KHITAN STUDIES
I. THE GRAPHS OF THE KHITAN SMALL SCRIPT

1. GENERAL REMARKS, DOTTED GRAPHS, NUMERALS

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To the memory of Chinggeltei bagshi

In the first part of this series of papers the author investigates the peculiarities and structure of the graphs of the Khitan Small Script. The graphs are polyvalent, and their phonetic values are based on and reflect the understanding of the Chinese phonetic system of the period. The list of graphs includes allographs and variants, further graphs with the same phonetic value but having different form(s). Some graphs have dotted and nondotted pairs. The Romanisation of the graphs is a convention by modern Chinese and European scholars. In some cases the phonetic value of a given graph is unknown, but its meaning is known; these are called logographs. Dotted forms and the numeric system are also investigated.

Key words: Khitan language, Khitan Small Script, graph, logogram, Old Mongolian, Proto Mongolian, Mongolic numeric system, gender in Khitan.

Introduction[1]

The state-of-the-art of Khitan studies has been recently summarised by Chinggeltei (2002a, b), Kane (2009), Wu–Janhunen (2010), Janhunen (2012) and others. The broad

outlines of the scripts and the language of the Khitans are by now clear, so we can enter a new phase. This includes minute work on the details and structure of the script and the language. The following work is based on the achievements of former research and the Khitan material published mainly by Chinggeltei (2002a, b), Kane (2009) and Wu−Janhunen (2010).

General Remarks

The graphs[2] of the Khitan Small Script may represent one phonetic unit or a section of phonetic sequences. For the Khitan scribe, a graph had one or more readings, and he was not aware of its phonemic structure and value. The Romanisation of a graph realises our concept of the reading. We know of graphs representing one, two, three and exceptionally four phonetic units. The situation is complicated by the fact that a graph may have more than one phonetic value or reading. For instance the graph (311) 丹 <b> may represent /b/, /bV/ and /VbV/:

  bas(a) 丹冬 (311.174) <b.as> 'again' (K32, 72, 84, D6-5, 19-18, 21-6 33-6, 35-18, 40-18, X11-10, 27-12, 32-38, 33-10, 37-26, 44-18)[3]. 冬 (174) may here denote [as] or [asa] | Mo *basa*, Da *base*, HN *basa* , DaE *bas* 'again, also'.[4]

  baka 丹力 (311.168) <ba.qa>'son', pl. 丹列出 (311.151.290) <ba.hu.án> 'sons' (K72, 118, D13-11, 15-20, 26-7, 26-16, 16-24, X 8-4, passim) | Mo *baga* 'young, childhood', *bagačud* 'youth', Da *bage* 'little, young', *bage.cude* 'youth, young men', HN *baga* 'small', DaE --, DaTC *bakš* 'malyj, malenkij' || The vowel after <b> may be either [a] or [o], the word was earlier read as *boqo*, Chinggeltei read *baγa,* Aisin Gioro (2012) read the second graph <qa>. The second syllable appears in **ńoqa** 伏力 (222.168) <ń.qa> 'dog', Liao shi *niehe* 捏褐 and in **teqa'a** 令力 力 (247.168.189) <te.qa.a> 'chicken', its reading as [qo] is here less probable.[5]

  Abogiń 丹九伏 (311.334.222) <b.g.ń> 'a name, *Abogin'(X 4-29/31) | in Ch *Abaojin* 阿保謹 [ʔa-puaw-kin].

This type of multiple reading has been mentioned earlier by Toyoda, Aisin Gioro and Kane (32). There can be no doubt about its existence, the question is: is this systematic or only a casual usage? We should not forget that the inventors and those who developed the KSS were not linguists. Their work was a practical one for practical purposes.

The readings of the graphs were in most cases ascertained by Chinese syllables which they used to transcribe. The correct reading of some graphs may have been helped by the fact that they are used in the same word in the same position as another graph already known. I quote such cases as G_1/G_2, that means graph1 and graph2 have the same phonetic value in the same word.

The Romanisation, that is, the Latin letters used in the transcription of the graphs, was first adapted to the phonetic character of the Chinese texts transcribed by KSS. That means that the accepted transcription of KSS graphs is far from reflecting a phonetic reality, not to speak of phonemes. Nevertheless, as we shall see later, the system is very useful for reconstructing the Khitan phonemic system.

At the present moment we can put aside the phonetic peculiarities of the Khitan sound system – Khitan is a dead language, though we will come back to some of its features. It is more interesting to analyse the graphemic aspect of the question. In the first period of the deciphering of the KSS, all new graphs were put in a list with ascending numbers. If a new graph came up in a new text it got a new number. It can be predicted that as the volume of the corpus grows, the number of new graphs in each new text will decrease. Until the summer of 2000, 32 substantial texts were known and a few smaller ones, as bronze mirrors, a seal, inscriptions on various objects and coins (WJ25-29, SJL,Wikipedia). At present (2015) we know of 39 major inscriptions. The total number of preserved graphs may reach 100,000. In 2010 Wu Yingzhe (Oyunchu) and Juha Janhunen published two newly found inscriptions, Nos 33 and 34. The *Xiao Dilu* (D, No 33) inscription is dated 1114, it was discovered in 2002 and acquired in May 2007, the *Yelü Xiangwen* inscription (X, No. 34) was dated 1091 and acquired in June 2007. The two inscriptions contain 78 graphs not listed before (Nos 381–459). Of these 78 graphs about 20 are identical with, or allographs of graphs in the earlier lists. That means that the two new inscriptions containing all 2700 graphs provided about 60 new items. This is a surprisingly high number, even if some of them turn out to be allographs of already known graphs.

There exist different lists, organised according to the stroke structure of KSS, such as that of Ji Ruhe and Wu Yingzhe (2009) and that of Sun Bojun, Jin Yongshi and Li Yang (2010). The first comprises 437, the second 448 graphs.

In the *List* we find 65 logographs, graphs of which we know the meaning, but not the pronunciation, such as 氶 (006) MOUNTAIN. Further there exist about 145 graphs of which we know neither the pronunciation nor their meaning. The high number of totally unknown graphs, which comprise almost 38% of the total number, is a great challenge.

The bottom line is that 173 graphs remain the pronunciation of which is given in several lists. As we shall see, even the reading of some of these graphs is uncertain.

I will quote the list of WJ with a capital L: the *List*. On the other hand, these hundred and seventy odd graphs seem to be the most frequent ones.

On the whole we have to keep in mind that the pronunciation given by several scholars for a given graph is at the best an approximation or a hint to a possible pronunciation and closely bound to the Chinese syllables for which it was used. In other cases the Romanisation follows earlier conventions.

Kane gave a detailed description of the problems connected with the separate Khitan graphs (Kane 2009, pp. 26–30). Aisin Gioro, in her earlier papers and in her last one (2012) where she summarises her earlier findings, offers, in a few cases, different readings.

The script reflects a syllabic structure. We find the following structures of the graphs: V, C, CV, VC, CVC, VV, CVV, logographs and graphs of which we know neither the pronunciation nor the meaning.

Some Khitan syllables are represented by one graph, others by two or more similar graphs. It is very difficult to distinguish between two graphs which are written with a small difference, due to the hand of different scribes, or simple mistakes, or small but significant differences. In a few cases the rubbing, or photograph of the rubbing, is not very legible. For practical purposes we call them *allographs*, as in:

ai   <ai> 丰 (122), <ai₃> 平 (395)
bai <bai> 刁 (061), <bai₂> 寸 (060)
em   <em> 仚 (257), <em₂> 仚 (256)

In general such allographs are distinguished in the Romanisation by subscribed indexes.

In other cases the same Khitan syllabic unit is written with different graphs. In such cases the vowel of the transcription is noted with a diacritic, the form of which has no importance. We also find cases where allographs and different graphs existed for transcription of the same syllabic unit, as in:

au   <au> 夬 (161), <aū>[6] 亐 (125), <aú> 尒 (210)
du   <du> 门 (237), <dú> 几 (179), <dū> 分 (249),
iu   <iu> 丙 (019), <iū> 刁 (138), <iū₂> 王 (382), <iú> 屶 (289),
en   <en> 扣 (140), <én> 屶 (361), <én₂> 与 (100), <én₃> 屶 (219),
         <én₄> 与 (399)

Special attention should be paid to the so-called "dotted pairs".

Dotted and Nondotted Pairs of Graphs

Kane mentions 12 pairs of graphs in the case of which one of the pairs is dotted, the other is not dotted. According to Wu–Janhunen (43) there exist 29 such pairs. Kane mentioned that this feature has been observed by several scholars. Wu (2005) suggested, that the dot indicates grammatical gender. Kane added, "the texts do not contradict that interpretation" (K27). This is true. The marking of gender in the case of

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[6] I use <ō> instead of <ô> and <ń> instead of <ñ>.

numerals or other attributives is one of the most interesting features of the Khitan Small Script. The marked pair is always the male, the unmarked the female. Wu and Janhunen dealt with the dotted pairs on pp. 42−43 of their work. If there exists a dotted form already deciphered and its nondotted pair is yet not deciphered, Wu and Janhunen use a raised small *x*, e.g. 夃 (047) <hor>, 夃 (046) <hor^x>, while if the dotted is not yet deciphered, they use a small circle, as in: 乃 (184) <am>, 及 (185) <am°>. They also realised that the dot is not only used for gender specification.

Kane cited the following 12 pairs (K27)

004−005 承 WHITE 承 WHITE°, 007−008 亚 EIGHT 亚 EIGHT°, 026−027 毛 ONE 毛 ONE°, 029−030 夭 tau 夭 tau° (FIVE), 033−034 禾 is 禾 is° (NINE), 081−082 夬 MONTH 夬 üe, 085−086 灰 SIX 灰 SIX°, 134−135 圣 TWO 圣 TWO°, 166−167 包 THREE 包 THREE°, 265−286 山 GOLD 山 GOLD°, 326− 327 文 ie^x 文 ie, 368−369 屯 FOUR 屯 FOUR°.

To the above we can add now the graphs for 'seven' 141−441 尽 SEVEN 尽 SEVEN°.

It is a bit more complicated with nine:

is 禾 (033) <is> 'nine, feminine'; the masculine form is 禾 (034) (K24, 109, D49-9. 51-8, X4-21, 6-8, 28-10), <is> (C107). On the reading, see below.

We have to suppose, that also in those cases where we did not find a "dotted pair" it can be found, in fact, in the case of adjectives, or nouns used as attributives[7]. Let us see some functions which are not or not mainly connected with gender specification.

The first of the pair <y> (020) 万 and <m> (021) 丙 is used when it occurs as an initial to represent [y] and [ye]. If it figures as a final, then it represents [ei]. It occurs *i.a.* in the clan name of the Khitan rulers, the Yelü. The second graph <m> (021) 丙, is most probably not a dotted pair of (020). It is read as [mo] and identified, based on the glossary of the Liaoshi, as *mo* 'mother, female person'. In <mo.ba.qa> it has the meaning 'daughter', i.e. female child (ba.qa). Anyhow the dotted pair should be the male, and this is here surely not the case. A further dotted pair is <ra> 夲 (084) and <ra> 夲 (397). Both occur in the transcription of the same clan name:

Yarud 万夲/夲 乑火 (020.084/393.131.344) <y.ra.u.ud> (D1-14) 'Yelü 耶律, clan name of the Khitan Emperors', LMCh *jia lyt* may give back a pronunciation like [yarüd] or [yärüd] (K22, 23, 37: *ei* =Ch *ye*, K259). The origin and the variants of the clan name of the ruling Khitan clan were discussed by Wittfogel and Feng (WF59n). One of the other forms used was Yi-la 移剌. The LMCh reading of Yi 移 was *ʔjiaj*. The first sign was written sometimes with *yi* 亦 which was read in LMCh as *jiajk*. All these transcriptions suggest a Khitan syllable /yä/. The second syllable of the clan name 夲/夲 (084/393) occurs also in word initial position: 夲乑 (084.131.273) <ra.u.un> 'a personal name or a part of it' (X39-3).

One has the impression that in these cases (084) has to be read /ar/ or /ara/ and the name has to be read *Aruun*. Perhaps it can be connected with Mo *arigun*

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[7] I suppose that the dotting became general only in a later phase of the history of the KSS.

'clean, pure, holy'.[8] The graph 夲 (397) has not yet been found in word initial position.

As we see, the correct Romanisation of 万夲/夲 及火 (020.084/393.131.344) is <y.r.u.ud>. Taking into account the Chinese transcriptions, the name may have been slightly palatalised, and pronounced *Yärüd.[9]

Whether this clan name has anything to do with the name of the Jarud tribe in Inner Mongolia is a topic for further investigation.

The nondotted graph <š> (028) 叉 transcribes Chinese /š/, and occurs in the Khitan word šen 叉夯 (028.073) <š.ēn> 'new' (K38, 188, Sh2) <ʃen> (C107) | Mo sine, Da šinken, HN sini, DahE šiŋ-kən, šəŋ-kən.

The pair graph has the dot above the graph <ž> 叉 (330). It is used only for transcription of Chinese /ž/. In this case the dot is a diacritic.

In the case of <hor> 南 (046) and <hor> 南 (047) we have most probably another type. The Khitan word ġor, also written <hor.u> 南及 (046/047.131)[10] has the meaning, according to Aisin Gioro (K40), 'people'. The initial is either a stop /ġ/ or a fricative /γ/.

Ġor 南 (047), **ġoru 南及** (047.131) <hor.u>, also 南为 (047.189) <hor.a> 'people' (K57, 111, 202, X5-31), 南及火 (047.131.273) gen.<hor.u.un> (D28-13, 28-10, 43-18), plural (047.254) 南仌 <hor.d> (X29-12). The comparison with MMo haran pl. harad as suggested by Vovin (2013:624 ← OT här, härä), can be excluded, the initial which became in Mo h- > zero, was /p-/ in Khitan. The initial was either a guttural stop /ġ/ or a fricative /γ/. The word reminds one of Tibetan Hor 'Mongol', but the connection is not clear.

Whatever the Proto Mongol origin of the Khitan word ġor/ġoru is, the dotted form marks male, and the nondotted form female members of the group of people. In this case it seems to occur with a noun.

Graph (100) <én₂> 与 has an allograph (361) 与 and an allograph (399) 与, and is mostly used as a marker of the genitive case in front vocalic words. The ordinal numbers (K143-144) quantifying feminine nouns have a suffix <én> 与. The ordinal numbers used with masculine nouns have among others the suffix <er> 仌 (269), an allograph of which is (341) 仌. The opposition <er>:<en> male:female *ere : *ene has to go back to nominal origins, and in this case *ene may have been a noun denoting a female being. We have to mention that er (341) 仌 is also used as the suffix of the past tense in front vocalic words.

Graph (101) <deu> 与 has a dot. Its meaning 'younger brother' would fit into the pattern:

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[8] I accept the arguments of P. Rykin and others expressed in the session of Academia.edu that the name of the Ilkhanid ruler Argun (1284–1294) may not pertain here.

[9] Jacques (2010) in his review on Kane (2009) mentioned that the name of the Khitans appear in Tangut transcription as tɕhjɨ¹ tã¹ which also points to a strong palatalisation. The nasalised /ã/ is also interesting.

[10] Slash / is used in cases where both graphs on the left and right side of the slash may appear on each other's place.

dew 夯 (101) <deu> 'younger brother' (K104, 119, X2-20, 3-14, 8-8, 9-2, 9-33, Sh2: *dʔw*) | <ia deu> 'brothers', <du> (C107) | Mo *degü*, Da *deü,* HN *deü,* DaE *dəu* 'younger sibling'. (101) has an allograph 夯 (072) with the meaning 'EAST'. If (101) and (072) are only allographs, that is, they denote the same phonetic unit, then we have to suppose *dew* 'east'. Can we connect this word to Mo *degedü* 'higher, upper etc.' the root of which is **dege*? But this is going back to **degü,* see *degüji-* 'to be hung or suspended'. However if 'east' means the 'upper', 'west' should be the 'lower'. Mongolian and Chinese orientations face south; Turkic orientations face east. We have to put this into the system of the cardinal points, to which I will come back later.

Another question is that, if 夯 (101) has a dot, does there exist a nondotted pair? Is this (453) 万 with a hitherto unknown pronounciation and meaning? The graph is said to be an allograph of 另 (129) with also no pronounciation or meaning. One would expect a word for 'younger sister'. In the Mo languages LM *degü* denotes both the male and the female younger siblings. If this is also here the case than (453) 万 has also the pronounciation **dew** and the meaning 'younger sister' while the graph (129) may be an allograph.

Graph 夬 (118) <qúˣ> is a dotted graph, while 夬 (117) <qú> does not have a dot. Graph 余 (246) has the same pronunciation /qu/ and is alternatively used with (118) in the same word as in <s.iau.qu> 'blue'. In the corpus of WJ neither (118) nor (117) occur as initial syllables. One has the impression that (117) and (118) are suffixes, or are also used as suffixes marking female and male gender. The words <m.as.qú> 又冬夬 (133. 174.118) and <m.as.qu> 又冬余 (133.174.246) have both the meaning 'first' (K48). In the *Yelü Xiangwen* inscription (line 10) <m.as.qu> 又冬余 (133.174.246) is the attributive of <ba.qa> 'son'. This proves that (246) is an allograph of (118) and not of (117).

Graphs <m> 又 (132) and <m> 又 (133) are also pairs. Interestingly enough, (132) does not occur in word initial position, while (133), the dotted form, is frequent as a word initial. It occurs in the WJ corpus in more than 30 different words. It occurs also in word internal and final positions. It also appears in the word <m.ō₂.qu> 又公夬 (133.253.118) 'first or eldest son, or the greatest son', that means that in this case two dotted graphs would signalise the male gender of the noun. Most probably the dot of the graph (133) lost its specific function.

The graphs 夂 (172) and 夂 (173) both <uh> are not occurring in word initial position. The transcription is conventional, it reflects an *uγ* final in transcriptions of Chinese words, which had originally a final -*k* as in Khitan <l.uh> Chinese 禄 *lu* < LMCh *ləwk* (K55). On the use of <h> in Liao Chinese transcriptions, see K254.

The graphs <ku> 几 (178) and <kuᵒ> 凡 (427) are also dotted pairs. The first has the meaning 'man'. This graph can hardly be separated from <g> 几 (334). The difference is in voicing; "voiced" and "not voiced" readings alternate. See the third part of this series of papers.

kū 几 (178), <ku> 'man, person', genitive **küwün** 几只火 (178.372.273) <ku.u.un> (K56-57, in D and X 24 times,WJ75) | Mo *kümün > küwün > kün,* Da *huu,* dial *kuu* 'person', HN *küün* 'person, human being', DaE *xuː,* DaTs *xuu,* Sh 101: *küwün* || The Dagur data show that as the Khitan word it has a long vowel and it has

lost its final -*n*. (427) seems to be a pleonasm, pointing to the male character of the concept. This may have importance, because the word had the original meaning 'human being, person', and the female form was later formed with a diminutive, see Mo *keüked* 'child', *keüken* 'girl, daughter'.

The graphic pairs <car> 𝌀 (183) and <car> 𝌀 (431) also belong to this group. The graph (431) occurs only in names, sometimes written <car.a> 𝌀 𝌀 (431.189) (X15-3, 1910, 38-21, 46-23, D13-8).

The graphs <am> 乃 (184) and <am> 㐂 (185) occur in word initial position. We find **amilaga'ai** 乃屮㞢乎 (184.261.051.122) <am.l.ha.ai> 'to give life, give birth' (X26-11) | Mo *amila*- and in X34-20 <am> 㐂 (185) is the first graph of the name of a mountain.

The graphs <lu> 夊 (208) and <lu> 夊 (209) represent the cyclical sign 'dragon' or 'serpent'. According to Kane the form with the dot (209) "seems to be a misinterpretation" (K60). There does exist also an allograph <lu₂ > 皮 (064).

The graphs 伏 (221) and 伏 (222) represent the palatalised /ń/ (in other transcriptions *ñ*). 伏 (222) frequently occurs in word initial position, while (221) has not been found in that position. In word initial position, in many cases 伏 (222) has to be read /ni/ or more probably /ńia/ or /ńio/ as in <ńia.qa> 伏力 (222.168).

ńiaka 伏力 (222.168) <ńia.qa> 'dog' (K2, 19, 93), <noxi> (C107), Liao shi *niehe* 捏褐 MCh *niat.xĥat* | Mo *nokai* < **ńokai*, Da *nohe*, HN *nokai*, DaE *nɔɣʷ* ‖ Cf. Tabgach **ńaxan* < **ńiak* +*gan* < **kan* 若 干 (Vovin 2009, pp. 199, 203), Sh (105 *ńaq*). For the reading /qa/ of (168), see *baka* above.

More complicated is the question how the graph has to be read if it is in final position. In many cases it represents a simple palatalised /ń/, in other cases /-in/, but Khitan second names ending in 伏 (222) are transcribed with Chinese syllables having the final *iŋ* and transcribed by Kane (2009, p. 61) as <iń>. One has the impression that 伏 in final position, if ending a Khitan word, has a morphological function: <a.am.an> (D35-6) and <a.am.ń> (X28-39, 45-9).

The graphs 仕 (223) and 仕 (224) represent both a syllable like /mu/. (224) also occurs as word initial (X32-4) in the complex <mu.u.ji₃.en> which seems to be the genitive case of *muji*.

muji 仕ゑ㸦/㸦/㸦 (224.131.152/153/337) <mu.u.ji> 'great, sacred, holy > emperor' (X32-4), and in a unit where the last two graphs are not readable (X36-1), it is most probably the same word. Also **mo muji** 及及 仕ゑ㸦 (133.186.224.131.152) <m.o mu.u.ji> 'the great sacred, holy' (K50). In his work on the Tabgach language, Ligeti (1970, 304) dealt with the title *moti bi* 莫 堤 比, which he reconstructed as **modi bi* 'chef militaire de province' and connected it with Mo *muji* 'province, region', supposing the change -*di*- > -*ji*-, while *bi* occurs in many other titles as well, but its identification has not yet been made. The text of X23-4 runs: <…mu.u.ji₃.en eu.uni…> where *muji* has the genitive marker. The word <eu.uni> 𐰴 杏 (067.059) has to be a title, something like *ewüni*. Further research is needed, to accept or to

reject the idea that the Tabgach word and its LMo form *muji* 'region, province' and the Khitan word *muji* in the above cited texts are the same words[11].

In the case of the graphs <pu> 分 (241) and 仐 <fu> (242), the graph with the dot seems to mark a foreign /f/. According to Kane (K63) Khitan did not have /f/ as initial, and thus transcribed Chinese /f/ sometimes by <p> in other cases by <f>. This may be the case e.g. in

püšin 分禿伏 (241.033.221) <pu.ši.iń> 'madame, Ch 夫人 *furen*' EMCh *puǎ*, LMCh *fjyǎ, fuǎ* + EMCh *ɲin*, LMCh *rin* (K23, 39, 62, 104), <pu.ši.ń> (Sh 106, WJ 53, D8-19/21, D9-1/4)‖ MMo SH *hüjin* ‖ Sh is right, (033) is here not /is/ but / ši/. (033) and (221) have dotted forms (034) 禿 and (223) 伏 resp. In this case the dot in 仐 <fu> (242) marks a phonetic peculiarity, existing in Chinese but not in Khitan as in the case of 戈 <ž> (330) above, p. 122.

The graph <ui> 火 (262) can occur independently as a word representing Khitan

üyi(l) 火 (262) <ui> 'matter, affair' (K106, 111, D5-1,17-15, 32-3, 34-4, 37-20, X3-4, 5-23, 14-21, 26-14, 37-1, 44-6) and has a dotted pair <ui°> 火 (263) used only in Chinese transcriptions for several Chinese forms of *wei* (see WJ191-192), in names, and in titles as *taiwei* 太尉 'grand commandant' (X18-30). We have to mention that in these cases *wei* is a part of a name or a title of a male person.

The graph <ie> 文 (326) occurs as word initial; 文 (327) does not occur in this position. However, (327) occurs in the Khitan transcriptions of Chinese *-ien* rhymes and also in Khitan words in non-initial positions, most probably with the main vowel [a] (K74), because the syllables co-occurring with it contain an /a/ vowel. But this is the same case as with (326), which is followed by <l.ha> and <l.un> (WJ357).

The graphs <hong> 王 (381) and <hong₂> 主 (328) are also related; the second is dotted, though the dot is above the graph. (381) does not occur in word initial position, (328) occurs as an independent word. The latter has an allograph <hong> 主 (075), and both have the meaning 'emperor' as in *hongdi*.

hongdi 主王 (328.037) <hong.di> 'Emperor' (K95, D3-23/27) ← Ch *huangdi* 皇帝 LMCh *xhuaŋ tiaj*. The LMCh [xɦ] evolved from an EMCh [ɣ] and this, or a voiced χ is the value of *h-* in the Khitan transcription of this title.

Theoretically 王 (381) should be the female counterpart, the Empress or Queen, but it is possible that the graph 王 is a simple mistake.

The graphs 火 (344) <ud> and 火 (345) <ung> seem to differ only in one dot or a small dash, while for **ung** we find also the allographs 火 (346) <ung₂>, 火 (106) <ung₃> and <úng> 火 (357). In these cases (344) most probably has nothing to do with the graphs (346, 106).

The graphs 丹 (370) and 丹 (371) both have the meaning 'region', but it is not clear what the distinction between the dotted and nondotted forms is.

As we can see most of the dotted pairs are used for gender differentiation, but not all. One has the impression that dotting is a relatively late feature in the history of KSS. It is in any case significant that the marked pair is the masculine.

2. Graphs Denoting Numerals

There exists a relatively rich literature on the numerals of Proto Mongol and Khitan[12]. I will not go here into the discussion of former research.

Remarks on the Numerals

The ordinal numbers were treated by Kane (K143–144). There is a miswriting in his table, in place of <úr> the consistent transcription is <ur> of 化 (236).

One 乇 (026), 乇 (027)

In some languages the numeral for 'one' is a newcomer[13]. This is due to different uses of the numeral in the syntax. There are different words in Khitan which seem to fill the function of the numeral 'one'.

nai 穴 (332) <nai> 'first, head; official' (K75, 109, D4-4/6, Sh2), plural **naid** 穴夶 (332.350) <nai.d>, gen. <nai.en> 'officials' (K101) ‖ the function of **nai** may be similar to OT *baš* 'head, leader, the first one'. In LMo *nai* has the meaning 'friendship', but it may be a different word.

mas 乇, 乇 (026, 027) <mas> 'one' (K110) <mɑsɑi> (C107), according to Aisin Gioro (2012) 乇 (027) has to be read *am*. According to Kane, in the emended sections of the *Dazong* inscription 住金仐九 224.257.244.334 <mu.em.se.gi> was rewritten as 乇仐九 <ONE.se.gi> suggesting that 乇 was pronounced the same as <mu.em> or perhaps **mem* (K110) ‖ see perhaps Mo *emüne* or more probably *emünesi* 'front, anterior'. The latter is in MgrH *muśi*, and in MgrM *meši*. However, see also **masku**.

masku 叒冬余/夬 (133.174.246/118) <m.as.qu/qú- 'first' (K48, 50, X10-20).

The logograph ONE is also used as general subject: 乇伵与 (026.238.100) <ONE BORN.en…> 'One is born into [disasters and good fortune]' (K155).

Two 圣(134), 圣 (135)

The cardinal numeral for 'two' is:

jür 朩化 (162.236) <či.ur> 'two' (K50, Sh2, D16-12, 24-20, X9-15, 15-2, 17-1, 19-30 and passim) | Mo *jirin* 'two (women)', *jirin sedkiltü* 'disloyal, i.e. who has a double soul', *jirmüsün* 'pregnant', *jirim* 'either one of the two leather straps on the left side of the saddle', *jitüger* (<*jirtüger*) 'jealousy, hate; invective used by wives of a polygamous marriage, in referring to each other', *jitüger eme* 'the other wife (term used by the other wife in polygamous marriage in reference to another), *jirgugan* 'six (twice three *jir*+*gur*, cf. also WJ 56), HN *ji-* 'two' in: *jitüer* 'second, co-wife', *jitügen* 'competition', the Mo base is not *ji- but *jir || There is a difference in the vocalism. The Mo word has /i/, the Khitan /ü/. As we shall see, /r/ may have been a very old suffix.[14]

Three 圣 (166), 圣 (167)

The Khitan cardinal numeral for 'three' is **ġur**. In the Romanisation we find <h> which denotes a back vocalic guttural, in some cases even a fricative, but here beyond any doubt it is a stop, though in the *Gaoshi* inscription of unknown date we find the initial 又 (341) <x>.

ġur 圣 (259) <hur> 'three' 圣圣圣 (151.236.269) < hu.ur.er>, 圣圣 (259.269) <hur.er> 'third, masc.', 圣圣圣 151.236.219) <hu.ur.én>, 圣圣 (259.218) <hur.én> (K53, 54-55, 66, 121, 143, D9-5), 圣圣圣 (340.236.219) <x.ur.én> (Gao inscr. K143) 'third, fem', <γur> (C107) | Mo *gurban*, Da *guarebe,* HN *gurban,* DaE *g^warbə, g^warbən, g^warəb* .

Four 圣 (368), 圣 (369)

The cardinal numeral for 'four' is in Khitan **dür** written in different ways. The graph (260) hitherto occurred only in this word, and was read <dur> and <t₂>.

dür 仐化 (260.236) <t.ur>, **dür** 仐夾(247.097) <t.úr> (X35-11), **dürü** 公夾 夊 (254.097.131) <d.úr.u>, **dürüġ** 仐化夂 (247.236.172) <t.ur.uh> 'four', (K98, Sh2: *dur*), <dur> (C 107), **dürüer, dürüen** 仐化父 (247.236.269) <t.ur.er> masc, 仐 化与 (~~ 361) <t.ur.én>, 公化与 (254.236.361) <d.ur.én> fem 'fourth' (K79, 98), <duruwei> (C107) | Mo *dörben*, Da *durube,* HN *dörben* 'four', DaE *durb^w, durbun* || The initial is <d> in the inscriptions. Zhi (1094), Yong , Gao (see K143-144) and has to be read *d-* also in the other inscriptions. As we shall see in the third part of these studies, the alternation *t~d* is orthographic, not phonetic.

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[14] The vowel of the Khitan word for 'two' is a closed labial sound. From the script we cannot decide whether it is a front or back vocalic one. During the session in Academia.edu, A. Hölzl and V. Ponaryadov argued that the vowel is back vocalic. My answer is that from the graphs we cannot decide. But since the whole system of the Khitan language points to the existence of a front–back opposition (see also Kane 2009, pp. 30–32), we can *reconstruct* here a front */ü/.

Five 圣(029), 圣(030)

The Khitan word for the cardinal numeral 'five' is **taw**:

    taw 圣 (029) <tau> 'five' (K19, 24, 38, 98), <t'αu> (C107). There exist a unit <ta.u> �圣 (229.131) which seems to be the transcription of the same numeral (D29-16, X32-26, 34-3) | Liaoshi *tao* 討, LMCh *thaw* | Mo *tabun*, Da *taau*, HN *tabun*, DaE *ta:wu(n)*. **tadoġo, todoġo** 令示/币及扎币 (247.099/016.186.076.) <t.ad/od.o.ho> 'fifth' (K97), <t'owo'oi> (C107) | Mo *tabudugar*, Sh: **tow-* || The ordinal suffix [-doġo] is reminiscent of Mo *-dugar*.

Six 圣 (085), 圣 (086)

Toyoda Gorō (1998) tried to reconstruct Khitan 'six' as **jirgu* and 'eight' as **nai*, which seems to be logical, but no convincing data has appeared, as remarked by Kane (K117). I have to add that in Khitan 'two' is *jür* and not *jir*. Mongolian *jirgugan* 'six' is, as it was stated by many scholars (Poppe 1955, pp. 245 etc.), two times three, *jir+gur-ban*, and may be a later formation. Nugteren (2011, p. 388) supposes for the Qinghai-Gansu Mongol languages here an unknown suffix *?-gUAn*, but this is not necessary. In any case Khitan may have had another word for 'six'. To the numeral 'six', see also Mo *jigü* 'descendant in the fifth generation', i.e. the 'sixth' (*<*jirgü/jirgu*). This may be of importance, because this form is front vocalic, while all other data for Mo 'six' are back vocalic. Chinggeltei (2002a, p. 107) reconstructed for Khitan **nir* for 'six' while Kane (117) **nil*. These are based on Manchu-Tungus **niŋun* 'six'. The numeral 'sixty' in Mo is *jiran*, where the final part may be the old word for 'ten/teen' *-on* (cf. OT *on* 'ten', see Poppe 1955, p. 247). This would suggest a word like **jïr* for 'six', but this was the Mongolian word for 'two' as we have seen. The ordinal of Khitan 'six' does not help, it is 太岑 (086.341) < SIX.er>.[15] For the time being the best candidate is **nir*.

Seven 圣 (141), 圣 (441)

The cardinal numeral 'seven' is **dalo**:

    dalo 圣圣 (171.313) < da.lo> 'seven' (K72, 115), <dol> (C107), **daloer** 圣圣岑 (171.313.269) < da.lo.er> 'seventh, masculine' (K72, 115), <doluwei> (C107) | Mo *dolugan*, Da *doloo*, HN *dolaan*, DaE *dɔlɔ, dɔlɔn* 'seven'. See further Mo *dalan*, HN *dalan* (*<*daluan*) 'seventy'.

Eight 亜 (007), 亜 (008)

Ji Shi and Chinggeltei (cited by K36) suggested for 'eight' **naim*. From the point of reconstruction I do not see any reason for the final *-m*, because in Mo *naiman* the last part *-man* is the same petrified suffix as *-b/gAn* in *gurban, dörben, jirgugan, dolugan, yisügen* and *arban*, only nasalised after a nasal initial: *naiman < *naiban*. Mo 'ninety' is *nayan*. All Khitan numerals lack the suffix **b/gAn*. Based on these facts one would

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[15] Hölzl (2015), as did earlier Kane, suggests a final *-l* based on Jurchen and Alchuka data. These *l*s may have been substituion for *-r*, which is present in most of the Proto Mongolic numerals.

expect for Khitan *nayi* or even *neyi*. The masculine ordinal of 'eight', 'eighth', is 亚仩仌 (008.235.269), that is <EIGHT.ri.er> (K143). This points to a possible form *nayirier* or *neyirier*. Here *-r-* would be the same petrified suffix as in *jür*, *gur*, *dür* etc. The expected form of Khitan 'eight' would be then *nayir/neyir*. For the time being we have to wait for new data.

Nine 禾 (033), 夛 (034)

iši 禾 (033) <is> 'nine, fem.' the masc. form is 夛 (034) (K24, 109, D49-8, 51-8, X4-21, 6-8, 28.10), <is> (C107) | Mo *yisün*, Da *ise*, HN *yesün* < **yersün,* DaE *is*, *yis*, Sh: **iši* | According to HN **yersün*, the **-r-* is reconstructed by HN from *yeren* 'ninety' and is preserved in one of the Baoan dialects. In another Baoan dialect the *y*- is absent as in Da || The *y*- in Mo may be secondary, and originally 'nine' was **isün*, which may have come from an earlier ***irsün*, where *–ün* is the same suffix as *-un* in *tabun*. The Khitan graph occurs also in the Khitan clan name 禾九仌 (033.334) <is.g.i> which occurs in the Chinese transcription as *Yishiji* 己室乙, the initial of the first word had in LMCh a glottal stop *ʔit*, the second word was *ši*, that is, the name had to be **Išigi* or the like. This is in favour of the proposal of Shimunek to read *iši* or *iš* for the numeral 'nine'. I would opt for *iši*. The <š> may be, however, secondary in the case of <isi> > <iši>. According to Janhunen (2012, p. 13) the Mo form **yersün* is an innovation and cannot be connected with Khitan **isi*. I think, that if we depart from a form ***irsün*, all forms can be connected. The ordinal form is **išider** 禾仝仌 (033.254.341) <iši.d.er> (D2-15).

The syllable is also present in the name <is.iú.ih/ih$_2$> 禾尖洈/菊 (033.289.338/455) 'Išiyuiġ' in D1-15, 51-15 as the name of the scribe of the Xiao Dilu inscription. The name may be of Biblic origin and perhaps Nestorian.

The graph occurs also in the Khitan transcription of the Chinese title

pushi 亽禾 <pu.is> is more correctly <pu.ši> 'Chinese title', *fushi* 副使 (WJ52, D1-5).

It occurs further in **püšin, fušin 亽禾伏** (241.033.221) see above, p. 125.

Ten 乇 (240), 乇 (422)

The Khitan pronunciation of the word for 'ten' was hitherto unknown. I suggest **par** or **para.** This occurs as 业方/ 方 (295.084/397) <p.ra/ra°> /para/. It is present in two inscriptions, in the Xiao Dilu inscription (AD 1117) we read:
   1. 业方 |亽九夾矢 |夾平圡丰 (D32-11–14)[16]
   2. (295.084| 245.334.097.205| 161.366.051.122)
   3. <p.ra ú.g.úr.de au.ul.ha.ai>
   4. para ugurde awulgai
   5. [the Emperor] let [him to be] appointed to the Ten Ugurs'.

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[16] In line 1 the text is given with Khitan graphs, in line 2 the numbers of the graphs in the List, in line 3 the transcription of the graphs according to the List, in line 4 suggested reading of the Khitan texts, in line 5 the English translation of the Khitan tetxt.

Table of the graphs

Number	Graph (No. in List)	Reading	Cardinal numbers in KSS
ONE, m	乇 (027)		
ONE, f	乇 (026)		
TWO, m	㞥 (135)	jür	jür 朿伦 (162.236) <či.ur>
TWO, f	㞥 (134)		
THREE, m	包 (167)	ġur	ġur 夊 (259) <hur> /ġur/
THREE, f	包 (166)		
FOUR, m	乇 (369)	dür	dürü 公夹夊 (254 .097.131) <d.úr.u>
FOUR, f	乇 (268)		
FIVE, m	戈 (030)	taw, LSh *tao* 討	taw 仔夊 (229.131) <ta.u>
FIVE, f	戈 (029)		
SIX, m	灰 (085)		
SIX, f	灰 (086)		
SEVEN, m	屄 (441)	dalo	dalo 久乎 (171.313) <da.lo>
SEVEN, f	屄 (141)		
EIGHT, m	㠭 (008)		
EIGHT, f	㠭 (007)		
NINE, m	㝉 (034)	iši	
NINE, f	㝉 (033)		
TEN, m	仑 (422)	para	para 业布 (295.397) <p.ra>
TEN, f	仑 (240)		para 业布 (295.084) <p.ra>

denoting numerals

Ordinal numbers in KSS	Ordinal number reading	Pronunciation	Mongolian simple /decade
叐及 (132. 186) 叐冬欠/余 (132.124.169/24) 宂 (332) 叐冬丈 (132.124.117)	<m.o> <m.as.qo/qu> <nai> 'first, head' <m.as.qú>		nigen
夲化癸 (162.236.269) 亥化癸 (104.236.269) 夲化与 (162.236.161)	<c.ur.er> <dz.ur.er> <c.ur.én>	jürer jüren	jirin, qoyar/ qorin
佘 癸 (259.269) 刋化癸 (151.236.269) 佘 与 (269.361) 刋化与 (151.236.361) 乂化与 (340.236.361)	<hur.er> <hu.ur.er> <hur.én> <hu.ur.én> <x.ur.én>	ġurer ġuren	ġurban/ gučin <*gurčin
令化癸 (247. 236.269) 仝化癸 (254.236.269) 令化与 (246.236.361) 仝化与 (254.236.361)	<t.ur.er> <d.ur.er> <t.ur.én> <d.ur.én>	dürer düren	dörben/ döčin <*dörčin
令币反扎 (247.016.186.076) 令㐱反扎 (246.099.186,076) 令㐱反雨(246.099.186.018)	<t.od.o.ho> Sh: <*t.ow.o.ho> <t.ad.o.ho> <t.od.o.in>	todoġo todoin	tabun/ tabin
			jirġuġan. <*jirgurban/jiran
			doloġan/ dalan
			nayiman/ nayan
			yisün <*yersün/ yeren
			(h)arban

According to WJ 112 in <ú.g.úr> <ú> stands for Chinese Wu 吳 and g.úr is the translation of Chinese *guo* 國 'state', that is <ú.g.úr.de> woud have the meaning 'to the State of Wu'. For the word <p.ra> no remark is offered, for <au.ul.ha.ai> WJ wrote "unclear, but perhaps 'placed'. The Kingdom of Wu was a small kingdom which existed from 902–937 in the southeastern part of China" (WF 562n), therefore this interpretation can be excluded with great probability for chronological and geographical reasons[17].

The second text is in the Yelü Xiangwen inscription (1091):
1. 业夯|仌仇囝|仐丐炎|屮呈佘|仐杰屮叏 (X43-10–24)
2. (295.084| 252.236.309|244.125.347|261.196.246|247.112.261.144)
3. <p.ra ō₂.ur.hó s.aū.oi l.bu.qu t.ge₂.l.un>
4. para ogurgo sawoi Elbuqu tegelün
5. 'While resting at the Ten Ogurs Elbuqu died (went up)'.

The different writing of the name Ugur or Ogur seems to be quite normal. There does exist a large literature on the Ogur tribal name which was originally Ogur and later became Ugur. I will come back to the absence of marking the guttural stops and fricatives. <hó> is a locative suffix, occurring at the end of nominals.

There exists an expression which occurs many times (D12-13, 25-25, X7-21, 12-29, 16-7): <mo.d/t p.ar.TWO> 丙仺/仐业本圣 (021. 254/247. 295.123134) '(he had) two wives'. What may be the word *par* here? According to WJ84-85 *mod par* seems to be the plural of *moku* 丙几 (021178), and *ku* is 'person'. According to WJ *par* is an irregular plural form of *ku*, a cognate to Mongolian *(h)aran/(h)arad* 'people'. This type of irregular plural form exists e.g. Russian *čelovek*, plural *ljudi* 'man, person, human being'. But one would expect in this case a normal plural, like **parad* as in *mod*. I suggest here the function of a count word or classifier, as it is frequent in Chinese and other East Asian languages. The phrase *mot par TWO* can be translated as '(he had) as to their number, two wives'. If this hypothesis can be proven, **para* originally would have been a count word. Later it became the count word par excellence, i.e. 'ten'. In Mongolian it acquired the suffix *-bAn*: *par+ban > harban > arban*. Here I would remark that many of the numerals end in *-r* (see also Janhunen 2012, p. 13): **ǰür* 'two', **gur* 'three', **dür* 'four', **jirs* 'nine', **par* 'ten'. *-r* is a residual form of an earlier suffix (see also Mo *qoyar*). Thus one would expect for 'ten': **par**. The ordinal form is TEN.d.er (D2-9).

Eleven 圣 / 圣 (240/422) + 乇/乇 (026,027)

Eleven is TEN+ONE (X2-3, EX4-9). Here we learn only the structure of the Khitan numeral for eleven, as Mo *arban nigen* 'eleven'. A few other numerals with similar structure are: twenty-three 丁包 (002.166) (K124), sixty-seven 乂/炎 (266/267) + 屌/屌 (141/441) (L26+34) and so on.

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[17] On the Ten Turkic Tribes see WF pp. 86, 471.

Twenty 丁 (002)

Kane (K35) quotes Ji Shi (1986) who noted a reference to an early Khitan leader, named *Zhou-li Hun-a* 晝里昏阿. About this person the *Qidanguozhi* tells us that he kept twenty sheep/goats[18], every day he ate nineteen, only leaving one, the next day again there were twenty, this continued day after day, every day was like this. Ji shi suggested that *zhou* 晝 might be a mistake for *hua* 畫, which would be reminiscent of Mo *qori, qorin* 'twenty' and *hun-a* to *qoni(n)* 'sheep'. May be we have not a mistake in the rendering of the first syllable of the Khitan name. *zhou* 晝 goes back to a LMCh *triw* and an EMCh *truw*. If used for transcription the initial represented a foreign affricate /č/ or /ǰ/. This means that we have in case of *zhouli* 晝里 the transcripition of a Khitan form *jüri*. Since 'two' is in Khitan **jür**, one would expect **jüri** for the Khitan word 'twenty' or perhaps **jürin**. This ending would be the same as in Mo *tabin* 'fifty'. The final *-n* may have been lost in Khitan.

We find the following text: <da.ha.ar o.ju. DAY (292).u> 'the coffin was closed [on the] day (292)', (K155), where 乎 (292) has to be a numeral, hitherto not identified. Theoretically it may also be something as the "middle", "full moon" etc., but this is unlikely, There are three graphs following each other which have neither known reading nor meaning in the List 水, 乎, 夵 (291, 292, 293). We see that the first graph occurs also as the upper part of the second and the third. It is possible that all three denote numerals, may be, but not sure, 21, 22, 23 or perhaps as in Old Turkic they may also denote 11, 12, 13, that is the first, the second, the third of the second decade. At least (292) has to be a numeral which may occur as the number of a day in a month.

Thirty ヒ (211)

The Mongolic word for 'thirty' is known from the Chinese geographical work *Yuan he jun xian tou zhi,* compiled in 813–814, where it is the local name of a mountain 30 *li* away from the centre. It has been dealt with by Pelliot (1929, pp. 250–252) and by Ligeti (1970, p. 290). It appears in the form *he zhen* 纥 真 EMCh *γət*, LMCh *xɦət* and EMCh *tɕin*, LMCh *tʂin*. Pelliot suggested as possible reconstructions **γutčin*, **γurčin* or with assimilation **γučin*. Ligeti reconstructed **guččin* or *gučin*. I would prefer **gurčin.* The final Chinese *-t* is reflected in this time in the Uygur and Tibetan transcriptions by *-r* (see Csongor 1952, 1954; Tokio Takata 1988). In the given case, the Chinese *he* is usually transcribing the second part of the tribal name Uygur as mentioned by Pelliot (1929, p. 252). It is possible that Mongolic **gurčin* goes back to an earlier **gurtin*. The form of the word for '30' can be reconstructed in Manchu-Tungus as **gutin* (see Laufer 1921; Miller 1975; Poppe 1979; Cincius 1975, p. 175, Doerfer 1985; Janhunen 1993; Hölzl 2015), while the Jurchen form is **gušin* (Kane 1989, p. 364), these forms are loans from early Mongolic. Though the Chinese data are

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[18] In the Chinese text there is *yang* 羊 'sheep'. Ch *hun* 昏, MCh *xun* may be connected with Mo *qoni(n)*, but the final *-a* has no explanation yet.

about hundred years older than the period the Khitans occupied their new territory in North China, it is possible that the Mongolic name is of Tuyühun origin, it gives some support to suppose that the Khitan word for '30' was also something like *gurčin.

The decades over thirty seem to be simple logographs: forty 了 (145), fifty 乙 (155), sixty 圣 (266), 圣 (267) 圣 (424), seventy 圣 (300), 圣 (301), eighty 𝄞 (449). The word for ninety has not yet been found in the texts. It is highly probable that dotted forms for the decades will also crop up.

Hundred

The Khitan word for 'hundred' is:

jaw 乑 (015) <jau>, 'hundred' (K2, 37, 102, D5-4, 19-8, 38-11) <dʒaw> (C107) Liaoshi *zhao* 朮 | MMo *jawun*, Mo *jagun*, Da *jau,* HN *jaun* DaE *jau.* ‖ All Mongolian languages and dialects have a final *-n* with the exception of Dagur and Khitan. The expression <ku.BORN.i jau.en eu.úr> is according to WJ (p. 204) a proverb-like expression, equivalent to the Chinese expression *rensheng baisui* 'human life [is equal to] a hundred years'. In this case *-en* is not the genitive suffix, but represents a final *-n*.

Thousand 圣 (207)

Chinggeltei (2002a, p. 107) and Kane (K122) suggest that the Khitan word be read as 'thousand' miŋ:

miŋ 癸 <miŋ> (207), 癸乑穴公 (207.011.332.254) <miŋ.an nai:d> 'leaders of a thousand' (K60, 122, D40-14, 46-9, X47-4), 爻癸卂为沙 (187. 207.122.140.336) <miŋ ai.en gi₂> '?' (D40-1/22), 癸午 (207.195) <miŋ. CHIEF> 'the leader of a thousand' (D46-9/12), <miŋ> (C107) | Mo *minggan*, Da *miange*, HN *miŋgan*, DaE *m^vaŋgə* | ← OT *miŋ, biŋ.*

Ten thousand 圣 (187), also 'a great amount' and similar:

Tum 圣 (312), 圣 (406) <tum> 'ten thousand' (K72, 120), 圣丹 (134.312) <Two-time> 'twenty thousand, two "ten thousand"'' (*Renxian* 49) | Mo *tümen*, Da *tume*. HN *tümen*, DaE *tum* ‖ Only Da has the word without final *-n*, the graph occurs also in names such as **Tümür.**

tümür 丹夾 (312.097) <tum.úr> 'iron' (D40-13, 43-1), 爻夾夾 (312.131.097) <tum.u.úr> (X47-9), 丹尺夾 (312.372.097) <tum.ū.úr> (X17-13, 38-36), in the name Tümür Tunga 丹夾令屮为 (312.097.247.357.189) <tumu.úr t.úng.a> in the *Yelü Renxian* inscr. (WJ119)| Mo *temür*, HN *temür*, Da 'iron' is **kasu* > Da *kasoo*, DaE *kasə:.* On the latter see Ligeti (1950–1951).

As it has been stated by most scholars, latest by Janhunen (2012, pp. 12–13), the Khitan and the Mongol numerical systems are genetically related. Only in the high numbers as thousand and ten thousand do we find loanwords.

Abbreviations

BaoD = Dahejia (or Jishishan) Baoan (after HN)
BaoŃ = Ńantoq subdialect of Tongren Baoan (after HN)
C = Chinggeltei (2002a)
Ch = Chinese
D = *Xiao Dilu* inscription in WJ
Da = Dagur according to Martin (1961)
DaE = Dagur according to Enkhbat (in HN)
DaTC = Dagur after Tumurdej – Cybenov (2014)
Dgx = Dongxian (after HN)
EMCh = Early Middle Chinese according to Pulleyblank (1991)
EX = *Eulogy for Empress Xuanyi*, ed K pp. 214 – 223
EYu = Eastern Yugur
Gu = The *Gu Yelü shi mingshi* Inscription AD 1115 (in K)
HN = Nugteren (2011)
K = Kane (2009)
Kgj = Kangjia (after HN)
Kh = Khalkha Mongol (Luvsandendev 1957)
KLS = Khitan Large Script
KSS = Khitan Small Script
L = The *Langjun* inscription in K
L2 = The *Langjun* inscription according to Sh2
List = List of KSS graphs as in WJ
LMCh = Late Middle Chinese according to Pulleyblank (1991)
Mgr = DeSmedt – Mostaert (1933)
MgrH = Huzhu dialect of Monguor (after HN)
MgrM = Minhe dialect of Monguor (after HN)
Mo = Literary Mongolian according to Lessing (1960)
PKh = Proto Khitan
Rykin = Rykin (2014)
QG = The Qinghai and Gansu Mongol languages according to HN
SH = *The Secret History of the Mongols* (cited after Rachewiltz 2004)
Sh = Shimunek (2011)
Sh2 = Shimunek (2014)
SJL = Sun – Jing – Li (2010)
Tib = Tibetan
TMR = *Tibeto-Mongolica Revisited* (Róna-Tas 2014)
WF = Wittfogel – Fêng (1949)
WJ = Wu – Janhunen (2010)
WOT = Róna-Tas – Berta (2011)
X = The *Yelü Xiangwen* inscription in WJ
Y = The *Yelü Dilie* inscription in K

References

Aisin, Gioro (2012): Reconstruction of Phonetic Values of Khitan Small Scripts and Concerning Problems. *Ritsumeikan bungaku* No. 7, pp. 1–28.
= http://www.ritsumei.ac.jp/acd/cg/lt/rb/627/627PDF/yosimo to.pdf

Chen Naixiong (1992): Qidan xiaozi shuci yingzi zi tan [On the 'shadow graphs' in Khitan numerals]. *Neimenggu daxue xuebao* No. 3, pp. 1–8.

Chinggeltei (1997): Qidanyu shuci ji Qidan xiao zi de yanjiu [Khitan numerals and graph combinations in the Khitan small script]. *Neimenggu daxue xuebao* No. 4, pp. 1–9.

Chinggeltei (2002a): On the Problems of Reading Kitan Characters. *AOH* 55, pp. 99–114.

Chinggeltei (2002b): *Qidan xiao zi shidu wenti* [Problems of the decipherment of the Khitan Small Script]. Tokyo.

Cincius, V. I. (ed.) (1975): *Sravnitel'nyj slovar' tunguso–man'čžurskih jazykov*. Vols 1–2. Leningrad.

Csongor, B. (1952): Chinese in the Uighur Script of the T'ang-Period. *AOH* Vol. 2, pp. 73–121.

Csongor, B. (1954) Some More Chinese Glosses in Uighur Script. *AOH* Vol. 4, pp. 251–257.

Doerfer, G. (1985): *Mongolo-Tungusica* (Tungusica 3). Wiesbaden.

Enkhbat (1984): *Daγur kelen-ü üges* [Dagur–Chinese Dictionary]. Kökekota.

Gamkrelidze, Th. V.–Ivanov, V. V. (1995): *Indo-European and the Indo-Europeans*. Part I. *The Text*. Part II. *Bibliography, Indexes*. Berlin–New York (Trends in Linguistics. Studies and Monographs 80).

Hölzl, A. (2015): New Evidence on Para-Mongolic Numerals (forthcoming).

Jacques, G. (2010): Review on Kane 2009. *Diachronica* 27, pp. 157–165.

Janhunen, J. (1993): The Teens in Jurchen and Manchu Revisited. *Festschrift für Raija Bartens. MSFOu* 215, pp. 169–184.

Janhunen, J. (2012): Khitan: Understanding the Language Behind the Script. *SCRIPTA* 4, pp. 1–36.

Ji Ruhe–Wu Yingzhe (2009): Qidan xiao zi yuanzi zixing guifan yu yunzi zongbiao (The standardisation of the Khitan Small Script character forms and general list of the characters). *Nei Menggu Daxue Xuebao* (*Zhexue Shehui Kexueban*) No. 3, pp. 127–132.

Ji Shi (1986): Guanyu Qidan shuci duyin wenti [The question of the pronunciation of Khitan numerals]. *Naimenggu daxue xuebao* No. 4, pp. 89–100.

Kałużyński, St. (1969–1970): Dagurisches Wörterverzeichnis. Nach F. V. Muromskis handschriftlichen Sprachaufzeichnungen. *Rocznik Orientalistyczny* Vol. XXXIII, No. 1, pp. 103–140, Vol. XIII, No. 2, pp. 109–143.

Kane, D. (1989): *The Sino–Jurchen Vocabulary of the Bureau of Interpreters*. Bloomington.

Kane, D. (2009): *The Kitan Language and Script*. Leiden–Boston.

Kara, G. (1997) Numerals in Kitan. *Lunwen yu Jinianwen, Jinnian Qing'ertai jiaoshou congjiao 50 jou bian wenji* [not seen].

Laufer, B. (1921): Jurči and Mongol Numerals. *Kőrösi Csoma Archivum* Vol. 1, pp. 112–115.

Lessing, F. D. (ed.) (1960): *Mongolian–English Dictionary*. Berkeley–Los Angeles.

Ligeti, L. (1950–1951): Mots de civilisation de haute Asie en transcription chinoise. *AOH* Vol. 1, pp. 141–185.

Ligeti, L. (1970): Le tabgatch, un dialecte de la langue sien-pi. In: Ligeti, L. (ed.): *Mongolian Studies*. Budapest, pp. 265–308.

Liu Fengzhu (1988): Qidan dai zhong 'liu' de jiedu licheng [The process of the decipherment of the graph for 'six' in the Khitan large script]. *Liao Jin Qidan Nuzhenshi yanjiu* 2, pp. 71–72.

Luvsandendev, A. (1957): *Mongol'sko–russkij slovar'*. Moskva.

Martin, S. E. (1961): *Dagur Mongolian Grammar, Texts and Lexicon*. Bloomington.

Miller, R. A. (1975): Notes on the Ӡürčen Numerals for the Teens. *UAJb* Vol. 47, pp. 146–153.

Nugteren, H. (2011): *Mongolic Phonology and the Qinghai-Gansu Languages*. Utrecht.

Pelliot, P. (1929): Neuf notes des questions d'Asie Centrale. *T'oung Pao* Vol. 26, pp. 201–265.

Poppe, N. (1955): *Introduction to Mongolian Comparative Studies*. Helsinki (MSFOu 110).

Poppe, N. (1964): *Grammar of Written Mongolian*. Wiesbaden.

Poppe, N. (1979): Jurchen and Mongolian. In: Schwartz, G. H. (ed.): *Studies in Mongolia, Proceedings of the First North American Conference on Mongolian*. Washington, pp. 30–37.

Pulleyblank, E. G. (ed.) (1991): *Lexicon of Reconstructed Pronunciation in Early Middle Chinese, Late Middle Chinese and Early Mandarin*. Vancouver.

Rachewiltz, I. de (1974): Some Remarks on the Khitan Clan Name *Yeh-lü ~ i-la*. *Papers on Far Eastern History* 9, pp. 187–204.

Rachewiltz, I. de (2004): *The Secret History of the Mongols. A Mongolian Epic Chronicle of the Thirteenth Century*. Vols 1–2. Leiden – Boston.

Róna-Tas, A. (2014): *Tibeto-Mongolica Revisited, with a New Introduction and Selected Papers on Tibetan Linguistics*. Leiden–Boston.

Róna-Tas, A. – Berta, Á. (2011): *West Old Turkic. Turkic Loanwords in Hungarian*. Vols 1–2. Wiesbaden.

Rykin, P. (2014): Middle Mongol Affricates and the Reconstruction of (Pre-)Proto-Mongolic Affricates. *AOH* Vol. 67, pp. 425–452.

Shimunek, A. (2011): Review of Kane's The Kitan Language and Scripts, 2009. *AOH* Vol. 64, pp. 101–107.

Shimunek, A. (2014): A New Decipherment and Linguistic Reconstruction of the Kitan–Chinese Bilingual Inscription of 1134 A.D. *AOH* Vol. 67, pp. 97–118.

Smedt, A. de – Mostaert, A. (1933): *La dialecte Monguor parlé par les Mongols du Kansou Occidentale, IIIᵉ partie: Dictionnaire monguor-français*. Pei'ping.

Sun Bojun – Jing Yongshi – Li Yang (2010): Preliminary Proposal for Encoding Khitan Characters in 1UCS, ISO/IEC JTC/SC2/WG2.

Takeuchi, Yasunori (2015): Direction Terms in Khitan. *Acta Linguistica Petropolitana: Transactions of the Institute for Linguistic Studies* Vol. XI, Part 3, pp. 453–464.

Tokio Takata (1988): *A Historical Study of the Chinese Language Based on Dunhuang Materials*. The Hexi Dialect of the Ninth and Tenth Centuries. Tokyo (in Japanese).

Toyoda Gorō (1992): Guanyu Qidan xiaozi de fangwei he yixie shuci [On the directions and some numerals in the Khitan small script] In: Liu Fengzhu – Lu Xun – Hua Zugen (eds): *Zhungguo minzushi yanjiu* Vol. 4, Beijing.

Toyoda Gorō (1998): Qidan xiaozi suo baoliu xialai de zhonggu mengguyu zhi henji – yongfu, chunqiu, shuci [Traces of Middle Mongolian preserved in the Khitan Small Script: "tomb", "spring/autumn", numerals]. *Ri-Zhong lianhe wenzi wenhua yantaohui fabiao lunwen ji*. Kyoto, p. 151.

Tumurdej, G. – Cybenov, B. D. (2014): *Kratkij dagursko–russkij slovar'*. Ulan Udė.

Vovin, A. (2007): Once Again on the Tabgač Language. *Mongolian Studies* 29, pp. 191–206.

Vovin, A. (2011): A Modest Proposal on the Decipherment of the Khitan–Jurchen Bilingual Text of the 1134 (the Langjun) Inscription. In: Knüppel, M. – Tangerloo, van A. (eds): *Life and Afterlife & Apocalyptic Concepts in the Altaic World*. Wiesbaden, pp. 123–130.

Vovin, A. (2013): Old Turkic Loanwords in the Khitan Language. In: Hatire Şirin User – Bülent Gül (eds): *Yalım Kaya Bitigi. Osman Fikri Sertkaya Armağanı*. Ankara, pp. 621–625.

Wittfogel, K. – Fêng Chia-shêng (1949): *History of Chinese Society: Liao (907–1125)*. Philadelphia.

Wu Yingzhe (2005): Qidan xiaozi 'xing' de yufa fanchou chutan (Preliminary research on the gram-
        matical category of 'gender' in the Khitan Small Script). *Neimenggu daxue xuebao* (*Zhexue
        Shehui Kexueban*) Vol. 37, No. 3, pp. 25–28.
Wu Yingzhe – Janhunen, J. (2010): *New Materials on the Khitan Small Script.* A Critical Edition of
        Xiao Dilu and *Yelü Xiangwen*. Folkestone.

(to be continued)