
An Analysis on Numeral Words in Mongolian and Korean Languages

Dao Runa

School of Mongolian Studies, Inner Mongolia University, Hohhot, China

Email address:

ndmxy2015@163.com

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Abstract: This article mainly conducts a comparative study of numeral forms in Mongolian and Korean through the observation of the numeral forms in mediaeval Mongolian literature, such as *The Secret History of the Mongols* and mediaeval Korean literature. The aim is to explore the homology between Mongolian and Korean numerals. Altaic numerals do not have an obvious phonetic correspondence as indo-European numerals do. Due to the nature of the numeral itself, a comparative study of numerals is not like a comparative study of grammatical elements. Strictly speaking, the comparative study of numerals belongs to the lexical category. In the whole numeral system, it is equally important to analyze the nature of a single numeral and observe other numerals in two languages. The character of a single numeral refers to the combination of root and affix, while the relation between numeral and numeral refers to the relation between one digit numeral word and the corresponding ten digit numeral word. Based on this point of view, the paper mainly analyzes the properties of the numeral itself and attempts to construct the root form of the numerals by combining the observation of the same root words. On this basis, the forms of numeral “one” and “two” in Mongolian and Korean are discussed.

Keywords: Mongolian, Korean, Numerals, Homology, Comparison

1. Introduction

Numerals in Altaic languages do not have obvious phonetic correspondence as those in Indo-European languages, and this has long been criticized by scholars who doubt or disapprove the Altaic language family. However, there are still some attempts to explore the origin of the relationship between numerals in the Altaic language family, but so far there is no convincing objective study of the relationship between numerals. There are few studies on the homology between Mongolian and Korean numeral words. For example, Hasbater (2002) tries to prove the numeral word ‘one’ in Mongolian and Korean from the perspective of lexicology. Recent studies include *The Qidan language ordinal numerals (2016)* and *The Comparative study of Numeral systems of Mongolian and Korean (2006)* by Lee Seong-Gyu. In Lee Seong-Gyu (2006), he analyses the whole numeral system of Mongolian and Korean, including numerals, the types, numeral affixes and so on. In Lee Seong-Gyu (2016), he tried to prove the homology of the affixes of ordinal numbers in

Mongolian, Khitan and Korean languages. Without exception, the superficial observation of Mongolian and Korean numerals does not reveal how many associations or phonetic correspondences exist between them. On the one hand, this phenomenon is a great obstacle to proving the relationship between Mongolian and Korean, but on the other hand, it allows us to examine the numerals of both languages more carefully to find details and find convincing facts. While there are considerable obstacles in establishing a clear connection between Mongolian and Korean, nevertheless, a series of convincing facts can be established by taking a closer look at the various details of the two languages. If research is only limited in scope to solely examining Mongolian, even if all its numerals are a concrete manifestation, it also tends to have several forms and phenomena that cannot be easily explained. Perhaps these forms indicate an ancient language and an earlier stage prior to the formation of Mongolian, thus a comparative study of the relationship between different forms of the languages is necessary.

Due to the character of the numerals themselves, they are dissimilar to grammatical elements contained in a

comparative study. Strictly speaking, the comparative study of numerals belongs to the comparative study of vocabularies. It is thus necessary to consider the nature of individual numerals and pay attention to the relationship between numerals and numerals in the whole numeral system. The individual number in question is characterized by the roots and affixes of exponential words, and the relation between numeral and numeral refers to the relation between single digits and the corresponding ten digits. Based on this view, this paper mainly discusses the form of the numeral “one” and “two” in Mongolian and Korean. Such a comparative study aims to discover the nature of the Mongolian numeral system and the relationship between Mongolian and Korean numerals, and also gives a reasonable explanation on the exceptions of Mongolian numeral as well.

2. The Numeral Word “One”

In modern Mongolian and Korean, the form of the numeral “one” is “nige” and “hana” respectively. “nige” appeared as “nigen” in the middle Mongolian. It seems that the Mongolian and Korean numerals are not related, let alone in phonetic correspondence. Therefore, in order to better explore the relationship between the form of the numeral “one” of Mongolian and Korean, Analyzing the relationship between the single digit and ten digits in Mongolian may provide some clues.

Lee Seong-Gyu compared the Mongolian and Korean numerals from 1 to 10 with their 10 multiples of the first consonant. He argues that Most of the single digits in Mongolian are consistent with their 10 multiples of the initial consonant, and there are only 3, 6, 7, 8, 9 numerals in Korean have the same initial consonant as the corresponding ten digits [1]. Here is the corresponding situation between the single digit and the ten digits of Mongolian language, such as following table:

Table 1. Single digit and the ten digits numerals in Mongolian.

Single digits	Word meaning	Ten digits	Word meaning
nige	one	arba	ten
qoyar	two	qori	twenty
γurba	three	γučī	thirty
dörbe	four	düči	forty
tabu	five	tabi	fifty
jiryūya	six	jira	sixty
dolūya	seven	dala	seventy
naima	eight	naya	eighty
yisu	nine	yere	ninety

It is not difficult to see from above table that the single digit in the Mongolian language and the corresponding ten digits almost have the same root, but the form “nige” represents one and “arba” represents ten do not possess the same root. As a result, there is a dissonant vacancy in the single-digit and ten-digit system of Mongolian language. This exception can lead us to re-examine the Mongolian numeral for “one”. In medieval Mongolian literature, the numeral ten appeared in the form of “harban”, so it can be speculated that

there are some single-digit numeral that has the same root or the same root element as “harban” in Mongolian.

In the Middle Mongolian, the root of “harban” (ten) is supposed to be *har. Jäyüčidai jirannige argues that Mongolian “harban” is combination of root ‘yar (hand) and ‘ba’ which means “something” [2]. In fact, “ürü’ele, üre’ele, üre’elsun” and other forms appeared in the middle Mongolian. According to karudi, in addition to “nigen” in the middle ages, there are “ürü’ele, üre’ele” and other forms of the words for numeral “one” [3]. These forms also exist in the modern Mongolian language. For instance, “ürü’ele, üre’ele, üre’elsün” and other forms appeared quite frequently in the medieval Mongolian literature. These words appeared several times in *The Secret History of Mongols*, mainly used when referring to “one of the two things”. Its earlier form should be *hürügele, *hüregele, *hüregelsün. Considering the rules of Mongolian phonological change *hürügele should be changed by *hüregele, and *hüregelsün's suffix “-lsün” is a relatively common derivation in the Middle Mongolian.

The form of “hol” in Modern Korean means “alone”, and the word appears in the Hunminjeongeum literature of the middle ages as the form of “hool” or “hool”. In other words, the word “hol” is changed from a two-syllable word to a single-syllable word. Their ancient form can be reconstructed as *hopol (>*hoβol>*howol>hool>hool>hol). In this way, it is not difficult to find that the Mongolian *hüregele has a longer vowel syllable ‘üge’ or ‘ege’ than the Korean *hopol. Б. Сумъяабаатар pointed out that the Korean words corresponding to the Mongolian long vowel syllables are short syllables preserving the part of the word root. Therefore, it is concluded that the Mongolian syllables such as “-aya, -ege -...” are formed relatively late, and some examples are selected from his, as shown in table below [4]:

Table 2. Cognate words in Mongolian and Korean.

Mongolian	korean	meaning
imay-a	yəm-	goat
ilaγ-a	phari	flies
qatayū	kud-	hard
toyori-	tol-	to turn
jujayan	tutən	thick
jīyaqan	cakum	small
barayun	parun	west
sibayun	sae	bird

Although some examples in above table are not exhaustive, they are generally convincing. In fact, compare with other Altaic languages, the long vowel syllables in Mongolian are mostly short syllables in other languages. If one considers the corresponding property of the aforementioned long vowel syllable, in Mongolian “-ge” of *hüregele is the long vowel syllable, while “-e” should be an affix or a vowel with a stable syllable structure, then the original form of Korean “hol<*hopol” should correspond to *hüre’ in Mongolian. In this way, it can be speculated that the Mongolian “*har” is related to the Korean “hol” and its original form *hopol and Mongolian form *hurel.

In fifteenth Century, the numeral "one" in Korean appeared

in the form of “hana”. The root of the word can be regarded as “hana” for a while, and some of the words in later medieval Korean end in “h”. In Korean, the ancient form of “one” in “*鷄林類事*” is “河屯”. Kang girun drew a comparison between “河屯”(katun) and “katana” in “*二中曆*” with the form of “gargan” in Manchu language, points out that the form of the numeral “one” in Korean Language should be *katun [5]. However, Kang girun did not provide a further explanation of the relationship between “rg” and “t”, thus making the comparison less reliable.

Ki Moon Lee argues that in 12th century literature *鷄林類事*, the form of “one” is “kodon”, and the pronunciation of “o” should be the round lip, which is weaker than /ɔ/[6]. So the Korean word for “one” is *kodon. In the Middle Korean *kodon's “o” vowel had become “a”. As for the affix “-don”, if an alternation of “d” and “n” is considered, it can be speculated that “-don” later became “-nan”, and the “-n” at the tail was fall off. That is to say, the evolution of *kodon>*kaldan>*hannan>hana>hana can be observed.

In modern Korean, there is the word “haru” for “one day”. “haru” appears in medieval literature inform of “hara”. Ki Moon Lee considered that the form of “two days, three days, four days, ten days” in Korean was “itūl, saal, naal, yərhūl” so he thought that the original form of “hara” was “hara”, and further speculated that *hara originates from *hadal, and the root form was *had [7]. That is to say, the root of “Kodon” is “kod> * had”.

In modern Korean, the word “hot” also means “unpaired, single”. The ancient form of the word “hot” can be traced back to the aforementioned *kodon, through its form and meaning. It is related to the change of consonants and the drop of consonants at the end of the word. In modern Korean, the word “hot” is not so active. In most cases, it is combined with several specific words to form a fixed collocation. What's more, in the process of the change from * kodon to “hot” in modern Korean, the changes in the Middle Ages are unknown. This fact further illustrates that “hot” is a residual form of the root of * kodon, unlike “hana”, which was the result of * kodon's subsequent active development and change.

A form of “qad” appears in *The Secret History of Mongols*, qad's translation is “alone”. Yeke Mingyadai irinčin notes the word as “yanča” [8]. The word “qad” rarely appears, and a second example is not found in *The Secret History of Mongols*. In the annotation of *The Secret History of Mongols*, the words “bei” had been used to explain the meaning of “qad” as “body” [9]. However, such an explanation is obviously different from the side translation.

Considering the form and meaning of Mongolian “qad”, the “hana” of Korean and its original form *kodon reveals the possibility of homology relationship.

In Mongolian language “γayča” means “alone”. It appears in the medieval literature and has been used in modern Mongolian as well, sometimes in the form of “yanča”. Kang girun proposes that there is a possibility to the evolution of yanča>hanja>hanya>hana between Mongolian and Korean [10]. There is also some other examples in the middle Mongolian, for example: the word “yooni” often used in

conjunction with “beye (body)” to mean “celibacy”.

In Korean, the word “honja”, which means “alone, single”, appeared in the form of “hounja, hūnja, haoza, hlonza” or the more primitive form ‘hβazain’ in medieval literature.

Hasbater made a comparison between the Mongolian “yoni” and the Korean “hana” and pointed out that the original form of “hana” was *hopun, while the original form of “honja” was *hopunta, and it is a cognate word with the Mongolian word yoni<*qabu, yanča<qabuta [11]. As mentioned in section 2.2, the original form of “hana” is not *hopun, but *kodon. In addition, it can be speculated that the original form of “yooni” is *yaoni, which should be the cognate word with “yanča”. The original form of *yaoni can be speculated as *yaboni. Lee SeongGyu proposed the “yanča” as Mongolian numerals, and thought that it was from the modern Korean word “honja” which has the same function [12]. As a result, the “-a” and the “-j” of the “honja” should both serve as a kind of numeral affix. The “i” in *yaoni the Mongolian, as mentioned above, may be a noun derivative. That is to say, there is a possibility of homology between the Mongolian language *yabon>(*yaon>*yoon) and Korean *hopon>(*hoon>hlon>hon).

3. The Numeral Word “Two”

The numeral for “two” in modern Mongolian is “qoyar”. There has been a lot of research on the root of “qoyar”, and there are many cognates of “qoyar” in Mongolian, such as “qori (twenty)”, “qoyurundu (between)”, “qoos (double)”, “qošiyad (each two)” and so on. From these cognate words, the root of the numeral for “two” can be inferred as *qo. The word “two” in Korean is “dul”, so it is obvious that there is no correspondence between them. And just to get a little bit further, let's also look at the correspondence between single digits and ten digits in Korean. Such as following table:

Table 3. Single digit and the ten digits in Korean.

Single digits	Word meaning	Ten digits	Word meaning
hana	one	yəl	ten
dul	two	sumul	twenty
ses	three	serun	thirty
nes	four	mahun	forty
tasəs	five	sün	fifty
yəsəs	six	yesün	sixty
ilkop	seven	nilhun	seventy
yəderp	eight	yəduun	eighty
ahop	nine	ahun	ninety

Can be found from above table that the Mongolian numerals “qoyar” and “qori” shared a common root element, but “dul” and “sumul” in Korean is not a common root element. In medieval literature “sumul” appeared in the form of “sumu”, and the root element also have “s” consonants. If infer from “sumul”, is there a single digit form of * s + vowels related to the numeral two?

In fifteenth Century, the word “səi” was used in Korean, which means “between two things, in the middle”. And Mongolian also has the word “qoyurundu”, which is homologous to “qoyar”, meaning “between two things”. First,

the “-du” of “qoyurundu” in Mongolian language should be a case affix. In addition, the Korean word “de” in “kaunde” for “between” is also a noun for location, but the word always depends on its preceding modifier. The earlier form of “-de” is “daj”. As for the word “de” G. J. Ramstedt mentioned that there is no such aspect case as “-da/ta,-de/-te,-dü/tü-” in Korean, but it is found that there is a noun “taj (daj)” denoting “place, region”. In addition, it is suggested that the original form of “a” in “daj” should be * - u -, * - o -, or * - a-[13].

Then the fact that the early form of the remaining “qoyurundu” should be *qoyura can be speculated. Incidentally, there is also a Mongolian word “jajura” with the same meaning, whose root should be “jai” means “distance”, and the medieval Korean word for distance is “sazi”. The “-a” in *qoyura should be a case affix, and the “-i” at the end of the “səri” in Korean should be a noun affix, so that the *qoyur in Mongolian corresponds to the “səri” in Korean, and the corresponding relationship between the Mongolian long vowel syllables and the Korean short syllables has been mentioned before, and will not be repeated here. The Mongolian *qoyur and Korean *sər should be in correspondence, that is to say, from the medieval Korean “səri” the root elements related to the meaning of “two” can be found. Kang girun believes that the Korean “sumul” is composed of “t ū r (< * dubur ‘2’)-* mil (> miš ‘ten’ Turkish) > s ū r - mil > simil” [14]. Although it is uncertain whether the root of “sumul” is related to the root of *dubur, it is certain that there must be ‘s’ consonant in the root element of “sumul”.

The correspondence between the root elements *qo and *su (?) of “sumul” and the correspondence between *qoyura and *səri in Mongolian and Korean can be used as evidence for the correspondence of “q” and “s” in Mongolian and Korean. An alternating correspondence between q > h and “s” in Mongolian dialects is tenable, so it is possible to further infer the correspondence between the elements of the meaning of the Mongolian and Korean “two”.

Regarding the origin of “qoyar” in Mongolian, G. J. Ramstedt believed that the earlier form of “qoyar” was *qojir, while N. Poppe and other scholars believed that the primitive form of “qoyar” originated from *qoyar. Д. ТӨМӨТӨГӨО pointed out that the Mongolian word “qoyar” is made up of root *qo and *jir. He also suggested that the persistence of “qoyir” in Mongolian proves his view, while the Mongolian written form “qoyar” is formed by the assimilation of the vowels of the modified words, and the root of *qo may originate from the original numeral “qos (double)” [15]. The “-r” of “-yar” should be an affix.

In Korean, the form of “three” is “ses”, while the form of the numeral “six” is “yəsəs”. Its structure should be “y+səs”. The basic form of the Korean numeral “three” is “ses”, but there are other forms, such as “sahuil (three days)”, “səkdal (three months)”. Therefore, the “səs” of “yəsəs” should mean “three”. Then it can be assumed that “yə” means “two, two times”. So the Korean “yə” of “yəsəs” and “yar” of “qoyar” may be homologous. There is another example that

can further prove this. The numeral 8 in Korean takes the form of “yədərb”. If the structure is supposed to be “yə+dərb”, the form of “-dərb” is similar to that of the Mongolian numeral 4 “dörbe”, so the “yə” in front of it is naturally the same root as the “yə” of “yəsəs”, meaning “two, twice of”.

According to previous studies, the variant of “yar” of “qoyar” in Mongolian is “yir”, and the more primitive form of “yir” is *yir* or *jir. In Mongolian, “-kir-, -jil-” “two elements of “ikir-e (twin)” and “ijil (same, pair)” should be one of the earlier forms of “yir”.

The Mongolian numeral “eight” is in the form of “naima”, which appeared in the form of “nayiman” in the Middle Ages, and the “-yi-” element here may also be related to the meaning of “two”. The more primitive forms of “naima” and “naiman”, which denote the numeral ‘eight’, in modern Mongolian written books and in medieval Mongolian, should be *nayiman or *najiman. They have undergone the evolution of “*nayiman/*najiman>nayiman>naiman>naima”. “-m” and “-an” in *nayiman should be affixes, and *nayı is the root part. The root form of the Mongolian numeral “four” is *dü, and the corresponding Korean form is *nə. It can be inferred that the root *nayı’s *na of the Mongolian numeral “eight” is related to the root of the Korean numeral “four”. That is to say, it is possible for the Mongolian “ya” or “yi”, “*yi, ji” correspond to the elements “yə” in Korean. That is to say, if it is inferred that the Mongolian “qoyar” is composed of “qo + ya + r”, the elements which may be homologous to *qo and *ya may exist in the form of *sə and *yə in Korean.

In the middle ages, in addition to “qoyar”, the word “jirin” also means “two”. From the Mongolian language, there are some words with the same root as “jirin”, such as, “jichi” (besides, second), “jiryuya” (six), “jirmüsün” (pregnant). The root of the Mongolian word “jirin”, which represents two, can be speculated as *ji, and further construct a more primitive *di form.

There is another word in Mongolian, “jüirei”, which means “double, pair”. There is also a word “jüir”, which means “a pair”. “jüirei” and “jüir” should be the same root word. “ei” of “jüirei” is an affix. The original form of “jüir” should be *düir, and the primitive form may be *dübir. That is to say, it has undergone a process of evolution like *dübir>*dügir>*düyir>*düir>*jüir.

The form of “two” in modern Korean is “dul” or “du”. In the 15th century, appeared in the form of “dulh”, while in the 12th century 鷄林類事, the numeral “two” was marked with the word “途孛”. The pronunciation of “途孛” is *dupul. According to the historical changes in Korean, the more ancient form should be *dupul.

Б. Сумьяабаатар thinks that “dul (du)” in Korean has nothing to do with “qoyar” in Mongolian, but has something to do with “jir, jirin”. The original form of “ji” should be “d+i”, and takes the ajiry-a<adiry-a (horse), jirum <dirum (tule), yajar<yadar (earth) as an example. It is also pointed out that the plural suffix “dul” in Korean and the plural suffix “d” in Mongolian, as well as the “jir” and “dul” denoting “two” are cognates [16]. The homology between the

Mongolian “*jir*< *dir*” and the Korean “*dul* (r)” mentioned here is convincing to some extent, but the homology between the plural affixes “*d*” and “*dul*” needs to be treated with caution. The correspondence between “*-dul*” in Korean and “*nar*” is more convincing than that. It is possible to correspond the homologous words of the Mongolian “*jirin*”, “*jür*, *jürei*” and their primitive forms **dübir* to the forms of “*du*, *dulh*” and “*dupul*” in Korean.

4. Conclusion

In this paper, from the exceptional fact that there is no common root between the numerals of “one” and “ten” in the system of single digit and ten digit in Mongolian, the numerals of “one” in Mongolian and their related forms are re-observed, and the root of the numerals of “one” in Korean is discussed. And its relationship with Mongolian roots. It has been speculated in Mongolian, it is very likely that there were numeral beginning with consonants of “*h*” or more primitive stages that denote “one”, and that the words “*qad*, *üre’ele*” and their constructed form **hüregle*, as well as the root **har* of “*harban*” in the Middle Ages Mongolian, can support this speculation. Thus there are several corresponding relations between the Mongolian word for “one” and the Korean word for “one” in a series of forms beginning with “*h*” or “*k*”. First, the correspondence between the Korean “*hot*” and **had* and its primitive form **kodon* and the medieval Mongolian word “*qad*”; secondly, the root **hal* of “*harban*” in Mongolian and “*hol*” in modern Korean, and **hürel*< *hüregle*<*üre’el* in medieval Mongolian, and “*hool*, *halol*”, or the correspondence between the more primitive **hobol* and other forms; thirdly, the correspondence between the root form **γabon* of **γaboni* in Mongolian and the root form **hopon* of **hoponsa* in Korean.

In addition, from the exceptions that there is no common root between “two” and “twenty” in the system of single digit and ten digit in Korean, this paper compares the forms related to numeral “two” of Mongolian and Korean, and tries to confirm their homology. Firstly, the **qo* of “*qoyar*” in Mongolian and the **sə* of “*səri*”, **suu* of “*sumuul*” in Korean are in homologous relationship, which means that the corresponding relationship between the Mongolian “*q > h*” and the Korean “*s*” may be tenable. Secondly, the corresponding form of **ya* form of the Mongolian “*yar*” in the Korean language should be **yəin* “*yəsəs* (‘six’)” and “*yədərb*”. Thirdly, another Mongolian form **jirin* and its primitive form **dirin*, and **dubir*, and its ancient form **dupul* which means “two” in Korean are in homologous relationship. In a word, this paper tries to reveal the

possibility of homology between Mongolian and Korean numerals “one” and “two”, and it is also necessary to further verify the relationship between these forms.

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