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Review

Martine Robbeets: Review of András Róna-Tas & Árpád Berta † (eds.), *West Old Turkic. Turkic Loanwords in Hungarian*. (Turcologica 84.) Wiesbaden: Harrassowitz, 2011. 1494 pages, xx black-white illustrations. 24 x 17 cm., linen book cover. ISSN 0177-4743, ISBN 978-3-447-06260-2.

Martine Robbeets, Seminar für Allgemeine und Vergleichende Sprachwissenschaft & Seminar für Orientkunde, Johannes Gutenberg-Universität Mainz, DE-55099 Mainz, Germany. E-mail: martine_robbeets@hotmail.com

1. The Hungarian window on West Old Turkic

In Turcological literature, the term “Old Turkic” is often restricted to what should be called “East Old Turkic” (Johanson 2001), the varieties of Turkic spoken between the eighth and the thirteenth century in Central and East Asia. The historical varieties of the Turkic languages spoken west of the Ural mountain range and the Ural River are generally swept under the carpet because they are too poorly documented. Historical records of these languages are mainly restricted to non-fully deciphered inscriptions and onomastic material scattered throughout non-Turkic sources. Moreover, historical comparative reconstruction is hindered by the fact that Chuvash is the only surviving representative of the western Turkic languages.

The study *West Old Turkic. Turkic loanwords in Hungarian* by András Róna-Tas and Árpád Berta improves this situation by using the Turkic loanwords preserved in Hungarian as a source for the reconstruction of West Old Turkic. Given the early dissolution of Turkic into an eastern, so-called “Common Turkic” and a western, so-called “Oghuric” branch, a better understanding of West Old Turkic will also lead to a more accurate reconstruction of proto-Turkic. Since this book opens an alternative window on West Old Turkic and thus paves the way for improving proto-Turkic reconstruction, it represents a major step forward in the field of Turkic historical linguistics.

Apart from students and scholars of Turkic languages and linguistics, *West Old Turkic. Turkic Loanwords in Hungarian* will also appeal to people interested in the history of the Hungarian language because it injects the advances made in Turcology over the last twenty years into Hungarian etymology and offers a concise history of the Hungarian language, including a list of core-etymologies reflecting (Finno-)Ugric affiliation.

The authors' wish expressed in the preface (p. viii) to "offer this book to PhD students in Turkology and East European Studies" is probably too modest an aspiration because not only scholars of Turkic or East European languages will benefit from reading this book; it will also be of interest to historical linguists in general. In the present review, I will concentrate on the merits that this research has for linguists who want to approach genealogical and contact studies from an integrated perspective. In Section 2, I will suggest a typology of the Turkic loanverbs in Hungarian and infer criteria to distinguish copies from cognates in cases of remote linguistic relationship. Verbs are particularly telling for this purpose, because they resist code-copying more successfully than nouns. Therefore, and in view of the limited space, I have chosen to restrict myself to an analysis of the verbs only. In Section 3, I will apply these criteria to a much debated case of remote relationship, namely the Transeurasian controversy. Finally, I will present my conclusions in Section 4, arguing that the nature of the verbal correlations in the Turkic-Hungarian contact case significantly differs from the ways in which verbs are shared across the Transeurasian languages.

2. Typology of the Turkic loanverbs in Hungarian

2.1. Contact setting

Throughout their history, the Turkic people have been massively on the move, with significant streams of migration going from East to West. From the fifth century AD on, Oghuric tribes, such as the Ogurs, Avars, Khazars and Bulgars arrived in Eastern Europe and from the ninth century on, written sources mention the presence of non-Oghuric tribes in this area, such as the Pecheneg, the Oguz and the Cumanian people. Referring to West Old Turkic (p. 1071) as "those Turkic languages spoken west of the Ural Mountains and the Ural River from the 5th century A.D. [until] ... the Mongolian invasion of this part of Eurasia [1241 AD]", the authors define it in an areal sense, including languages of Common Turkic descent. As such, the lexicon with West Old Turkic loanwords in Hungarian lists 37 words of Cumanian origin and 2 words of debated Cumanian origin.¹ However, by reconstructing asterisked West Old Turkic words, the authors imply that West Old Turkic represents a genealogical grouping, notably the common ancestor from which all Oghuric languages descend. Perhaps this confusion could have been prevented by restricting the

1 Omitting the entries H *bugâ* dial 'ox; also ox, goat, ram without or with small or unusual horns; stupid' < **buga* ← Cum **buga* 'ox' and H *kömödörög* 'breast strap' ← Cum **kömlüdürik* 'breast strap', the authors (p. 1145, 1157, 1340–1341) count only 35 loanwords of Cumanian origin. They count the entry H *tābor* 'camp, military camp' < **tabur* ← MT *tabur* 'army, military camp' ← Mo *dabkur* as a loanword of Cumanian origin on p. 1341, although the source is described as "an Oghuz language" in the lexicon (p. 839). Therefore, I consider this entry as an instance of debated Cumanian origin.

use of “West Old Turkic” to the areal sense and using “Oghuric” in the genealogical sense.

In the fifth and sixth centuries, the Oghuric languages first came into contact with Ancient Hungarian (ca. 1000 BC–1000 AD), which separated from the Ob-Ugric branch about one and a half millennia earlier. Between the sixth and the tenth century, the Hungarians lived with and among the Turks, which resulted in intensive language contact. After the tenth century, contacts between West Old Turkic and Old Hungarian (1000–1350 AD) became looser, although there still was language contact with Cumanian people, some of whom spoke a Kipchak language and lived to the east of the Hungarian territory from the eleventh until the sixteenth century. The contact was ultimately interrupted by the Mongolian invasion of Hungary in 1241, which also marked the end of the Old Turkic period.

As such, the contact setting between West Old Turkic and Hungarian is of particular interest to the historical linguist. First, it can be characterized as long and intensive: it lasted for eight hundred years and Turkic-Hungarian cohabitation implied a high degree of bilingualism. Moreover, code-copying was favoured because of a high degree of structural similarity between languages of the Transeurasian and the Uralic type. Third, the contact is prehistorical in the sense that it started at a remote time in history, predating the first (decipherable) written sources of West Old Turkic and Hungarian. And, finally, the contact was followed by roughly half a millennium during which Hungarian escaped Turkic influence, ample time to shape the Turkic loanwords in its own way. Although the Turkic influence on Middle Hungarian (1350–1550 AD) was renewed through the Ottoman occupation of Hungary in 1526, the Turkic impact rapidly decreased and lasted only until the end of the seventeenth century. This peculiar case of contact can help us draw inferences about the plausibility of other, similar contact scenarios, such as the prehistorical contacts that are believed to motivate the similarities among the Transeurasian languages.

2.2. Verbal copies

The bulk of this book (p. 53–1008) consists of a lexicon containing all Hungarian words for which the authors have found a plausible West Old Turkic model. Even if this massive word stock builds on previous treatments of Old Turkic loanwords in Hungarian such as those by Gombocz (1912) and Ligeti (1986) and re-evaluates the proposals made in two Hungarian etymological dictionaries by Benkő (1967–1984; 1993–1997), the descriptions are unprecedented in accuracy and detail.

Whereas the authors (p. 1143) count 419 main entries in the lexicon, 72 of which are verbs, my count has resulted in 414 main entries, 66 of which are verbs. For a full list of verbal copies and their distribution across different subtypes, I refer to the appendix below. The reason for the discrepancy in counting the main entries may have to do with whether one treats Hungarian entries that are redirected to a single Turkic model as different entries or not. The difference in counting verbal copies,

then, probably depends on how one defines a verbal copy. In my definition, a verbal copy is a contact-induced replication of a verb stem from the model language as a verb stem in the basic language. By consequence, I do not consider West Old Turkic non-verbs that are copied and verbalized in Hungarian as verbal copies, e.g. H *koldul-* ‘to beg, to mendicate’ < **koldu* + *-(V)l-* VBLZ ← WOT **koldu* < **kol-* ‘to pray, ask for’ + *-dU* NMLZ; H *tāplāl-* ‘to feed, to nourish’ < **tāplā* + *-(V)l-* VBLZ < **taplay* ← WOT **taplay* ‘satisfaction’; H *üdül-* ‘to refresh oneself, to rest, to become cured’ < *idül-* < **edül-* < **edü* + *-(V)l-* VBLZ ← WOT **edü* ‘good, morally good’.

a) Debated verbal copies

Our corpus of 66 verbs can further be reduced by eliminating 13 verbs which the authors mark as “of debated Turkic origin” (e.g. H *ārik-* ‘to decay, putrefy, go bad (of food, water)’ < **ār-* + *-ik-* ← WOT **ar-* ‘to become exhausted’ has semantic and phonetic difficulties and is alternatively derived from PFUgr. **arə-* ‘to become tired’); 2 cases in which the Turkic model cannot unequivocally be reconstructed as a verbal base (H *šēr-* in *šērt-* ‘to hurt’, *šēriül-* ‘to become hurt’ < **šir-* ← WOT **šir-* < **šir-* < **sir-*, but this base is mainly reflected as a nominal base **sir* ‘pain’, for instance in the denominal verbalization EOT *sizla-* ‘to ache’), 1 instance of contamination with an original Finno-Ugric root (H *ēr-* ‘to arrive, to reach, get to’ < **er-* ← WOT **er-* ‘to reach, arrive’, but the Turkic model has only contaminated the Hungarian reflex of PFUgr. **šārə-* ‘to reach, arrive’); and 1 case in which the copied verb base is only reflected in a supposedly derived nominalization in Hungarian (H *örvén-* ‘whirlpool, eddy’ < **ör-* + *-vĀn* NMLZ < **ör-* < **eür-* < **ewir-* < *eyir* ← WOT **āyir-* ‘to twist’). This elimination process leads to a core of 49 indisputable verbal copies.

b) The model is morphologically complex

Out of these 49 verbal copies, the authors list 25 cases in which the West Old Turkic model has a morphologically complex origin, whereas the Hungarian copy does not. In 4 cases, the assumed morphological complexity is less transparent. One example is H *törtēnik-* ‘to happen, to occur’ < *törtēn-* < **törtün-* ← WOT **tör(ü)tün-* < **törü-* ‘to come into existence’ + *-(X)t-* CAUS + *-(X)n-* ANTICAUS), in which the Turkic model verb can be analyzed as an anticausative ‘to happen’ from a causative ‘to bring into existence’ of a verb ‘to come into existence’, while the Hungarian copy lacks this analysis.

c) The copy is accommodated with a native suffix in the basic code

Out of 49 verbal copies, there are 15 instances in which the verb stem is indirectly inserted in Hungarian. This means that the verbal copy is accommodated with a specific, native Hungarian suffix and lacks alternant stems or roots reflecting an original bare verb root. Hence, it is impossible to reconstruct the bare verb root without accommodating suffix in Ancient Hungarian. Thus, entries such H *kēšik-* ‘to be,

become late', H *sökik-* 'to leap, to jump, to escape, to flee' and H *borul-* 'to overturn into, to get overturned, get overcast' that were attested as direct insertions of the shape *kēs-*, *sök-* and *bor^o-/bur^o-* before they were derived are not counted here.

Only a limited set of four suffixes is used for the accommodation of Turkic verb stems, i.e. H *-(V)l-*, *-(A)l-*, *-(V)d-* and *-ik-*. The denominal verb suffixes H *-(V)l-* or *-(A)l-* occur in 4 instances, e.g. H *čātol-* 'to add, to join; to buckle up sg' < **čatol-* < **čat-* + *-(V)l-* VBLZ ← WOT **čat-* 'to bring together, to join'. According to the authors (p. 1139–1140), *-(V)l-* is the common loan verbalizer, also accommodating copies from Germanic and Slavic languages. However, the verbalizer *-(A)l-* also displays this function in Hungarian, e.g. Eng. *realize* → H *realiz-ál* 'to realize' (Farkas & Kniezsa 2002: 285; Wohlgemuth 2009: 96). The deverbal frequentative *-(V)d-* occurs in 5 instances, e.g. H *erñed-* 'to tire, lose vitality, slacken, relax' < **erñ-* + *-(V)d-* FREQ ← WOT **ärin-* 'to be lazy, indolent'.² The suffix H *-ik-* which originally had reflexive-anticausative meaning and developed into a marker of indefiniteness in what is known as "the *-ik-* conjugation" (p. 1136–1139), occurs in 6 instances, e.g. H *toyik-* 'to lay eggs' < **tuik-* < **tuyik-* < **tuy-* + H *-ik-* ← WOT **tuy-*, *toy-* 'to be born'. Note that a denominal verb suffix is not the only means that languages across the world use for accommodating verbal copies. Since the purpose of the marker is to add valency, thereby assigning "verbhood" to the word, many languages use factitives or causatives or suffixes that assign the verb to a particular class of verbs (Wohlgemuth 2009: 97–101). From this perspective, the choice of the deverbal frequentative *-(V)d-* or the indefinite conjugational marker H *-ik-* as loan verb markers makes sense.

d) The meaning of the copy is restricted to secondary semantics of the model

Out of 49 verbal copies, there are 19 instances in which the meaning of the Hungarian verb corresponds to the secondary meaning of the Turkic model. The primary meaning of the Turkic verb has thus not been copied into Hungarian, e.g. H *bāsik-* 'to fuck' < **bas-* ← WOT **bas-* 'to press, oppress', whereby most Turkic varieties have developed the secondary meaning 'to fuck'. The primary meaning 'to press, oppress' is not attested in Hungarian.

e) "Clean" copies

Only 6 verbal copies are "clean" in the sense that they combine a simplex Turkic model with direct insertion and a correspondence to the primary meaning. Out of these 6 etymologies, 2 occur in a binary setting, going from Turkic into Hungarian

2 Note that in the cases of *āporodik-* 'to decay, putrefy, turn stale' and *d'ārāpodik-* 'to increase, put on weight, grow stronger' the loan verb marker *-(V)d-* is further derived with the indefinite conjugational marker *-ik-*. This is reminiscent of how more recent loanverbs from German such as Grm *büffeln* 'to swot' → H *bifláz-* 'to cram' which are first accommodated by only the loan verb marker *-Vz-*, may later enter the *-ik-* conjugation, i.e. *biflázik-* is accepted as well (p. 1139–1140).

(H *kēšik*- ‘to be, become late’ < *kēš*- < **kēč*- ← WOT **kēč*- ‘to be late’; H *vāy*- ‘to hollow out, to scoop out’ < **vay*- ← WOT **vay*- ‘to hollow out’), while 4 occur in a triple setting, involving a copy into or from Mongolic as well (e.g. H *tūr*- ‘to endure, suffer, bear, stand’ < **tür*- ← WOT **tör*- | EOT *töz*- ‘to endure, suffer’ → Mo *tes*- ‘to bear, stand, to endure’).³ None of these verbs has been copied in yet a fourth language. None has a so-called “basic” meaning corresponding to an item on either the Swadesh 100 list (Swadesh 1955) or the recently updated Leipzig-Jakarta list (Tadmor et al. 2010).

f) Copies of verbal morphology

On p. 1125–1135, the authors provide a long list of Turkic suffixes which have been borrowed into Hungarian attached to Turkic stems, including 14 bound verbal morphemes. However, none of these suffixes has become productive on native, Hungarian bases. Hence, one of the most striking aspects of the West Old Turkic-Hungarian contact is that after 800 years of intensive code-copying, not a single bound morpheme—be it nominal or verbal—has been copied. Although the authors mention two lexical copies, i.e. H *kēp* ‘picture, shape, form’ and H *kor* ‘age, period’, which grammaticalized over a postposition into, respectively, a comparative suffix ‘like, as’ and a temporal suffix, these forms were borrowed as independent nouns from, respectively, WOT **kāp* ‘mould, model’ and WOT **kur* ‘time, rank’ and grammaticalized late in the history of Hungarian.

2.3. Analysis

For a complete analysis of the verbal copies present in the lexicon, I refer to Appendix I below. A numerical overview of my findings is given in Table 1.

Table 1: Numerical overview according to type of verbal copy

Entries in the lexicon: 414

Verbal: 66

Disputable: 17

debated Turkic origin: 13

uncertain verbal origin: 2

contamination: 1

nominalized in Hungarian: 1

Undisputable: 49

indication(s) of copying: 44

complex origin: 25

probable complex origin: 4

indirect insertion: 15

3 The authors (p. 1114) date the West Old Turkic–Mongolic contacts to the period between the third century B.C. and the fifth century A.D.

+ H -(V)l- : 4
 + H -(V)d- : 5
 + H -ik- : 6
 secondary semantics: 20
 “clean” verbal copies: 5
 in binary setting: 2
 in multiple setting: 3
 triple setting: 3
 quadruple setting: 0
 basic vocabulary: 0
 Non-verbal: 348
 Cumanian origin: 37
 Uncertain Cumanian origin: 2

a) Contact perspective

Observing the West Old Turkic verbal copies in Hungarian, we thus learn that

1. copying of verbs is rare in cases of low to moderate contact such as in the Cumanian-Hungarian case. In instances of intensive contact such as in the Oghuric-Hungarian case, however, verbal copies do occur.

2. the proportion of verbal copies is 16% (= 66/414), which is about 5 times lower than that of non-verbal copies, i.e. 84% (= 348/414). Note that the proportion of verbal cognates to non-verbal cognates in the list of Hungarian words of (Finno)-Ugric origin (p. 1272–1293) is 35% (= 173/ 494), which is only 3 times lower.

The authors suggest counting the proportion of verbal copies in another way: “If we count the number of verbs in our sample that exist as verbal bases of nouns or as verbs, their number is about 170. ... Thus, we can conclude that the proportion of verbs to non-verbs among the WOT lws in H is 33% : 67%.” In my definition (see Section 2.2.), however, the borrowing of a nominalized Turkic verb as a noun in Hungarian, cannot be regarded as a verbal copy.

3. 90% (= 44/49) of verbal copies can be recognized on the basis of one or more characteristics, unmasking them as a copy. For 59% (= 29/49) of verbal copies, the Turkic model is morphologically complex. 30% (= 15/49) have been accommodated with a native Hungarian suffix. 41% (= 21/49) reflect only the secondary meaning of the Turkic model verb.

4. 10% (= 5/49) of verbal copies cannot be recognized on the basis of these characteristics. Moreover, only 6% (= 3/49) of verbal copies are shared in a triple contact setting. None of them is shared in a quadruple contact setting. None represents basic vocabulary.

5. no bound verb morphology has been copied from Turkic into Hungarian.

b) Genealogical perspective

Extrapolating these observations to genealogical linguistics, we infer that

1. sharing verb roots requires intensive contact, including centuries of contact and a high rate of multilingualism among the languages concerned. If languages share verb roots, but the archeological record does not preserve indications of such a contact setting, genealogical relationship is the hypothesis that should be tested first.

2. when the proportion of verbal etymologies involves more than a third of all etymologies, genealogical inheritance is a more plausible explanation than code-copying.

3. excluding etymologies that display indications of code-copying will increase the probability of inheritance up to about 90% and reduce the probability of code-copying to about 10%. We should thus exclude etymologies

- (a) in which one member is morphologically complex, while the other(s) is (are) not
- (b) in which the corresponding verb root is systematically attached to a specific native affix, which is either the common native loan verbalizer or another native suffix recurrent on other shared verbs
- (c) in which only secondary semantics are shared.

4. when corresponding verbs that do not display any indications of code-copying share similarities over three or more (proto-)languages, the probability of inheritance increases beyond 90%. When such corresponding verbs represent basic vocabulary, the probability that the correlations are induced by language contact is extremely low.

5. sharing of bound verb morphology is indicative of inheritance.

3. Implications for the Transeurasian controversy

Let us now apply these observations and inferences to the verbs shared across the Transeurasian languages. The label “Transeurasian” was coined by Johanson & Robbeets (2010: 1–2) in reference to a large group of geographically adjacent languages, traditionally known as “Altaic”, that include up to five different linguistic families: Japonic, Koreanic, Tungusic, Mongolic, and Turkic. The question of whether these families go back to a single common ancestor is one of the most disputed issues in historical comparative linguistics. The controversy is not primarily fueled by a shortage of similarities, but by the difficulty of accounting for them: are all shared forms generated by borrowing, or are some residues of inheritance? The application of the five genealogical guidelines proposed in Section 2.3.b) to the verbs shared across the Transeurasian languages can, in my opinion, substantially help to unravel this question.

1. *Extra-linguistic evidence for intensive contact setting*

In Robbeets (2005: 380–395), I propose 170 etymologies for verbs, corresponding formally and semantically across the Transeurasian languages. A borrowing scenario would require the assumption of an intensive multilateral contact situation, lasting for centuries—if not millennia—and involving a high degree of multilin-

gualism in Turkic, Mongolic, Tungusic, Koreanic and Japonic. Obviously, the archaeological records preserve no evidence for such a longstanding, multilateral cohabitation.

2. Proportion of verbal etymologies

Out of 354 lexical etymologies proposed in Robbeets (2005: 380–411), only 184 are non-verbal. The proportion of verbal etymologies (48%) thus practically involves half of all etymologies and is nearly the same proportion as that of non-verbal etymologies (52%), which favours a genealogical explanation.

3. Copy-proof properties

For the present purpose, I will restrict myself to 11 etymologies for basic verbs and verbal adjectives, summarized in Table 2. For the underlying data, I refer to Appendix II below. These verbal etymologies are relatively “copy-proof” because (a) except for the verbs reconstructed in etymology (4) ‘to burn’, none of the compared proto-verbs is morphologically complex in one branch and simplex in another, (b) there is no trace of a specific native suffix accommodating corresponding verbs in one or more individual branches and (c) the shared verbal meanings are not restricted to secondary semantics.

4. Basic vocabulary in multiple setting

The proto-Transeurasian verbs reconstructed in Table 2 are “basic” in the sense that they represent meanings belonging to the basic vocabulary Leipzig-Jakarta (LJ) or Swadesh (S) 100-list. Note that all etymologies have members in three different branches of the Transeurasian unity, while 6 etymologies [(5), (7), (8), (9), (10), (11)] have cognates in four branches. Therefore, in line with the inferences made above, the probability that the correlations are induced by language contact is extremely low.

Table 2: Basic verbs and verbal adjectives shared across the Transeurasian languages

No	LJ/S item	Japonic	Koreanic	Tungusic	Mongolic	Turkic
(1)	LJ 3 ‘go’	OJ in- ‘go away’ pJ *na-	MK na- ‘go out’ pK *na-	Evk. -na:- ‘go out to’ pTg *-na:-		
(2)	LJ 36 ‘hit, beat’	OJ tuk- ‘hit with force’ pJ *tuk-	MK ·thi- ‘hit, strike’ pK *t(λ)ki-	Evk. dug- ‘hit’ pTg *dug-		
(3)	S 56/ LJ 46 ‘bite’	OJ kam- ‘bite’ pJ *kam-			WMo. kemeli- ‘bite’ pMo *keme-	OTk. kemür- ‘gnaw’ pTk *kem-

(4)	S84/ LJ 53 'burn'	OJ tak- 'burn (tr.)' pJ *tak-	MK ·tho- / tahi- 'be on / set fire' pK *takΛ- /*taki-			Otk. yak- 'burn (tr.)' pTk *ya-k-
(5)	LJ 70 'carry'	OJ op- 'carry on back' pJ *əpə-	MK ep- 'carry on back' pK *ep-	Evk. ewe- 'carry' pTg *ebe-	WMo. eyüre- 'carry on back' pMo eyüre-	
(6)	LJ 76 'be thick'	OJ puto ₁ - 'be thick' pJ *puta-	MK "pwuT- 'increase intr.' pK *pwutΛ-		WMo. büdügün 'large' pMo *büdü-	
(7)	LJ 96 'be(come) wide'	OJ nobi ₂ - 'spread intr.' pJ *nənpa-	K nelp- 'be wide' pK *nelpΛ-	Evk. nepte- 'spread out' pTg *nepte-	WMo. nebsei- 'be broad/long' pMo *nebse-	
(8)	LJ 99 'be hard'	OJ kata- 'be hard' pJ *kata-	MK kwut- 'be hard' pK *kata-		WMo. qata- 'become hard' pMo *kata-	Otk. kat- 'be hard' pTk *kat-
(9)	S65 'walk'	J kati 'walking' pJ *kat-	MK "keT- 'walk' pK *ketΛ-		MMo. ketül- 'cross, pass' pMo *ketü-	Otk. ket- 'go away' pTk *ket-
(10)	S90 'be white'	OJ siro ₁ - 'be white' pJ *sira-	MK ·huy-/ hoy-Ma. šara- MK syey- 'be(come) white' pK *si(l)Λ-	hoy-Ma. šara- 'become white' pTg *sia:ra- (<*si:ra-?)	[WMo sira 'yellow'] Copy? pTk *sia:ri- (<*si:ra-?)	Otk. šarig 'yellow' pTk *sia:ri- (<*si:ra-?)
(11)	S 99 'be round'	MJ maro- 'be round' pJ *maru-	MK mulu- 'turn around' pK *mili(-)l-	Evk. murume 'round' pTg *muru-	WMo murui 'curve' pMo *muru-	Otk. бүр- 'wind round' pTk *bur-

5. Bound verb morphology in common

In previous publications (Robbeets 2007a, 2007b, 2009, 2010, 2012), I have identified twenty-one verb suffixes reflecting regular phonological and functional correspondences in at least three branches of the Transeurasian languages. In line with the verbal evidence, this sharing of bound verb morphology is indicative of inheritance.

4. Conclusion

In this magnum opus, András Róna-Tas and Árpád Berta use the loanwords preserved in Hungarian as an alternate window on the reconstruction of West Old Turkic. As such, this study represents a major step forward in the field of Turkic

linguistics, but it also has important implications for historical linguistics in general and in particular for Transeurasian comparative linguistics. In this review article, I have explored the merits of their research for an integrated approach of genealogical and contact linguistics by inferring criteria to distinguish between inheritance and code-copying on the basis of a typology of Turkic loanverbs in Hungarian.

Contrary to the authors' claim (p. 1142) that "In respect of the hypothesis of the relationship of the Trans-Eurasiatic or the "Altaic" lgs, this carries an important message. After one and a half thousand years, verbs borrowed fr an unrelated lg cannot be detected with internal methods. They are deeply embedded," my analysis suggests that verbs borrowed from an unrelated language can be distinguished from inherited verbs shared between related languages, even after millennia have elapsed. The loanverbs in Hungarian show that criteria such as morphological complexity, indirect insertion and secondary semantics can unmask 90% of the verbs copied from West Old Turkic into Hungarian. Adding requirements such as basic vocabulary and multiple setting further reduces the verbal copies to 0% in the Turkic-Hungarian case. Extrapolating these observations to genealogical linguistics, we can make our etymologies copy-proof by eliminating instances of morphological complexity, indirect insertion and secondary semantics and requiring basic verbs corresponding in a multiple setting.

Applying these guidelines to the Transeurasian controversy, it becomes possible to answer the key question whether all shared forms are generated by code-copying, or whether some are residues of inheritance. The 11 etymologies for basic verbs and verbal adjectives presented here are fully copy-proof from the perspective of our guidelines. Moreover, twenty-one verb suffixes are shared between the Transeurasian languages, whereas not a single bound morpheme has been copied from Turkic into Hungarian, in spite of the intensive contact, so well described in this study. Inspired by this magnificent work, I cannot but conclude that not all correlations between the Transeurasian languages are the result of language contact and that some bear witness to inheritance.

Abbreviations

ANTICAUS	anticausative	MIM	mimetic
CAUS	causative	PASS	passive
FREQ	frequentative	NMLZ	nominalizer
INCH	inchoative	tr.	transitive
intr.	intransitive	VBLZ	verbalizer

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Appendix I

Analysis of verbal copies arranged on Hungarian headword in transcribed form

1. Entries in the lexicon reflecting verbal copies

- | | | |
|--|--|---|
| (1) <i>áynāroz-</i> 'to fondle' | (23) <i>d'ārāpodik-</i> 'to increase' | (45) <i>šēpēr-</i> 'to sweep, broom' |
| (2) <i>āpol-</i> 'to nurse' | (24) <i>d'ārt-</i> 'to produce, build' | (46) <i>sān-</i> 'to have pity for, regret' |
| (3) <i>āporodik-</i> 'to decay, putr[i]fy' | (25) <i>d'ōnik-</i> 'to confess (sins)' | (47) <i>sān-</i> 'to wish, to intend' |
| (4) <i>ārāt-</i> 'to mow' | (26) <i>d'ōtör-</i> 'to torture' | (48) <i>senderedik-</i> 'to slumber' |
| (5) <i>ārik-</i> 'to decay, putrefy' | (27) <i>d'ōz-</i> 'to conquer, triumph' | (49) <i>sōr-</i> 'to spread, scatter' |
| (6) <i>bān-</i> 'to regret, to be sorry' | (28) <i>d'ūl-</i> 'to catch fire' | (50) <i>sōkik-</i> 'to leap, jump, escape' |
| (7) <i>bāsik-</i> 'to fuck' | (29) <i>d'ūr-</i> 'to knead, pug' | (51) <i>sūnik-</i> 'to cease, to stop' |
| (8) <i>bēcūl-</i> 'to estimate, to esteem' | (30) <i>d'ūlik-</i> 'to assemble, gather' | (52) <i>sūr-</i> 'to strain, to filter' |
| (9) <i>bočānik-</i> 'to be forgiven' | (31) <i>d'ūlöl-</i> 'to hate' | (53) <i>tārt-</i> 'to hold, carry; to last' |
| (10) <i>bočāt-</i> 'to forgive' | (32) <i>iyest-</i> 'to frighten' | (54) <i>teker-</i> 'to wind round, twist' |
| (11) <i>borūt-</i> 'to cover, to overturn' | (33) <i>illik-</i> 'to suit, be proper' | (55) <i>teng-</i> 'to vegetate' |
| (12) <i>bossānt-</i> 'to annoy' | (34) <i>imád-</i> 'to adore, worship' | (56) <i>tēr-</i> 'to turn' |
| (13) <i>čātol-</i> 'to add, to join' | (35) <i>īr-</i> 'to write' | (57) <i>toyik-</i> 'to lay eggs' |
| (14) <i>čekēl-</i> 'to bind (sg)' | (36) <i>izzik-</i> 'to glow, be hot' | (58) <i>torol-</i> 'to pile up (tr)' |
| (15) <i>čökik-</i> 'to become smaller' | (37) <i>kērōdzik-</i> 'to ruminate' | (59) <i>tökēl-</i> 'to perform' |
| (16) <i>čūr-</i> 'to wind, to turn' | (38) <i>kēšik-</i> 'to be, become late' | (60) <i>tör-</i> 'to break, separate' |
| (17) <i>dōl-</i> 'to lean, topple over' | (39) <i>kösön-</i> 'to greet, thank' | (61) <i>törtēnik-</i> 'to happen, occur' |
| (18) <i>dug-</i> 'to squeeze, thrust into' | (40) <i>ölt-</i> 'to stitch, put on a dress' | (62) <i>tūr-</i> 'to endure, suffer, bear' |
| (19) <i>enged-</i> 'to allow, permit' | (41) <i>ōn-</i> 'to elect, to select' | (63) <i>vāy-</i> 'to hollow out, scoop' |
| (20) <i>ēr-</i> 'to arrive, to reach' | (42) <i>ōr-</i> 'to grind, mill' | (64) <i>ver-</i> 'to plait, lay the rope' |

- | | | |
|---|--|--|
| (21) <i>erned-</i> 'to tire, lose vitality' | (43) <i>örül-</i> 'to rejoice, to be glad' | (65) <i>örvén-</i> 'whirlpool, eddy' |
| (22) <i>d'älāz-</i> 'to abuse, calumniate' | (44) <i>örül-</i> 'to become mad' | (66) <i>šērt-</i> 'to injure, to hurt' |

2. Verbal copies of debated Turkic origin

- | | |
|--|---|
| (1) <i>āynāroz-</i> 'to fondle, pet' | (8) <i>kērōdzik-</i> 'to ruminate' |
| (2) <i>āpol-</i> 'to nurse, take care of' | (9) <i>senderedik-</i> 'to slumber' |
| (3) <i>ārik-</i> 'to decay, putrefy' | (10) <i>teng-</i> 'to vegetate' |
| (4) <i>dug-</i> 'to squeeze, thrust into' | (11) <i>torol-</i> 'to pile up (tr)' |
| (5) <i>d'ül-</i> 'to catch fire, be kindled' | (12) <i>tökēl-</i> 'to perform' |
| (6) <i>iyest-</i> 'to frighten' | (13) <i>ver-</i> 'to plait, lay the rope' |
| (7) <i>izzik-</i> 'to glow, be hot' | |

3. Not unequivocally "verbal" copies

- (1) *šēr-* in *šērt-* 'to hurt', *šērül-* 'to become hurt' < **šir-* ← WOT **šir-* < **šir-* < **sir-*, but this base is mainly reflected as a nominal base **sir* 'pain' in e.g. EOT *sizla-* 'to ache'
- (2) *d'älāz-* 'to abuse, calumniate' < **d'ala-* + -(V)z- FREQ < **jala-* ← WOT **jala-* | EOT *yala-* 'to make false accusation' < **yal* 'lie' + A- VBLZ, but we cannot exclude that this is a copy of WOT **jal* 'lie' + H -Vz- VBLZ following /l, n, r/ final stems (p. 1139); cf. WOT **jal* → Mo. *jali* 'ruse, craft, cunning, trick, deceit' is a nominal copy.

4. Verbal copies with morphologically complex origin

- (1) *āporodik-* 'to decay, putrefy, turn stale' < **oporo-* ← WOT **op(u)ra-* 'to grow old, decay, to wear out' < **op* + -rA- MIM
- (2) *ārāt-* 'to mow' < **orat-* ← WOT **orat-* < **or-* 'to mow' + -(X)t- CAUS
- (3) *bān-* 'to regret, to be sorry' < **baγin-* ← WOT **bagin-* < **bak-* 'to look' + -(X)n- ANTICAUS
- (4) *bēčül-* 'to estimate, to esteem, to appreciate' < **bečel-* ← WOT **bičil-* 'to be cut' < **bič-* 'to cut' -(X)l- PASS
- (5) *bočānik-* 'to be forgiven' < **bočan-* < **bolčan-* ← WOT **bolčan-* 'to free oneself (from sin)' < **bolč* 'empty' + -A- VBLZ + -(X)n- ANTICAUS
- (6) *bočāt-* 'to forgive' < **bulšat-* < **bulčat-* ← WOT **bolčat-* 'to release' < **bolč* 'empty' + -A- VBLZ + -(X)t- CAUS
- (7) *bossānt-* 'to annoy' < *bossan-* < **busan-* << WOT **busan-* 'to grieve, to be sorrowful' < **busa-* 'to cause sorrow' + -(X)n- ANTICAUS
- (8) *enged-* 'to allow, permit, concede; yield, give way' < **eng-* ← WOT **āṅ-* 'to bend (intr.)' < **äg-* 'to bend (tr.)' + -(X)n- ANTICAUS
- (9) *erned-* 'to tire, lose vitality, slacken, relax' < **erin-* ← WOT **ārin-* 'to be lazy, indolent' < **er-* 'to criticise' + -(X)n- ANTICAUS
- (10) *d'ārāpodik-* 'to increase, to put on weight, to grow stronger' < **d'ārāp-* < **jarap-* < **jarpa-* ← WOT **jarpa-* < **jarp* 'firm, solid' + -A- VBLZ

- (11) *d'ärt-* 'to produce, build, fabricate' < *d'arat-* < **jarat-* ← WOT **jarat-* 'to make, create something' < **jara* 'to be useful, or suitable' + -(X)t- CAUS
- (12) *d'önik-* 'to confess (sins)' < *d'ön-* < **d'un-* < **jün-* ← WOT **jün-* 'to make oneself clean' < **jū-* 'to wash' + -(X)n- ANTICAUS
- (13) *d'ötör-* 'to torture, to make suffer' < **jütür-* < **jitür-* ← WOT **jitür-* 'to cause to tear, make somebody tear, cut into pieces' < **jirt(t)ür-* < **jir-* 'to dig through, to cut through' + -(X)t- CAUS + -tUr- CAUS
- (14) *d'ülük-* 'to assemble, gather' < *d'ül-* < **d'il-* < **jīyil-* ← WOT **jigil-* 'to be heaped up, collected, to assemble' < **jig-* 'to collect, assemble' + -(X)l- PASS
- (15) *d'ülöl-* 'to hate' < **d'üle-* < **d'eüle-* < **jeyle-* ← WOT **jāgilā-* 'to be hostile' < **jāgi* 'enemy, hostile' + -lA- VBLZ
- (16) *kösön-* 'to greet, to thank' < **küsen-* ← WOT **küsän-* 'to wish' < *küsä-* 'to wish' + -(X)n- ANTICAUS
- (17) *ölt-* 'to stitch, to put on a dress' < **ilt-* ← WOT **ilt-* < **il-* 'to catch, to hang, to suspend' + -(X)t- CAUS
- (18) *örül-* 'to rejoice, to be glad' < **ör-* < *ör-* < **öyir-* ← WOT **öyir-* 'to be joyful, to rejoice' < **öyi* 'joy' + -(A)r- intr. VBLZ
- (19) *örül-* 'to become mad' < **evril-* < **evril-* ← WOT **ävril-* 'to revolve' < **ävir-* 'to turn' + -(X)l- PASS
- (20) *sān-* 'to have pity for, to regret' < **sān-* < **sayin-* ← WOT **sayin-* 'to think anxiously about something, to be worried' < **sak-* 'to think' + -(X)n- ANTICAUS
- (21) *sān-* 'to wish, to intend, to devote' ← WOT **sān-* 'to think' < **sā-* 'to count' + -(X)n- ANTICAUS
- (22) *sör-* 'to spread, to scatter, to winnow' < **sawur-* ← WOT **sawur-* 'to scatter, to winnow' < **sav-* 'to spray' + -(U)r- CAUS
- (23) *sūr-* 'to strain, to filter' < **sür-* ← WOT **sür-* < **sū-* 'strain' + -(X)z- CAUS
- (24) *tör-* 'to break, to separate into pieces, to crush' < **tör-* < *tūr-* < *tüyür-* ← WOT **töyür-* < **töy-* 'to pound, crush, grind' + -(U)r- CAUS
- (25) *törtēnik-* 'to happen, to occur' < *törtēn-* < **törtün-* ← WOT **tör(ü)tün-* < **törü-* 'to come into existence' + -(X)t- CAUS + -(X)n- ANTICAUS

5. Verbal copies with a less transparent morphologically complex origin

- (1) *čūr-* 'to wind, to turn, to dist[r]ort, misinterpret, to spin a yarn' < **čevür-* ← WOT **čāvür-* 'to turn' < ?**čAv-* + -(l)r- INCH
- (2) *tārt-* 'to hold, carry; to last' < *tart-* ← WOT **tart-* 'to pull, to drag, to weigh, to stretch' < ?**tar-* 'to be narrow' + -(X)t- CAUS
- (3) *teker-* 'to wind something round, to twist' < **teker-* ← WOT **tākir-* 'to surround' < ?**tāk-* 'to reach' + -(l)r- INCH
- (4) *tēr-* 'to turn, to change the original direction' < **tevir-* ← WOT **tāvir-* 'to turn (tr.)' < **tāw-* 'turn, twist, move' + -(l)r- INCH

6. Verbal copies accommodated by a native suffix

6.1. Accommodation by the Hungarian denominal verb suffix -(V)l-

- (1) *čátol-* 'to add, to join; to buckle up' < **čátol-* < **čat-* + -(V)l- VBLZ ← WOT **čat-* 'to bring together, to join'

- (2) *čekēl-* ‘to bind (tr.)’ < *ček- < *čik- + -*ál-* VBLZ ← WOT *čik- ‘to tie up (a parcel)’
(Uncertain: Hungarian item is a hapax)
(3) *d’ülöl-* ‘to hate’ < *d’üle- < *d’eüle- < *jeyile- + -(V)l- VBLZ ← WOT *jägilä- ‘to be hostile’
(4) *örül-* ‘to rejoice, to be glad’ < *ör- < *ör- < *öyir- + -(V)l- VBLZ ← WOT *öyir- ‘to be joyful, to rejoice’

6.2. Accommodation by the Hungarian deverbial frequentative -(V)d-

- (1) *āporodik-* ‘to decay, putrefy, turn stale’ < *oporo- + -(V)d- + -ik- ← WOT *op(u)ra- ‘to grow old, decay, to wear out’
(2) *enged-* ‘to allow, permit, concede; yield, give way’ < *eng- + -(V)d- ← WOT *äñ- ‘to bend (intr.)’
(3) *erñed-* ‘to tire, lose vitality, slacken, relax’ < *erin- + -(V)d- ← WOT *ārin- ‘to be lazy, indolent’
(4) *d’ārāpodik-* ‘to increase, to put on weight, to grow stronger’ < *d’ārāp- < *jarp- < *jarpa- + -(V)d- + -ik- ← WOT *jarpa- ‘to be firm, solid’
(5) *imád-* ‘to adore, worship; to ask for, pray’ < *vimad- < *vim- + -(V)d- ← WOT *vīm- ‘to ask for, covet’

6.3. Accommodation by the Hungarian indefinite conjugational marker -ik-

- (1) *bāsik-* ‘to fuck’ < *bas- + -ik- ← WOT *bas- ‘to press, oppress’
(2) *bočānik-* ‘to be forgiven’ < *bočān- < *bolčān- + -ik- ← WOT *bolčān- ‘to free oneself (from sin)’
(3) *čōkik-* ‘to become smaller, remain small’ < *čōk- < *čūk- + -ik- ← WOT *čōk- ‘kneel down, to sink, to collapse’
(4) *illik-* ‘to suit something, to be proper, to fit into’ < *il- + -ik- ← WOT *il- ‘to hang on, attach to (tr./intr.)’
(5) *sūnik-* ‘to cease, to stop’ < *sūn- < *sōn- + -ik- ← WOT *sōn- ‘to die down, to disappear (e.g. a flame)’
(6) *toyik-* ‘to lay eggs’ < *tuik- < *tuyik- < *tuy- + -ik- ← WOT *tuy- ‘to be born’

7. Verbal copies reflect secondary semantics

- (1) *bān-* ‘to regret, to be sorry’ ← WOT *bagin- ‘to pay heed, look around; (>) look at the (negative) consequences’
(2) *bāsik-* ‘to fuck’ ← WOT *bas- ‘to press, oppress; (>) to fuck’
(3) *bēčül-* ‘to estimate, to esteem, to appreciate’ ← WOT *bičil- ‘to be cut; (>) to be in agreement’
(4) *bočānik-* ‘to be forgiven’ ← WOT *bolčān- ‘to become untied, divorced, to free oneself; (>) free oneself from sin’
(5) *bočāt-* ‘to forgive’ ← WOT *bolčāt- ‘to release, make free; (>) make free from sin’
(6) *borīt-* ‘to cover, to overturn’ ← WOT *bur- ‘to twist, wind around, wrinkle, turn over; (>) to wrap around, to cover’
(7) *bossānt-* ‘to annoy’ ← WOT *busan- ‘to be misty, clouded; (>) to grieve, be sorrowful’

- (8) *čökik-* ‘to become smaller, remain small; to sway, to totter; to sprain’ < ← WOT **čök-* ‘to go down; (>) to kneel down, to sink, to collapse’
- (9) *döl-* ‘to lean, topple over, stream down’ ← WOT **tül-* ‘to move downwards; (>) to fall, get off (a horse), to settle, to retire’
- (10) *enged-* ‘to allow, permit, concede; yield, give way’ ← WOT **äḡ-* ‘to bend (intr.); (>) to bow, allow, permit, obey’
- (11) *d’ärt-* ‘to produce, build, fabricate’ ← WOT **jarat-* ‘to make useful; (>) to make, create something’
- (12) *d’önik-* ‘to confess (sins)’ ← WOT **jün-* ‘to wash oneself; (>) make oneself clean (of sins)’
- (13) *d’ötör-* ‘to torture, to make suffer’ ← WOT **jitür-* ‘to cause to tear, make somebody tear, cut into pieces; (>) to make suffer’
- (14) *ir-* ‘to write’ ← WOT **ir-* ‘to make a notch, breach in (something); (>) to carve script in (something)’
- (15) *ön-* ‘to elect, to select’ ← WOT **ün-* ‘to rise; (>) to be lifted out’
- (16) *ölt-* ‘to stitch, to put on a dress, to dress somebody’ ← WOT **ilt-* ‘to cause to hang; (>) wear’
- (17) *ör-* ‘to grind, mill’ ← WOT **ävir-* ‘to turn, to turn (a wheel), to overturn (a cup), to turn (the face) towards/ away from; (>) to turn (a grinding wheel)’
- (18) *örül-* ‘to become mad’ ← WOT **ävril-* ‘to revolve, be turned; (>) to be turned on emotionally’
- (19) *šeper-* ‘to sweep, to broom’ ← WOT **sipir-* ‘to clean, drive out, send away; (>) to sweep’.
- (20) *toyik-* ‘to lay eggs’ ← WOT **tuḡ-* ‘to rise (of sun), to be born (intr.); (>) lay eggs (tr.)’

8. “Clean” verbal copies

8.1. Binary setting

- (1) *kēšik-* ‘to be, become late’ < *kēš-* < **kēč-* ← WOT **kēč-* ‘to be late’
- (2) *vāy-* ‘to hollow out, to scoop out’ < **vay-* ← WOT **vay-* ‘to hollow out’

8.2. Multiple setting

- (1) *d’ür-* ‘to knead, pug’ < **jūyur-* ← WOT **jūyur-* / *jūyur-* ‘to knead’ ← Mo **jīgura-* ‘to knead, mix’
- (2) *sökik-* ‘to leap, to jump, to escape, to flee; to spring, dance’ < *sök-* < **sek* < **sek-* ← WOT **sek-* ‘to spring, jump, move quickly’ = ? Mo **sekü-* / *seke-* ‘to raise, lift up, open by lifting up’
- (3) *tūr-* ‘to endure, suffer, bear, stand’ < **tür-* ← WOT **tör-* | EOT *töz-* ‘to endure, suffer’ → Mo *tes-* ‘to bear, stand, to endure’

Appendix II

Data underlying the overview of basic verbs and verbal adjectives in Transeurasian

(1) 'to go'

OJ *in-* 'to go away, leave, depart' A, OJ *-in-* perfective auxiliary, J *nar-* B, OJ *nar-* 'to become, come into being', J *nas-* B, OJ *nas-* 'to make, do, give birth to', pJ **na-* 'to go out, become',

K *na-*, MK **na-* 'to go out, emerge, leave, become, come into being, come out', MK **nay-* 'take out, produce' (pK **-i-* causative), MK *nat-* 'to appear' (pK **-t(i)-* passive), MK *-na-* resultative, pK **na-* 'to go out, become',

Ma. *-na-* ~ *-ne-* ~ *-no-*, Na. *-nda-*, Olch. *-ŋda-*, Oroch. *-na-*, Ud. *-na-*, Sol. *-na:-*, Neg. *-na-*, Evk., Even. *-na:-*, pTg **-na:-* 'to go out'

OJ *in-* 'to go, leave, depart' belongs to the n-irregular verb paradigm (*na-hen*) along with only two other verbs: OJ *sin-* 'to die' and the perfect auxiliary OJ *-in-*, which are probably reflexes of the same etymon (Robbeets 2005: 123, 162). The n-irregular verb paradigm is an exception to the athematic paradigm (*yodan*) because it has 'long' adnominals (*rentaikei*) *-uru* and subjunctives (*meireikei*) *-ure* in contrast to the 'short' adnominals *-u* and subjunctives *-e* of the athematic paradigm.

Whitman (1985) has argued that at some proto-Japanese stage **-r-* was deleted after short vowels but retained after long vowels. The loss of the intervocalic *-r-* in the adnominals and subjunctives of the athematic paradigm is commonly attributed to this rule, so in the case of the n-irregular verb paradigm a preceding long original vowel must have blocked the application of the rule. Since the root vowel in monosyllabic morphemes was automatically long at the proto-Japanese stage, it is inviting to reconstruct monosyllabic pJ **na-* 'to go'.

The prefix in OJ *in-* 'to go, leave, depart' is a lexicalized instance of the Old Japanese verb prefix *-i-*. Various semantic and syntactic analyses of this prefix circulate in the literature,⁴ but, arguing that Old Japanese has active alignment in nominalized clauses, Yanagida and Whitman (2009: 117–119) demonstrate that the *i-* prefix is exclusively attached to active verbs, i.e. to transitive verbs and to intransitive verbs with an agentive subject. The separate accentuation of *i-* is high atonic 1.1. (Martin 1987: 668), which explains the B register in a number of lexicalizations such as J *imasu* B 'deign to be/stay/go/come' (< OJ *mas-* A 'to deign to be/stay/go/come'), OJ *ino2r-* B 'to pray' (< OJ *no2r-* A 'to declare') and OJ *ituk-* B 'to purify' (< OJ *tuk-* B 'to soak'). Lexicalized stems showing a reduced form of *i-* such as OJ *ik-* / *yuk-* 'to go', OJ *yokos-* 'to send here' and OJ *yusug-* 'wash out, rinse' have A register. OJ *in-* 'go, leave, depart' and OJ *sin-* 'die' have A register. How-

4 Martin 1987: 94, 668: independent adverb; Hino 1997: 2–5: agentive marker; Unger 2000a: 676: reanalysis of a preceding *-i* converb Russell 2006: 141–142: goal focus marker; Vovin 2009a: 561: directive-locative focus marker

ever, in reference to Kindaichi, Martin (1987: 201) points out that the original accent type may be B because “these verbs originally had a fall (instead of just low) on the ending of the predicative [...] and that of the infinitive [...] like verbs of Type B.” From this perspective, pJ **na-* ‘to go’ may underlie derivations such as OJ *nar-* ‘to become, come into being’ and OJ *nas-* ‘to make, do, give birth to’ which have B register. The grammaticalization of ‘to go’ into a change-of-state verb is cross-linguistically well attested (Heine and Kuteva 2002: 156-157).

A similar pathway of grammaticalization probably underlies in MK *·na-* ‘to go out, emerge, leave, become, come into being, come out’. In addition to the most common meaning ‘to become’, the Korean verb is used in the sense of K *na-ka-* ‘to go out, leave’, e.g. in *nwun-ey nata* ‘go out of a person’s favor’. Derivations such as MK *·nay-* ‘take out, produce’ with the causative suffix **-i-* and MK *nat-* ‘to appear’ with the passive **-t(i)-* indicate that the original meaning was ‘to go out’. Martin (1992: 702, 933) further considers the so-called “effective suffix” MK *·na-*, that can only apply to the verb MK *·wo-* ‘to come’ yielding MK *·wo.na-* ‘to end up by coming, ultimately come’, to be a grammaticalization from the auxiliary MK *·na-* ‘to go out, emerge’.

The Tungusic languages share a suffix that denotes departure from a place to other places or towards the object of an action (Benzing 1955a: 1068, Gorelova 2002: 239-240), such as Ma. *feku-* ‘to jump’ → *fekune-* ‘to jump away from the speaker, to jump to the other side’, *guri-* ‘to move’ → *gurine-* ‘to move to another place’ and Ma. *omi-* ‘to drink’ → *omina-* ‘to go to drink’. In Manchu, this construction can be replaced by a periphrastic converb construction with the verb *gene-* ‘to go’. From the viewpoint of cyclic grammaticalization, the synthetic construction may also go back to an original verb pTg **na-* ‘to go out’. Its origin as an independent verb is further supported by the observation that there is no development of vowel harmony for the suffix, except in Manchu.

(2) ‘to hit, beat’

J *tuku* B, OJ *tuk-* ‘to pound, husk, beat, hit with force’, Shuri *cicun*, pJ **tuk-* ‘to pound, hit with force’

MK *·thi-* ‘to hit, strike’, pK **t(ʌ)hi-* < **t(ʌ)ki-* ‘to hit, strike’

Evk. *dug-* ‘1 to hit, beat, hammer’, Even *duy-* ‘1’, *duy-* ‘2 batter, hit repeatedly’, Neg. *duw-* ~ *duy-* ‘2’, *dukte-* ‘1’, Ma. *du-* ~ *du:-* ‘1, thresh’, Jur. *du-ŋu-mij* ‘1’, Olč. *du:čĩ-* ‘2’, Oroč. *du:* 1, *du:čĩ-* ‘2’, Na. *du:-* 1, *do:čĩ-* ‘2’, Oroč. *du:-* ‘1, 2’, Ud. *du:-* ‘2’, *dukte-* ‘1’, pTg **dug-* ‘hit with force’

According to Ramsey’s law (cf. (20)), the reconstruction of a minimal vowel in pK **tʌhi-* is legitimate. Velar lenition (cf. (30)) supports the reconstruction of pK **tʌki-*. Although the semantic and formal correspondences among the Japanese, Korean and Tungusic participants are very close, we cannot exclude the possibility that we are ultimately dealing with a sound symbolic formation.

(3) 'to bite'

J *kamu* B, OJ *kam-* 'to bite, gnaw, chew, masticate, eat', pJ **kam-* 'to bite, chew' MMo. (Muq) *kemile-* 'to gnaw', WMo. *kemeli-*, *kemele-* '1 to gnaw, nibble, crack with one's teeth (tr.)', *kemki-* '2 to bite, snap with the teeth (tr.)', Khal. *ximle-*, *xemle-* '1', Bur. *ximel-* '1', Bur. (Bargu dial) *ximil-*, Kalm. *keml-* '1', Ordos *kemele-* '1', *kemxel-* '2', Bao. *kamel-*, Baoan (Dahejia dial.) *kaməl-* 'bite', Dag. *keme-* '1', Eastern Yugur *kemle-*, *kelme-*, Kangjia *kemle-*, pMo **keme-* 'to bite' (pMo **-la-* / **-li-* intensive-iterative suffix)
 Karakh. *kemür-* 'to gnaw, chew (tr.)', MTK. *kömür-*, Tk. *gemir-*, *kemir-*, Az. *gämür-*, Tkm. *gemir-*, Gag. *kemir-*, Uz. *kemir-*, Uigh. *kemi(r)-*, Tat. *kimer-*, Khak. *kimar-*, Krm. *kemir-*, Kirg. *kemir-*, Tuva *xemir-*, Tof. *xemir-*, Kazakh *kemir-*, Nogh. *kemir-*, Bash. *ki-mer-*, pTk **kem-* 'to bite, chew (intr.)' (pTk **(U)r* causative).

In his review of Robbeets (2005), Georg (2007: 273) objects: "Had they used more scientifically oriented sources [...] or any Mongolistic expertise for a change, they would have found the *meaning* of this verb to be 'to crack open a bone with one's teeth and to suck the marrow', which makes clear that it is derived from *kemi* 'marrow of bones' and has to be eliminated from this "etymology". However, these Mongolic forms can be analysed in two different ways: whereas Georg derives them from pMo **kemi(n)* 'marrow of the bones', I derive them from pMo **keme-* 'to bite'. Thus, I take the general meaning 'to bite' as the primary one and assume that the peripheral attestation of MMo. *kemi-le-* is a case of metathesis. Both *-la-* and *-li-* are attested as deverbal iterative-intensive suffixes in Mongolic. The intensive-iterative pMo **-la-* is frequently lexicalized in verb pairs such as WMo. *alqu-* 'to step, walk (intr.)' -> *alqula-* 'to march, walk with quick steps (intr.)', WMo. *seji-* 'to butt with the horns' -> *sejile-* 'to butt repeatedly with the horns', WMo. *ili-* 'to caress, stroke' -> *ilile-* 'to touch or stroke repeatedly'. However, the suffix **-la-* in Georg's analysis may also be the denominal verb suffix, e.g. WMo. *šibayun* 'bird' -> *šibayula-* 'hunt birds'. The suffix **-ki* in WMo. *kemki-* 'to bite, snap with the teeth (tr.)' can be explained either as a deverbal transitivizer or as a denominal verb formant; the second explanation based on Georg's analysis, is more problematic, however, since **-ki-* is a grammaticalized form of MMo. *ki-* 'to make' with the meaning 'to make the verb base', e.g. WMo. *sayad* 'hindrance' -> *sayadki-* 'to hinder'. The expected meaning of the derived verb would thus be 'to make marrow' rather than 'to bite'. In the present analysis, WMo. *kemki-* 'to bite, snap with the teeth (tr.)' reflects a deverbal transitivizer pMo **-ki*, lexicalized in verb pairs such as WMo. *kel-* 'to be strung (as pearls) (intr.)' -> *kelki-* 'to string pearls (tr.)'. Furthermore, the final vowel in all contemporary attestations reflects *-e-* rather than *-i-*, which suggests that **keme-* is the primary form.⁵

5 Dagur has a verb *kam'* 'to ruminate, chew the cud', which reflects a final high front vowel. However, in view of the meaning of this form, it is probably a reflex of pMo. **kebi-* 'to chew, to ruminate' (Nugteren 2011: 407).

According to Clauson (1972: 723), the Turkic transitive verbs meaning ‘to gnaw, chew’ can be derived as a causative of pTk **kem-*. The causative suffix **(U)r* is lexicalized in Turkic verb pairs such as OTk. *ač-* ‘to be hungry’ → *ačur-* ‘to starve (tr.)’, OTk. *keč-* ‘to be late (intr.)’ → *kečür-* ‘to delay (tr.)’ (Erdal 1991: 710–726). As Róna-Tas et al. (2011: 534) note, the root pTk **kem-* ‘to gnaw’ should be kept separated from pTk **keb-* ‘to chew’ which is reflected in Hungarian *kérődzik-* ‘to ruminate’.

(4) ‘to burn’

J *taku* A, OJ *tak-* ‘to burn, boil, cook (tr.)’, Shuri *tak-* ‘to burn’, pJ **tak-* ‘to burn’, MK *·tho-* ‘to burn, be on fire (intr.)’, MK *ta·hi-*, K *tay-* ‘make (fire), heat (with fire) (tr.)’ (MK *-i* causative-passive), pK **taha-* < pK **tak-* ‘to burn’
Karakh. *yak-*, MTk. *yaq-*, Tk. *yaq-*, Tkm. *yaq-*, Gag. *yak-*, Az. *yax-*, Tat. *yay-*, Krm. *yaq-*, Uz. *yəq-*, Uigh. *yaq-*, Yak. *saq-*, Kirg. *žaq-*, Kaz. *žaq-*, Bash. *yaq-*, Khalaj *ya·q-*, Chu. *šot-*, pTk **ya-k-* ‘to ignite, burn (tr.)’

According to Ramsey’s law, the original root underlying MK *·tho-* ‘to burn, be on fire (intr.)’ can be reconstructed as pK **taha-* ‘to burn’, which probably is an assimilation to the second syllable vowel from pK **taha-*. The transitive verb MK *ta·hi-* ‘make (fire)’ can be derived from this root by adding a causative-passive suffix *-i-*. As expected, the addition of a final suffix *-i-* blocks the weakening process of the vowels. Velar lenition took place at an early stage in Korean (Martin 1996: 36–37), supporting the reconstruction of pK **tak-* ‘to burn’.

The correspondence with the Turkic verbs may of course be coincidental. Indeed, the proto-Turkic verb **yak-* ‘to ignite (tr.)’ may represent a complex form, while the inclusion of the Turkic form would lead us to expect register B rather than A in Japanese. As Róna-Tas et al. (2011: 410) note, the attestation of OTk *yal-* ‘to blaze, burn, shine (intr.)’ and OTk *yan-* ‘to burn, blaze up (intr.)’ suggests that these verbs are morphologically complex. The underlying verb being pTk **ya-* ‘to burn (tr.)’, OTk *yal-* ‘to blaze, burn, shine (intr.)’ would represent a derivation with a passive suffix pTk **(X)l-* (Erdal 1991: 651–693), OTk *yan-* ‘to burn, blaze up (intr.)’ a derivation with an anticausative suffix pTk **(X)n-* (Erdal 1991: 584–638) and, Karakh. *yak-* ‘to ignite, burn (tr.)’ with an inchoative suffix pTk **(X)k-* (Erdal 1991: 645–650). This inchoative suffix can be traced back to proto-Transeurasian. Ultimately, Japanese and Korean may only have inherited the Transeurasian complex inchoative form.

(5) ‘to carry’

J *ou* B, OJ *op-* ‘to bear, carry on the back’, EOJ *opuse-*, OJ *opose-*, J *ooseru* ‘to charge with’, J *obuu*, OJ *obup-* ‘to carry on the back’, pJ **əpə-* ‘to carry on the back’
MK *ep-* ‘to carry on the back’, pK **ep-* ‘to carry on the back’
Na. *iwarī-* ‘to unload’, Evk. *ewe-* ‘to carry’, Oroč. *ewu-gi-* ‘to bring’, iwa-dala- ‘to put a person on one’s shoulder’, pTg **ebe-* ‘to carry’

WMo. *eyüre-*, *egür-*, *ügür-* ‘to carry or load on one’s back; to bear; to take a burden upon oneself (tr.)’, (SH) MMo. *u’ur-* ‘to lift on the shoulders, carry’, Khal. *ü:re-* ‘carry on one’s back, bear’, Kalm. *ü:r-*, pMo **eyüre-* ‘to carry on the back’

The deep-velar consonant with velar origin WMo. $\gamma < *g$ only occurs in stems with back vowels. In intervocalic position, it converged with the deep-velar consonant with bilabial origin WMo. $\gamma < *β < *p/*b$ (Poppe 1955: 98). In cases like WMo. *eyüre-*, where γ occurs in stems with front vowels, a velar origin can be excluded.

(6) ‘to be thick’

J *hutoi* B ‘to be thick, burly, fat’, OJ *putoI-* ‘to be thick, fat’ ($< *puta-wo-ra$ (thick-COP-ADN), Shuri *butasaN*, pR **buta-* ‘stout, thick’ (Thorpe 1983: 335), pJ **puta-* ‘to be thick’

K *pu:s-* ‘to swell (intr.)’, MK *pwuT-* ‘to swell, increase’, pK **pwuti-* ‘to become thick’ WMo. *büdügün*, *bidügün* ‘large, huge, big’ (WMo *-yun / -gün* deverbial noun deriving quality words (Poppe 1954: 46)), MMo. *bidun*, Khal. *büdü:n*, Kalm. *büdü:n*, *bödü:n*, Ordos *büdü:n*, *bidü:n*, Dong. *biedun*, Bao. *beidoŋ*, Dag. *budun*, *budu:n*, SYugh. *budü:n*, Mgr. *budin*, *bidun*, Mgr. *beidü:n*, *beidun*, pMo **büdü-* ‘to be large’

The Old Japanese initial *p-* may require special notice because it has been suggested that its articulatory definition had already become a bilabial fricative *F* by the time of Old Japanese. Miyake (1999: 396–400) has argued against the spirantization of OJ *p*, demonstrating that *p* remained unchanged until Middle Japanese when it became a fricative *f*.

In Mongolic, two descriptive verb stems alternate: pMo **büdü-* ‘to be large’ and pMo **bedü-* ‘to be large’. The latter form may have arisen through convergence with a form ancestral to OTk. *bédü-* ‘to be(come) big, great’ (Doerfer 1963: 235; 1975: 275).

(7) ‘to be(come) wide’

J *noboru* B, OJ *nobe2-* ‘to stretch, spread, lengthen (tr.)’, J *nobiru* B, OJ *nobi2-* ‘extend, lengthen, stretch, spread, grow; be postponed (intr.)’, J *nobasu* B, OJ *nobas-* ‘extend, lengthen, stretch, spread (tr.)’, pJ **nənpa-* $> *nəmpi-$ ‘to become long and wide’ K *nelp-* ‘to be wide’, MK *nep-* ‘to be wide’, MK *nelu-* ‘to be wide’, pK **nelp(i)-* ‘to be wide’

Neg. *nepte-nepte* ‘even’, Na. *nepte-nepte* ‘even’, Olch. *nepte-nepte* ‘even’, Orok *nette-* ‘spread out’, Even *nebde-* ‘to pull off the skin in one piece’, *nebde* ‘open(ness); wide(ness)’, *nebden-* ‘to unfold widely; open up (of cloth, wings); straighten out; open up (of leaves) (intr.)’ (Even *-(A)n(2)-* processive), *nebdeñe:* ‘flat, wide’ (Even *-ñA* deverbial adjectivizer), *nebder-* ‘to open, come out (of flowers) (intr.)’, *nebdeku* ‘opened up; wide’, Evk. *nepte-* ‘to unfold, smooth out, spread out’, pTg **nepte-* ‘to become flat and wide’

WMo. *nebseger* ‘wide and long’ (WMo. *-GA* deverbial quality noun (Poppe 1954: 46)), WMo. *nebseyi-* ‘to be wide and long (of clothes), to be tattered, in rags (intr.)’

(pMo *-yi- anticausative, cf. (3)), WMo. *nebsegene-* ‘to move (of something wide and long)’ (WMo. -GA- factitive: Poppe 1954: 61; pMo *-nA- processive.), Khal. *nevsiy-*, Bur. *nebši-*, pMo *-nebse- ‘to be(come) wide and long’

Robbeets (2005: 375; 2008) argues that the voiced series in Japanese, which are internally derived from original nasal clusters, can be traced back to clusters in the Transeurasian languages. The original clusters can be divided into homorganic and heterorganic clusters (Sagart pc.) Homorganic clusters are composed of a sonorant and a stop (pTEA *-Rp-, *-Rt-, *-Rk-) and merge in a nasal cluster (pJ *-np- > OJ -b-, pJ *-nt- > OJ -d-, pJ *-nk- > OJ *-g-) in Japanese. In heterorganic clusters, such as those reflected in this etymology, on the other hand, the nasal and the stop have a different place of articulation, which results in the insertion of a parasitic stop (pTEA *-m(P)T-, *-n(T)K-, *-ŋ(K)T-). The nasal is lost in the continental Transeurasian languages (*-PT-, *-TK-, *-KT-), whereas Korean and Japanese lose the final stop (pJ *-mp- > OJ -b-, pJ *-nt- > OJ -d-, pJ *-ŋk- > OJ *-g-).

(8) ‘to be hard’

J *katai* A, OJ *kata-* ‘to be hard, solid, tough, rigid’, Shuri *kata-* A ‘to be sturdy, sure, saturated’, pJ *-kata- ‘to be hard’

K *kwut-*, MK *kwut-* ‘to be hard’, K *kkatalop-*, MK *skatalwop-* ‘to be hard, difficult, complicated; be harsh, severe’ (adj. n. + MK -lwop- ‘to be characterized by’; pK

*s(u/o)- intensive prefix), pK *-kata- ‘to be hard, severe’

WMo. *qata-* ‘1 to become hard, dry (intr.)’, *qata-yu* ‘2 hard’ (WMo -yu / -gü deverbial noun deriving quality words (Poppe 1954: 46)), *qata-n* ‘hard, strong’, MMo. *qata’u* ‘2’, Khal. *xat-*, *xatu:* ‘2’, Mgr. *xada-* ‘1’, *xadoŋ* ‘2’, pMo *-kata- ‘to become hard’

OTk. *kat-* ‘to be(come) hard, firm, tough’, *katīy* ‘2 hard’, Karakh. *kat-* ‘1’, *katīy* ‘2’,

Tat. *katī* ‘2’, Uz. *katik* ‘2’, Uig. *ketik* ‘2’, Az. *gati* ‘2’, Tkm. *gat*, *gati* ‘2’, Khak. *xatīy*

‘2’, Shor *kadiy* ‘2’, Chu. *xidə* ‘2’, Yak. *kīta:nax* ‘2’, Dolg. *kat-* ‘to become dry’,

kīta:nak ‘2’, Tuva *ka’dīy* ‘2’, Kirg. *katū* ‘2’, Kaz. *kattī* ‘2’, Nog. *kat* ‘2’, Bash. *kati* ‘2’,

KKalp. *kattī* ‘2’, pTk *-kat- ‘to be hard’

In Korean, relatively higher and lower vowels alternate phonologically in certain color adjectives, mimetic and expressive adjectives, a phenomenon referred to as “ablaut” by Vovin (2008a: 6) and as “heavy and light isotopes” by Martin (1992: 343–344). The higher and more back vowels *e*, *ey*, *wu*, *wi* (< MK *wuy*) are typical of the heavy isotopes, while the lower and more front vowels *a*, *ay*, *o* (MK *wo*), *oy* (MK *woy*) are typical of the light isotopes. The higher vowels are associated with weighty, bulky concepts, while the lower vowels are used for small and unsubstantial things, e.g. K *ce:k-* ‘to be small in number or quantity, few’ vs. K *ca:k-* ‘to be small in size, tiny’. It is not surprising that the adjective meaning ‘to be large’ has a higher vowel in its default form K *khu-*. A trace of a lower alternant, however, can be found in the obsolete adjective K *ha-* (< MK *·ho-*) ‘to be large in number, much, many, be great’, lexicalized, for instance, in K *hankul* ‘hankul, lit. great script’. Similarly, the stem meaning ‘to be hard’ has developed a higher vowel in its default

form K *kwut*-, MK *kwut*- ‘to be hard’, while there is a trace of a lower —and probably original— alternant in the adjective with metaphorical meaning K *kkatalop*-, MK *skatalwop*- ‘to be hard, difficult, complicated; to be harsh, severe’. This form can be derived from **s-kata-lwop*- (INT-hard-be.characterized.by). The first element is the intensive prefix pK **s(u/o)*- > MK *s*- > K reduplication (Lee 1977: 145, Ramsey 1977: 64, Martin 1996: 24, 27, 91), e.g. MK *tih*- ~ *stih*- ‘to pound’. The last element is the verbal adjective formant pK **-lwop*- > MK *-lwop*- > K *-lop*- ‘to be characterized by’ (Martin 1992: 677), e.g. K *say* ‘new’ vs. *saylop*- ‘to be new’. Apophony between the higher vowel *wu* and the lower vowel *a* can be found in other adjective pairs, such as in K *phalah*-, MK *pha-la ho*- ~ K *phwulu*-, MK *phwulwu*-, *phwulu* ‘be blue’, where it is used for its expressive effects only.

Róna-Tas et al. (2011: 511–513) find that a nominalized form on *-(X)η* of the root pTk **kat(a)*- ‘to be hard’ is reflected in Hungarian *kâtāng* ‘chicory’.

(9) ‘to walk’

OJ *kati*, EOJ *kasi*, MJ *kati* ‘walking’ (deverbal noun on *-i* from unattested verb ‘walk’), pJ **kat*- ‘to walk’

K *keT*-, MK *keT*- ‘to walk’, pK **keti*- ‘to walk’

(SH) MMo. *ketü-gelje*- ‘to cross over, go across (intr.)’, (pMo **-gA-ljA*- inchoative suffix denoting multiple actants), *ketü-s* ‘crosswise, straight through (water)’ (pMo **-s* adverbializer), *ketü-l*- ‘to cross, pass (tr.)’ (WMo. *-l*- intensive-iterative; cfr (1)), WMo. *ketül*- ~ *getül*- ‘to traverse, cross, ford; be delivered’, Khal. *getle*- ‘1 cross’, Bur. *getel*- ‘1’, Kalm. *getl*- ‘1’, Ordos *getül*- ‘1’, Dag. *hedele*- ‘1’, *xedelgē*- ‘1’, *xedle*- ‘1’, pMo **ketü*- ‘to cross, traverse’

OTk. *kēt*-, MTk. *kēt*-, Tk. *git*-, Tat. *kit*-, Uz. *ket*-, Uig. *kät*-, Az. *gät*-, Tkm. *git*-, Kirg. *ket*-, Kaz. *ket*-, Nog. *ket*-, Bash. *kit*-, Gag. *get*-, Karaim *ket*-, KKalp. *ket*-, pTk **ke:t*- ‘to go, go away’

Vovin (2008: 150) rightly argues against Whitman’s (1985: 225) suggestion that OJ *kati* is derived from a thematic verb pJ **kati*- because we would not expect palatalization to /si/ is Eastern Old Japanese if this were the case. However, his suggestion that “WOJ *kati* was borrowed from Korean as a set form, and then re-borrowed into Eastern Old Japanese as *kasi*” is difficult to support because the nominalized form in Korean would be pre-MK *keli* and pK **keti* ‘walking’. The quality of the vowel and/or the liquid in the Korean model are difficult to reconcile with the Old Japanese form.

(10) ‘to be white’

J *siroi* B, OJ *siroi*- ‘to be white’, J *siro* (2.5), OJ *siroi* ‘white’ (< **sira-wo-m* (thick-COP-NML)), J/ OJ *sira*- in e.g. J *sirakami*, OJ *sira-kami* ‘white hair’, Shuri *sirusaN*, pR **siro*- ‘white’ (Thorpe 1983: 347), pJ **siro*- ~ **sira* ‘(to be) white’, OKog **tšiar* ‘silver’ (Beckwith 2004: 100, 112), OKog **šilap* ‘white’ (Miller 1979: 7)

MK *hoy*- ~ MK *huy*- ‘to be white’, MK *syey*- ‘to become white (of hair, of face)’, pK **si(l)A*- ~ pK **si(l)i*- ~ pK **si(l)e*- ‘to be white’

Ma. *šara-* 'to become white', Ma. *šari* 'light', Evk. *se:ru:-*, dial. *še:ru:-* 'to sparkle, glitter, flash', Evk. *se:ru:n*, dial. *še:ru:n* 'rainbow' (cf. pTg **-n* nominalizer), Evk. *sereme* 'yellow' (cf. pTg **-mā* nominalizer), Orok *se:rro*, *širo* 'rainbow', pTg **sia:ra-* 'to be light, white'

WMo. *sira* 'yellow, yolk of an egg, bile, heartburn', MMo. *šira*, *šira:*, Khal. *šar*, Bur. *šara*, Kalm. *šarə*, Ordos *šara*, Dong. *šara*, *šira*, Bao. *šira*, Dag. *šara*, *šar*, *šari*, Yogh. *šəra*, Mgr. *s!ira*, Mogh. *šira*, *sira:*, pMo **sira* 'yellow'

OTk. *šarīg*, *sarīg* '1 yellow', Karakh. *sariy*, MTk. *sariy*, Tk. *sari* 1, Tat. *sari* 1, Uz. *sariq* 1 Uigh. *seriq* 1, S.-Yugh. *sariy* 1, Az. *sari* 1, Tkm. *sa:ri* 1, Khalaj *sa:ruy* 'orange', Tuva *sariy*, Kirg. *sari* 1, Kaz. *sari* 1, Bash. *hari* 1, Sal. *sari* 1, Chu. *šur*, *šurā* 'white', *šur-* 'to become white', Khazar Šarkel 'the white city', pTk **sia:ri-* 'to be white, yellow' (< pTk **si:ra-* ?) (pTk **(X)g* nominalizer; cf. Erdal 1991:172-232)

The seven vowel system proposes a double origin for OJ *i*; the front vowel derives either from pJ **e* or from pJ **i*. In the case of OJ *siro* *l-* 'be white', there is no internal or Ryukyuan evidence, supporting the reconstruction of a mid front vowel. However, Frellesvig and Whitman (2008: 37) take the attestation of MK *syey-* 'become white (of hair, of face)' as external evidence for the reconstruction of pJ **sero* 'white'. This reconstruction seems implausible, however, in view of the attestation of two other, related stems MK *hoy-* 'be white' and MK *huy-* 'be white'. I assume the following developments in Korean:

pK <i>*si(l)ə-</i>	> <i>*syo-</i>	> <i>*hyo-</i> (metathesis)	> MK <i>hoy-</i> 'white'
pK <i>*si(l)i-</i>	> <i>*syu-</i>	> <i>*hyu-</i> (metathesis)	> MK <i>huy-</i> 'white'
pK <i>*si(l)e-</i>	> <i>*si(l)ye-</i>	> <i>*syey-</i>	> MK <i>syey-</i> 'become white'

Proto-Korean had three apophonical alternants for the adjective root 'be(come) white'. The original final mid vowel in pK **si(l)e-* diphthongized. Diphthongization of mid front vowels by way of assimilation to a high front vowel also occurred in the derivation of MK *myey-* 'get stopped up' from MK *mek-* 'stop up' and a passive suffix MK *-i*.

After liquid loss, the vowels of the three alternants contracted. Initial pK **s-* developed into pre-MK **h-* whenever it was followed by a front vowel *-i-* or palatal glide *-y-*, but this development was blocked when a second glide was present in the syllable. This explains why MK *syey-* 'become white (of hair, of face)' maintained its silibant. The Koguryo cognate OKog *ᄒᄡᆞᆫ* 'silver' proposed by Beckwith, while semantically rather distant, would support the high front vowel. Although Miller's Koguryo proposal would be a better fit, it may concern a ghost-word which has arisen via a modern scholar's handwritten copy of the character 刀 (Beckwith 2004: 72).

It is clear that Tungusic forms such as Ma. *sira* 'yellow', Even *hiraŋan* 'yellowish (of reindeer skin)' and Ud. *si:* 'yellow paint' are copies from Mongolic (Miller & Street 1975: 133, Doerfer 1985: 302, Rozycki 1994: 184). These are nominal forms with high front vowels meaning 'yellow'. However, the Tungusic stems proposed in

the etymology can be derived from descriptive verbs, reflect pre-glided low vowels and share the meaning ‘to be light’ or ‘to be white’.

The Mongolic forms may be borrowed from Turkic because they are restricted to the meaning ‘yellow’ and cannot be derived from descriptive verbs. If the contact scenario is correct, the copies suggest that the Turkic model was an unbroken pTk **si:ra-*.⁶ Some contemporary Mongolic forms have recently undergone “*i*-breaking” whereby the vowel *i* develops into *a* or *ia* before *a*. If the Koguryo, Tungusic and Turkic forms cited are indeed related, then they should have undergone a similar development of “*i*-breaking”. Although “*i*-breaking” must have occurred independently at different points in time in each of the languages, it may represent “Sapirian drift” (Sapir 1921: 126–127, Joseph 2013), a specific type of recurring changes in related languages at widely separated stages of their development.

Since the formant *-(X)g* is very frequent in deverbal nouns in Old Turkic, e.g. OTk. *isi-* ‘to be hot’ → *isi-g* ‘hot; heat’, we can reconstruct pTk **siarī-* ‘to be white, yellow’ as an original descriptive verb. This is supported by the Chuvash descriptive verb *šur-* ‘to become white’. The palatal sibilant in Chuvash, Khazar and in the Hungarian loanwords *šār* ‘yellow’ and *šārgā* ‘yellow’, as well as the palatalized variant Orkhon OTk. *šarīg* support the diphthong in the reconstruction.⁷ Note that Róna-Tas et al. (2011: 691–695) propose that the West Old Turkic models underlying H *šār* ‘yellow’ and *šārgā* ‘yellow’ are WOT **šarī* and **šarug*, respectively, but they derive both forms from a single origin **siarī-g*. In my view, pTk **sia:rī-* ‘to be white, yellow’ represents the original proto-Turkic form, rather than deriving it from pTk **sa:rī-*, as is proposed by them. Róna-Tas et al. (2011: 693) further point out that the meaning ‘yellow’ is probably secondary because it denotes a light yellow color, which probably evolved from the word for ‘white’. The original meaning is preserved in Chuvash and in the Khazar place name.

(11) ‘to be(come) round’

J *marui* A, EMJ (10th C) *maro-* ‘to be round’, J *maru*, OJ *maro2* ‘round thing’, Shuri *marusaN*, pR **maro-* (Thorpe 1983: 321), pJ **maru-* ~ **maro-* ‘to be round’, OKog **mawr* ‘round, circle’ (Beckwith 2004: 66, 114, 158)

6 Contrary to Doerfer (1963: 220–221), who considers the parallel between the Mongolic and Turkic forms as a coincidence, Georg (2007: 274) explains it in terms of a loan connection. He finds that “adding Japanese to this does not lead to any serious objections on the semantic side, but the vowel does not fit the Turkic etymon (which is the source of Mongolian here)”. But if Turkic indeed is the loan source of Mongolian, this indicates that the model was pTk **si:ra-* ‘yellow’ with a vowel that fits the Japanese etymon.

7 Old Turkic distinguished between two sibilants in native words: alveolar /s/ and palatal /ʃ/ (Erdal 2004: 82–83). The distinction is found in most runiform inscriptions of Orkhon Old Turkic. Manichean writing uses two different characters, but other Old Uighur texts do not distinguish consistently, as is the case here for Orkhon OTk. *šarīg* vs. Uighur OTk. *sarīg*.

K *mulu-* (-*ll-*) 'to turn around, retreat, go back (intr.); give back, return (tr.)', MK *mulu-* (-*ll-*) 'to retreat, withdraw', pK **mili-l-* 'to turn around'

Evk. *mur-* '1 to walk round, return', *murume* '2 round' (cf. pTg **-mA* nominalizer), Even *merək-* 'to return', Even *mereldin-* 'to circulate, circle, orbit', *mere:ti* 'circle', Neg. *meysel* 2, Ma. *muri-* 'to twist, wring', *murigan* 'curved place on a road', *murcaku:* 'spiral, whorl, helix', Olch. *mur-muru* 2, Orok *moroline* 2, Na. *murgi* 2, pTg **muru-* 'to turn around'

WMo. *muri-* ~ *mur-* 'to go astray, act contrarily', WMo *muruyi-* 'to be bend, to be crooked, to turn, to meander (intr.)' (pMo. **-yi-* anticausative), WMo *murui* 'awry, slanting, bending; bend, curve, crookedness (n. and adj.)' (cf. pMo **-i* deverbial noun suffix), MMo. *mur-*, *muri* '1 curve', Khal. *muruy* '1', Buriat *muṛu:* '1', Kalm. *muṛu:* '1', Ordos *muṛi:* '1', Dag. *morčigui* '1', Mgr. *muri:* '1', pMo **muru-* 'to make a curve, turn round'

OTk. *bür-* 'to twist, wind round, screw (tr.)', MTK. *bur-*, Tk. *bur-*, Tat. *bor-*, Uz. *bur-*, *bura-*, Uig. *bur-*, Az. *bur-*, Tkm. *bur-*, *bürü-*, Khak. *pur-*, Shor *pur-*, Kirg. *bura-*, *bür-*, Kaz. *bura-*, *bür-*, Nog. *bur-*, *bura-*, *bür-*, Bash. *bor-*, Balkar *bur-*, Gag. *bur-*, Karaim *bur-*, KKalp. *bur-*, *bura-*, Chu. *pär-* 'to turn, wind, bend, screw', pTk **bür-* ~ *bur-* 'to turn over, wind around'

The regular medial vowel reflex of a high back vowel **-u-* is Japanese *-u-*. However, the reflex *-a-* in pJ **maru-* ~ **marə-* 'to be round' is the one expected in a particular phonological environment, whereby the vowel is preceded by an initial labial consonant (**p-*, **w-*, **m-*) and followed by a medial resonant (**-r-*, **-n-*). The phonological development probably involved the diphthongization of the high back vowel: **muru-* > **mauru-* > *maru-* > *marə-*. The final vowel alternation in pJ **maru-* ~ **marə-* reflects the change in medial vowel quality and the following assimilation of the final vowel. Note that MJ *waru-* ~ *waro-* 'to be bad' (< pJ **waru-* ~ **warə-* 'to be bad') reflects a similar development. Based on Beckwith's reconstruction of OKog **mawr* 'round, circle', the dissimilation may have already started in Japanese (Japanese-Koguryoic).

MK *mulu-* (-*ll-*) 'to retreat, withdraw' belongs to a small class of seven verbs that are marked by *-ll-* doubling infinitives. Ramsey (1986: 186) derives these verbs from original verb roots that were closed by a final liquid *-l*. Given the intensive or iterative connotation of some of these verbs, it is inviting to set up a final intensive-iterative suffix pK **-l-* in some cases.

The deverbial anticausative suffix pMo **-yi-* can be reconstructed on the basis of verb pairs such as WMo. *sekü-* 'to raise, lift up (tr.)' -> *seküyi-* 'to rise, stand out (intr.)', WMo. *čarda-* 'to starch (tr.)' -> *čardayi-* 'to harden, become hard (intr.)' and WMo. *julbu-* 'to shed skin, to lose hair (intr.)' -> *julbuyi-* 'for the hair to lie down (as when wet), to be short-wooled'. In view of WMo *muruyi-* 'to be bend', this suffix supports the reconstruction of a verb root pMo **muru-* meaning 'to make a curve, turn round'.

The basic meaning of the Turkic verbs is 'to turn over, wind around', but it has secondarily developed meanings as 'wrinkle, wrap around, cover', which have been

borrowed into Mongolic, e.g. Wo. *burgi*- ‘to rise in clouds, whirl’, *burjiyi*- ‘to curl, frizzle’, *būri*- ‘to cover, envelop’, etc. (Róna-Tas et al. 2011: 150). The Mongolic copies are easily unmasked because their meaning is restricted to the secondary meaning of the Turkic model. The back- and front-vocalism in the Turkic languages may be iconic, having to do with the differentiation between larger and smaller concepts, as it does in Korean (see etymology (8) ‘to be hard’).

