

# Does Doerfer's *Zufall* mean 'cognate'?

## The case of the initial velar correspondence in Altaic.

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The present article deals with the question whether the initial velar correspondence that is found between Japanese, Korean, Tungusic, Mongolic and Turkic is significant enough to rule out chance as a possible explanation for the phonological similarity. The problem is approached from both a methodological and a factual viewpoint. With Doerfer's *Zufall* in mind, this article examines the criteria that must be fulfilled before the comparative method of historical linguistics can determine whether the similarities between putatively related languages are the result of chance or not. Next, the article evaluates the evidence proposed in the past underlying the initial velar correspondence. By way of conclusion an attempt is made to answer the question whether the initial velar correspondence in Altaic is more likely to be the result of chance or whether it is attributable to common ancestorship.

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### 1. Introduction

“Wir wollen jetzt die angebilde Gleichung alt. \*g- = mo. g- = tü. q- untersuchen; bei Ramstedt erscheinen 64 Belege. Davon ist ein einziger ein sog. “klarer Fall” ! mo. *gar* ‘Hand, Arm’ - tü. (auch schon atü.) *qar* ‘Oberarm’. Alle anderen Belege sind höchst unsicher: es sind Onomapoetika, semantisch oder lautgesetzlich nicht einwandfreie Gleichungen oder Wörter, die nur in modernen dem Mo. geographisch benachbarten Dialekten auftreten. ... Einer Fülle von Unklarem steht also (ähnlich auch bei POPPE 1960, 24) ein einziger “klarer Fall” gegenüber. Hier nun ist aber ein Zufall ... tatsächlich möglich.” This remark on the initial voiced velar correspondence in Altaic was made by Doerfer (1963: 60-61). Sifting the evidence for the initial voiced velar correspondence in Altaic, Doerfer focused on binary comparisons between Mongolic and Turkic. The selection criteria that he applied on the etymologies proposed by various authors so far left him with only a single acceptable etymology: the comparison of Mo. *yar* ‘hand, arm’ with Tk. *qar* ‘arm’. Because a single etymological pair cannot sufficiently exclude

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chance as a possible explanation for the similarity holding between the two languages compared, Doerfer concluded that *Zufall* or coincidence was the most plausible explanation for the remaining look-alike between Turkic and Mongolic. Today, in the light of the recent developments in the Altaic field, Doerfer's observation becomes increasingly relevant, both from a factual and a methodological viewpoint.

In the present article I intend to evaluate etymologies with an initial velar correspondence, that have been proposed by linguistic scholarship in the past in an attempt to relate Japanese to Korean, Tungusic, Mongolic and Turkic. That the term Altaic is used in reference to these languages is only a matter of terminology. With the cover term Altaic I refer to a group of North-East Asian languages that share a number of phonological, morphological and structural similarities. But the cover term does not presuppose that the similarities are due to common ancestorship. It is exactly the goal of the present article to find out more about the nature of the similarities involved. For the purpose of this article, I will restrict myself to putative initial velar correspondences in Altaic for which a Japanese cognate is advanced.

The reason of this restriction to etymologies with a Japanese participant is twofold. The first motivation is a methodological one. Focusing on binary comparisons between Mongolic and Turkic, Doerfer meets with an elementary probabilistic problem. The number of examples that are needed to exclude chance as a possible explanation of the similarities holding between the languages compared, exponentially decreases with the number of branches that are taken into consideration. If we consider only two branches, namely Mongolic and Turkic, we will need exponentially more evidence in order to exclude coincidence than is the case when we make comparisons over three, four or five branches. That is how a macro-level comparison, including Japanese and Korean can throw a different light on the question whether we are dealing with *Zufall* or not.

The second ground for limiting myself to Altaic etymologies with a Japanese member is a practical consideration. In view of the limited space at my disposal it provides a criterion to cut down the number of etymologies that are open to evaluation. An evaluation of etymologies ideally starts from a state of the art of proposals made by scholarship in the past. Every single etymology reflecting an initial velar correspondence and including a Japanese cognate deserves to be examined on its own merits. The etymological index in appendix to my doctoral dissertation (Robbeets 2003) that gathers Altaic etymologies proposed for Japanese etyma is convenient for this purpose.

## **2. Methodology**

Arguing for or against a linguistic unity is a probabilistic matter. A genetic argument is a negative argument, what in classical logic is called a disjunctive syllogism. It means that our deduction, the process of reaching a conclusion about common ancestorship, works by elimination. One rules out all but one of the logically possible accounts of the

similarities holding between the languages compared, so that only inheritance from a putative common ancestor remains. Thus, a genetic argument consists not only in the presentation of a set of similarities holding over the languages compared, it also consists in the demonstration that these similarities are not likely to be the result of nature, borrowing or chance.

Applying this knowledge to the similarities holding between Japanese, Korean, Tungusic, Mongolic and Turkic and involving a putative initial velar correspondence, it is essential to set up a methodological framework for sifting the proposed evidence. Of course, not all etymological proposals that have ever been made in support of an initial velar correspondence in Altaic are valid ones. The sifting criteria that I intend to adopt in order to separate the stronger etymological proposals from the weaker ones are the following. First I omit initial velar etymologies in which the internal analysis of the individual proto-forms is in conflict with the external comparison. Second, I omit similarities that could be the result of universal tendencies in the structuring of language. Third, I try to rule out borrowing as an explanation of the similarity sets. Fourth, I set up semantic constraints for the comparison of the meanings.

Provided that a number of initial velar etymologies stand the sifting process along these four lines, we then know that the compared proto-forms are legitimate reconstructs, that general properties of language as well as language contact can, with a high degree of certainty, be excluded as possible explanations of the observed similarities and, that with the constraints on semantic latitude, the factor coincidence is limited. Limited, but not completely excluded. The fact that the remaining etymologies all reflect an initial velar could have arisen by pure chance. Therefore, we still do not know whether we are dealing with look-alikes or whether some of the etymologies with the putative velar correspondence are real cognates. What remains to be done in order to motivate the phonological similarity by genetic relationship is the establishment of regular sound-correspondences.

Although the present article examines the so-called initial velar correspondence in Altaic, a regular correspondence of the initial consonant alone cannot rule out chance in a satisfactory way. That is why evidence reflecting an initial velar correspondence will only be admitted on the phonological condition that the medial vowel and the medial consonant of the proto-forms correspond regularly as well. Regular will be those correspondences that obey the majority. But that raises a quantitative question: what is the majority? Or how many cognates are needed to exclude sheer chance as an explanation for the set of phonological correspondences? Intuitively we feel that once we have obtained a certain number of cognates, the evidence is just too striking to be purely coincidental. It is like asking how many grains of sand one does need in order to make a pile and how many piles are needed in order to turn them into a burden. Elementary probability theory shows that any group of languages can be expected to share a certain

number of phonological correspondences. It is possible to calculate the number of phonological correspondences that can be expected by chance alone. If the number of the real correspondences in a set of etymologies, from which borrowings and universal look-alikes have been eliminated, is significantly greater than those expected by chance, genetic relationship is the only motivation that remains. It is possible that finally, in the fifth section, the initial velar correspondences will be represented by such a number of underlying etymologies that coincidence can be intuitively excluded. If the outcome is a borderline case, however, I will use a 2-4-8-16 guideline in the sense that I want at least two etymologies that reflect the suggested sound correspondence in all five branches, or at least four etymologies that reflect the suggested sound correspondence in four branches, or at least eight etymologies that reflect the suggested sound correspondence in three branches, or sixteen etymologies that reflect the suggested sound correspondence in only two branches on condition that the other phonemes in the word correspond regularly. In short it is possible to motivate the 2-4-8-16 guideline in the following way. It minimally takes two examples to speak of a correspondence. It is clear that the number of examples that are needed exponentially decreases with the number of branches that are taken into consideration. That is because in a situation that features occur independently from each other, the probability that a feature in language A cooccurs with a feature in language B by pure coincidence is the chance that it occurs in language A multiplied by the chance of occurrence in language B. Introducing a third language C that shares the same feature, the probability that the similarity is due to sheer chance is further multiplied by the chance of occurrence of the feature in language C. Since chance probabilities always range between 0 and 1, the more we multiply, the less convincing the sheer chance explanation becomes. Therefore, starting from a minimum of two examples (=  $2^1$ ), raising the exponent results in  $2^2$  or four,  $2^3$  or eight and  $2^4$  or sixteen examples needed. The 2-4-8-16 guideline gives a valuable approximation for the number of sound correspondences that are needed to exclude coincidence as a possible explanation for sound similarity.

### **3. Inventory of initial velar proto-phonemes**

#### **3.1. pJ \*k-**

Applying the comparative method to the proto-languages that are supposed to make up the Altaic unity, certainly does not assume that we already know everything we need to know about the individual proto-languages involved. A lingering problem for the comparative Altaic enterprise is the restricted distribution of voicing.

As far as the proto-Japanese consonant inventory is concerned, there is some disagreement on the validity of the reconstruction of voiced obstruents. The present article takes the view that there was no phonological voice distinction in proto-Japanese. The assumption that proto-Japanese had voiced obstruents is hardly tenable in the case of

pJ \*g . Apart from some sporadic  $k \sim \emptyset$  alternations, there is no systematic internal evidence for the validity of pJ \*g >  $\emptyset$ . Therefore, I reject the reconstruction of an initial pJ \*g- underlying a small number of doublets like the distal doublet *a-* ~ *ka-* ‘that’ that is also reflected in *are* ‘that one’ ~ *kare* ‘he’. It is more likely that the elision of the initial *k-* in one alternant is due to sporadic phonological erosion. It can be remarked that sporadic velar elision is attested elsewhere in Japanese, as for example the *k-*elision in the adjective attributive or in *tuitati* ‘first day of the month, new moon’ that is derivable from *tuki* ‘moon’. So, pJ \*k is the only velar phoneme that can be reconstructed for proto-Japanese.

### 3.2. pK \*k-, \*h-

For Korean there is still no agreement on the question whether Middle Korean and proto-Korean were phonologically voiced or not. I side with Martin (1996: 48) that the notion of earlier distinctive voicing in Korean came about because the Middle Korean orthography provides a separate notation for the voiced fricatives. The obstruent /k/ in contemporary Korean is automatically voiced in voiced environments, and there is no reason to assume that voicing worked in a different way in Middle Korean. However we find a graphic device in Middle Korean, that indicates a graphic juncture, whereby a syllable-final *-l* or *-Δ* is restrained from becoming the onset of the tightly joined vowel-initial syllable.<sup>2</sup> Usually, when a consonant final syllable is joined to a vowel initial syllable in Middle Korean, the final consonant is written as the onset of the vowel-initial syllable. The graphic juncture is generally thought to reflect a fricative /ɣ/, but there is no consensus whether it lenited from the plain obstruent pK \*k or whether it is the reflex of an original voiced obstruent pK \*g. I agree with Martin that the lenition of obstruents is an internal Korean development because the voiced fricatives in Middle Korean can be seen as a weakening of the plain obstruents in the regular environment \*CV·Cu/o-.

Another argument for lenition is that no convincing evidence has been found for an initial voicing contrast. There are also several examples of compounds like MK *key-γwuc-* ‘be messy’ that can be derived from MK *kwuc-* ‘be bad’ or MK *hyey-γa · li-* ‘figure out’ from MK *hyey-* ‘consider’ and MK *ka · li-* ‘branch off’, in which the initial voiceless *k-* of the second member becomes a fricative *-γ-* when it occupies the medial position in a voiced environment. Moreover, The Early Middle Chinese phonographs, used to represent syllables of Koguryō, Paekche, and Silla Old Korean toponyms in the Samguk Sagi and Samguk Yusa show random voicing and imply that Old Korean did not have a phonological voicing distinction, just as is the case in contemporary Korean.<sup>3</sup>

<sup>2</sup> The Middle-Korean orthographic convention Δ is represented as such in order to avoid taking a priori position about its still debated phonetic value.

<sup>3</sup> Miyake 2000: 2.

It is generally believed that the development of aspiration is an internal Korean process and that the aspirated velar obstruent MK *kh* developed out of the reduction of consonant clusters. The creators of the Korean alphabet did not provide symbols for the reinforced consonants, like we find them in contemporary Korean, because at that time they were not distinct phonemes yet.

Next to pK *\*k* we can also reconstruct pK *\*h*, but for numerous words there is internal evidence that indicates that MK *h* is secondary. One source for MK *h* was pK *\*s*, but another source is pK *\*k*.<sup>4</sup> From Chinese donorwords corresponding to Korean loanwords (e.g. Ch. *cak* ‘foot (measure)’ is borrowed as MK *· cah*), phonogram readings in the Kyelim Yusa (e.g. *·hwalq-huy* for MK *holk* ‘earth’), elements in Paekche placenames (e.g. *tin· qak* for MK *·twolh* ‘stone’), dialectal forms (e.g. dial. *tolk* for MK *·twolh* ‘stone’), and internal doublets (MK *siphu-* versus MK *sikpu-* ‘want’) it can be understood that velar lenition (*\*k* > *\*h*) has taken place at an early stage in Korean.<sup>5</sup>

### 3.3. pTg *\*k-*, *\*g-*, *\*x-*

The cover term Tungusic is used in reference to both the Manchu and Tungusic subgroups. The phonemic inventories of all Tungusic languages are very similar. All languages show distinctive voicing, so voice distinction can safely be reconstructed for proto-Tungusic. Apart from the velar stops pTg *\*g* and pTg *\*k*, a velar fricative pTg *\*x* and a velar nasal pTg *\*ŋ* can be reconstructed.

Parallel to the observation of early velar lenition in Korean, I tend to consider pTg *\*x-* < *\*k-* as an early internal development within Tungusic. The distinction between pTg *\*x-* and pTg *\*k-* is based on the following correspondences, taken from Benzing (1955: 976, 989).

| pTg         | Ma.       | Na. | Olč. | Orok | Oroč. | Ud. | Sol. | Neg. | Ev. | Lam. |
|-------------|-----------|-----|------|------|-------|-----|------|------|-----|------|
| <i>*x-</i>  | ∅         | x-  | x-   | x-   | ∅     | ∅   | ∅    | ∅    | ∅   | ∅    |
| <i>*xi-</i> | i         | si- | si-  | si-  | i-    | i-  | i-   | i-   | i-  | i-   |
|             | (ni-~si-) |     |      |      |       |     |      |      |     |      |
| <i>*k-</i>  | k~x       | ∅   | ∅    | ∅    | k~x   | x~g | x-   | x-   | k-  | k-   |

Although it is not within the scope of the present article to investigate what environment exactly caused the velar lenition, I think that it is an internal Tungusic development. First, an internal indication comes from some Tungusic words for which internal evidence

<sup>4</sup> Whitman (1999) derives Korean words with initial *\*h-* that are polysyllabic or have a rising tone and preserve evidence of a high front vowel or a palatal glide from proto-forms with initial *\*s-*. An example is MK *hoy-* ~ *·huy-* ‘white’ in alternation with MK *syey-* ‘whiten (of hair, of face)’ in which a causative suffix *-i-* probably blocked the development to MK *h-*.

<sup>5</sup> Yi (1977: 83-84); Martin (1996: 36-37); Itabashi (1991: 160-62) discusses the multiple origin of MK *h*, but internal evidence supports only pK *\*s* and *\*k* as possible origins for MK *h*.

points to pTg \*x- as well as to pTg \*k-. An example for which pTg \*x- is in alternation with pTg \*k- is present under 43. *kokoro* ‘heart’. Although Neg. *oxon / okon* and Ev. *ukun* ‘breasts’ point to the reconstruction of pTg \**xuku-n*, other clearly related forms like Ma. *xuxuŋ*, Lit. Ma. *xuxun*, Na. *kū(n)*, Olč. *kū(n)*, *kuku(n)*, Orok *kū(n)*, Jur. *xuxun* ‘breasts’ point to pTg \**kuku-n*. The secondary development pTg \*k- > \*x- could account for the doublet. Second, the fact that pTg \*x- is limited to the initial position can be taken as an indication for secondary development on itself.

The velar nasal pTg \*ŋ- can occur in initial position, but according to Poppe (1960: 23), a number of occurrences of pTg \*g- preceding medial sonorants -n-, -l- or -r- have merged with pTg \*ŋ-. An example that is relevant for the purpose of the present article is pTg \**ŋāla* < ? \**gāla* ‘hand’ under 59. *kata* ‘shoulder’, that is supported by Neg. *ŋāla*, Ma. *galž*, Lit. Ma. *gala*, Na. *nana*, Olč. *ŋāla*, Orok *ŋala*, Jur. *ŋala*, Ev. *ŋāle*. However since there are counterexamples available where pTg \*g- preceding medial sonorants -n-, -l- or -r- does not merge with pTg \*ŋ- like under 63. *kiru* ‘cut’, Ma. *giri-* ‘cut, trim’, Na. *geri-* ‘cut out’, Ev. *girža-* ‘cut in pieces’, *girjwūn* ‘scissors’, Ud. *gī-* ‘cut’, Neg. *gej-* ‘cut’, Lam. *geṛ-* ‘cut’, pTg \**giri-* ‘cut’ and under 68. *kuru* ‘come’, Orok *gilin-*, Ev. *gel-*, pTg \**gel-* ‘get hardly on one's way’, I suspect that pTg \**ŋāla* ‘hand’ is a case of sporadic assimilation.

### 3.4. pMo \*k-, \*g-

It is clear that proto-Mongolic had voice distinction for its stops and affricates. Depending on the vocalic environment, there are positional variants for the velar consonants pMo \*k and \*g. The deep voiceless velar stop pMo \*q is the positional variant of pMo \*k before back vowels *a, o, u* and the deep voiced velar stop pMo \*ɣ is the positional variant of pMo \*g in the same environment. Technically speaking, due to the merger of the unrounded high vowels \**i* and \**ɨ* in proto-Mongolic there was a phonological opposition between \**ki* and \**qi* and between \**gi* and \**ɣi*. But its low functional load allows the distinction between pMo \*k, \*g and pMo \*q, \*ɣ to be ignored for most reconstructive purposes.

### 3.5. pTk \*k-

Proto-Turkic had a fortis-lenis distinction for its stops though the actual phonetic features corresponding to this distinction may differ from voiceless and voiced. But the fact that there is a distinction alone is enough for the present reconstructive purpose. As far as the velar obstruents are concerned, it is assumed that pTk \*k and \*g were realized as front or back according to the quality of the vocalic environment and later split into *k* versus *q* and *g* versus *ɣ*.

According to most Turkologists, the distribution of consonants in initial position seems to have been rather limited. It is generally assumed (Johanson 1998: 95, 100) that

initial \*g- and \*d- disappeared in favor of \*k- and \*t- as a result of neutralization. However in the Altaic dictionary, recently published by Starostin, Dybo, Mudrak (2003: 67, 70-72) it is argued that, while \*g- and \*k- were neutralized to pTk \*K- before back vowels, the distinction between pTk \*g- and \*k- can be reconstructed before front vowels. The internal basis for this reconstruction are cases in which Turkish, Azerbaijani and Turkmen have a g- reflex before a front vowel, whereas the other Turkic languages have a k- reflex. Examples that are relevant for the discussion below are under 68. *kuru* ‘come’: pTk \*gel- ‘come’ (instead of \*kel-) on the basis of OTk. *kel-*, Tk. *gel-*, Tat. *kil-*, Uigh. *käl-*, S.-Yugh. *gel-*, Az. *gäl-*, Tkm. *gel-*, Chuv. *kil-*, Yak. *kel-*, Kirg. *kel-*, Kaz. *kel-*, Bash. *kil-*, Sal. *gel-*, *gej-*; under 47. *kuu* ‘eat’: pTk \*gēb- ‘chew’ (instead of \*kēb-) on the basis of OTk. *käv-*, Tk. *gevele-*, Az. *gävälä-*, Tkm. *gāvü-še-me-*, Chuv. *kavle-*, Yak. *kebī-*, Kirg. *küj-šö-*; under 44. *korosu* ‘kill’: pTk \*gerüš- ‘quarrel, fight’ (instead of \*kerüš-) on the basis of OTk. *keriš-*, *küreš*, Tk. *güreš-*, Az. *güläš-*, Tkm. *göreš-*, Kirg. *keriš-*; and, under 33. *kamu* ‘bite’: pTk \*gemür- ‘gnaw’ (instead of \*kemür) on the basis of OTk. *kemür-*, Tk. *gemir-*, Tat. *kimer-*, Az. *gemir-*, Tkm. *gemir-*, Kirg. *kemir-*. Besides the actual voiced reflexes in Oghuz, the reconstruction of pTk \*g- in this position can be supported by the observation that Oghuz languages tend to be more conservative in general, by the consideration of phonological symmetry including word-initial position in proto-Turkic, by the external comparison with Tungusic and Mongolic languages that distinguish \*g- and \*k- initially.

On the other hand, there are a number of counter-arguments that strengthen the traditional Turkological viewpoint that the g- reflexes in Turkish, Azerbaijani and Turkmen are secondary. First, the observation that only three Turkic languages, belonging to a single branch, Oghuz, preserve a reflex of pTk \*g- is in conflict with the majority-wins principle of linguistic reconstruction. Besides the oldest stages of Turkic preserve k- in the position where Oghuz has g-. Chuvash, the only modern representative of Oghur as well as Khalaj, spoken today in central Iran and the only descendant of Arghu, preserve k-. Second, if we accept that pTk \*g- became k- everywhere except in Oghuz, phonological symmetry with initial d- in Oghuz requires the reconstruction pTk \*d- > t- elsewhere. The preservation of d- and g- in Oghuz, however, shows many exceptions. An example relevant for the following discussion is under 55. *kumu* ‘draw (water), dip up, pump’ with OTk. *köm-*, Tk. *göm-*, Az. *köm-*, Tkm. *göm-*, Yak. *köm-* ‘dig’ in which Turkish and Turkmenian have a voiced reflex, while Azerbaijani has a voiceless k-. This raises the suspicion that we are dealing with sporadic, secondary voicing. Another hint that the voicing is secondary comes from foreign loanwords in Turkic. It is suggested by Doerfer (1967: 615-616) that the Turkic words for ‘parasite, tick’, Tk. *gene*, Tkm. *gänä*, Tkm. dial. *känä*, Khalaj *kana* and Kaz. *kenä* are borrowed from Persian *kana* ‘tick’. The Turkic phonological system permits an imitation of the



word as *\*kana*, so the fronting of the vowel and the voicing of the initial velar in some Oghuz forms are probably secondary developments. Although relying on external comparison with Mongolic and Tungusic would be methodologically circular, the distribution of pTk *\*g-* and *\*k-*, as it is proposed by the Russian research team, is not paralleled by that of Mongolic and Tungusic putative cognates with *\*g-* and *\*k-*. The suggested voice distribution in Turkic leads to at least a threefold consonant distinction in proto-Altaic. Therefore I follow the traditional Turkological approach that *\*g-* and *\*k-* are completely neutralized into pTk *\*k-*. Relying on internal data for the reconstruction of individual proto-forms, all initial velars will be rendered with pTk *\*k-*, independent of external cognates.

#### 4. Sifting the evidence

Arguing for or against a linguistic unity is a matter of data. For the purpose of the present article the data are the Altaic etymological proposals that have been advanced in the past reflecting a velar correspondence and including a Japanese cognate. In what follows I intend to sift the stronger etymologies from the weaker ones. Due to the limited space at my disposal, I will not go into the sifting details for every single Altaic etymological proposal that I have eliminated. Rather, I will restrict myself to the illustration of the sifting criteria with a number of examples. In the next section (5.) the evidence for an initial velar correspondence that stands the test will be presented.

##### 4.1. Illegitimate proto-form

There are a good number of initial velar etymologies for which the reconstruction of the individual proto-forms is not in accordance with accepted standards of internal analysis. Such cases are eliminated from the core evidence. The following are examples of Japanese etyma that are etymologized as simplex roots, whereas internal evidence argues for segmentation into distinct morphemes.

Starostin, Dybo and Mudrak (2003: 805) compare OJ *kami<sub>1</sub>ra* ‘leek, scallion’ with pTg *\*ximŋe-kte* ‘bird-cherry’, pMo *\*kōmeli* ‘a kind of wild onion or garlic’ and pTk *\*kumlak* ‘hop’, but this comparison is in conflict with the internal analysis of the Japanese word. The word is a petrification of the Old Japanese word for ‘leek’ *mi<sub>1</sub>ra* prefixed by OJ *ka* ‘fragrance, smell’. A similar construction in which OJ *ka* ‘fragrance’ precedes an aromatic natural product is found in the *Nihon Shoki*, OJ *ka kunomi<sub>2</sub>* ‘fragrant fruit’.

The resemblance between MK *ka* *Δomyel-* ‘to be rich, wealthy’ and the Japanese compound J *kanemoti* ‘wealthy person’ is indeed striking as Vovin (1993: 257) remarks, but the phonological correspondences are merely coincidental. Since the use of coins is already mentioned in the *Nihon Shoki* and their circulation was increasing gradually in

Japan since the eighth century, the rich were distinguished from the poor on the basis of the *kane* ‘money’ they *motu* ‘dispose of’.

In the Altaic etymological dictionary (Starostin, Dybo & Mudrak 2003: 846) OJ *kutupi<sub>1</sub>ki<sub>1</sub>* ‘a loom that is bound to the feet and used by pulling the feet’ is compared to pTg *\*xudekī* ‘board for cutting skins, a stick for sewing’, pMo *\*kōdū-sū* ‘worked sheep skin’ and pTk *\*kidir* ‘felt’. But the Japanese word verb for the mechanical tool is an obvious compound of *kutu* ‘shoe’ and the deverbal noun of *hiku*, OJ *pik-* ‘pull’. It goes without saying that proposed cognates for which the internal analysis is in conflict with the external comparison must be disregarded.

#### 4.2. Nature

Some similarities between languages cannot be attributed to a common ancestor. They are the result of natural or universal tendencies in linguistic structuring. Observing that nursery terms like Eng. *tits* and J *titi* ‘breasts’, Eng. *papa* and J *haha*, OJ *papa* ‘mother’ or sound symbolic words like Eng. *zigzag* and *gizagiza* ‘notched’, Eng. *knock knock* and J *kon kon* ‘knock knock’ are similar does not tell us anything about the common ancestor of English and Japanese. Being due to universals in language, mama-papa terms and sound symbolic words are generally regarded as poor diagnostics of genetic relatedness (Jakobson 1960).

In many languages throughout the world voiceless velar stops are used for the imitation of sounds of birds and insects, often in combination with liquid phonemes. In English we find sound symbolic verbs like *crow*, *cuckoo*, *croack*, *quack*, *cry*, *creep*, etc. and derived animal names like *crow*, *cuckoo*, *quail*, *cricket*, etc. This observation raises the suspicion that the Altaic etymology suggested for ‘crow’, for example, is the result of natural similarity, and not of common ancestorship. It is agreed that the *-su* in the Japanese word *karasu* ‘crow, raven’ is a separate formant that frequently occurs in the names of birds and insects such as *hototogisu* ‘little cuckoo’, *uguisu* ‘bush warbler’, *kirigirisu* ‘long-horned grasshopper’. The morphemes preceding *-su* in these examples can all be taken as iconic for the sound that the animal in question produces and it cannot be excluded that the formant *-su* itself is an original deverbal noun derived from the naked root of *suru*, OJ *so<sub>1</sub>-* ‘do, make’ which is also used in the sense of ‘making a sound’. Just like in the English word *crow*, it is highly probable that *kara* is imitative of the sound produced by the bird in question. The ‘crowing’ may have been approximated in the same way in Korean, K *kalkamakwi*, MK *kolkamakwi* ~ *kolkama* · *koy* ‘jackdaw’; in Tungusic, Na. *qori*, Orok *qori* ‘mythic bird’, in Mongolic, WMo. *kerijen*, Khal. *xerē(n)*, Kalm. *kerē*, Dag. *xerē*, Mgr. *kərē* ‘raven’ and in Turkic, OTk. *qarɣa*, Az. *garɣa*, Tkm. *garga* ‘crow’. In spite of the etymology provided in the Altaic dictionary (Starostin, Dybo & Mudrak 2003: 691) these words cannot be considered as reliable cognates.

### 4.3. Borrowing

Throughout the individual histories of Japanese, Korean, Tungusic, Mongolic and Turkic many foreign words have entered the languages and were assimilated until they completely conformed to the native phonological constraints. Therefore it is not an easy task to make the etymological proposals free from loanwords. The strongest evidence for loanword identification comes from the attestation of a plausible candidate for a loan source in a language that does not belong to the hypothesized Altaic family. Taking our knowledge of the historical and cultural context into account, the first donor language that comes to mind is Chinese. The stratum of loanwords from Middle Chinese that has entered Japanese and Korean during the Tang period (618 -906 AD) is known as Sino-Japanese and Sino-Korean. Being recent loanwords from Middle Chinese, these words are easily recognizable as such and none of them are proposed as cognates in Altaic etymologies. However, there are also a number of loanwords that are not associated with Chinese characters and that entered the Japanese and Korean language at an early period, predating the florescence of Chinese culture under the Tang dynasty.

Ramstedt (1949: 90-91) and Starostin, Dybo and Mudrak (2003: 661-62) relate J *kama* 'kiln, stove, oven' to K *kama* 'kiln, stove, oven', MK *ka'ma* 'iron pot, kettle; kiln, stove, oven' and to Chuv. *kɓ<sup>w</sup>mɓ<sup>w</sup>ga*, Kirg. *kemägä*, pTk *\*kemeke* 'stove, stove-hole'. Starostin, Dybo and Mudrak (2003: 737) further relate J *kama* 'iron pot, kettle' to Neg. *kombo*, Na. *qombo*, Olč. *qombo*, Orok *qombo*, Ev. *kōmba*, pTg *\*kōmba* 'scoop, ladle'; WMo. *qombu ya*, Khal. *xombogo*, pMo *\*kombuga* 'sack', and to OTk. *qumyan*, Az. *gumyan*, Kaz. *quman*, pTk *\*kumgan* 'kettle, jug'. However, the Japanese etyma *kama* 'iron pot, kettle' and *kama* 'kiln, stove, oven' are probably derivable from the same root pJ *\*kama* 'pot'. The semantic development from 'pot' to 'oven' as is seen in the development from Skr. *ukha-* 'pot' to Eng. *oven* is a common one. It can also be remarked that MK *ka'ma* meant both 'iron pot, kettle' and 'kiln, stove, oven', but in contemporary Korean *kama*, only the meaning 'kiln, stove, oven' has survived. According to Miyake (1997: 204) OCh. *\*khaam* 'pot' is a likely donorword for the Japanese etymon. The presence of the echo-vowel in K *kama* 'kiln, stove, oven', MK *ka'ma* 'iron pot, kettle; kiln, stove, oven' makes me suspect that the Korean word is a later borrowing from Japanese. If the Japanese and Korean words are borrowings from Chinese, they cannot fit into the proposed Altaic etymologies.

The governmental concept of forming one state being foreign to the Japanese Yayoi people, it seems likely that J *kuni* 'country, land, realm' is a loan from EMCh. *\*gunh* or OCh. *\*guns* 'country' (Miyake 1997: 188-89). If proto-Japanese had -as was suggested in subsection 3.1.- no voiced counterpart of the velar stop pJ *\*k*, the Chinese initial would be borrowed as *\*k-*. Starostin, Dybo and Mudrak (2003: 705-706) try to

relate the Japanese and Korean words to Literary Manchu *χunčixin* ‘relative, kinsman’, to Mongolic, WMo. *kümin*, Khal. *xün*, Kalm. *kün*, *küm̄n*, Dong. *kun*, Bao. *kuŋ*, Dag. *xə*, *kə*, Yogh. *kuun*, Mgr. *kun*, pMo *\*küyün*, *\*-m-* ‘person’ and to OTk. *kün* ‘people’, but if we are dealing with a loan from Chinese, the Altaic comparison is in vain.

The second indication that proposed cognates could be borrowings is a semantic and word categorical hint. First, loan vocabulary is often restricted to lexical items, the large majority of which are nouns. And second, borrowings tend to cluster into certain semantic spheres of the vocabulary such as technological, martial, political, religious, and artistic terms. On this ground I have eliminated all etymologies for nouns in the sphere of cultural vocabulary from the core of sound etymological proposals.

The Altaic etymology for ‘footwear’ is an example of a comparison that is disregarded because it belongs to the sphere of cultural vocabulary. Ramstedt (1949: 128), Poppe (1960: 24, 86, 101, 130, 138), Street (1974: 13), Miller (1986: 55) compare K *kwutwu* ‘Western style shoes’ to Ma. *gulχa* ‘footwear, boot’ and Mo. *gutusun*, pMo. *\*gutul-sun* ‘footwear, boot’ to which Street and Miller add J *kutu* ‘shoes, boots’. While Vovin (1994: 244-45) correctly objects that K *kwutwu* ‘Western style shoes’ is a recent loanword from J *kutu*, that entered the Korean language in the beginning of the 20th century with the Japanese occupation, he finds no hint that the other words are loanwords, rather than common Altaic heritage. However, I think that the cultural sphere to which the putative cognates belong is enough ground to reject the entire etymology on suspicion of borrowing.

#### 4.4. Semantic overpermissiveness

The effectiveness of the comparative method depends on our ability to rule out coincidence as a possible explanation for regular sound correspondences. The greater the semantic latitude permitted in external comparisons, the more likely it becomes that the apparent formal similarity is due to pure coincidence. Doerfer calling this “*dynamischen Zufall*” is quite cynical in his illustration of the problem, but he is right in warning us for overpermissive semantic associations.<sup>6</sup> From the following examples it immediately becomes clear that some of the suggested etymologies considerably suffer from the “*Mauer und Mädchen*” -factor. When the measure of freedom for the compared meanings is too large, the etymology in question cannot be allowed into the core evidence.

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<sup>6</sup> Doerfer (1973: 72-73): “Je liberaler man bei Sprachvergleichen ist, desto größer ist die Chance eines dynamischen Zufalls. ... Zuruf “Mauer und Mädchen” Antwort: “Ist dasselbe; den wenn eine Bombe kommt, dan fällt die mauer um, und wenn eine männliche Sexbombe kommt, dan fällt das Mädchen um. Man sollte sich also beim Vergleich solcher Sprachen, deren Verwandtschaft man erst nachzuweisen hat, sehr vor Vergleichen allzu bedeutungsgetrennter Wörter hüten, schon die bedeutungsverwandten können oft genug auf dynamischem Zufall beruhen.”

Miller (1972: 146) compares J *karai* ‘hot, acrid, sharp, salty, bitter’ with Mo. *qadu-* ‘mow, cut’ and with OTk. *qadir* ‘fierce, hard’, OTk. *qadiz* ‘cinnamon’, OTk. *qadyur-* ‘be concerned’, OTk. *qadyu* ‘sadness, suffering’. Starostin, Dybo & Mudrak (2003: 626) insert the same Japanese cognate *karai* ‘hot, acrid, sharp, salty, bitter’ in another Altaic etymology, comparing it to K *kolmaci*, MK *kwolaci* ‘scum’, to Na. *qauqta* ‘salmon stomach’, Olč. *qauqta* ‘salmon fat’, and to the Mongolic words for ‘poison’, WMo. *qour*, Khal. *xor*, Kalm. *xorŋ*., Dag. *xor*, *kor*, and Dong. *xō* ‘anger’, Bao. *hor* ‘anger’. This example illustrates how semantic overpermissiveness enhances chance similarity. Therefore I pursue severe semantic constraints when sifting the evidence for initial velar etymologies.

### 5. Look-alike or cognate?

What is the result of the above sifting process? The following list of 69 initial velar etymologies stands the test. The phonological correspondences are regular, not only for the initial velar, but they reflect a triple phoneme correspondence.<sup>7</sup> For the sound correspondences required for the medial vowel and the medial consonant, I refer to the correspondence list in footnote.<sup>8</sup> The medial correspondences have been established by

<sup>7</sup> Given the fact that the large majority of the proto-Japanese roots are either monosyllabic or disyllabic in origin, the surviving etymologies show complete phonological fits for the Japanese words, except for the final vowel of disyllabic roots. Since Japanese linguistic scholarship in many cases, like for example in case of the reconstruction of verb roots, does not agree on the internal reconstruction of this final vowel, a triple phoneme correspondence is often as far as we can get.

<sup>8</sup> Non-initial correspondences are required to be as following.

| pJ         | pK          | pTg         | pMo         | pTk     |
|------------|-------------|-------------|-------------|---------|
| *-p-       | *-p-        | *-p-        | *-b-/ -ɣ-   | *-p-    |
| *-p-/ *-w- | *-p-        | *-b-        | *-b-/ -ɣ-   | *-b-    |
| *-np-      | *-Cp-/ -pC- | *-CP-/ -PC- | *-CP-/ -PC- | *-(C)P- |
| *-t-       | *-t-        | *-t-        | *-t-        | *-t-    |
| *-t-       | *-t-        | *-d-        | *-d- (ǰi)   | *-d-    |
| *-nt-      | *-Ct-       | *-CT-       | *-CT-       | *-CT-   |
| *-t-       | *-c-        | *-č-        | *-č-        | *-č-    |
| *-y-       | *-l-        | *-d- (-ǰi)  | *-d- (-ǰi)  | *-d-    |
| *-y-       | *-l-        | *-j-        | *-j-        | *-j-    |
| *-nt-      | *-c-        | *-(C)č-     | *-(C)č-     | *-(C)č- |
| *-k-       | *-k-(-h-)   | *-k-        | *-k-        | *-k-    |
| *-k-       | *-k- (-h-)  | *-g-        | *-g-/ -ɣ-   | *-g-    |
| *-nk-      | *-Ck-       | *-ŋ-        | *- ŋ -      | *- ŋ -  |
| *-nk-      | *-Ck-       | *-CK-/ -KC- | *-CK-       | *-CK-   |
| *-s-       | *-s-        | *-s-        | *-s-        | *-s-    |
| *-m-       | *-m-        | *-m-        | *-m-        | *-m-    |
| *-n-       | *-n-        | *-n-        | *-n-        | *-n-    |
| *-r-/ *-t- | *-l-        | *-r-        | *-r-        | *-r-    |

way of a regularity test based on matrices in my doctoral dissertation (Robbeets 2003). For a small number of proto-forms the initial velar or the medial vowel correspondence is acceptable, but not completely regular. Cognates reflecting such a relatively irregular correspondence have been put between square brackets ( [ ] ). A small number of proto-forms is preceded by a question mark (?) because their reconstruction does not rely on internal evidence alone, but makes internal and external evidence work in tandem.

In what follows I first concentrate on the phonological distribution of the velar initial proto-forms. Out of 69 etymologies I find a straightforward distribution over a voiceless velar (B) series with 31 etymologies and a voiced velar (C) series with 13 etymologies. Due to the lack of a Mongolic and a Tungusic cognate 25 etymologies remain undecided (A) with respect to the voicing of the initial velar they reflect. In the second part of this section I have provided the data underlying the individual proto-forms involved per etymology. The numbers of the underlying data in subsection 5.2. refer to the proto-forms in the table of subsection 5.1. The sources that are given under every etymology refer to the different proposals available for the Japanese entry in question. Although these references have contributed to the given etymology, they do not necessarily reflect the same view as I advance here.

## 5.1. Phonological distribution

### A. Undecided

|     | pJ              | pK                  | pTg | pMo | pTk               |
|-----|-----------------|---------------------|-----|-----|-------------------|
|     | *k-             | *k-                 | X   | X   | *k-               |
| 01. | pJ <i>*kapa</i> | pK <i>?*kap(V)k</i> |     |     | pTk <i>*kāpuk</i> |
| 02. | pJ <i>*kapa</i> | pK <i>*kapo-</i>    |     |     |                   |

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|        |         |         |          |                    |
|--------|---------|---------|----------|--------------------|
| *-r-   | *-l-    | *-r-    | *-r-     | *-r <sub>2</sub> - |
| *-r-   | *-l-    | *-l-    | *-l-     | *-l-               |
| *-s-   | *-l(h)- | *-l(C)  | *-l(C)-  | *š / *l(C)         |
| *-ns-  | *-l(h)- | *-l(C)- | *-l(C)-  | *-š-               |
| *-a-   | *-a-    | *-a-    | *-a-     | *-a-               |
| *-o-   | *-e-    | *-e-    | *-e-     | *-e-               |
| *-a-   | *-e-    | *-e-    | *-e-     | *-e-               |
| *-u-   | *-wo-   | *-e-    | *-e-     | *-e-               |
| *-o-   | *-wo-   | *-o-    | *-o-     | *-o- / -i-         |
| *-o-   | *-u-    | *-u-    | *-ö-/-ü- | *-ö-/-ü-           |
| *-u-   | *-wu-   | *-u-    | *-ö-/-ü- | *-ö-/-ü-           |
| *-u-   | *-o-    | *-u-    | *-u-     | *-u- / -i-         |
| *-aCa- | *-oCo-  | *-u-    | *-u-     | *-u-               |
|        | *-oCi-  |         |          |                    |
| *-i-   | *-i-    | *-i-    | *-i-     | *-i- / -i-         |

|     |               |                  |                         |
|-----|---------------|------------------|-------------------------|
| 03. | pJ *kapa      | pK ?*ka(p)i      |                         |
| 04. | pJ *kata      | pK *kech~ *kyech |                         |
| 05. | pJ *kata      | pK ?*keli        |                         |
| 06. | pJ *kata(ra)- | pK *koto-        |                         |
| 07. | pJ *kat-      | pK *ketu-        |                         |
| 08. | pJ *kasi      | pK *kal          |                         |
| 09. | pJ *kama      |                  | pTk *kamǎš              |
| 10. | pJ *kami      | pK *kama         |                         |
| 11. | pJ *kani      | pK *ke(n)i       |                         |
| 12. | pJ *kanka     | pK ?*konkol      |                         |
| 13. | pJ *kipa      | pK ?*kip(V)k-    |                         |
| 14. | pJ *kir-      |                  | pTk *kir <sub>2</sub> - |
| 15. | pJ *ko        | pK *kul          |                         |
| 16. | pJ *koko-     | pK *huku-        | pTk *kök                |
| 17. | pJ *koro      |                  | pTk *kolu               |
| 18. | pJ *-ku       | pK *kwo          |                         |
| 19. | pJ ?*kupi     | pK *kwup         |                         |
| 20. | pJ *kupa-     | pK *kwop-        |                         |
| 21. | pJ *kuta-     | pK *kwuc-        |                         |
| 22. | pJ *kusa      | pK *kosom        |                         |
| 23. | pJ ?*ku(r)o   | pK *kwolo-       |                         |
| 24. | pJ *kuru-     | pK *kwolwu-      |                         |
| 25. | pJ *kunto     | pK *kwucit-      |                         |

## B. Voiceless

|     | pJ        | pK        | pTg         | pMo           | pTk                      |
|-----|-----------|-----------|-------------|---------------|--------------------------|
|     | *k-       | *k-, h-   | *k-, x-     | *k-           | *k-                      |
| 26. | pJ *-ka   | pK *ka    | pTg *xa     |               |                          |
| 27. | pJ *kapo  |           | pTg *kepe   |               |                          |
| 28. | pJ *kapa- | pK *kap - | pTg *xab-   |               |                          |
| 29. | pJ *kata- |           |             | pMo *kata-    | pTk *kat                 |
| 30. | pJ *kata- |           | pTg *xete-  |               |                          |
| 31. | pJ *kaka- |           | pTg *xak-   | pMo *kaka-    | pTk *kak-                |
| 32. | pJ *kama- |           | pTg *kamur- | pMo *kam-     | pTk *kamug               |
| 33. | pJ *kamo- |           |             | pMo *kemi-    | pTk *kemür-              |
|     |           |           |             | pMo *kemeli-  |                          |
| 34. | pJ *kara  |           | pTg *xere-  |               | [pTk *kar <sub>2</sub> ] |
| 35. | pJ *kansa |           |             | pMo *kabsara- | pTk *kasürku             |
| 36. | pJ *-ki   | pK *-ki   | pTg *-kī    |               |                          |

|     |                                  |                |                          |                          |               |
|-----|----------------------------------|----------------|--------------------------|--------------------------|---------------|
| 37. | pJ *kituna(C)i<br>pJ *kituni(C)a |                | pTg *kitiri              |                          |               |
| 38. | pJ *kimuo                        | pK *him        |                          | pMo *kim                 |               |
| 39. | pJ *kira-                        |                |                          | pMo *kilagi-             |               |
| 40. | pJ *kosi                         | pK *heli       | pTg *xelgeñe             |                          | pTk *kelč     |
| 41. | pJ *kos-                         |                |                          | pMo *küse-               | pTk küse-     |
| 42. | pJ *kokono                       |                | pTg *xegün               |                          |               |
| 43. | pJ *koko                         |                | pTg *xuku-<br>pTg *kuku- | pMo *kökün               | pTk *kökiür   |
| 44. | pJ *koro(-)s-                    |                |                          | pMo *kere-               | pTk *keriř-   |
| 45. | pJ *konpusi                      |                | pTg *kombo-              |                          |               |
| 46. | pJ *ku                           | pK *kwuli      | pTg *xuri-               | pMo *küre-<br>pMo *küri- |               |
| 47. | pJ *kup-                         |                |                          | pMo *kebi-               | pTk *kēb-     |
| 48. | pJ *kuta(C)i                     |                | pTg *kuta                |                          | pTk *küte(re) |
| 49. | pJ *kus(u)a-                     | pK *kwusu-     |                          | pMo *kösiür              |               |
| 50. | pJ *kusi                         |                |                          | pMo *kusiga              | pTk *kusiik   |
| 51. | pJ *kuku-                        |                | pTg *xuku-               |                          |               |
| 52. | pJ *kura-                        | pK *kolo-      |                          | pMo *kuri-               | pTk *kura-    |
|     | pJ *kuranpa-                     | pK *kolopo-    |                          |                          | pTk *kur      |
| 53. | pJ *kuru                         | pK *kolay      | pTg *kuri                |                          |               |
| 54. | pJ *kura-                        | pK ?*kwol(V)k- | pTg *xeri-<br>pTg *xeru- |                          |               |
| 55. | pJ *kum-                         |                | pTg *xumu-               |                          | pTk *köm-     |
| 56. | pJ *kum-                         | pK *kom-       | pTg *kum-                | pMo *kumi-               |               |

### C. Voiced

|     | <u>pJ</u>            | <u>pK</u> | <u>pTg</u> | <u>pMo</u>   | <u>pTk</u> |
|-----|----------------------|-----------|------------|--------------|------------|
|     | *k-                  | *k-       | *g-        | *g-          | *k-        |
| 57. | pJ *ka-              | pK *ka-   |            | pMo *gar-    |            |
| 58. | pJ *ki(C)a           |           | pTg *gia   |              |            |
| 59. | pJ *kata             |           | pTg *gāla  | pMo *gar     | pTk *kari  |
| 60. | pJ *ka(C)itu         |           | pTg *gedi  | pMo *gede    | pTk *ked   |
| 61. | pJ *kakot-           |           | [pTg *geg] | pMo *gaɣa-   | pTk *kaki- |
| 62. | pJ *kar-<br>pJ *kor- | pK *kolo- |            | pMo *gur-    |            |
| 63. | pJ *kira-            |           | pTg *giri- | [pMo *kira-] | pTk *kir-  |
| 64. | pJ *kop-             |           | pTg *gob-  |              | pTk *kob-  |
| 65. | pJ *koma-            |           | pTg *gemu  |              |            |



|     |           |            |           |             |           |
|-----|-----------|------------|-----------|-------------|-----------|
| 66. | pJ *kuwa- |            | pTg *güb- | pMo *göbi-  | pTk *küb- |
| 67. | pJ *kutu  | pK *kwut   | pTg *gude |             |           |
| 68. | pJ *ko-   |            | pTg *gel- | pMo *gel-   | pTk *kel- |
| 69. | pJ *kupa- | pK *kwopo- |           | [pMo *goba] |           |

## 5.2. Underlying data

### A. Undecided

01. J *kawa*, pJ \**kapa* ‘bark, skin, shell’

K *kkaptaygi* ‘shell, skin’ < *kaph-* + *taygi* ‘thingy’, K *kkaphwul* ‘skin, outer layer, film’, MK *ka·phol* ‘case, sheath’, pK *kaph-* (< ? \**kap(V)k*) ‘bark, skin, outer layer’

OTk. *qabiq*, Tk. *kabuk*, Tat. *kabik*, Uigh. *qobuq*, Az. *gabig*, Tkm. *gābiq*, Chuv. *xobă*, Kirg. *kabik*, Kaz. *qabiq*, Bash. *kabik*, pTk \**kāpuk* ‘bark, shell’

(Martin 1966: 225; Miller 1971: 34-35, 153; Whitman 1985: 171, 221; Starostin 1991: 15, 38-39, 67, 92, 251, 264, 27)

02. *kawa*, pJ \**kapa* ‘side, row’

K *kakkap-*, MK *kaskap-* ‘be near’, MK *kas'ka·i ~ kas'ka·Wi* ‘nearby’ < MK *kas* ‘just’ (adverb) + \**kapo-* ‘be near’; K *kawuntey*, MK *ka·won·toy ~ ka·Won·toy* ‘midst’<sup>9</sup> < \**kapo-* ‘be near’ + *-on* (attributive) + *·toy* ‘place’; pK \**kapo-* ‘be near’

(Martin 1966: 237; Starostin, Dybo & Mudrak 2003: 778-779)

03. *kawa*, pJ \**kapa* ‘river’

K *kay*, MK *kay*, pK \**ka(C)i* (< ? \**ka(p)i*) ‘inlet, estuary’

(Martin 1966: 250; Starostin, Dybo & Mudrak 2003: 771)

04. *kata*, pJ \**kata* ‘shape, form’

K *keth* ‘appearance’, MK *kech* ‘outer appearance, exterior’, pK \**kech* ‘outer appearance’

(Martin 1966: 241; Whitman 1985: 129, 171, 223; Starostin 1991: 255, 273, 297;

Starostin, Dybo & Mudrak 2003: 656)

05. *kata*, pJ \**kata* ‘beach, bay’

K *kyel*, MK *·kyel*, pK \**kyel* (< ? \**keli*) ‘wave, sea’

(Starostin, Dybo & Mudrak 2003: 767)

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<sup>9</sup> For Middle Korean the Yale romanization is modified with –W- to allow for the transcription of the now obsolete grapheme that probably represented a bilabial voiced fricative [β] and that can be traced back to pK \**-p-* following Martin’s (1996) lenition theory.

06. *kataru*, pJ \**kata-*, \**katara-* ‘talk, tell, narrate, recite’  
 K *ilkhoT-* ‘say, state, cite; praise’ < \**ilh-* (from which *ilhwum* > *ilum* ‘name’) + *koT-* ‘say’, Che. *koT-* ‘say’ (enjoys a full paradigm), pK \**koto-* ‘say’  
 (Martin 1966: 244; 1996: 12, 75; Starostin, Dybo & Mudrak 2003: 781-782)
07. *kati* ‘walking’ (deverbal noun from ‘walk?’), pJ \**kat-* ‘walk’  
 MK \**keT-*, pK \**ketu-* ‘walk’  
 (Miller 1971: 125,126; 1996, 154; Martin 1966: 245; Whitman 1985: 128, 225; Martin 1996: 16-18; Starostin 1997: 337; Starostin, Dybo & Mudrak 2003: 550-551)
08. *kasi*, pJ \**kasi* ‘evergreen oak’  
 MK *kal* ‘oak’, MK *kalap* ‘oak’ (< *kal* ‘oak’+ *nip* ‘leaf’), pK \**kal* ‘oak’  
 (Martin 1966: 237-38; Whitman 1985:184, 220; Starostin, Dybo & Mudrak 2003, 857)
09. *gama* ‘reed mace’, *kama* ~ *kaba* ‘bulrush’, *akama* ‘bulrush’, pJ \**kama* ‘reed’  
 OTk. *qamš*, Yak. *xamš* ‘reed’, Chuv. *xəməl* ‘stalk of cereals’, pTk \**kamšC* ‘reed’  
 (Starostin, Dybo & Mudrak 2003: 774)
10. *kami*, OJ *kami*<sub>1</sub> ‘top, head’, *kami*, OJ *kami*<sub>1</sub> ‘hair’ (OJ *kami*<sub>1</sub>- *ke*<sub>2</sub> ‘hair (on the head)’),  
 pJ \**kami* ‘head’  
 K *kama*, MK *ka · ma* ‘the whirl of hair on the head’, pK \**kama* ‘hair on the head’  
 (Starostin 1991: 256, 269, 279; Starostin, Dybo & Mudrak 2003: 760)
11. *kani*, pJ \**kani* ‘crab’  
 MK \**key*, dialect *kengi* ‘crab’, pK \**ke(n)i*  
 (Martin 1966: 229; 1996, 38; Miller 1985: 81; 1986, 48; Whitman 1985: 187, 225;  
 Starostin, Dybo & Mudrak 2003: 657)
12. *kage* ‘shadow’, OJ *kage*<sub>2</sub> ‘shadow, reflection, radiance, light’, *kagami*, OJ *kagami*<sub>2</sub>  
 ‘mirror’ (<? ‘reflection’ + ‘look’), *kagari* ‘bonfire’, *kagati* ‘Chinese lantern plant’ (< ?  
 ‘light’ + ‘thistle’), *kagayaku* ‘shine, reflect, sparkle’, pJ \**kanka* ‘light, reflection, shade’  
 K *kunul*, MK *ko · nolh*, *ku · nulh* ‘shadow’, pK \**konolh* ‘shadow’ (< ?\**konkol*)  
 (Poppe 1960: 25; Whitman 1985: 183, 199, 222; Vovin 1993: 257; Starostin, Dybo &  
 Mudrak 2003: 720)
13. *kiwa* ‘extremity’, OJ *kipam-* ‘take to outermost limit’, *kewasii*, OJ *kepasi-* ‘steep,  
 precipitous’, pJ \**kipa-* ‘(be) extreme’  
 MK *kiph-*, pK \**kiph-* (< ?\**kip(V)k-*) ‘be deep’

(Martin 1966: 230; 1996, 98; Whitman 1985: 171, 229; Starostin, Dybo & Mudrak 2003: 689-690)

14. *kiru* ‘make a fire by rubbing sticks together’, pJ \**kir-* ‘make fire’  
Tk. *qiz-* ‘catch fire, become hot, warm’, Chu. *χěr-* ‘to become heated, to get angry’, pTk  
\**kir<sub>2</sub>-* ‘catch fire’  
(Street & Miller 1975: 108; Miller 1975: 163; 1981, 851)

15. *ki*, OJ *ki<sub>2</sub>* ‘tree’, OJ *ko-no-pa* ‘leaves’, pJ \**ko* ‘tree’  
MK *kuluh*, pK \**kul* ‘stump, counter for trees’ (Old Koguryo \**kil* ‘tree’)  
(Whitman 1985: 138-139, 226)

16. OJ *kokoda* ‘much’, pJ \**koko-* ‘much’  
MK *·khu-* ‘big’, pK \**huku-* ‘big’  
Tk. *kök*, Az. *kök*, pTk \**kök* ‘healthy, big, thick’  
(Ramsey 1993: 440; Starostin, Dybo & Mudrak 2003: 832)

17. *koro* ‘time, about’, pJ \**koro*  
OTk. *qolu* ‘period of time’, Chuv. *xol’l’en* ‘slowly, gradually’, Kirg. *kolu* ‘originally’,  
pTk \**kolu* ‘period of time, time’  
(Martin 1966: 250; Starostin, Dybo & Mudrak 2003: 715-716)

18. *-ku* nominalizer, conjunctive marker for adjective stems. OJ *-ku*, pJ \**-ku*.  
MK *·kwo* gerund, pK \**kwo*.  
(Whitman 1985: 222; Miller 1985: 65-68; Martin 1991, 286; 1995, 148; Vovin 1998)

19. *kubisu* ‘heel’, MJ *kubisu*, *kibisu*, *kofisu*, OJ *kupi<sub>1</sub>pi<sub>1</sub>su*, pJ \**kupi(-)pisu* ‘heel’  
MK *·kwup* ‘hoof’, pK \**kwup* ‘hoof’  
(Whitman 1985: 182, 226; Starostin, Dybo & Mudrak 2003: 690)

20. *kuwaeru* ‘add’, *kuwawaru* ‘be added, grow’, *kuu* ‘make (a nest)’, pJ \**kupa-* ‘add’  
K *kop* ‘double, twofold’, MK *kwop-* ‘double, increase twofold’, pK \**kwop-* ‘double’  
(Whitman 1985: 223; Starostin, Dybo & Mudrak 2003: 840)

21. *kutabireru* ‘get tired, be fatigued’, *kutaru* ‘spoil, rot, decay’; *kutasu* ‘make rot, let  
rot’, *kutabaru* ‘die’, *kuta-kuta* ‘be worn out’, *kutiru* ‘rot, decay’, pJ \**kuta-* ‘decay’  
K *kwuc-*, MK *kwuc-*, pK \**kwuc-* ‘be bad, decay’  
(Starostin, Dybo & Mudrak 2003: 671-672)

22. OJ *kusa* ‘material, matter, stuff, sort, kind’, pJ \**kusa* ‘material’  
MK *koΔom*, pK \**kosom* ‘material, texture, cloth’  
(Whitman 1985: 202, 222; 1990: 518; Starostin, Dybo & Mudrak 2003: 673)

23. *koi*, OJ *ko<sub>1</sub>-* ‘fat, saturated’, *koeru* ‘get fat, fertile’, *koyasu* ‘fertilize, enrich, fatten’, pJ \**ku(r)o* ‘saturated, fertile’  
MK *kwolo-* ‘make thick, rich by boiling’; MK *kwoloysil* ‘deep, well-watered, fertile field’ (< ? *kwolo-* + *-i* (deverbal nominal suffix) + *-s-* (genitive) + *il* ‘work’), pK \**kwolo-* ‘make fertile’  
(Martin 1966: 230; Whitman 1985: 143; Starostin, Dybo & Mudrak 2003: 734)

24. *kurusii* ‘painful’, pJ \**kuru-* ‘painful’  
MK *kwolwuW-* ‘troublesome, hard, painful’, pK \**kwolwu-* ‘painful’  
(Whitman 1985: 223; Starostin 1991: 257, 272, 292; Starostin, Dybo & Mudrak 2003: 826; Finch 1987: 11, 17)

25. *kudoku* ‘persuade, solicit, seduce’, *kudoī* ‘wordy, garrulous, fussy’, pJ \**kunto-* ‘plead’  
MK *kwucic-*, *kwucit-* ‘scold’, pK \**kwucit-*, \**kwucic-* ‘scold’  
(Starostin, Dybo & Mudrak 2003: 702)

## B. Voiceless

26. *-ka*, OJ *-ka* question marker; *ga*, OJ *ga* genitive case marker; subject marker in the dependent and the main clause, pJ \**-n-ka* ‘the question of’  
K *ka*, MK \**ka* question marker, K *ka* subject marker, MK \**ka* colloquial subject marker, pK \**ka* ‘the question of’  
(1.) Ma *aj*, Na. *haj*, Olč. *xaj*, Ud. *ī*, Sol. *ī*, Ev. *ī*, Lam. *ī*, pTg \**xa.i* (\**xa.gi*) ‘which’; (2.) Ma. *absi*, Na. *haosi*, Olč. *xawasi*, Oroč. *awasi*, Neg. *awaski*, Ev. *awaskī*, Lam. *awaskī* ~ *awuskī*, pTg \**xa.ba.sikī* ‘where’. (3.) Na. *hali*, Ud., Neg. *ali*, Ev. *alī*, pTg \**xa.lī* ‘when’. (4.) Na. *hadu*, Olč. *xadu*, Ud., Neg. *adi*, Ev., Lam. *adī*, pTg \**xa.dū* ‘how much’. (5.) Na. *hasun*, Olč. *xasun*, Neg. Ev., Lam. *asun*, pTg \**xa.son* ‘how big, how much’. (6.) Na. *honi*, Olč. *xon*, Ud. *ono*, Ev., Lam. *ōn*, pTg \**xa.oni* ‘how’, pTg \**xa* interrogative  
(Whitman 1985: 220; Martin 1990: 485, 488, 489; 1991, 283; Starostin 1991: 256, 271, 282; Starostin, Dybo & Mudrak 2003: 754; Benzing 1955: 114)

27. *kao*, OJ *kapo*, pJ \**kapo* ‘face’  
Na. *kepī* ‘gills’, Olč. *kepi(n)* ‘gills’, Ev. *kewe* ‘jaw’, Na. *qāf* ‘face’, Orok *qêmi* ‘temple’, Ev. *kêwa* ‘face’, pTg \**kepe* ‘face, jaw, gills’

(Starostin, Dybo & Mudrak 2003: 668)

28. *kau*, OJ *kap-* ‘buy, exchange, cross’, *kawaru* ‘change’, *kawasu* ‘exchange’, pJ *\*kapa-* ‘buy, exchange, cross’

MK *kaph-* ‘repay’, MK *·kaps* ‘price’ (MK *-s* substantivizing suffix), pK *\*kaph-* ~ *\*kap-* ‘pay’

Orok *xaw-* ‘buy’, pTg *\*xab-* ‘buy’

(Martin 1966: 227; 1996: 98; Whitman 1985: 171, 220; Starostin 1997: 330; Starostin, Dybo & Mudrak 2003: 760-761)

29. *katai*, pJ *\*kata-* ‘hard’

WMo. *qata-*, Khal. *xat-*, *xatū*, pMo *\*kata-* ‘hard’

OTk. *kat*, Tk. *kati*, Tkm. *gat*, Chuv. *xidə*, Yak. *kīt*, pTk *\*kat* ‘hard’

(Martin 1966: 233; Whitman 1985: 227-228; Street 1978: 206-223; Finch 1987: 11; Starostin 1997: 332; Starostin, Dybo & Mudrak 2003: 785-786)

30. *katu* ‘win’, *kateru* ‘get vanquished, can be done (after conjunctive)’, pJ *\*kata-*  
Ma. *etuxuše-*, Na. *xete-*, Olč. *xete*, Orok *xete-*, Jur. */o-te-/*, Ev. *ete-*, pTg *\*xete-*  
‘overcome, win’

(Whitman 1985: 230; Starostin, Dybo & Mudrak 2003: 784; Martin 1996: 75)

31. *kaku*, OJ *kak-* ‘lack, break’, *kakeru* ‘be lacking, be damaged’ pJ *\*kaka-* ‘lack, break’  
Neg. *akī-* / *kakī-*, Na. *χāGa-* ‘cut off’; *χaqpā-*, Olč. *χaqpā-lü-*, Orok *χaqpā-* ‘tear off,  
separate’, (also pTg *\*xak-ta* ‘to castrate’), pTg *\*xak-* ‘cut off, tear off, separate’

WMo. *qaqa-*, Khal. *xaga-*, pMo *\*kaka-* / *\*kaga-* ‘to break, tear off’

OTk. *qaq-*, Tkm. *kak-*, *kakīl-*, pTk *\*kak-* ‘to hit, knock, tear’

(Starostin, Dybo & Mudrak 2003: 792-793)

32. *kamaeru* ‘keep (a house), set up, arrange’, pJ *\*kama-* ‘arrange’

Na. *qamor*, Olč. *qamiür*, Orok *qamiür*, pTg *\*kamur* ‘together, gather’

WMo. *qamu-* ‘gather’, *qamtu* ‘together’, Khal. *xamt* ‘together’, Kalm. *xamtə* ‘together’,  
*xamə* ‘gather’, pMo *\*kam-* ‘gather’

OTk. *qamuγ*, Tk. *kamu*, pTk *\*kamug* ‘together’

(Starostin, Dybo & Mudrak 2003: 639-640)

33. *kamu* ‘bite, gnaw, chew, masticate’, OJ *kam-* ‘brew’, *kamosu* ‘brew’, pJ *\*kamo-*  
WMo. *kemeli-*, *kemile-*, Khal. *ximle-*, Kalm. *keml-*, Bao. *kamel-*, Dag. *keme-*, Yogh.  
*kemle-*, pMo *\*kemeli-*, *\*kemi-* ‘gnaw, bite’

Otk. *kemür-*, Tk. *gemir-*, Tat. *kimer-*, Az. *gəmir-*, Tkm. *gemir-*, Kirg. *kemir-*, pTk *\*kemür-* ‘gnaw’

(Martin 1966: 247; Starostin, Dybo & Mudrak 2003: 641, 662)

34. *kara*, pJ *\*kara* ‘skin, husk, hull, nutshell’

Neg. *ejekte*, Na. *xerekte*, Olč. *xerekte*, Orok *xerekte*, Ev. *erekte*, pTg *\*xere-kte* ‘skin’

Otk. *qaz*, *qaðız*, Tat. *kajri*, S.-Yugh. *kazdik*, Chuv. *xojär*, Yak. *qatırık*, pTk *\*kar<sub>2</sub>* ‘bark, scales’

(Miller 1985: 151; 1996: 151; Starostin 1991: 74; Starostin, Dybo & Mudrak 2003: 782-783)

35. *kaze* ‘wind’, pJ *\*kansa* ‘wind’

WMo. *qabsara-* ‘blow (of wind)’, *qabsaraya* ‘cold wind, snowstorm’, Khal. *xawsra-* ‘to blow (of wind)’, *xawsraga* ‘cold wind, snowstorm’, Kalm. *xawsrg* ‘cold wind, snowstorm’, pMo *\*kabsara-* ‘blow (of wind)’

Otk. *qasırqu*, Tk. *kasırya*, Az. *qasırya*, pTk *\*kasırku* ‘whirlwind’

(Starostin, Dybo & Mudrak 2003: 642)

36. *-ki* ~ *-gi*, pJ *\*-ki* ~ *\*-n-ki* suffix in animal names (e.g. OJ *usagi<sub>1</sub>* ‘rabbit, hare’, OJ *munagi<sub>1</sub>*, J *unagi* ‘eel’, J *toki* ‘Japanese crested ibis’, OJ *koporogi* ‘cricket’ etc.)

K *-ki*, pK *\*-ki* suffix in animal names (e.g. K *kalmayki* ‘common gull, sea gull’, K *kileki* ‘wild goose’, K *kwuteki* ‘maggot, worm’, K *saykki* ‘young of animal’, K *thwokki* ‘(home) rabbit, hare’, K *tta’oki* ‘Japanese crested ibis’ etc.)

pTg *\*-kī* suffix in animal names (e.g. pTg *\*xere-kī* ‘Frosch’, pTg *\*sula-kī* ‘Fuchs’, pTg *\*tüğže-kī* ‘Luchs’, pTg *\*pora-kī* ‘Auerhahn, Birkhahn’, pTg *\*tō-kī* ‘Elch’, pTg *\*tuksa-kī* ‘Hase’, pTg *\*piala-kī* ‘Rebhuhn’, pTg *\*müi-kī* ‘Viper’, pTg *\*turā-kī* ‘Rabe, Krähe’, pTg *\*xölü-kī* ‘Eichhörnchen’, pTg *\*niuṛṇia-kī* ‘Gans’, pTg *\*pinmü-kī* ‘Haselhuhn’ etc. (Benzing 1955: 1014-1015)

37. *kitune*, OJ *ki<sub>1</sub>tune*, pJ *\*kituna(C)i* ~ pJ *\*kituni(C)a* ‘fox’

Neg. *kitıjıjı*, Na. *kičiri*, Orok *kitčiri*, pTg *\*kitiri* ‘a kind of fox’

(Starostin 1997: 335; Starostin, Dybo & Mudrak 2003: 709)

38. *kimo*, OJ *kimo<sub>2</sub>* ‘liver, courage’, pJ *\*kimuo*,

K *him* ‘strength’, MK *him* ‘strength, sinew’, MK *kim* ‘breath’, pK *\*kim(V)*

WMo. *kim*, Khal. *xim*, pMo *\*kim* ‘sausage, offal’

(Martin 1966: 249; Starostin, Dybo & Mudrak 2003: 775)

39. *kirau*, pJ *\*kira-* ‘dislike’

Mo. *kilayi-* ‘d disdain’, pMo \**kilayi-*  
(Finch 1987: 11; Starostin, Dybo & Mudrak 2003: 528)

40. *kosi*, OJ *ko<sub>2</sub>si*, pJ \**kosi* ‘waist’

K *heli*, MK *he`li*, pK \**heli* ‘waist’

Neg. *ejeñē*, Olč. *xengi* ‘waist’, Orok *xeŋgeje* ‘armpit’, Ev. *ejeñē* ‘waist’, pTg \**xelgeñe* ‘waist’

OTk. *keš*, Kirg. *keš*, *kešene*, Chuv. *kažan*, pTk \**kelč* > \**keš* ‘back, spine’

(Martin 1966: 245; Miller 1996: 85; Starostin 1991: 76, 257, 272, 289; Starostin, Dybo & Mudrak 2003: 773-774)

41. OJ *-ko<sub>2</sub>s-*, pJ \**kos-* ‘wish’

WMo. *küise-*, Khal. *xüs-*, pMo \**küise-* ‘wish’

OTk. *küise-*, Tkm. *küise-*, pTk \**küise-* ‘wish’

(Starostin, Dybo & Mudrak 2003: 829-30)

42. *kokonotu*, OJ *ko<sub>2</sub>ko<sub>2</sub>no<sub>2</sub>tu*, pJ \**kokono* ‘nine’

Neg. *ije yin*, Lit. Ma. *ujun*, Na. *xujū*, Olč. *xuju(n)*, Orok *xuju(n)*, Ev. *je yin*, pTg \**xegiün* ‘nine’

(Murayama 1962, 9; Miller 1985 b: 143; Vovin 1994, 247; Starostin, Dybo & Mudrak 2003: 772)

43. *kokoro*, OJ *ko<sub>2</sub>ko<sub>2</sub>ro<sub>2</sub>* ‘heart’, MJ *kokoti* ‘heart, feelings, mood’, pJ \**koko* ‘heart’

Neg. *oxon / okon* and Ev. *ukun* ‘breasts’ > pTg \**xukun*

Ma. *xuxuŋ*, Lit. Ma. *xuxun*, Na. *kū(n)*, Olč. *kū(n)*, *kuku(n)*, Orok *kū(n)*, Jur. *xuxun* ‘breasts’ > pTg \**kukun* (pTg \**k-* > \**x-* ?)

WMo. *kökü*, SH MMo. *kokan*, Khal. *xöx*, Kalm. *kökŋ*, Dong. *gogo*, Bao. *kugo*, Yogh. *hgön*, Mgr. *kugo*, ZM *kukä* (2-8a), Mogh. *kökä*, pMo \**kökön* ‘breast’

OTk. *köküz*, Tk. *göyüs*, Az. *köks*, Tkm. *gövüis*, Chuv. *kögör*, Kirg. *kökürök*, Sal. *göfryx* all with the meaning of ‘breast’ and Yak. *köyüs* ‘middle of the back’, pTk \**kökür<sub>2</sub>* ‘breast’

(Murayama 1966: 155; 1983: 8; Martin 1966: 248; Doerfer 1963: 481-82; Miller 1971: 147, 167; 1976: 377; 1979, 19-21; Starostin 1991: 15, 32, 256, 270, 280; Itabashi 2001: 108; Starostin, Dybo & Mudrak 2003: 713-714)

44. *korosu* ‘kill, murder’, pJ \**koro(-)s-* ‘kill’

WMo. *kere-* ‘fight’, *kereče-* ‘be angry’, Khal. *xerelde-* ‘fight’, Kalm. *keřldə-* ‘fight’,

Mgr. *kəředi-* ‘fight’, Mogh. *kerälda-*, pMo \**kere-* ‘to quarrel, to fight ; be angry’

OTk. *keriš-*, *küreš-*, Tk. *güreš-*, Az. *güläš-*, Tkm. *göreš-*, Kirg. *keriš-*, pTk *\*keriüš-* ‘quarrel, fight’.

(Starostin, Dybo & Mudrak 2003: 671)

45. *kobusi*, pJ *\*konpusi* ‘fist’

Neg. *komboxī*, Na. *qombjo*, Orok *qomū*, pTg *\*kombo-* ‘wrist, hand, spoke-bone’

(Starostin, Dybo & Mudrak 2003: 718)

46. *ki* ‘yellow’, Shuri dial. *ci-iru* ‘yellow’ (palatalization: < *\*ku-Ci* rather than < *\*ko-Ci*), OJ *kugane* < *ku* + *kane* ‘metal’, pJ *\*ku*

MK *kwu · li* ‘copper’, Kog. OK *\*kul* ‘yellow’, pK *\*kwuli* ‘yellow, copper’

Neg. *ōjin*, Na. *χō-gžō*, Olč. *χoj-pü(n)*, Ev. *uri-m*, pTg *\*xuri-* ‘grey’

WMo. *küreñ*, *kürin*, Khal. *xüren*, Kalm. *kürñ*, Dag. *kurel*, Mgr. *kurē*, pMo *\*küre-* ‘brown’

(Whitman 1985: 133-135, 226; Starostin 1997: 331; Starostin, Dybo & Mudrak 2003: 695)

47. *kuu*, OJ *kup-*, pJ *\*kup-* ‘eat’

WMo *kebi-* ‘raminate, chew the cud’, WMo. *kebi-*, Kalm. *kew-*, Dag. *keme-*, Mgr. *kēji-*, pMo *\*kebi-* ‘chew the cud’

MTk. *keviš*, Az. *göjüš*, Tkm. *gāvü-š* ‘cud’, Khal. *kāvīš*, Bash. *köjöš*, Kaz. *kūjis* all mean ‘cud’ and OTk. (Karakhanide) *kev-*, Tk. *gev-*, Gag. *gevše-*, Sal. *küšä-*, Chuv. *kavle-*, Yak. *kebi-*, Kirg. *küj-šö-* mean ‘chew, chew the cud’, pTk *\*kēb-* ‘chew the cud’

(Ozawa 1968: 208-209; Starostin 1991: 15, 69, 109, 279; 1997: 330; Itabashi 2001: 108-109 [‘bite’]; Starostin, Dybo & Mudrak 2003: 667)

48. MJ *kute* ‘marsh-like land where waterplants grow’, OJ *kute*, pJ *\*kuta(C)i* ‘marsh’

Neg. *kota*, Ev. *kuta*, pTg *\*kuta* ‘bog, marsh’

Tat. *küür*, *kötä* (dial.), Bash. *küür* (dial.), pTk *\*küte(re)* ‘bog, marsh’

(Starostin, Dybo & Mudrak 2003: 749-750)

49. *kusai* ‘ill-smelling’, *kuso*, OJ *kuso<sub>1</sub>* ‘dung’, pJ *\*kusa-* ~ pJ *\*kusua*

MK *kwusu-* ‘(pleasantly) odorous’, pK *\*kwusu-* ‘odorous’

WMo *kösür-sün*, Kalm. *kösrsn* ‘dung’, pMo *\*kösür* ‘dung’

(Martin 1966: 243; Whitman 1985: 227; Starostin, Dybo & Mudrak 2003: 748)

50. OJ *kusi*, pJ *\*kusi* ‘chestnut’

WMo. *qusiga*, Khal. *xušga*, Kalm. *xušg*, pMo *\*kusiga* ‘walnut’

OTk. *qusiğ* ‘pine kernel’, OTk. *qusiğ* ‘pine kernel’, pTk *\*kusiğ* ‘nut’

(Starostin, Dybo & Mudrak 2003: 748-749)



51. *kukuru* ‘bind’, *kukumu* ‘wrap, tie’, pJ \**kuku-* ‘wrap, bind’  
Lit. Ma. *uxu-*, Na. *xuku-*, Olč. *xuku-*, Orok *xukulitči-*, Ev. *ukulī-*, pTg \**xuku-* ‘wrap’  
(Starostin, Dybo & Mudrak 2003: 833)

52. *kuraberu* ‘compare, balance, contrast’, OJ *kura*, OJ *kurawi* ‘position’, pJ \**kura-*,  
\**kuranpa-* ‘put in position’  
MK *ˈkolW-* < \**ko lo ˈpo-* ‘line up’, MK [ˈ] *ko(l)- / ko ˈ lo-* ‘be sideways, horizontal’, pK  
\**kolo-*, \**kolopo-* ‘line up, be sideways’  
Mo. *quru*, *quri* ‘gather’, *quri-ja*, *χurā-*, *χurā-* ‘collect’, *quri-lta* ‘meeting’, *qurim* ‘id.’,  
pMo \**kuri-* ‘gather’  
OTk. *qur* ‘rank’, Chuv. *xbrax* ‘equal’, Yak. *kurduk* ‘equal’, Tk. *qur-* ‘to arrange, to  
adjust’, *qura-* ‘put in order, compose’, pTk \**kura-*, \**kur* ‘put in order’.  
(Martin 1966: 228; 1996: 109; Whitman 1985: 221; Starostin, Dybo & Mudrak 2003:  
700)

53. *kuri* ‘chestnut’, *kurusu* ‘chestnut grove’, OJ *kuri/u-kuma* ‘Chestnut Corner’, MJ *kurumi*  
‘walnut’, pJ \**kuru* ‘chestnut’  
K *kalay*, Mod K *kaloy* (1773-1837 Mulmyeng-ko 4.3a), MK *kolay* ‘wild walnut’, pK  
\**koloy* ~ pK \**kolay* (< \**kolo-i*) ‘walnut’  
Lit. Ma. *χuri* ‘’, Na. *kori-či*, *kore-cta*, Jur. *xuri*, pTg \**kuri* ‘cone, nut’  
(Whitman 1985: 193, 231; Miller 1985 b:143, 154; 1986: 51; Martin 1996: 89-90;  
Starostin, Dybo & Mudrak 2003: 725-726)

54. *kuru* ‘bore, gouge, scoop out, hollow out’, OJ *kura* ‘valley’, *kura* ‘saddle’, pJ \**kura-*,  
MK *kwolh-* ‘be hungry, be empty’, pK \**kwolh-* (< ?\**kwol(V)k-*) ‘be empty’  
Neg. *ej*, Na. *xeti-*, (\**xer-či-*), Olč. *xeru-*, Orok *xeri-*, Ev. *eru-*, pTg \**xeri-*, \**xeru-* ‘rake  
up’.  
(Martin 1966: 227; Starostin, Dybo & Mudrak 2003: 855)

55. *kumu* ‘draw (water), dip up, pump’, pJ \**kum-* ‘dip up’  
Neg. *umu-*, Lit. Ma. *umbu-*, Na. *xumu-*, Olč. *xumu-*, Orok *xumu-*, pTg \**xumu-* ‘dig’  
OTk. *köm-*, Tk. *göm-*, Az. *köm-*, Tkm. *göm-*, Yak. *köm-*, pTk \**köm-* ‘dig’.  
(Whitman 1985: 186, 222; Vovin 1993: 257; Starostin, Dybo & Mudrak 2003: 838-39)

56. *kumu* ‘intertwine, assemble, unite’, pJ \**kum-* ‘assemble’  
K *kam-* ‘shut, close (eyes)’, MK *kom-* ‘shut, close (eyes), join’, pK \**kom-* ‘join’  
Neg. *kumul-* ‘cover’, *komnō-* ‘cover’, Na. *kumuligu-* ‘cover’, Olč. *kumul-* ‘cover’, Orok  
*kumele-* ‘cover’, Ev. *kumu-* ‘cover’, *kumlē-* ‘embrace’, pTg \**kum-* ‘cover, embrace’

WMo. *qumi-*, Khal. *xumi-*, Kalm. *xümə-, xömə-, xumíə-*, pMo *\*kumi-* ‘to wrap up, roll up, collect’.

(Martin 1966: 246; Whitman 1985: 222; Starostin, Dybo & Mudrak 2003: 739)

### C. Voiced

57. *iku* ‘go’, *kayou* ‘ply between, commute, frequent, go’, OJ *kaye-* ‘get apart’, OJ *kare<sub>2</sub>-* ‘get apart, cease, go away’, OJ *so<sub>2</sub>k-* ‘get distant, recede’ (< ? pJ *\*so* ‘back’ + pJ *\*ka-* ‘go’), distal OJ *ka-* ‘(going) away from me’ versus proximal OJ *ko-* ‘(coming) towards me, near me’ reflects the original contrasts between the verb roots *\*ka-* ‘go away’ and *\*ko-* ‘come’, pJ *\*ka-* ‘go away’

K *ka-*, MK *'ka-* ‘go’, pK *\*ka-* ‘go’.

WMo. *yar-*, Khal. *gar-*, Kalm. *yar-*, Dong. *qeri-*, Bao. *xǎr-*, Dag. *gar-*, Yogh. *Gar-*, Mgr. *Gari-*, Mogh. *yaru-*, pMo *\*gar-* ‘go out’

(Whitman 1985: 39; Martin 1995: 147; 1996: 17, 79; Unger 1977: 132; Starostin, Dybo & Mudrak 2003: 547-548)

58. OJ *ke<sub>1</sub>*, pJ *\*ki(C)a* ‘strange’

Neg. *gê*, Lit. Ma. *Guwa*, Na. *Gja-Gda* ‘single’, *Goj*, Olč. *Gê-Gda* ‘single’, *Goj*, Orok *Gê-da* ‘one, single’, *Goj*, Ev. *gê*, pTg *\*gia* ‘other’

(Starostin, Dybo & Mudrak 2003: 563)

59. *kata*, pJ *\*kata* ‘shoulder’

Neg. *ḡāla*, Ma. *galž*, Lit. Ma. *gala*, Na. *nana*, Olč. *ḡāla*, Orok *ḡala*, Jur. *ḡala*, Ev. *ḡāle*, pTg *\*ḡāla* < *\*gāla* ‘hand’

WMo. *yar*, Khal. *gar*, Kalm. *yar*, Dong. *qa*, Bao. *xar*, Dag. *gari*, Yogh. *Gar*, Mgr. *Gar*, Mogh. *yar*, *qar*, pMo *\*gar* ‘hand’

OTk. *qari*, Tkm. *gari* ‘shin-bone’, Chuv. *xor* ‘shin-bone’, Yak. *qari*, Kirg. *kari*, pTk *\*kari* ‘arm’

(Pope 1960: 24; Doerfer 1963: 60; Starostin, Dybo & Mudrak 2003: 530-531)

60. *ketu* ‘behind, buttocks, rump’, (*kita* ‘north, OJ *kita* ‘shaded side of the mountain’), pJ *\*ka(C)itu*

Neg. *gedemuk*, Ev. *gedimuk*, pTg *\*gedi-muk* ‘back of the head’

WMo. *gede* ‘nape, back of the neck, occiput’, WMo. *gedei-* ‘bend backwards, throw one’s head back’, WMo. *gedes* ‘backward’, *gedeski-* ‘to make a sudden movement backward’, WMo. *gedergü* ‘back (adv)’, WMo. *gežige* ‘back of the head; plait’, Khal. *gedreg* ‘back (adv.)’, *gezeg* ‘back of the head; plait’, Kalm. *gedrgə* ‘back (adv.)’, *gižəge* ‘back of the head; plait’, pMo *\*gede* ‘back’

OTk. *keḡdin*, Chuv. *kaj*, Yak. *kelin*, Yak. *ketex* ‘back of head’, pTk *\*ked* ‘back, after’

(Poppe 1960: 24; Doerfer 1963: 492; Miller 1985 a: 79; 1985 b: 143; 1986: 47; Starostin 1997: 332; Starostin, Dybo & Mudrak 2003: 535-536)

61. *kakotu*, pJ \**kakot-* ‘complain, grumble’

Neg. *gewxe-*, Na. *geuxe-de-*, Olč. *gewxe-de-*, Ev. *gegin-*, pTg \**geg-* ‘be angry’

WMo. *ɣaɣa-*, Khal. *gā-*, pMo \**gaɣa-* ‘be angry’

OTk. *qaqı-ɣ* ‘anger’, Tk. *kakı-*, Tkm. *kakı-*, pTk \**kakı-* ‘be angry’

(Starostin, Dybo & Mudrak 2003: 536)

62. *karu* ‘cut, shear, reap, clip’, *koru* ‘cut (wood)’, pJ \**kar-* ~ \**kor-*

MK \**kol-* ‘grind’, MK \**koli-* ‘whack, cut’, pK \**kolo-* ‘divide, separate, grind’

WMo. *gorbi* ‘carving’, Khal. *gurvi* ‘carving’, *guranz* ‘whetstone’, Kalm. *gur’wə*, *gor’wə* ‘carving’, pMo \**gur-* ‘carve, whet’

(Martin 1966: 229; Starostin 1991: 288; Miller-Street 1975: 109; Martin 1996: 98; Finch 1999: 103; Starostin, Dybo & Mudrak 2003: 556-557)

63. *kiru* ‘cut’, *kirasu* ‘run out of’, *kireru* ‘be sharp, get cut, run out’, pJ \**kira-* ‘cut’

Ma. *giri-* ‘cut, trim’, Na. *geri-* ‘cut out’, Ev. *gırža-* ‘cut in pieces’, *gırjwūn* ‘scissors’, Ud. *gī-* ‘cut’, Neg. *gej-* ‘cut’, Lam. *ger-* ‘cut’, pTg \**giri-* ‘cut’

WMo. *kira-*, *kiru-*, Khal. *ıar-*, Kalm. *kur-*, pMo \**kira-* ‘mince, cut small’,

OTk. *qır-* ‘break’, Tk. *kır-* ‘break’, Az. *gır-* ‘break’, Tkm. *gır-* ‘break’, Chuv. *xěr-* ‘break’, Yak. *kira* ‘small’, Kirg. *kır-* ‘scrape’, pTk \**kır-* ‘break, demolish’

(Poppe 1960: 20; Martin 1966: 229; Miller 1971: 72,73; Miller & Street 1975: 108-113; Miller 1981: 851, 863; Martin 1996: 98; Starostin, Dybo & Mudrak 2003: 679)

64. *kou*, pJ \**kop-* ‘ask, request, beg’

Neg. *gobžo-*, Orok *Gobdo-*, Ev. *goɣ-*, *govžo-*, pTg \**gob-* ‘hunt’

OTk. *qov-*, Tk. *kov-*, pTk \**kob-* ‘follow, chase’

(Poppe 1960: 24; Miller 1985 b: 145; Starostin 1991: 81; Starostin, Dybo & Mudrak 2003: 560-561)

65. *komu* ‘be crowded, be full up’, *komeru* ‘put in’, *komaru* ‘get put inside’, pJ \**koma-* ‘be full up’

Ma. *gumə*, Lit. Ma. *gemu*, Na. *xem*, Olč. *xem*, *xum*, Orok *gem*, Jur. *ɲemur*, pTg \**gemu* ‘all’

(Whitman 1985: 220; Starostin, Dybo & Mudrak 2003: 539)

66. *keru* ‘kick’, OJ *kuwe-* ‘kick’, pJ \**kuwa-* ‘kick’

Neg. *giw-*, Na. *guji-*, Olč. *guji-*, Ev. *giw-*, pTg \**güb-* ‘pound, strike’

WMo. *göbi-*, *gübi-*, Khal. *güve-*, *gövši-*, pMo *\*göbi-* ‘pound, strike’  
Tat. *küjä-* ‘pound, hit’, Chuv. *kiv-* ‘pound, hit’, Chuv. *kəʷvende* ‘pestle’, pTk *\*küb-*  
‘pound, hit’.  
(Whitman 1985: 226; Starostin 1997: 33; Starostin, Dybo & Mudrak 2003: 557-558)

67. J *kuti* ‘mouth, aperture, opening’, *kutuwa* ‘bit’, pJ *\*kutu* ‘mouth, opening’  
MK *·kwut*, pK *\*kwut* ‘hollow, pit, cave’  
Oroč. *gudə-* ‘break, tear’, Orok, Na. *gudə* ‘a hole’, pTg *\*gude* ‘a hole’  
(Martin 1966: 237; Whitman 1985: 135, 227; Miller 1985: 142; 1996: 172)

68. *kuru* ‘come’ (OJ *ko<sub>2</sub>nu* ‘not come’; *ko<sub>2</sub>ba* ‘if come’; *ko<sub>2</sub>si* ‘came’etc. ), pJ *\*ko-*  
Orok *gilin-*, Ev. *gel-*, pTg *\*gel-* ‘get hardly on one’s way’  
WMo. *gelgüri-*, *gelderi-*, Khal. *geldre-*, Kalm. *geldr-*, pMo *\*gel-* ‘walk slowly’  
OTk. *kel-*, Tk. *gel-*, Tat. *kil-*, Uigh. *käl-*, S.-Yugh. *gel-*, Az. *gäl-*, Tkm. *gel-*, Chuv. *kil-*,  
Yak. *kel-*, Kirg. *kel-*, Kaz. *kel-*, Bash. *kil-*, Sal. *gel-*, *gej-*, pTk *\*kel-* ‘come’.  
(Starostin 1991: 254, 265, 274; Starostin, Dybo & Mudrak 2003: 538)

69. *kuwasii* ‘beautiful, detailed’, OJ *kupasi-* ‘beautiful; detailed’, pJ *\*kupa-* ‘beautiful’  
MK *kwo ·po-* ‘be beautiful, attractive’, pK *\*kwopo-* ‘beautiful’  
WMo. *yuwa*, Khal. *gua*, Kalm. *gō* ‘straight’, Dong. *gau*, pMo *\*gowa* < *\*goba* ‘beautiful,  
good’  
(Pope 1960: 24, 124; Doerfer 1963: 422; Miller 1985 b: 144-45; Whitman 1985: 223;  
Starostin, Dybo & Mudrak 2003: 561-62)

## 6. Conclusion

The polemic on the initial velar correspondence in Altaic can be taken as an illustration of the partisan fashion in which the Altaic debate is sometimes approached. Doerfer’s (1963: 60-61) criticism on the initial voiced velar correspondence that “there is only one clear case of pA *\*g-* which is probably the result of chance” is run into the ground by Starostin, Dybo and Mudrak (2003: 72) with the remark that “This is again an example of Doerfer’s debating technique: poor evidence is criticized while better evidence is omitted for discussion”. While the present article does not support either viewpoint, it is an attempt to reexamine the support available for the initial velar correspondence in Altaic. The central question that this article attempts to answer is whether the initial velar correspondence that is found in Altaic is significant enough to rule out chance as a possible explanation for the phonological similarity. The problem is approached from a methodological and factual viewpoint. After gathering and sifting the evidence, a core of 69 etymologies stands the test.

The data lead to the conclusion that although Doerfer is right in pointing out the necessity of sifting the Altaic evidence, he is probably wrong in attributing the remaining similarities to chance. The overall number of etymologies (= 69); the number of branches involved in the comparison (= 5); the phonological symmetry between a voiced *\*g-* and voiceless *\*k-* correspondence series; the overall symmetry of the system of sound correspondences as a whole; the stability of the etymologies in terms of individual reconstruction, borrowing, nature and semantics; and, the fact that the cognates reflect triple phoneme correspondences rule out, with a considerable degree of probability, chance as an explanation for the remaining similarities.

It is interesting to notice that, contrary to Starostin, Dybo and Mudrak's findings, the initial velar correspondences between Japanese and the other Altaic languages bear evidence to the classic twofold consonantal contrast. Ramstedt and Poppe have reconstructed a dual contrast -whether between voiced / voiceless or between fortis / lenis- for the Altaic obstruents.<sup>10</sup> Partly to make the Altaic family fit into the luxuriant sets of correspondences that appeared in the putative Nostratic family, Ilič-Svityč (1971) felt the need to introduce a three fold consonantism in Altaic based on the distinctions voiced (*\*k*), voiceless (*\*g*) and aspirated (*\*k'*). This formulation was warmly welcomed by Starostin (1991: 21) and Starostin, Dybo and Mudrak (2003). The three-way division was also taken over by Menges (1975: 44) and by Vovin (1994 b: 100) and, Miller (1995: 72-73) favored it in his review of Starostin's 1991 monograph. As the Altaic etymologies piled up and as the Korean and Japanese proposals increased, the expanded possibilities for comparing consonants proved useful. A way in which Starostin, Dybo and Mudrak support the three-way consonant division is by projecting the Oghuz voicing of initial *d-* and *g-* back into the ancestral Turkic language. In order to account for the richer sets of correspondences that appear with the new distinctions in proto-Turkic, it becomes necessary to expand the Altaic consonantism. In the present article I have argued that the Oghuz voicing of initial *g-* is secondary and that it cannot serve as an internal motivation for the distinction between pTk *\*g-* and *\*k-*. Sifting the evidence, I have also reduced the number of etymologies. The remaining etymologies with initial velar that compare Japanese etyma to Altaic bear no evidence for a threefold set of initial velar correspondences. The classic twofold Poppe-Ramstedt division can basically account for all the core etymologies that have survived the sifting and it is confirmed by the pairwise voice distinctions that I find for the other stops in my doctoral dissertation (Robbeets 2003).

Although the twofold velar correspondence series suggests the reconstruction of pA *\*g-* and *\*k-*, it can be noticed that in all examples of the voiced series, the reflected

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<sup>10</sup> Poppe 1960: 9: "Zu den Klusilen und Affrikaten sei bemerkt, daß sie nicht so sehr in stimmlose und stimmhafte wie in starke (fortes) und schwache (lenes) einteilten".

Altaic medial consonant is voiced, either a sonorant or a voiced obstruent. The number of etymologies in the voiced series (13) is relatively low in comparison to the number of etymologies in the voiceless series (31). Therefore the possibility cannot be excluded that initial pA \*g- is the result of secondary voicing conditioned by a voiced environment. Some reservations should be made because the present article is restricted to a selection of Altaic initial velar core-etymologies for which Japanese reflexes are preserved. Considering Altaic etymologies for which there are no Japanese cognates available could result in additional examples of the above sound correspondences. This would reduce the chance that the velar correspondences are purely coincidental to an even lower probability. It would also give a better insight in eventual environmental constraints to the voiced velar correspondence series.

### Abbreviations

|         |                               |
|---------|-------------------------------|
| Az.     | Azerbaijani                   |
| Bao.    | Bao'an                        |
| Bash.   | Bashkir                       |
| Bur.    | Buriat                        |
| Ch.     | Chinese                       |
| Che.    | Chejudo (Korean)              |
| Chu.    | Chuvash                       |
| Dag.    | Dagur                         |
| Dong.   | Dongxiang (Santa)             |
| Eng.    | English                       |
| EMCh.   | Early Middle Chinese          |
| Ev.     | Evenki (Tungus, Ch. Elunchun) |
| J       | (standard Tokyo) Japanese     |
| Jur.    | Jurchen                       |
| K       | (standard Seoul) Korean       |
| Kalm.   | Kalmuk                        |
| Kaz.    | Kazakh                        |
| Khal.   | Khalkha                       |
| Kirg.   | Kirghiz                       |
| Kog. OK | Koguryŏ Old Korean            |
| Lam.    | Lamut (Ewen)                  |
| Ma.     | Manchu                        |
| MJ      | Middle Japanese               |
| MK      | Middle Korean                 |
| MMo.    | Middle Mongolian              |
| Mgr.    | Monguor                       |

|       |   |
|-------|---|
| Mo.   | Mongolian   |
| Mogh. | Moghol  |
| MTk.  | Middle Turkic   |
| Na.   | Nanai (Goldi, Ch. Hezhe)  |
| Neg.  | Negidal   |
| OCh.  | Old Chinese   |
| Oir.  | Oirat   |
| OJ    | Old Japanese  |
| Ołč.  | Olcha (Ulcha, Ulchi, Olchi)   |
| Oroč. | Oroch (Orochen, Oroqen)   |
| Orok  | Orok (Uilta, J Uiruta)  |
| OTk.  | Old Turkic  |
| pA    | proto- Altaic   |
| pJ    | proto- Japanese   |
| pK    | proto- Korean   |
| pMo   | proto- Mongolic   |
| pTg   | proto- Tungusic   |
| pTk   | proto- Turkic   |
| Sal.  | Salar (Uighur)  |
| SH    | Secret History of the Mongolians ( <i>Manghol un niuca tobca'an</i> ) |
| Skr.  | Sanskrit  |
| Sol.  | Solon (Ch. Ewenke)  |
| Tat.  | (Volga) Tatar   |
| Tk.   | Turkish   |
| Tkm.  | Turkmen   |
| Ud.   | Udehe (Ude, Udege)  |
| Uig.  | Uighur  |
| WMo.  | written Mongolian   |
| Yak.  | Yakut   |

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