk. yūšär (< *yūš- ?) 1. inej; 2. morosjaščij dožd’ (DSBJa 128). Despite Clauson, DLT ywš ~ ywš- can hardly be a reciprocal derivative of yū(ŋ)- ‘to wash.’ As we have no evidence that the opposition of *d₂: *d₂- was preserved in Common Turkic, the script number is put in brackets. It is likely that *d₂- had already merged with *t- in Proto-Common Turkic.

Samoyedic lacked a voiced dental segment, and Proto-Yeniseian lacked a dental fricative segment, */ð-*/ must have been substituted with the closest sounds in both protolanguages.56

Unlike */ʌs*, the ancient Turkic loanwords in Yeniseian discussed above are all borrowed from Bulgar Turkic.57 Despite Vajda (2009: 481–482) and Werner (2003a: 143), PY */tʲi’s* ‘stone’ (Werner 2002: II/312) must be added here as an old borrowing from */tʲâš < *tâš*stone’, cf. BT */tjàl.ä* > Chuv. čul ‘1. kamen’; kamennyj; 2. žërnov (mel’ničnyj)’ (ChuvRSI 595) and BT */tjàl.ä* → */tël+ɡu* > Mo. *čilaun

56 Assuming that the Proto-Yeniseian word for ‘leaf’ reconstructed as */l, a(tm)p* (Werner 2005a: 200) and */b(tm)p* (Werner 2005b: 218) is a loanword from the Old Chinese 葉 *ṭ[a]p* ‘leaf’ (Baxter & Sagart 2014), the lateral character of the Yeniseian initial is secured. The Chinese 葉 *lap* is also mentioned by Starostin (1995: 233) in connection with the Yeniseian word reconstructed by him as */jäpe*. PS */jäpe ‘Blatt’ (SW 41) is obviously a loanword from Yeniseian. Furthermore, PM *nabčîn (~ *labčîn) ‘leaf, foliage’ (N 450) and PM *nabaa ~ *namaa ‘foliage’ (N 450) also seem to be related to the Chinese word. Yet, the question remains why the Chinese *-l* is substituted by the Yeniseian *-l* if Proto-Yeniseian already had an initial *-l*. If Baxter’s (1992: 411) reconstruction */jap* is correct, this would better account for PY *l-*, as well as PM *n- (< *ni-*)

57 A further Bulgar Turkic loanword in Yeniseian is likely to be *dala / jalas* (alternatively *l-al* and *lal* ‘child’ (Werner 2004: 148; Werner 2005a: 200–201; Werner 2005b: 219), whose donor form may be cognate with CT *yâš ‘young; child’ and perhaps identical with BT, *níařá (> BT, *júlátá). Mo. *nîlka* ‘the youngest (child of a family), baby, young and tender, delicate’ (N 457) and Mo. *jalaù ‘young (person)’ (N 381) are borrowings from BT, *níařá* and BT, *júlátá, respectively. Osm. julasun ~ jîlasun shows that Mongolic must also have had an unattested variant in *jala-sun*, whose base is identical with that of *jala-u* (Schönig 2000: 105–106). Since the sonorants *n, n*l* and *ŋ do not occur in onset position in Yeniseian (Werner 2005b: 204), the initial *-l* of the Bulgar Turkic form must have been substituted by *-l* - or a lateral consonant of uncertain sound value as Werner’s reconstruction suggests. This comparison, albeit in a more concise manner, has already been made by Róna-Tas (1982: 136). For the sake of completeness, I would like to remark here that the same Proto-Yeniseian word is reconstructed as *g*al by Anderson (2003: 13) based on the reconstruction of Starostin (1995: 308) as */gVl*. Another reconstruction is found as */gʷâl* ‘child’ (Baxter & Sagart 2014). Yet, a short scrutiny reveals that the opposite is true: the diphthong */iâ/ in Bulgar Turkic arose from an older long */i/ that remained unchanged in Common Turkic. Yet, a short scrutiny reveals that the opposite is true: the diphthong */iâ/ is primary, and it got monophthongised in Common Turkic. The strongest evidence for this statement comes from the near-minimal pair *kîâr ‘snow’ (CT *kîr*) and *káx ‘goose’ (CT *kâz*), which resulted in Chuv. yur and xur respectively. This fact demonstrates that not every long */i/ was diphthongised in Early Bulgar Turkic. As a further example, Chuv. sum ‘count’ < BT */sâm* (cf. CT */sān* ‘number’) → Hung. szám ‘number’ (TLH 762–766) may be given, which would be expected to surface as *sûm* in Chuvash and as *sám* in Hungarian if the rule mentioned above were true. This fact was already acknowledged by Doerfer (KhM 278–279).
'stone' (N 302), Kit. *čala [183.189] ← čala, *čala [431.189] ← čala ‘male personal name’ (Liaoshi 遼史) 查剌 *čala ‘male personal name’ (Kane 2009: 57; Wu & Janhunen 2010: 171, 178–179, 209–210, 220; Ōtake 2017: 204n.). A similar unexpectedly early narrowing of *a, as is later observed in Tuvan and Yakut, is already found in the Dingling丁零 word kūnzi 昆子 *kïrsak60 attested in Weilüe 魏略 from the third century CE (Pulleyblank 1962: 226; Schuessler 2014: 273). This word is clearly cognate with the historical Common Turkic word karsak ‘steppe fox’ (ED 663; ĖSTJa V 313–314) and the Mongolic *kïrsa ‘steppe fox, corsac.’ Again, despite Werner (2010b: 181–182), PY *quˀs ‘tent, house’ (Werner 2002: II/140), *quwa ‘birch bark tent’ (Fortescue-Vajda 2022: 270) is another possible loanword from CT *koš ‘tent’ (VEWT 283b; Stachowski 1997b: 230–231), cf. SH qoš ‘Haus (Jurte, Zelt ?) (房子)’ (Haenisch 1939: 68).

The couple of doublets given above demonstrate that Proto-Common Turkic and Proto-Bulgar Turkic retained the onset consonants *ń- and *d-. Exactly this assumption makes it more likely that *p- must be ascribed to the same stages as well.

In addition to that, some Bulgar Turkic loanwords in Mongolic point to a second and younger loanword layer and originate from a period in which *d(2)- and *p- of the older layer had already changed to *ǰ- and *h-.

59 The conventional readings of the graphs 𢄑 和 枭 are ← čar° and ← a, respectively. Although the character 刺 usually renders the Kitan syllable /ra/, there is at least a certain case of /ra/: Kit. 刺孙 *šilasun (or *šilăsun) ‘leopard (豹)’ (Sün & Niè 2008: 102), cf. PM *šileü(l)sün ‘lynx’ (N 495) and, in particular, Eyug. falesen 辭狸 ‘lynx’ (Bolčuluu et al. 1984: 106). Despite Ōtake’s (2017: 204n.) contention, the coda vowel of the word may not necessarily be long. However, it certainly points towards an older sequence ąayV because the coda vowel ąa would have been elided in Middle Kitan. This also challenges Shimunek’s (2017: 459) assumption that the suffix +yu is a Proto-Mongolic innovation. So, Kit. 𤋬 /šawu ‘bird of prey’ (Shimunek 2017: 379) and Mo. *šižaun ‘bird’ (N 488) both go back to *šibayu. The same contraction of ąayV is also observed in Kit. 𤋬 /šawu [247.468.189] ← taqa ‘chicken, hen’ (Shimunek 2017: 372) and 𤋬 /šawu [270.189] ← ema ‘goat’ (Shimunek 2017: 339), which are, like PM *takïa (N 510) and PM *tmaan ‘goat’ (N 372), obvious loanwords from earlier forms of OT takïgu ~ takagu ‘a domestic fowl’ (ED 468) and OT ñnga ‘wild mountain goat’ (ED 158).

60 The use of Mo. ēilayun as a personal name is well documented (Rybatzki 2006: 301–302).

61 The sound value of *kïr for the character 昆 is secured by the circumstance that in Weilüe it also occurs in the transcription Gēkūn 隔昆 (Chavannes 1905: 561), which renders the well-known ethnonym *Kürkür that surfaces as Kürkiz in the Orkhon inscriptions. The same transcription is attested as early as 200 BCE (Pulleyblank 1962: 123, Pulleyblank 1983: 455, Pulleyblank 1993: 99–101, Schuessler 2014: 272).
BT, *ńaĺiī* > BT₂ *jaliī* → Mo. *jaliī* > SH *jalira*-62 ‘vom Zorn ablassen’ (Haenisch 1939: 85),
WM *jalira* ‘to shirk, be lazy or nonchalant; to rest from work; to stop for a time; to calm
down; to abate, to get better (as illness)’ (L 1032), PM *jalīkāī*63 ‘lazy’ (N 381–382), PM
*jalīkau ‘lazy’ (N 381–382).

BT, *pāɾă > BT₂ *hāɾă ‘little, few’ → Mo. *ara > SH aran ‘kaum’ (Haenisch 1939: 8), WM
*araī ‘just a little too...; not quite...; hardly, scarcely, barely; with difficulty’ (L 48).64

This is another strong argument in favor of attributing the loanwords with *p-* to Proto-Common Turkic
and Proto-Bulgar Turkic as in the second scenario above. We can state, by extending it, that the first and
more archaic Bulgar Turkic loanword layer in Mongolic stands out with *p-, *ń- and *d-* whereas the
second and younger layer features *h- and *ǰ-, which developed from the former ones.

To sum up, Proto-Common Turkic and Proto-Bulgar Turkic both had the onset consonants *p-,
*ń- and *d-, which yielded *h-, *ǰ- and *ǰ- in prehistoric Bulgar Turkic and *h-, *y- and *y- in historical
Common Turkic.65 Even though it cannot be verified by means of the available data that these onset

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62 From a semantic viewpoint, Kempf’s (2013: 169–170) derivation of this verb from jali ‘ruse, craft, cunning, trick, deceit’ is
unacceptable. It is a much better fit for the deverbal formative -rA-, also dealt with by Kempf (2013: 124–131). Poppe (1927:
114) has already compared jali-ra- with CT yaśī.

63 Nugteren reconstructed the Proto-Mongolic form as *jalkāi* mainly based on the modern languages. However, precl. WM
jaliqai kümün ‘indolent person’ (Tib. le lo can) (Kara 2009: 130) and HY jaliqai ‘paresse (懶)’ (Mostaert 1977: 65) point to a
trisyllabic form in *jalkāi*. Despite Godziński (1985: 30), jaliqai cannot be derived from the noun jali, which is attested in
Muqaddimat al-Adab (Poppe 1938b: 230b) with the alleged meaning ‘spokój.’ Firstly, jali is a misinterpreted cognate of Mo. jali
‘splendor, majesty’ (Kara 2009: 130). Secondly, jaliqai hardly belongs to this denominal formation. It is rather a deverbal
derivative with the suffix -kei/-qai.

64 This also shows that the change of *p-* > *h- in Bulgar Turkic must have occurred before the fourth century because the
Bulgar Turks had already left their home in South Siberia and lost their connection with the Mongols in the middle of the
same century.

65 Doerfer reconstructed only *p- and *d- for Proto-Turkic (see TMEN I 197; Doerfer 1971b: 332–342; Doerfer 1975–1976: 25, 28).
As regards *ń-, Doerfer deemed only the comparison of Mo. nudurga ‘fist’ and Tu. yudruk ‘id.’ acceptable and claimed that
the Mongolic form might have been dissimilated from *dudurga (see TMEN I 62; TMEN §1787). In a later study in which he
consonants had not undergone any changes during the formation of Proto-Common Turkic and Proto-
Bulgar Turkic, it is possible and quite likely that Proto-Turkic had the same initials */p-*, */ń-*, and */d-*, as well.

In the current scenario, it unfortunately remains unclear whether Proto-Turkic was a r̥/l or z/š language. Taking into consideration the successful argumentation of Doerfer (1975–1976: 33–35), I am tentatively willing to consider Proto-Turkic as a language with two rhotic and two lateral phonemes. The assumption that /ś/ and /z/ come from */l/ and */r/ succeeds in explaining why the former sounds do not occur in initial position in Common Turkic. The non-occurrence of the sibilants /ś/ and /z/ as phonemes in the proto-systems of Mongolic, Tungusic, Samoyedic and Yeniseian is another point that strongly speaks against the existence of these phonemes in Proto-Turkic. Since it is improbable that

reviewed the ‘Altaic’ cognate sets beginning with non-labial nasals, Doerfer tended to explain the rare plausible cognates as Mongolic loanwords in Turkic where the Mongolic */ń-* has been substituted by the Turkic y- (Doerfer 2001 §R 19, §R 29).

66 Concerning the zetacism, another hint pointing to the rhotic origin of CT z is given us by the Old Turkic postposition üzä ‘above,’ the antonym of as-ra ‘below.’ If we suppose that it is also derived with +ra in parallel with asra, it becomes immediately clear that the assimilation of the rhotic consonant of the suffix entails the reconstruction of the stem-final consonant as another rhotic: *ąr, +r, ā > *ąr, r, ā > *ąr, ā > *ązä (DLT üzä ~ őzä, Yak. üöhä ~ őhä). This also shows that */r/, was more dominant than */r,/. On the etymology of üzä, see also Tekin (1996: 328–329) and Erdal (2004: 179) for other possible but less likely explanations. The oldest attested form of the ethnonym Kırkız, i.e., pires in the Chinese transcriptions Gékün 隔昆, *krik-kun and Jiânkün 堅昆, *kun-kun (Schuessler 2014: 272) possibly rendering */k/hr, k/, proves that CT /z/ goes back to a rhotic consonant. If taken to be a loanword from Ir. *bọro < *baura: ‘brown, bay, grey’ (ESIIa 152), CT böz ‘grey, brown’ (ED 388–389) (without any cognate in Chuvash) is a further solid piece of evidence for the prehistoric sound change */r,/* > /z/. Likewise, OU bâkiz ~ pâkiz ‘clearly manifest’ (ED 333; Wilkens 2021b: 125–127) can be taken as another good example for the Turkic zetacism provided that it is an ancient loanword from a Tocharian form such as *påkri ‘clear, obvious, evident’ (Adams 2013: 389–390). However, it is quite doubtful when and how this word entered Turkic and why its distribution is so restricted despite its supposed antiquity. See Helimski (1991: 262–265) for further zetacistic points of argumentation. Against Helimski and, before him, Róna-Tas, I tend to interpret the so-called ‘graphic evidence’ as an indication of the Bulgaric origin of the Turkic runiform script.

67 Another possible solution was put forward by Ščerbak (1970: 83–88; and elsewhere), and it has been strongly endorsed by Janhunen (1989, 2016). According to Ščerbak, the coda */s/ has been voiced to /z/ after long vowels in monosyllabic words and in disyllabic words regardless of vowel length, whereas it has been retained after short vowels. Doerfer (1975–1976: 31–32) already raised justified objections to Ščerbak’s theory. It can be easily refuted by minimal pairs such as CT káz ‘goose’ : kâr ‘snow’ : kâs ‘bark’, CT hâz- ‘to lose one’s way’ : hâr- ‘to be tired’ : hâs- ~ hâs- ‘to hang’, CT yâz ‘spring’ : yâr ‘cliff’ : yâs ‘loss,
they have emerged *ex nihilo* in Common Turkic, we should assume a substrate language that had these sibilants. It may be an extinct language that was spoken in the Xiongnu Empire, perhaps an early Middle Iranian dialect. Considering the Old Turkic šatu 'ladder, staircase' (ED 867), it may be presumed that this idiom was closely related to Khotanese Saka, cf. Khot. būṣṣāta ‘stairway’ (Bailey 1979: 300), which is cognate with the Khwarezmian šc ‘Leiter,’ Gazi sārt, Sivandi sid ‘staircase, ladder’ (< Old Persian *ṣ(a)tā̆-), Pashto šol, Waziri Pashto šol ‘stairway of stones and earth,’ Yazghulamī šad ‘ladder,’ Ossetian (Digor) asiṇ(ae) ‘ladder,’ Yidgga afšinya ‘ladder’ < Ir. *srita- / *sritā- / *sriti- (Morgenstierne 2003: 98; Cheung 2007: 354–355). 69 CT tōn ‘garment, clothing’ (ED 512–513) has also been deemed to be a loanword from Khot. thauna- ‘cloth; silk’ (Bailey 1979: 149), which is the source of Tch. B tono ‘silk’ (Adams 2013: 329). Historically speaking, we can identify these Iranian-speaking people with Qūshè 屈射 EMC kʰut-ţiajk *Skujaka mentioned in Chinese sources as early as 200 BCE (Pulleyblank 1983: 455; Pulleyblank 2000: 72).

Based on the Mongolic, Tungusic, Yeniseian and Samoyedic data given and discussed under (13) and (14), we might posit that the Proto-Turkic */l/ changed to the Common Turkic */š/ over a dental consonant. The following phonetic values can tentatively be assigned to these phonemes: */l/ */ɬ/ > /tʃ/ */ʃ/ [ʃ]. The dental consonant can, of course, also be interpreted as a dialectal innovation and not as an intermediary stage. Nonetheless, the interpretation that I am most inclined to is to regard */tʃ/ with the possible phonetic value of [ts] or [θ] as the origin of the Common Turkic /š/ [ʃ] and Bulgar damage, death’ (also Chuv. *šūs → Cher. sūs ‘Gedächtnisfeier für die Verstorbenen’) and CT *hāvēs- (> āvūs- ‘to winnow’: CT hāvēr- ‘to turn.’ On the other hand, it cannot be denied that there is a dislike of the coda /s/ and the tendency for voicing it in Turkic: DLT ās ~ āz ‘ermine’ (CTD I n8), DLT kās ~ kāz ‘bark’ (CTD II 225–226). See Helimski (1991: 265, 267n.) for possible explanations of the latter phenomenon.

68 Proto-Iranian is reconstructed as having š and z (N. Sims-Williams 2017: 271). More importantly, East Middle Iranian languages all had these consonantal phonemes.

69 Based on the Middle and New Persian forms, Tafazzoli (1970: 87–89) reconstructed *sarta- ‘ladder’ for Old Persian and linked it to the Avestan sar and Sanskrit śr (sic) ‘joindre.’ On the other hand, Skjærvø, in a note to Morgenstierne (2003: 98), remarked that *srīta- / *srītā- must be distinguished from *sarta-.

70 Semitic languages are a perfect example of how these sounds can be interchangeable.
Turkic /l/ [4]. *tʃ/ would perfectly fit in with the consonantism of Proto-Turkic as the voiceless counterpart of */dʃ/. While */dʃ/ has yielded y- in Common Turkic, */tʃ/ must have changed to ę-. This could also explain the salient fluctuation of CT ę- ~ y- attested in čiğ ~ yiğ ‘raw, uncooked,’ čirü ~ yirü ‘to rot, to decay,’ čayka ~ yayka ‘to stir, to shake,’ čörgä ~ yörgä ‘to wrap up,’ čöpink ~ yöpük ‘impurity, rubbish, garbage,’ and perhaps even çöz ~ yör to untie’ simply as a result of an underlying alternation of */tʃ/- ~ */dʃ/-. Furthermore, PM *tüükei ~ *tüükü (< *tigüki ~ *tigükei?) ‘raw’ (N 528) and *sidun (< *sittün) ‘tooth’ (N 494) may also be regarded as ancient loanwords from PT *tigüki ~ *tigükäy > CT čiğki ~ čigkäy ‘raw, uncooked’ and PT *süt,ü ~ *süt,ũ > CT tiš ~ tiš4 (due to regressive dissimilation), Chuv. šäl ‘tooth.’

In this reconstruction, the rare but solidly attested alternations of CT t- ~ y- as in tint- ~ yind- ‘to search for, to seek’ and CT t- ~ ç- as in tāğzin ~ çāğzin ‘to revolve, to rotate’ easily find an explanation: they go back to the earlier sporadic alternations of */tʃ/- (~ */tʃ/-) ~ */dʃ/- and */tʃ/- ~ */tʃ/-.

As support for this assumption, I would like to mention a possible Chinese loanword in Proto-Turkic. I consider it quite likely that the Proto-Turkic *nūāt,ā, which is the origin of CT yaš’ ‘molodoj (+ maloletnij); junyj; junoša (+ paren’); rebenok, ditja (+ maloletnij); mладенец; novoroždennoe ditja; grudnoj, novoroždennyj; mal’čik; syn’76 (ESTJa IV 162 §7) and whose Mongolic (*jalau, *nīka) and Yeniseian (*d’ala / *lala) cognates have been mentioned above, was borrowed from the Western Han

71 Proto-ObUgrian *ŋ > Proto-Khanty *ŋ (Honti 1998: 337) is an interesting parallel to the proposed change of Proto-Turkic *ŋ- > Proto-Bulgar Turkic ę-.

72 MAyozül- ‘çözülmek, dağılıp çürümek’ (Yüce 1993: 212) is either a contamination of both forms or simply a miscopy.


74 CT sīšak > sīšak ‘two-year-old sheep’ (T MEN §1322; TLH 745; Li 2013: 566–567), cf. SH šilegǘ ~ qonin, zweijähriges Schaf, ~ irge, zweijähriger Hammel (二歳) (Haenisch 1939: 140), preserves the expected Common Turkic reflex *siš.

75 Ignorant of the external data I depend on, Anderson (1997/1998: 171, n. 3) has already proposed that */ŋ/ and *ŋ are as good a representation for the correspondence set as the standard */tʃ/ and */tʃ/.

76 As far as I can determine, the earliest attestations of this word in Turkic are IM (thirteenth c.) yaš oglän ‘small, young’ (ED 976), CC (thirteenth c.) yaš yaśindan ‘ab infantile etate’ (Gronbech 1942: 117) and QA (1310) yaš ‘young, at an early age’ (Ata 1997: 714). In any case, CT yaš ‘young’ must be kept apart from the homonymous words signifying ‘tears,’ ‘year of age’ and ‘fresh, moist, green’ as is also pointed out by Street (1980: 298n.).
Chinese form of *rúzǐ 孺子 ‘a child; my lad’ (Mathews 1972 §3147). Its Eastern Han Chinese pronunciation is given as *njuah-tsjaː; by Coblin (1983: 183, 191). Schuessler (2007: 445) emphasized that in Old Chinese the phrase *rúzǐ 孺子 meant literally ‘weak child,’ and *rú 孺 is a derivation from or perhaps identical with *rú 懦 ‘weak, timid.’ This word also occurs in the names of two Chinese emperors, Rúzǐ Xi 孺子猗 (fifth c. BCE) of Wèi 魏 (Riegel 1977) and Rúzǐ Ying 孺子婴 (5–25 CE) of Hán 漢. The speakers of Turkic must have heard the Chinese word as *ńwətsə and adopted it as *ńiātə [ńiatsə] to their speech. Since this borrowing can at the earliest be dated to the second century BCE in which Han–Xiongnu relations were diplomatically intensified through the heqin (和親) policy, the existence of */tʃ/ is secured for that period. This loanword thereby establishes the time-depth of Late Proto-Turkic.

A Xiongnu word in Chinese transcription not only backs up the reconstruction of */tʃ/ but also sheds light as to when it has changed to /ʃ/ in Common Turkic. I relate jūcì 居次 kɨa-tʃiə ‘lady, married daughter’ (Schuessler 2014: 272) to the Common Turkic kisi ~ kîsi ~ kisi (OU kisi, DLT kis(i) ~ kisi, Kh. kisi ~ kîsî ~ kîsi) ‘woman, wife’ (ED 748, 749; Maue & Röhrborn 1985: 69; Zieme 1992: 306–307; Li 1999: 248–249; Doerfer 1993: 63) that is unavoidably contaminated with CT kisi ‘person.’ The fluctuation of /s/ and /ʃ/ in Turkic may be explained through the circumstance that */tʃ/ had already begun to change to /ʃ/ in some Early Common Turkic dialects at the time the word was borrowed. The Xiongnu word, which I reconstruct as *kîtsi, entered the conservative dialects that had not completed this sound change as *kitʃ. This form regularly yielded kîsi in Common Turkic. The innovative dialects that no longer possessed the phoneme */tʃ/, on the other hand, substituted the Xiongnu */ts/ through /s/ and

77 The same phrase is reconstructed as *ńo-tsiə for Later Han Chinese (Schuessler 2007: 445, 633), as *ńjuh-tsjaː (Schuessler 1987: 516, 682) for Early Zhou Chinese and as *nos-tsəʔ for Old Chinese (Baxter & Sagart 2014).

78 A similar delabialization has apparently also occurred in the adoption of Chinese words in the Huán-Mò rhyme group into Old Uyghur (BTT 34: 183–184).

79 The Eastern Han Chinese pronunciation of 居 is given as *kjah and *kjâ (Coblin 1983: 162, 201, 213, 226). Its Old Japanese (Wei zhi stratum) pronunciation, on the other hand, is ka (Bentley 2016: 91).

80 De Groot (1921: 197n.) compared the Xiongnu word with the Turkic ‘kiš.’ It remains unclear to me whether de Groot had an attested Turkic word in mind, or he simply reconstructed a hypothetical Turkic form.

81 Zheng Xuan’s 鄭玄 (127–203 CE) hint that 居 is read like 姬 (Bentley 2016: 91) must be noted here. Coblin (1983: 201) gives the Eastern Han Chinese pronunciation of the latter as *kjah. Also cf. Hakka ki-tshû (MacIver 1904: 31, 63).
so emerged the variant *kisi. This Xiongnu word from the first half of the first century BCE sets the date for the emergence of the Turkic sound change */tʃ/ > */ʃ/ and the Early Common Turkic dialects.82

A third possible loanword in Turkic may help us to date the change of */tʃ/ to a lateral consonant in Bulgar Turkic. If a form related to Tch. B ȵyāṭse ~ řāṭse ‘danger; plague, distress’ (also ‘need’) (Adams 2013: 291) and Tch. A řāṭse ‘molestia, periculum’ (Poucha 1955: 109) is the source of CT yāš ~ yāš83 ‘1. vred, uščerb; 2. smurt’, gibel’; 3. traur, plač po umeršemu, pričitanje, plač, oplakivanje, otčajanie, predmet otčajanja, pečal’, pominki’ (ÈSTJa IV 150) and BT řāš ‘mourning’ (cf. Hung. gyász ‘mourning, bereavement,’ Cher. sös ‘Gedächtnisfeier für die Verstorbenen’) (TLH 376–377; Paasonen 1948: 112), we can assume that it was borrowed into Common Turkic as the change of */tʃ/ > */ʃ/ was still in progress because CT yāš, like CT kisi ~ kiši treated above, shows an alternation of */ʃ/ ~ */ʃ/. This dates the borrowing to the first half of the first century BCE. Unlike Common Turkic, Bulgar Turkic must have already undergone the change of */tʃ/ > */l/ at that time. Otherwise, we would find either řāl or an alternation of řāl and *yāš. In conclusion, the change */tʃ/ > */l/ in Bulgar Turkic seems to have come to pass prior to the change of */tʃ/ > */ʃ/ in Common Turkic, presumably in the second half of the second century BCE.84 Even though it does not help us in corroborating this dating, PTch. *i̯ētse ‘(outer) skin’ > Tch. yats (~ yāts), Tch. B yetse (Adams 2013: 549) is another possible loanword in Proto-Turkic. It

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82 Róna-Tas (1982: 123–122 and elsewhere) maintained that the word for ‘stirrup’ must have existed in Turkic prior to the split of Bulgar Turkic and Common Turkic and so dated their divergence to the first centuries BCE. This dating is in accordance with our dating of the sound change */tʃ/ > */ʃ/ which marks the emergence of Common Turkic.

83 Three instances from three different periods of Turkic speak for a variant in yāš: OU (yāš- yāš ‘Schaden’ (TT VIII O 7), QA yaš ‘mourning’ (Boeschoten & O’Kane 2015: 698), Yak. įš-sās ‘bran’, vražda; zlost’; spory-perekory’ (Pek. II 1973, s.v. įš).

84 Tch. AB tsit ‘to touch’ (Malzahn 2010: 992–993; Adams 2013: 807), without any Indo-European etymology, may serve as evidence for the opposite direction of borrowing if it can be related to the Late Proto-Turkic form *d̥etā- that yielded CT yet- ‘to catch up, to reach; to be sufficient’ (ED 884–885) and Chuv. sīt- ‘1. doxodit’, doezžat’, dobiratsja i t. d.; 2. približat’sja, nastupat’; 3. dogonjavat’, nagonjavat’, približat’sja k komu-čemu-l.; 4. dostavat’; 5. dostigat’; doxodit’ do čego-l.; 6. poseti’ kogo-čto-l., pobyvat’ gde-l.; 7. uspevat’; 8. sbyvat’sja, ispolnjavat’sja, osuščestvljavat’sja; 9. xvatat’; byt’ dostatočnym; 10. postigat’; obrušjavat’; 11. rvanjat’ sja, byt’ rvnym’ (ChuvRSl 419). PT *d̥- [dz ~ dz̥] was substituted by /ts/ in Tocharian because it lacked its voiced counterpart. The semantic gap between ‘to touch’ and ‘to reach’ is easily bridgeable. Note that OT tāg- ‘to reach (a place)’ also gained the meaning ‘to touch’ from Middle Turkic on (ED 476). According to Carling (2005: 65–66), Common Tocharian is to be dated around the beginning of our era. This sets the terminus ante quem for this borrowing.
probably entered Turkic as *(i̯)ät,ā ~ *(i̯)ä̆sa and gave äš ~ *äs (OU eeš, Tt. dial. eš, Tkm. ešen, Uzb. eš, Tuv. esten') 'placenta' (Ölmez 2008: 233–234) in Common Turkic.85 Intriguing word forms with the same meaning and not identifiable as of foreign origin are found in Ottoman Turkish (thirteenth or fourteenth c.) as ätin 'döl eşı, meşime, son, döl yatağı' (Doğuer 2013: 157), in Turkish dialects as eten, etene and etek 'insan ya da hayvan eşı, sonu' (DS 1797) and in Azerbaijani as ätänä 'posled, placenta' (AzRSI II 129).86 All of these forms ultimately go back to *ätän, which is either a younger loanword from Tocharian, or the result of a sporadic change of */t₂/ to /t₁/. At this point, I would also like to remind the reader that Naert (1964: 257–258) considered the Tocharian word, which is quite likely of Indo-European origin, a loanword from the Khanty et 'body, surface of the body; skin of human beings.' Van Windekens (1964: 594–595), however, rejected this etymology and established a connection with the Mordvinic jožo, jož(a) 'surface' and Zyryan ež 'the inner side of the skin; skin; flesh.'

As I have suggested the presence of ancient Tocharian loanwords in Turkic, it may be appropriate to back up this suggestion indicating a firm witness of the linguistic contact between Xiongnu and Yuezhi who spoke Tocharian. Pulleyblank (1966: 19–20) made an important point when he considered the Xiongnu title ruōdī 若鞮ńak-te (glossed as xiào 孝 'filial piety') (Schuessler 2014: 280) as a borrowing from the Lesser Yuezhi title Ruōjū 若苴ńak-tsia (Schuessler 2014: 280), which is an equivalent to Tch. A nākci, B nākciye 'divine, celestial, heavenly' (Adams 2013: 284–285; Barnes 2013: 41n.) However, the Xiongnu title is more likely to be a loanword from Tch. B ńakte 'god' (Adams 2013: 281–282). Blažek & Schwarz (2017: 65–66) already referred to this connection and concluded that “during the 1st cent. BCE the chieftains of the tribal confederation, in Chinese sources called Xiongnu (匈奴 Xiōngnu), introduced among their titles and epithets a Tocharian word with typical features of Tocharian B.” I suspect that the enigmatic Middle Turkic word yagdu – yagtu – yakdu – yaktu 'light, brightness, splendor' (see TMEN §1902 and Tezcan 2020: 86–87 for documentation and etymology) may go back to *ńaktu and be somehow related to the Xiongnu *ńakte. If my suspicion is correct, the Xiongnu and Lesser Yuezhi words must have originally meant 'light, splendor' and therefore also ‘majesty,’ although none of

85 The identification of CT āš 'placenta' with CT ēš 'companion, comrade; spouse; one's equal' (ED 253–254) is phonetically not possible.

86 Tkm. etene 'operivšijsja (o ptence)' (TkmRSl 795) may also belong here.
the attempted PIE etymologies of the Tocharian word supports this assumption (see Barnes 2013: 41–51 for an overview of the etymological suggestions). The only evidence for the existence of a root similar in meaning in the languages concerned may be the Koguryoan nàixī 奈兮 *nayeī ‘white (白),’ for which Beckwith (2007: 57, 252) offers no comparison. This word can be taken to point to a root in *ńaK- ‘bright, shining’ that entered Koguryoan from one of the languages beyond its western border.

Last, but not the least, Čāč, the old name of Tashkent, may also serve as a confirmation for the Proto-Turkic */tʃ/. This name appears as ššs[tn] and Τσατσηνς in the Great Inscription of Shapur I (Huyse 1999: II/37), as cʾcnʾy ‘of Chach (Tashkent)’ in Manichaean Sogdian (Henning 1940: 8–9), as cʾcynk ‘čačskij’ in the Sogdian Mugh document A-14 (Livšic 1962: 81–83) and as 柘支 tšja-tšje, 柘折 tšja-tšjät and 赭時 tšja-ži in Middle Chinese (Pulleyblank 1962: 248). 87 To the extent of my knowledge, the only etymology for this toponym has been offered by Gershevitch (1974: 55, 72) and, following him, by Livshits (2007: 179). According to these scholars, Čāč comes from the Old Iranian *čāiča- ‘area of water, lake,’ which in turn related to Čaēčista-, the Avestan name of the Aral Sea. Čāč allegedly represents the vriddhi form of *Čaēča, assimilated from an older *Šaiča. Having served as a name for the Aral Sea, it subsequently came to be used for the Tashkent oasis. This etymology is based on too many assumptions. The city and its surrounding regions were in control of the Kangju until the third century CE who had direct contact with the Northern Xiongnu and the Dingling in the first century BCE (Golden 1992: 62; Kim 2013: 33, 182). The name of the city is highly likely a relic of one of these contacts and stems from the Late Proto-Turkic *tʃāt(ā) ‘stone.’ 88 This and the Chinese Shíguó 石國 ‘Stone Country’ used later by Tang times (Pulleyblank 1962: 246–248; Pulleyblank 1995: 426) both seem to be translations of Kāŋjū 康居 EHC kʰəŋ-kˈia (Schuessler 2007: 322, 332), possibly meaning ‘stone.’ Against the assumption of Pulleyblank and Bailey, behind *kañk- ‘stone’ is not a Tocharian, but an Iranian word hidden, cf. Pashto kāñay ‘stone’ (see Blažek & Schwarz 2017: 51 for further forms and references). 89 Aalto (1977: 198)

87 The Middle Chinese pronunciations are given according to Schuessler (2007).

88 In my view, Janhunen’s (2016: 192–193) ‘Pre-Proto-Macro-Turkic’ reconstruction *tuxash is completely ungrounded. Particularly, the medial *-x- and the final *-š are forcibly inserted into this reconstruction.

89 Tch. A †kāṅk- ‘stone’ turns out to be non-existent. Carling (2009: 199) reinterpreted the attestations cited by Bailey as ‘river; the river Gaṅgā’ (with a question mark!) and ‘designation of an auspicious sign on the body of the Buddha.’
concludes his study focusing on the name of Tashkent as follows: “[...] it seems that since time immemorial the various names of Tashkent have been translations or transformations of older ones and have always had the sense ‘stone.’”

The reconstruction of */t₂/ for Proto-Turkic leads us to the following conclusive reinterpretation of our data: the Turkic forms reconstructed with */l/ (6–11) are from Proto-Bulgar Turkic whereas those with */t₂/ turn out to be from Early and Late Proto-Turkic (13–14). The only Common Turkic instance with */s/ (12) is still dubious. Five items with */r/ (1–5) are either of (Late) Proto-Turkic or of Proto-Bulgar Turkic origin. Although it is now clear when the Proto-Turkic */t₂/ underwent the changes that formed Common Turkic and Bulgar Turkic, we are still left with the uncertainty whether in Bulgar Turkic */t₂/ directly merged with */l/ or first changed to */l/ and then merged with it. It also remains open as to when the two rhotic phonemes have merged in Bulgar Turkic. Concerning these questions, none of the adjacent languages can provide us with deeper insight.

So, we attain a series of phonemes for Proto-Turkic */t₂d₂r₂/ which probably had affricate and/or fricative realizations. To these series, one more phoneme may be added: a fourth velar consonant beside */k g ŋ/, which I would like to denote as */k₂/. This phoneme may explain the Turkic loanwords in Mongolic that appear with onset */k/ although their Turkic cognates have been attested with vocalic onsets. In historical Turkic, this consonant has apparently been elided in all positions and left no explicit traces. Three of these loanwords, belonging to the spheres of agriculture, leatherwork and woodcraft, are given beneath.

1. WM *kili ~ *kile ‘furrow between two fields, border, boundary; frontier; limitation’ (L 466), Khal. *xií ‘1. (~ xyazgaar) frontier, boundary, border; 2. rift or ridge in ice on a lake’ (Bawden 1997: 440), Bur. *xile ‘1. granica, rubež; 2. meža, linija, čerta; 3. granˊ, rubež, granica, styk (napr., stoletíj)’ (BurRSII 424), Oir. *kile ‘granica, rubež’ (Todaeva 2001: 198), EYug. *kîl ‘border, borderline, frontier’
(Sün 1990: 349) < *kili> < *kirt> – Tu. *ḵir, ī > *ḵir, ิ > CT īz – īz ‘1. sled (slede)’; 2. nažim; 3. čerta, borozda; koleja, linija; tropa, tropinka; doroga dlja pešexođov; doroga, put’; ruslo; rel’ sy; 4. put’, sposob, rod; 5. povedenie; 6. potomstvo’ (ĚSTJa I 646–647; Károly 2001: 73–75), OU (Br.) īz ‘Spur’ (Maue 1996: 151–152), Kum. hīz (гьыз) ‘linija, čerta’ (KumRSl 133), Chuv. yĕr ‘Spur; Streif, Rand’ (Paasonen 1974: 25), Chuv. yĕr ‘1. sled; otpečatok; 2. tropa, tropinka, dorožka; koleja; 3. linija, čerta; 4. morščina; 5. stroka’ (ChuvRSl 128).

2. Mo. *kedergen ‘a wooden scraper used in tanning hides’ (Khabtagaeva 2017: 103) – Tu. *ḵäd, īr, ā-k, ā > CT ādrāk > Kum. īyrek ‘prisposoblenie dlja vydělki koži’ (KumRSl 167), Kklp. īyrek ‘1. zigzag, izvilina, lomanaja linija; / zigzagoobražnyj, izvilistyj; 2. prisposoblenie dlja očistki koži (železnaja ili derevjalnaja plastinka s krupnymi zubčajmi)’ (KklpRSl 292), Kird. īyrek ‘1. zigzag, izvilina, lomanaja linija; zigzagoobražnyj, izvilistyj; 2. prisposoblenie dlja očistki koži (železnaja ili derevjalnaja plastinka s krupnymi zubčajmi)’ (KirdRSl I 297–298), Alt. edrek ‘mjalka dlja vydělki kož i škur’ (OjRSl 189), Alt. ādrāk ‘instrument dlja vydělki ovčin’.

90 The change °ri > °li- is sporadic, but not isolated. It already occurred in Pre-Proto-Mongolic, cf. WM qali ‘to flow over the brim of, overflow (of a vessel or river); to appear over melting ice (of water)’ (L 919) < *kari- > CT kār- ‘to overflow’ (ED 643), OU kar- ‘überfluten’ (Wilkens 2021a: 333). Note that Chag. (Baburnama) kirľa ‘to cut a furrow’ (Thackston 1993: III/853) and Kh. kîl ‘Furche, Rinne’ (WCh 151) are almost certainly unidentified Mongolic loanwords.


92 The initial h- of the Kumyk form is isolated and probably secondary, cf. Kum. hav ‘1. oxota; lovlja // oxotničj; 2. dobyča, oxotničči trofei’ (KumRSl 122) but Kh. Ḣečči ‘Jäger’ (LSpCh 304). It must be noted that, despite its formal and semantical similarity, Tt. dial. Ḣozañ (~ Ḣižan) ‘fallow field, unplowed field, stubble etc.’ does not belong here because it is a loanword from Arm. xozań ‘stubble; (dialect.) field reaped but not yet plowed; land left fallow for two years’ (Dankoff 1995: 65). Kh. ħiştäk ‘Wunsch’ (WCh 133) cannot be taken as a proof for CT *hīz either since the etymology of the verb īstā- is still disputed (OTWF 455–456; Károly 2001: 79–80; UW Nb I/2: 131–134).

93 The meaning ‘border, boundary between two fields’ is better manifested in the Common Turkic derivative °įz+an: Nog. ǰın, Tat. ǰın, Bashk. ǰın, Kum. hīz, Chuv. ǰın (ĚSTJa I 647–648; Károly 2001: 76). Chuv. ǰın also means ‘furrow.’ If it is not a loanword, Karachay-Balkar ǰ̱i ‘meža’ (KrchBlkRSl 759) must also be connected with *ūr.

3. Mo. *kirüe ‘saw’ (N 416) < *kerüpeg ← Tu. *kärıpä-g > CT erpäg > OU erpäk95 ‘a saw’ (OTWF 176), Dolg. ärbi ‘Säge’ (Stachowski 1993: 47), Yak. dial. ärbîlǟ ‘pilitˊ, raspilivatˊ drova’ (DSlJaS 250), Yak. dial. ärbî xardarar ‘instrument dlja razvodki zubˊev pily poočeredno v raznye storony’ (DSlJaS 251).

We also find implicit traces of this consonant in morphology. As already implied by Károly (2009: 351), the dominant vowels of the Old Turkic formatives -Xn and -Xš hint at the earlier forms *-CXn (= *-k₂Xn) and *-CXš (= *-k₂Xš), respectively.96 Taking this into account, the Proto-Turkic form of CT *(h)arïš ‘shaft’

94 PTg. *hirõgǟ ‘file’ and PTg. *hirõgǟ ‘to rasp, to file’ (SS I 328–329; EEW §4989) do not belong here.
95 The Old Uyghur word is given as erpäk by Wilkens (2021: 262).
96 The merger of two distinct formatives in CT -Xš is best seen in its two distinct reflexes in Chuvash: Āś (Levitskaja 1976: 163) and -Āl. The latter is unproductive and is attested in only a few nouns. Among them, the only transparent one is Chuv. xăvăl ‘1. duplo; duplistyj; 2. duplo (zuba); duplistyj, s duplom; bortˊ; bortevoj; 4. polostˊ; polyj; 5. pustota; pustoj, pustotelyj’ (ChuvRSl 541): CT kovuš ‘hollow, empty’ (< *kov- > kovi‘hollow; kovok ‘hollow, empty; kovga ‘pail, bucket’) (ED 613, s.v. ‘koğus; OTWF 269). WM yobil’ ‘cavity, hole, pit, hollow, groove, depression’ (L 357) and qobil ‘groove’ (L 949) come from *gobial (with *ia > i in the second closed syllable), which is a loanword from BT *gobyâl, < PT *gobk,ät.ä. Other examples of this formation are opaque: Chuv. xirlü ‘1. tetiva; 2. struna (prisposoblenie dlja bitˊja šersti); 3. stuženˊ, vjezok (derevjannaja detalˊ, soedinjajuščaja konec poloza s grjadkami); 4. dial. ognivo’ (ChuvRSI 558): CT kiriš ~ kirïš ‘bowstring; cord; the joist (of a roof)’ (ED 747; ESTJa V 71–72), Chuv. šâmål ‘povod, predlog, pričina’ (ChuvRSI 452): CT yumuš ‘errand’ (ED 938), Chuv. xâmál ‘1. stebelˊ (zlakov); 2. sternja, sternˊ; 3. žnivˇë’ (ChuvRSI 544): CT kâmiš ‘reed, cane, rush’ (ED 628–629), Chuv. kêmël ‘1. serebro; serebrjanyj; serebrjstjej, serebrjannyj’ (ChChRSI 168): CT kâmiš ‘silver’ (ED 723–724). Perhaps OU koguş ‘Fell, Leder, Trommelöffel; Lederschlauch; Leber.’ (Willens 1921: 389), cf. Mo. *koala(ŋ) ‘throat’ (N 416), also belongs to this formation.
must be reconstructed as *pär,kāt,ā. Assuming that */k/ changed over [ç] to [y] in Proto-Bulgur Turkic, this form may have given *pär,yāl,ā there. Exactly *pāryāl,ā must have been the source of Tabg. *parialan discussed under (10) above. Similarly, the Proto-Turkic form of CT hidiš ~ hidiš ‘cup, vessel’ may be reconstructed as *piíd,kāt,ā if it derives from *piíd,ā related to PS *pāt- ~ *pāts- ‘in den Topf legen’ (SW 118). Its regular Proto-Bulgur Turkic form *piidyāl,ā would better explain Kit. *piliā (< *piliāla < *piðiala) discussed under (8) above. Even PS *petš ‘(earthen) vessel’ may be traced back to PPS *petšil(e). The vowel length in the second syllable of Kh. hidiš also underpins our reconstruction with */k/.

If */k/ also gave y- in the onset, the Proto-Turkic form of CT āt ‘name, reputation’ and Chuv. yat (< *yät) ‘name, title’ may be reconstructed as *k,alt,ō. Its later Common Turkic form *altō entered Kitan as ālûdûn 阿鲁敦 *aldur ~ ālûduólì 阿廬朶里 ‘aldor ‘male personal name’ (Sün & Niè 2008: 47–48), Mongolic as *aldar (< *aldor) ‘fame, popularity, glory’ (Sûn 1990: 102) and Tungusic as *aldô ‘Neugkeit’ (EEW §367). The verbal base *k,al- ‘to say’ of *k,alt,ō is highly reminiscent of PS *kâ- (< *kål- ?) ‘rufen, bitten’ (SW 56) and Pump. kalû, kalâ ‘to say, to speak’ (Werner 2005b: 182–183). I have a strong feeling

97 The elision of /l/ in front of /t/ and the resulting compensatory lengthening of the vowel are also observed in CT āt-(Tkm. āt-) ‘šagat’ (ÊSTJa I 88; VEWT 31), Chuv. ut-‘idti, šagat’ (ChuvRSi 519) < Tu. *altä- and CT *altē- (Tkm. gät-, Kh. kätük ~ kätük) ‘to notch, chip, gash (something)’ (ED 700–701; WCh 149), Chuv. kat- ‘1. kolot’; 2. vydalblivat’ (dolotom); 3. rassekat’; 4. ustupat’, sbavljat’, ubavljat’ (v cene); 5. vyčitat’, uderživat’ (napr. iz zarplaty); 6. ubavljat’, umen’at’, sokraščat’ (količestvenno)’ (ChuvRSi 152) < Tu. *kältē-. The ancient forms are preserved in PM *alča-‘to spread the legs’ (N 267) (with *ia > a in the second open syllable) and PM *kelte- ‘to break off, to chip off’, cf. Evk. kelte- ‘otlomit’ (kusok xleba) (SI I 446), respectively. The structural resemblance of PM *alčala- ‘to spread the legs’ (N 267) and WM alčam ‘big step’ (L 28) with CT *ātla- (Tkm. ātle-) ‘1. šagat’; 2. perešagivat’, perestupat’; 3. pryhat’, pereprygiatan’; izmeriat’ šagamî (ÊSTJa I 322) and *ātim (Tkm. ādim) ‘1. šag; 2. sled, sled nagi (stupnî)’ (ÊSTJa I 88) speaks in favor of this relationship. The scarcity of the coda /lt/ in Old Turkic (e.g., tôšt ‘pillow’) also shows that the primary */lt/ must somehow have been altered. Another Turkic verb ending in *-tiä is *gatžā- > *katā- > CT kat- (Osm. katı-, Yak. xat-, Kh. qatu-) ‘to be hard, firm, tough’ (also ‘to dry up’) (ED 595; ÊSTJa V 334–335; WCh 175), Chuv. xät- ‘1. tverdet’, zatverdevat’, stanovit’sja tvêrdym; 2. zastyvat’, sxvatyvat’; 3. styt’, stynut’, zastyvat’; kočenét’; 4. grubet’, stanovit’sja grubym; 5. stanovit’sja trudnym, tjažêlym (o žižnî); stanovit’sja nedostupnym (dlja priobremenija); 6. stanovit’sja bolee strogim, žëstkim; 7. byt’ skupym, skrjagoj, skupit’sja; skrjažničat’ razg.; 8. stare’t, terjat’ vkus (o pive)’ (ChuvRSi 574). The Turkic verb was borrowed twice into Mongolic, surfacing as WM yaça- ‘to harden, dry; to freeze, freeze over; to be blocked, entangled, caught, or jammed; to become mulish, obstinate; to resist, thwart, oppose; to contradict; to interfere, stand in the way; to die (of animals)’ (L 341) and PM *kata- ‘to be or become hard or dry’ (N 405).
that the hapax legomenon *qala* ‘Kommando, Signal, Befehl’ (Haenisch 1939: 57) in SH is linked to *k₂al- although its morphological structure remains obscure. The KAL-type verbs with the meaning ‘to call, to shout out’ are typologically common: PIE *gal- ‘call out, speak,’ *kelh₂- ‘call out to’ (Mallory & Adams 2006: 473, 489), OC ḥa *qhaal ‘shout, scold’ (Zhèng Zhāng 2003: 391), Ar. جل qāla ‘sprechen, sagen’ (Wehr 1985: 1065–1066).

Furthermore, some nomenverba appear to be the result of the elision of */k₂/; CT karī- ‘to be or become old’ < *kar₁i- vs. CT karī ‘old’ < *kar₁īk₂V̆. Finally, and most importantly, some zetacistic changes can be better explained with the involvement of this consonant, e.g., CT kōz ‘eye’ < *k₁ō(ü)r₂V̆ < *k₁ō(ü)r₁r₂V̆ derived from *k₁ō(ü)r₁ ‘to see.’ In this case, /r₂/ apparently resulted from the fusion of /r₁/ and /k₂/. The Proto-Bulgar Turkic had, instead, the derivative *k₁ō(ü)r₁čV̆ which yielded kuś (Str. kōes !) in Chuvash. In view of this argument, the etymology of CT bōz ‘grey, brown’ can also be reviewed. Despite what has been stated above, it is more likely to be a loanword from Ir. *bōrkə / *bōrxə < *bauraka- / *bōraka- (ÈSIJa II 153; Tavernier 2007: 148), cf. Khot. baurkʰə ‘yellow leaf (?)’ (Bailey 1979: 306), 98 instead of *bōrə < *baura- ‘brown, bay, grey.’ So, one does not need to explain why the Iranian /r/ entered Proto-Turkic as */r₂/ and not as */r₁/. In short, CT *bōz goes over *bōr₁ə ultimately back to PT *bōrk₂ə.99

Seeing *ga-tā- ‘to dry and harden’ < *ga- > CT ka-k (Osm. Tkm. kāk) ‘something dried’ (ED 6:8; ÈSTJa V 218–222), *altā- may be analyzed as a derivative of *al(V̆)-, which perhaps survived in PM *alku ‘step’ and *alku- ‘to step’ (N 268).

98 Emmerick & Skjærvø (1982: 94–95) reinterpreted the Khotanese word as ‘root bark.’

99 WM borki ‘old badger’ (l. 121) and Kalm. bork ‘dachs; alter, grosser dachs’ (KWh 52), bork (60pč) ‘staryj borsuk’ (KalmRSl 111) might be etymologized in connection with PT *bōrk₂ə ‘grey.’ Note that Tekin (1986: 157–158) and Erdal (OTWF 101) also derived DLT borsmuk ‘badger’ from boz ‘grey, grey-brown.’ In this case, however, the color name may be referring to the old age of the animal.
### Table 2 Proto-Turkic consonantism

<table>
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<tr>
<th></th>
<th>labial</th>
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<th>alveolar</th>
<th>postalveolar</th>
<th>palatal</th>
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<td>*b</td>
<td>*t₁</td>
<td>*d₁</td>
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<td>trill / tap</td>
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<td>*t₂</td>
<td>*d₂</td>
<td>*s</td>
<td>*rᵣ</td>
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<td>affricate</td>
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### Table 3 Proto-Bulgar Turkic consonantism

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<td>*b</td>
<td>*t</td>
<td>*d₁</td>
<td>*k</td>
<td>*g</td>
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<tr>
<td>nasal</td>
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<tr>
<td>trill / tap</td>
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<td>*rᵣ</td>
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<tr>
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<td>*d₂</td>
<td>*s</td>
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<td>*č</td>
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As is inferable from Table 1 above, Proto-Bulgar Turkic had a greater impact on the adjacent languages in comparison to Proto-Common Turkic. This can be explained only through the higher cultural level and greater political power of the early Bulgar Turks. The argument that the Dingling who were present in the area from the third century BCE to the third century CE spoke Bulgar Turkic perfectly fits with our linguistic conclusions.

The question as to why the attested Turkic languages do not exhibit any onset consonant that is more archaic than *h- also needs to be answered. My answer to this would be that the two main branches of Turkic remained in a similar linguistic environment after their split until the westward migration of the Bulgar Turks. In this environment, they must both have undergone the sound change of *p- > h- simultaneously.\(^{200}\) This change may have been triggered by the common ancestor of the modern Ket and Yugh languages that was spoken in the Xiongnu Empire and made the sound change

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\(^{200}\) I deem it highly likely that the Proto-Turkic *p- directly changed to h- without an intermediary *f-. Note that the Orok p- also fluctuates with h-.
of *p- > *f- (>{Ket h-, Yugh f-}) probably in the first centuries CE. Parallel developments discussed under (7) and (9) also attest to the contact between Bulgar Turkic and Common Turkic after their split.

Doerfer (MT 154, n. 29) suggested that the sound change of *p- > h- took place prior to the emergence of Tuobá 拓拔, i.e., around the birth of Christ or shortly after. Unfortunately, this assumption was based on the misinterpretation of two Tuoba glosses as originating from Turkic donor forms with initial *h- (MT 163). Anyhow, Doerfer’s dating still appears to be accurate. The Turkic *p- seems to have been retained until the split of Proto-Samoyedec or even after it. The Turkic loanwords in Proto-Samoyedec, such as *përûjû ‘Bohrer’ (SW 114) < *përû- ‘kaira’ (Janhunen 1981 §36), *pâ首要 ‘Holz, Baum, Wald’ (SW 117) and päymä ‘Stiefel’ (SW 118), which correspond to the Common Turkic *hêr- to ‘to drill, to breach’ (ED 194), *hê (~ *hû) vegetation, bush, tree’ (ED 1) and *(h)oyma ‘felt boots’ (ED 273).

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101 Janhunen (1981 §36), Sammallahti (1988: 539b), Rédei (UEW 405) and Katz (2003: 262–263) regarded the Proto-Samoyedec form as going back to the Proto-Uralic *purä / *purâ-, *purä, *pura and *pôrâ, respectively. According to Janhunen, the sound correspondence is flawless. Nevertheless, the Proto-Samoyedec root is verbal whereas the Finno-Ugric form is nominal. If, despite this discrepancy, the proposed connection is true, *përûjû must be discarded from the list.


103 The front vocalism is secured by the Old Uyghur and Qarakhanid derivatives ĭrök ~ ĭrûk (read: ĭrûk ~ ĭrûk) ‘lückenhaft, schadhaft, morsch, mangelhaft; Lücke, Riss, Auslassung’ (Wilkins 2021a: 310) and ĭrûk ‘a breach or crack (tulma) in a wall, or other’ (CTD I 110) as well as the Middle Kipchak noun ĭrûk (with kaf) ‘al-mitqa’ (Toparlı et al. 2000: 32). Hung. ĭr ‘to write’ and ĭrdal ‘to cut, to slit in’ might also originate from a cognate of CT *hêr- unless from CT *ĕr(ê) as suggested by Róna-Tas & Berta (TLH 459–464). Khanty ĭeri- ‘certifit’, zeichnen, e. Strich ziehen, mit e. Strich versehen (z. B. e. Baum)’ (DEWOS 404) rather speaks in favor of the former. The reconstruction of the initial *h- and the vowel ē is supported by PM *hărūm (< *perūm) ‘drill, auger, awl’ (N 362; K 153) and Kh. hēr = Per. ēdān (LSpCh 292). The Mongolic form may be traced back to a Turkic derivative *pērīg (cf. WM ĭrîm ‘pus’ : OT ĭrīg ‘id.’), which is also possibly the donor form of the Proto-Samoyedec word.

104 Kh. ĕyäč ‘Baum, Holz, Stock, Parasange’ (WCh 125) clearly attests to CT *h-. Cf. also PTg. *piâ (< *pi-xa) ‘birke’ (B 33), PTg. *piâ.kta ‘Weide’ (B 33).

indicate that the Turkic bilabial strong onset stop may have been preserved until the first century BCE, provided that Janhunen's (2009: 63) estimation of the Proto-Samoyedic time-depth is correct. On the other hand, the very same onset consonant must already have changed to *h- when the Proto-ObUgrian *ūγ3 – *ūγ3 'song' (Korenchy 1972: 52–53, albeit with an unlikely Iranian etymology) was borrowed from an earlier derivative of CT *hūr.'song' (ED 192), possibly similar to *hūrikaš, cf. Salar jūräx 'chant, chanson' (Kakuk 1962: 196). The Turkic *h- is not represented in Proto-ObUgrian as it lacked any voiceless velar or glottal segment (Honti 1998: 332). Since the disintegration of the ObUgrian unity began in the first centuries CE (Honti 1998: 327), the change of Turkic *p- to *h- must have occurred roughly around the birth of Christ, probably after it.

Our dating of the sound changes *p- > h- and *t₂ > š- in Turkic, according to which the latter precedes the former, is totally in agreement with the assumption that both Proto-Bulgar Turkic and Proto-Common Turkic preserved the onset *p- of Proto-Turkic. In other words, the split of Proto-Turkic into these branches antedates the lenition of the onset */p/.

Two Turkic loanwords in Proto-ObUgrian, *saws and *ūγ3 – *ūγ3, also reveal that the word-final reduced vowels in Common Turkic survived into the first centuries CE and coexisted with *h-. This conclusion is congruent with and confirmative of the reconstruction BT₁ *hārā suggested by the Mongolic aran – arai.¹⁰⁸

¹⁰⁶ Cf. Tt. dial. (Urfa) gür ‘türkü’ (DS 2051).
¹⁰⁷ See Sinor (1979–1985), Ligeti (1986: 136–143) and Róna-Tas (1988: 749–750) for a discussion of possible Turkic loanwords in Proto-Ugric and ObUgrian. The most securely established Turkic loanword in Proto-ObUgrian is *saws ‘word, voice, call, song, melody’ (MSzFE 591). Despite Róna-Tas & Berta (TLH 810), the Proto-ObUgrian word must have been borrowed from CT *savā and not from any Bulgar Turkic form. Seeing that the Chuvash cognate of the word lives on in yat-šiv ‘dobre imja, dobraja slava, čestˊ’ (ChuvRS 651), cf. OU at sav söz ‘Bezeichnung,’ (Wilkens 2021a: 79), the Early Bulgar Turkic form can be reconstructed as *siāvā. Chuv. savā ‘song, poem, melody,’ despite Róna-Tas & Berta (TLH 810) and others, does not belong to this word family and probably has a different origin.
¹⁰⁸ Tu. *hāgār-, *hārā and *hörmākā are further similar forms that can be reconstructed on the comparison of CT hūgir- ‘to spin, to twist, to surround’ (ED 113; WCh 130), CT hār ‘man’ (ED 192; WCh 129) and CT hōrmāk ‘a plaited, knitted or woven garment’ (ED 231) with the Proto-Mongolic *ere- ‘to rotate, to spin, to surround’ (Haenisch 1939: 42; Sūn 1990: 248), *ere ‘man’ (N 331–332) and *örmege ‘kind of coarse fabric’ (N 476). Whether they entered Mongolic from Bulgar Turkic or Common Turkic remains unclear.
Table 5  Major sound changes in Turkic and their datings

<table>
<thead>
<tr>
<th>Sound changes in Turkic</th>
<th>Approximate dating</th>
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<tr>
<td>Common Turkic, Bulgar Turkic</td>
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<td>*-t/z &gt; *-l-</td>
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</tr>
<tr>
<td>*-t/z &gt; -š-</td>
<td>100–50 BCE</td>
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<tr>
<td>*p- &gt; h-</td>
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<td>*-ų &gt; -ø</td>
<td>&gt; 200 CE</td>
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4. **Conclusion**

The purpose of the present study is to answer whether Proto-Turkic had an onset *p- or *h- corresponding to the Common Turkic h-/Ø-. The comparative data from Turkic languages enable us to reconstruct only *h-. In contrast, the external evidence from the Turkic loanwords in adjacent languages indirectly attests to the presence of a prehistoric *p-. The material that comprises fourteen Turkic loanwords in different languages is presented above. Whether the onset *p- should be assigned to Proto-Turkic or later stages is clarified in the discussion. Other important problems, such as the onset consonants of Proto-Turkic and the question of rhotacism and lambdacism, have also been dealt with.

The conclusions drawn in the discussion above can be summarized as follows:

1. Proto-Turkic had the initial consonants *p-, *ń- and *d-. They yielded h-, y- and y- in Common Turkic. *d- should be strictly distinguished from *d- which merged with *t- and yielded t- in Common Turkic. The Proto-Turkic *-d- in intervocalic position also changed to -y- in Common Turkic. The change of *p- > h- must have taken place in Early Bulgar Turkic and Early Common Turkic around the birth of Christ, probably due to the influence of Northern Yeniseian. As clearly reflected in Mongolic, the initial *ń- was retained both in Proto-Bulgar Turkic and Proto-Common Turkic. It has been first denasalized in the later stages of both branches. The retention of the opposition of *d- and *d- is only secured for Proto-Bulgar Turkic.

2. Regarding the question of rhotacism and zetacism, it is assumed that Proto-Turkic had two rhotic phonemes */r/ and */ɾ/, which were probably realized within the range of [r] ~ [ɾ] and [ɻ] ~ [ɾ] respectively. As regards the question of lambdacism and sigmatism, the hypothesis has been put forward that the Bulgar Turkic /l/ and Common Turkic /ʃ/ go back to the Proto-Turkic */t₂/ [ts] (later [θ]) which fits in with the consonantism as the voiceless counterpart of */d₂/ [dz] (later [ð]). In onset position, the very same *t₂- yielded č- in both branches. The emergence of /ʃ/ and /z/ in Common Turkic is linked with an unidentified Middle Iranian substrate, probably close to Khotanese Saka.

3. The change of the Proto-Turkic */t₂/ to /ʃ/, which marks the emergence of Proto-Common Turkic, is dated to the first half of the first century BCE whereas its change to /l/ in Proto-Bulgar Turkic slightly preceded it. Thus, these changes are older than the lenition of *p- > h- in Turkic...
that took place around the birth of Christ. This chronology corroborates the suggestion that both Proto-Bulgar Turkic and Proto-Common Turkic preserved the Proto-Turkic *p-. The lenition of *p- > h- is followed by the loss of the word-final reduced vowels. So, it turns out that the onset *h- and the reduced coda vowels coexisted for a while in Early Common Turkic and Early Bulgar Turkic.

4. The parallel development of some Bulgar Turkic and Common Turkic forms is suggestive of an early contact between these branches. In other words, they first split and diverged, then converged and finally lost contact completely.

5. In view of the considerations above, a protolanguage cannot be defined as a hypothetical linguistic entity whence all the common features of its descendant languages have emerged or to which all these features can be traced back, because a feature of the protolanguage may not be retained in any of the daughter languages if it is interrupted in all main branches of the family for any reason. This indicates the possible existence of misleading ‘breakings’ in the development of a proto-phoneme into a correspondence set. In some rare cases, the projection of a correspondence set with the comparative method may turn out to reflect a ‘pseudo-proto-level’ if there has been a coincidental or convergent parallel change affecting it.
ABBREVIATIONS

Ab. Abakan dialect of Khakas
AD Koşay & Işıtman 1932
Alb. Albanian
Alt. Altai
Ar. Arabic
Arm. Armenian
Av. Avestan
AYS Altun Yaruk Sudur
AzRSl Tağiyev 2006
B Benzing 1956
Bactr. Bactrian
Bao. Baoan
Bashk. Bashkir
Br. Brāhmī script
BSogd. Sogdian in Buddhist texts
BT Bulgar Turkic
BT₁ Bulgar Turkic (first layer of loanwords in Mongolic)
BT₂ Bulgar Turkic (second layer of loanwords in Mongolic)
BTT 3 Tezcan 1974
BTT 7 Kara & Zieme 1976
BTT 34 Shōgaito et al. 2015
Bu Bugut inscription
Bur. Buryat
c. century
C M. A. Castrén
CC Codex Cumanicus
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Tt.  Turkish
Tu.  Turkic
Tuh.  Kitāb al-Tuhfat al-Zakiyya fi Luṣat al-Turkiyya
Tuñ.  Tuñuquq inscription
Tuv.  Tuva
TuvRSI  Tenišev 1968
Udh.  Udihe
UEW  Rédei 1988
Ulch.  Ulcha
UW  Röhrborn 1977–1998
UW Nb I/1  Röhrborn 2010
UW Nb I/2  Özertural 2020
UW Nb II/1  Röhrborn 2015
UW Nb II/2  Röhrborn 2017
Uzb.  Uzbek
VB  Volga Bulgar Turkic
VEWT  Räsänen 1969
WCh  Doerfer & Tezcan 1980
WM  Written Mongol
WYug.  Western Yugur (Sarigh Uyghur)
Yak.  Yakut
ZY  Zhiyuan yiyu (至元譯語)
**APPENDIX 1: RECONSTRUCTED PROTO-TURKIC FORMS OF THE WORDS CITED IN THIS STUDY AND RELATED LOANWORDS IN ADJACENT LANGUAGES**

1. *altjä- ‘to step’ > CT āt-, BT *āt- (Chuv. ut-) || Mo. *alča- ‘to spread the legs.’
2. *ādjä ‘lord, master’ > CT āyä ~ āyä⁹ || Mo. *eǰen ‘master, owner,’ Tg. *ādä ‘husband, master.’
3. *(i)āsä ~ *(f)āt,ā ‘placenta’ (< PTch. *fētse (outer skin)) > CT *ās – āš.
5. *dōr,ā (< *dō + *gār,ā?) ‘birchbark’ > CT tōz || Mo. *durusun ‘birchbark,’ Mo. toos ‘birchbark.’
6. *dōg,ār ‘dark brown’ > CT yag, BT *jägūn > *jägni (Chuv. śirä) || Mo. *dayır > *dayir ‘brown (earth), chestnut-colored (horse).’
7. *dakā- ‘to burn, to ignite’ (< Ch. zhuó LHC tśak ‘to burn, to scorch’ or PTch. *tsāk- ‘to glow’ < PIE *dʰōgʷʰ) > CT yak- (Tkm. yak-, Kh. yaq-) ‘id.’
8. *d,at,ut,ā (< *d,at,ā-) ‘hidden’ > CT yašut || Mo. *dalda ‘hidden, concealed, secret.’

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⁹⁹ CT āyä has to be strictly distinguished from CT idi. Kh. eydi ‘Besitzer’ (WCh 112), the only alleged proof in favor of CT ādä, is a crasis of *āyä idi that surfaces as iyä idi ‘Herr,’ in Old Uyghur (Wilkens 2021a: 315).
10. *d.ūr, ā ‘a plant’ > CT үөз || Mo. *deresün ‘feather-grass.’
11. *d.ēt, ā ‘to reach’ > CT ыет, BT ḳēt- (Chuv. ｓīt-) || Tch. AB tsit ‘to touch.’
12. *d.îrā- | *d.îrā- ‘to separate, to tear, to split’ (← PTch. tsār- [tsir] ‘to separate (entirely)’ < PIE *der- ‘to split, to flay, to tear’) > CT үîр- ‘to tear (off), to dig,’ CT үîр- ‘to separate, to split,’ BT ḳîr- ‘to make furrows’ (Chuv. ｓîr-) || Mo. *ǰîr- ‘to cut.’

◊ I assume that CT үîр- and CT үîр- are simply historical variants of the same etymon. They are both attested since Old Uyghur as independent verbs (see ED 955; ÈSTJa IV 203–204; Wilkens 2021: 890, 900, s.v. yeril- and yur-).

13. *d.ûr, ā ‘weak, impotent; barren’ > CT ыоз || Mo. *dora ‘feeble, weak.’
14. *d.ū ‘residue’ (← Ch. зăо 砕 *[ts] ‘u ‘sediment; dregs’) > CT yıuk ‘id.,’ CT yıuk- ‘to stick to.’
15. *d.ūt, ā ‘to pour out’ > CT ywaćş- – yış- || Mo. *dusu- ‘to drip, to drop.’
16. *d.ûr, i 100’ > CT yıyz, BT *jûr (Chuv. şēr) || PS *ǰûr ‘100,’ PY Ḵ.ус / Ḵ.ут ‘100.’
17. *d.ûr, i ‘complexion, face’ > CT yıź, BT *ǰûr (Chuv. şāvar) || Mo. *dūrī ‘appearance, form, complexion.’
18. *gat.ū ‘to be or become dry or hard’ > CT қат-, BT *kṣ (Chuv. xīt-) || Mo. *gača- ‘to harden, to dry; to freeze, to freeze over,’ Mo. *kata- ‘to be or become hard or dry.’
19. *gobk.āt, ā ‘hollow, empty’ (PBT *gobyăl) > CT kovuš, BT *kovul (Chuv. xăvăl) || Mo. *gobil ‘cavity, hole, hollow, groove.’
20. *k.əd, a ‘rock’ > CT қайа || Mo. *kada ‘rock.’
22. *k.ṭi, (ヴ) ‘sable’ > CT қisseur || PPS *k’il > *ki ‘sable,’ PY Ḵ.əda ‘Siberian weasel.’
23. *k.ṭi, i ‘winter’ > CT қîs, BT *k.ū. > *xīl (Chuv. xēl) || PY *kata ‘winter,’ PPS *kêl > *kê ‘winter.’
24. *k.ṭi, i ‘lady, wife’ (← Xiongnu 居次 ‘kîtsı / *kîtsı ‘lady, married daughter’) > CT kisi ~ қîsî.
25. *k.əd.ṭi, āk, ā ‘wooden tool for scraping animal hides’ > CT ādrāk || Mo. *kedergen ‘a wooden scraper used in tanning hides.’

PY *kəda (Werner 2002: 1/475) is only related to *k.ṭi, (ヴ) if the voicedness of the dental in Yeniseian can be accounted for.
26. *k.ält.ā ‘to notch, to chip’ > CT *kāt-, BT *kāt- (Chuv. kat-) || Mo. *kelte- ‘to break off, to chip off.’
27. *k.är.ıpäg ‘saw’ > CT ārpäg – erpäg || Mo. *kirüe ‘saw.’
28. *k.ër.ī ‘trace; line; border’ > CT ēz – ĭz, BT *yū/îr (Chuv. yër) || Mo. *kili ‘border, borderline, boundary.’
29. *k.ō(ā)r,k,V ‘eye’ > *k.ō(ā)r,V > CT köz.
30. *ńāsā ~ *ńāt.ā ‘loss, damage, death; mourning’ (- Tch. B ńyātse ~ ńātse ‘danger; plague, distress’) > CT yāš ~ yāš, BT *jās || Hung. gyász ‘mourning, bereavement,’ Cher. sōs ‘memorial service for the deceased.’
31. *ńat.ā ‘weak, emaciated, lazy, calm’ > CT *yaš, yaşi-, yašık- || Mo. *nala > *nalaï ‘to be quiet, to be calm,’ Mo. *nasē-gai ‘slow, lazy,’ Mo. *fali- ‘to calm down; to be lazy.’
32. *ńat.ā ‘(year of) age’ > CT yāš, BT *jāu (VB jāl, Chuv. šul) || Mo. *nasun ‘(year of) age.’
33. *ńiř.ī ‘backbone’ > CT yīz ~ yīz || Mo. *ńiřuun > *ńiřun ‘back,’ PTg. *ńiři+ ‘backbone.’
34. *ńiät.ā ‘new-born, baby, child’ (+ Ch. rūzi 孺子 *njuah-tʃəh ‘weak child’) > CT yāš || Mo. *ńiška ‘youngest child, baby, young and tender, delicate’ (Mo. *ńiʃaraï ‘young, tender, new-born’ and Mo. *ńiɾai ‘newly-born’ may also belong here). Mo. *jalar ‘young,’ PY λ,əl(ə) ‘child.’
36. *pär.ā ‘few, little’ > CT *hāz, BT *hār || Mo. aran – arai ‘hardly, barely, scarcely,’ Cher. or, ar ‘small, young.’
37. *pāt.(V) ‘heat’ > CT *hāš, BT *hār. || PY *pʰal ‘hot, warm,’ Mo. asa- ‘to burn, to catch fire.’
38. *pāƣār.ā- ‘to spin, to twist, to surround’ > CT hāgir-, BT *(h)āgir- (Chuv. arla-) || Mo. *eere- ‘to rotate, to spin, to surround.’
39. *pār,ā ‘man’ > CT hār, BT *(h)ār (Chuv. ar) || Mo. *ere ‘man.’
40. *pāt,ā ‘to dig’ > CT *hāš(ū), BT *ā.-(Chuv. al-) || Mo. *hete- ‘to pick, to pluck out,’ Tg. *pātā- ‘to dig, to dig out, to dig up.’
41. *pī (~ *pā) ‘vegetation, bush, tree’ > CT *hī || PS *pā (~ *pā?) ‘wood, tree, forest.’
42. *pūd,kāt,ā (< *pūd,ā-) ‘cup, vessel, dish’ (PBT *pūd,ā) > CT *hūsīš ~ hūšī || Kit. pilia ‘drinking cup,’ PTg. *pīla ~ *pīlia ~ *pīlāi ‘wooden vessel, formed like a cask,’ PS *petā (earthen) vessel.’
   ◊ The verbal root *pūd,ā- may be related to PS *pāt~ *pāts- ‘in the Topf legen’ (SW 118). See No. 41 for the correspondence of Tu. *ṭ and PS *ā.
43. *pūr,(ū) ~ *pūr,ī ‘song’ > CT *hūr, BT *hiārī (Chuv. yurā) || PObUg. *ūrṣ ~ *ārṣ ‘song.’
44. *pūt,ā- ~ *pūt,ā- ~ *pūt,ā- ‘to smooth (out)’ > CT *hūš(ī) ~ *hūś ~ *hūṣ- || PS *pīcā (~ *pūcā-) ‘to shave beard, to cut hair,’ Mo. *hūle- ~ *hūl- ‘to caress, to rub, to iron, to smooth,’ Mo. *hūlī- ‘to rub, to knead, to scrape.’
45. *por,ā- (der. *por,ākā-) ‘to outstrip, to escape’ > CT hoz- || Mo. *horgu- ‘to flee.’
46. *pot,ā ‘inside; internal organs, intestines’ > CT *(h)oṣ || PY *puɵ ‘fat.’
47. *pūk,ār, (< *pūg kār,?) ‘ox’ > CT hōkūr, BT *hōkūr (Chuv. vakâr) || Mo. *hūker ‘bovine, ox.’
49. *pūr,ūt,ā (< *pūr,ā-) ‘torn off’ > CT *hūz- || Mo. *ḥūrtesiūn ‘scrap, rag, shred; piece, morsel’
50. *pūt,ā- ‘to search’ > CT *hūs- || PS *pe- (~ *pej-) ~ *pū- (~ *pūj-) ‘to search.’
51. *pūt,ū- ‘to grow, to increase’ > CT *hūšū- ~ *hūkūs || Mo. *hūle- ‘to remain, to be left,’ PTg. *pūlā- ‘to remain, to be in excess,’ PS *pū- to spawn.’
52. *sūt,ū ~ *sūt,ā ‘tooth’ > CT tūs ~ tūs, BT *sū. (Chuv. šāl) || Mo. *sūtūn ~ *sidūn ‘tooth.’
53. *siābā ‘word’ > CT *sāvā ~ sāv, BT *siāvā (Chuv. šīv in yat-šīv) || PObUg. *saws ‘word, voice, song.’
54. *tāj,ā ‘stone’ > CT *tāš ~ *tās, BT *tiā.(ā) > *čāl (Chuv. ċul) || PY *tī’s ‘stone,’ Mo. *čīlaun ‘stone.’
55. *tīgū(-ki/-kāy) ‘raw, uncooked’ > CT čūg(-ki/-kāy) ~ ēyūg || Mo. *tāukēi ~ *tāukū ‘raw.’
56. *ār, ‘above, upper part’ > CT āzā, BT *ār > *ver (Chuv. vir).
APPENDIX 2: XIONGNU WORDS SURVIVING IN ALTAIC LANGUAGES

(Xiongnu data cited from Pulleyblank 1962 and Schuessler 2014)

1. chénglí 撐梨 đaŋ-li < *drâŋ-ri ‘sky’ || Tu. táŋri ~ täŋri ‘heaven, God,’ Mo. tengeri ‘sky, heaven, god.’
2. jìnglù 徑路 keŋ-H-ɑ, qīnglǚ 輕呂 kʰieŋ-ɑ ‘Hunnish knife’ || Tu. kïŋrak ~ kïŋïrak ~ kïŋarak (~ kïrŋak) ‘broad knife (often with two blades),’ Mo. *kïŋgara ‘large knife (often with two blades).’
3. tuóxī 驒騱, 単騱 dɑi/tɑn-ge, ten-ge (Yán Shīgǔ: 頫奚 ten-ge) ‘a wild horse’ || Tu. taği (~ taki) ‘female wild ass,’ Mo. taki ‘wild horse’ (→ Man. tahi ‘a wild horse’).
4. ōuduó 甌脫 ʔo-duatr < *ʔô-lôt ‘wasteland, border area’ || Tu. oro ‘a storage pit dug in the ground’
5. jūcì 居次 kɨɑ-tsʰi ‘lady, married daughter’ || Tu. kisi ~ kiši ‘woman, wife.’
6. lào 酪 lɑk < *g-lâk ‘a milk product’ || BT *îrag ‘buttermilk’ (→ Cher. yôra ‘buttermilk,’ Hung. író ‘buttermilk’).
8. táotá 騥駼 dou-dɑ < *lû-lâ ‘a kind of horse’ (Yán Shīgǔ: 桃塗 dɑu-dɑ) || Tu. yunt ~ yund ‘horse’ < PT *dˌund.ɑ (~ *dˌud.ɑ?) (→ PS *juntå (~ juntə) ‘horse’).
9. tíhú 醴醐, tihú 髦醐 de-ya ‘purified kumiss, clarified butter’ (Jap. daigo ‘ghee’) || CT yâg ‘fat, oil, grease,’ Chuv. su ‘butter, fat’ < PT *dˌiāgå, cf. Proto-Circassian *dağa ‘lard, fat’ (Kuipers 1975: 69), without cognates in other West Caucasian languages, possibly a borrowing from Early Bulgar Turkic.

◊ Otherwise related to the Sogdian γnγrh *xangarā-, Christian Sogdian xgr, Wakhi xiŋgār, Yidgha xugor by Bailey (1985).

◊ Despite the superficial similarity, the Xiongnu word is not related to Tu. ordo ‘royal residence; burrow, underground habitation of an animal’ or Mo. ordon ‘residence of a ruler, palace, camp.’

◊ The Chinese transcription renders a phonetic realization of */dˌiāgå/, approximately [dɪ̯aːɡa].

◊ Otherwise related to the Mongol čige(n) ‘kumiss’ < *tîgä(n) / *tîga(n) by Pulleyblank (1962), to the
Proto-Yeniseian *täk- or *tik- ‘white’ by Vovin (2003b) and to the Iranian *dauga- ‘buttermilk, sour milk etc.’ by Dybo (2007).

10. chúqí, túqí 屠耆 da-gi < *dä-gri (Yán Shīgū; *dia-gri) ‘title given to the Crown Prince of the Xiongnu; (lit.) virtuous, worthy (賢)’ || Avar iugurruš *yugur (< *d.oguRã ?) ‘co-ruler of the khagan,’ cf. the Danube Bulgarian tribe name δουάρης *duar (Beševliev 1963: 289–290).

◊ Since Mikkola (1927: 160), the Avar title has mistakenly been identified with the Qarakhanid title yuguruş ‘a commoner of vizier rank one degree below Khagan’ (ED 905–906). The Qarakhanid title might be related to the Avar *yugur only with its base. Perhaps it was formed from *yugur on the analogy to čavuš ‘army commander’ (ED 399). The Xiongnu title is otherwise related to the Turkic title tegin ‘prince’ by Pulleyblank (1962) and to CT *dogro ‘direct, fair, honest, legal’ by Dybo (2007).


◊ Otherwise related to PT *durak < *dur- ‘to stand’ by Dybo (2007) and to WM dobuiýa ‘elevation’ by Di Cosmo (2013).

12. púlèi 蒲纇 bo-luis < *bā-rus ‘name of a country; name of a general’ || Tu. bars ‘tiger,’ Mo. bars ‘tiger,’ possibly borrowed from Tch. A pārs ‘variegated, magnificent, splendid’ or MP parš ‘spotted, speckled.’

13. jiādōu 夾兜 kep-to ‘bag’ || Tu. kāp (< *kiāp) ‘leather bag, waterskin, sack; vessel, container,’ cf. Tu. *kapturga ‘a big, deep sack,’ Tu. (Rubruck) captargac /kaptïrgak/ ‘a square bag,’ Mo. *kabtarga ‘bag, pouch, purse, pocket.’
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