Counting days in Hokkaidō Ainu.
Some thoughts on internal reconstruction
and etymology*

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Abstract

A new etymological solution is proposed to explain two highly irregular formations in Ainu: *tutko *'two days' and* *rerko *'three days', from* *tu *'2' and* *re *'3', respectively. These words contain two components which have not been satisfactorily explained hitherto:* *-t- *and* *-r-, *and* *-ko. *The assumption is made that these components are the remains of older formations that were subjected to reduction over time. These older formations took part in a coherent system of derivation by means of the element* *rerko *'12-hour period'. The entire system collapsed long ago, but can be partially deduced from Ainu dialectal data via internal reconstruction. The very nature of the scenario put forward in this contribution rises some interesting questions regarding the method of internal reconstruction and its limits.*

Keywords: *historical linguistics, internal reconstruction, comparative method, philology, Ainu language, number systems.*

In 2012 I was lucky enough to count with our *Iubilarius* as a member of my PhD dissertation committee. Though it may seem that the topic of the dissertation (Ainu[1] historical linguistics and philology) falls out of his field of expertise (Indo-European

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[1] Ainu is a nearly (if not already) extinct language of Japan. Once spoken on Hokkaidō, the Sakhalin Island, the Kuril Islands up to the southern tip of the Kamchatka peninsula and at least the northernmost part of Honshū, the last speakers of Ainu can be found nowadays only in Hokkaidō. From a linguistic viewpoint, three varieties can be distinguished: Sakhalin Ainu (henceforth SA), Hokkaidō Ainu (= HA) and Kuril Ainu. As far as HA is concerned, there is some remarkable internal diversity and numerous subdialects can be identified.

and Basque studies), his many remarks (not only of a methodological nature, as one might think) resulting from the attentive reading of that work led to its improvement. Some of them made me even reconsider my own stance on how closely historical linguistics and philology collaborate and what we should expect from the comparative method when this powerful tool is applied to language isolates. After all, the Basque language and its fascinating (pre)history are at the core of our honoree's interests and constitute a significant part of his scholarly output. It should not come as a surprise that Ainu, a language isolate like Basque, could arouse his curiosity, as it obviously did.

In this brief contribution I offer to our honouree some thoughts on the methodology of internal reconstruction and etymology based on my own experiences after having tried to deal with a very intriguing puzzle to be found in the Ainu numerical system. The structure of the paper is very simple: in section **1** I present the data and the problem. In section **2** I will put forward an attempt at solving the problem. General considerations on methodology emanating from my proposed solution will be addressed in section **3**. The final section of the paper, **4**, is reserved for conclusions.

1. Introducing the problem

The following passages belong to two different songs of the well known *Ainu shin'yōshū*, a collection of oral-based texts told by Chiri Yukie (1903-1922), the older sister of the linguist Chiri Mashiho (1909-1961). Below I give the Ainu text according to Kitamichi's edition (Kitamichi 2003; cf. Kirikae 2003). Unless otherwise indicated, English translations are from Strong (2011; cf. Katayama 2003). Glosses are mine. All these passages have in common that they contain the expression *tutko rerko*:

1/202　*tutko rerko* / *sir-an ko* / *i-ku oka-an*
　　　　two.days three.days appareance.be PST APASS-drink be.PL-IND.S[2]
　　　　'After two, three days passed in this way the feast come to an end'[3]

8/110　*tutko rerko* / *sir-an awa* / *puray or-un*
　　　　two.days three.days appareance.be and window place-LOC
　　　　'When two or three days had passed, something seemed to be at the window'

8/146　*or-o-wa-no suy* / *tutko rerko* / *sir-an a-i.ke*
　　　　place-AFF-from-ADV time two.days three.days appearance.be IND.S-time.do
　　　　'After that, two or three days passed'

8/181　*tutko rerko* / *sir-an ko* / *i-ku a-okere*
　　　　two.days three days appareance.be PST APASS-drink IND.S-finish
　　　　'When two or three days had passed we ended the feast'

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[2] Abbreviations: 1,2,3 = person, ADV = adverbial, AFF = affiliative, APASS = antipassive, CONT = continuous, EXCL = exclusive, IND = indefinite, LOC = locative, O = object, PL = plural, PST = past, Q = question mark, S = subject, > = evolves to, < = evolves from, ⇒ = analogical replacement, ← = borrowed from.

[3] For the sake of curiosity, I will mention here that we have a Spanish translation of the entire first song of the *Ainu shin'yōshū* by Muñoz González (2001). The passage sounds as follows: "Entonces después de dos o tres días, se terminó el banquete" (2001: 126).

Taken separately, *tutko* and *rerko* mean 'two days' and 'three days', respectively, hence the rather unproblematic rendering 'two, three days' in English (and in Japanese). While in principle there is no reason to doubt about the correctness of this literal translation,[4] there is ample evidence to suggest an alternative translation: *tutko rerko* is an idiomatic expression meaning 'some/many days'. The following examples, which are taken from Ito Oda's oral repertoire in the Chitose Ainu dialect wonderfully edited by A. Bugaeva (2004), demonstrate, first, that the sequence *tu... re...* can occur with different referents, not only days (however, the expression *tutko rerko* 'two or three days' appears eight times), and, second, that an alternative, more idiomatic translation is sometimes more advisable than the literal one (Bugaeva's glosses and translations):

4/51   *tu su at pak, re su at, (at) pak ya, re su at pak ya*
two pan 3S-boil.up until three 3S-boil.up boil.up until Q three pan 3S-boil.up until Q
'For a while (lit. 'until two or three pans boiled up')'.

Here it is thanks to Ito Oda's explanation that this idiomatic expression is correctly translated as 'for some time, for a while' (Bugaeva 2004: 159 fn. 17).

11/101 *tu sumaw-e, re sumaw-e*
two dead.bear-AFF three dead.bear-AFF
'[I brought] two or three dead bears'

When Ito Oda summarizes in Japanese what happens next, she uses the Japanese expression *takusan* 'a lot, many' in what clearly appears as an attempt at rendering idiomatically the Ainu expression *tu sumawe, re sumawe* (Bugaeva 2004: 328).

Ito Oda's comments to the translation support that idea that the sequence *tu... re...* is idiomatic and could (should?) be translated appropriately, i.e., *tutko rerko* 'several/many days'.

Moreover, in Hattori (1974: 246[4]) it is mentioned that the expression 'in a few days, one of these days', which in the Saru dialect translates *tane tane*, in other dialects translates *tutko rerko pakita* (or *uturuta*), *na'a ponno tutko rerko siran ko* or *na tuto reto siran cik(i)*, etc.

The distribution of the sequence *tu... re...* is not restricted to HA, but it occurs very often in SA too, e.g. West Coast SA *tu pa, re pa*, translated by Piłsudski as 'a few years'. He adds that "[t]hese two numbers are used in Ainu folklore to express an indeterminate but not very short space of time" (Piłsudski 1912: 32). This remark refers to the expression *tu pa, re pa*, but from the discussion above it follows that the description "indeterminate, but not very short" may not be limited to this expression, but could apply to all instances of the sequence *tu... re...* 'two or three X' (for various other combinations as well as a brief remark on the correlative nature of these two numbers, see Chiri and Kindaichi 1973: 563-564 §116). Its presence in SA gives

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[4] Chiri Yukie's younger brother, Chiri Mashiho, has been accused by some of manipulating and distorting the translation of original Ainu texts (it is open to discussion whether this is a legitimate, conscious-made strategy by Chiri Mashiho, see, *i.a.*, Sato-Rossberg 2008). Chiri Yukie's first language was Ainu (Chiri Mashiho's first language was Japanese, he learnt Ainu as a high-school student).

more strength to the idea that the idiomatic expression *tu... re...* has Pan-Ainu status and was most likely a feature of the parent language.

Coming back to the *Ainu shin'yōshū*, that another, alternative translation is possible can be also seen in the existing translations by different authors of these passages. The following English translation by Strong respects Chiri Yukie's original Japanese 'two or three days':

> 1/216-217   *kamuy-utar / hekom-pa i-ta / pirka inaw |*
> *tup ci-kore / rep ci-kore*
> god-PL return-PL place-to beautiful *inau*
> two.things 1PL.S.EXCL-give two.things 1PL.S.EXCL-give
> 'When the spiritual beings were about to return to their homes I gave / each two or three of the beautiful *inau*' (Strong 2011: 204).[5]

However, in the English rendition provided in Katayama's edition, the very same passage reads as follows: "Then, when the Gods left, I gave them / <u>many</u> (Jap. *takusan*) beautiful *inau*" (2003: 87). Notwithstanding this, generally speaking in Katayama's English version, the translator consistently opts for 'two or three X' (following very closely Chiri Yukie's version), 'several/many X' being the exception rather than the rule.

At this point, with the ample evidence presented above plus the opinion of a native speaker (Ito Oda), it is unnecessary to elaborate further on this issue. Be that as it may, translating Ainu *tu... re...* as (literally) 'two or three X' instead of (idiomatically) 'several/many X' is not erroneous, but simply a matter of style and context, very much like choosing in English between 'two or three things' and 'a couple of things'.

Now, although this may seem like nothing else but a minor improvement of an otherwise unproblematic situation, I will show that the existence of an idiomatic sequence involving the numerals two and three may hold the key to the solution of a long-lasting etymological puzzle in the history of the Ainu language.

This puzzle starts with the enigmatic forms *tutko* and *rerko*. These forms belong in a number series employed in counting days. As shown in the table below (data from Tamura 1996: 254-256 on the Saru dialect and Refsing 1986: 113 on the Shizunai dialect are virtually the same, cf. Batchelor 1905/1988 [Grammar]: 100-101, Hattori 1964: 264[66] and Satō 2008: 257-258; note that when counting in isolation, that is, without a determinant, the first four numerals in series I are replaced with *sinep, tup, rep* and *inep*), numerals for counting days present some remarkable irregularities, unlike other numerals for counting human, things or years (where irregularities can be attributed to a common type of allomorphy whereby the suffix is sensitive to final consonants and vowels):

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[5] Spanish translation: "Cuando los dioses regresaron, les di dos o tres hermosos *inau*" (Muñoz González 2001: 126).

	I	...human(s)	...thing(s)	...day(s)	...year(s)
1	sine	sine-n	sine-p	sine-to	sine pa
2	tu	tu-n	tu-p	*tutko*	tu pa
3	re	re-n	re-p	*rerko*	re pa
4	ine	ine-n	ine-p	*ine-rerko*	ine pa
5	asik	asikne-n	asikne-p	*asikne-rerko*	asikne pa
6	iwan	iwan-iw	iwan-pe	*iwan-rerko*	iwan pa
7	arwan	arwan-iw	arwan-pe	*arwan-rerko*	arwan pa
8	tupesan	tupesan-iw	tupesan-pe	*tupesan-rerko*	tupesan pa
9	sinepesan	sinepesan-iw	sinepesan-pe	*sinepesan-rerko*	sinepesan pa
10	wan	wan-iw	wan-pe	wan-to	wan pa

Special numerals for counting days are attested in southwestern and northeastern HA dialects (see, *i.a.*, Nakagawa 1995: 278, 428 for Chitose dialect, Kayano 1996: 329b, 478a for Nibutani dialect, Tamura 1996: 575, 744 for Saru dialect, Ōta 2005: 178a, 227a for Asahikawa dialect, etc.).[6] There is absolutely no trace of them in the other major dialect-clusters of Ainu, namely, SA (see Murasaki 2009 for an extensive philological research on SA numbers, cf. Dettmer 1989.A: 399-400 §96) and Kuril Ainu. As for the philological documentation in HA, there is no doubt that *sine to* is the form with the earliest attestation (an undisputable instance can be found in the *Matsumae no kotoba*, 1630-40?, see Satō 1999: 83).[7] As far as *tutko* and *rerko* are concerned, they appear only in contemporary dictionaries and vocabularies. However, if, according to Refsing (2014: 190), Dobrotvorskij (1875) is the first contemporary Ainu dictionary, then it must be said that neither *tutko* nor *rerko* found their way into it.[8]

At first glance, *tutko* and *rerko* seem to contain a suffix *-ko* which theoretically means 'day'. However, there is no such word as **ko* 'day' in Ainu. Moreover, *rerko* 'three days' attaches itself to numbers 4 to 9. In this case, *rerko* logically does not mean 'three days', but just 'day', as in *hempak rerko?* 'how many days?' (see Chiri 1974a: 53 §82, Chiri and Kindaichi 1973: 557 §104; *hempak* is a regular interrogative pronoun meaning 'how many').

In light of all these irregularities, the entire system has been recently replaced by one in which numerals are followed by *to* 'day' (see, *i.a.*, Tamura 1996: 258) in analogy to the year series. This is the only system which has been documented in SA. In

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[6] In the *Ainu shin'yōshū* there are no instances of *tutko* alone. It appears only in the expression *tutko rerko* and in the temporal phrase *tutko pakno* [2x] meaning 'after (= *pakno*) two days'. *rerko* also surfaces with the meaning '12-hour period' in the compound nouns *tokaprerko* 'daytime' [1x] and *kunnererko* 'night time' [1x]. Other numerals employed in counting days appear also alone: *inererko* '4 days' [1x] and *iwanrerko* '6 days' [1x].

[7] Batchelor made profusely use of numbers for counting days. Regrettably, Batchelor's translations are well known for being mostly unintelligible to the Ainu, and therefore these materials have only anecdotic value (see, *i.a.*, Refsing 2000, Majewicz 2005, esp. 455-456).

[8] Dobrotvorskij (1836-1874), an army physician in Eastern Siberia, was sent to the southern part of the Sakhalin Island from 1867 to 1872. In the dictionary he uses his own field work materials as well as data from all the sources available to him at his time (see a list of them on pp. 19-30). Therefore, in the dictionary forms from both Hokkaidō and Sakhalin dialects are mixed together.

HA dialects where the replacement is complete, the idiomatic expression *tutko rerko* consequently surfaces as *tu to re to* (see, *i.a.*, in some northeastern HA dialects: Kirikae 2004: 168 for the Kushiro dialect, Otsuka 2008: 361a for the Tokachi dialect, etc.).[9]

The presentation above poses the following questions: what is the origin of the consonant clusters *-tk-* and *-rk-* in *tutko* and *rerko*? Or, if we assume that the correct segmentation is **tu-t-ko* and **re-r-ko*, what is the origin of **-ko*? Is this hypothetical **ko* 'day' somehow related to the regular word for day *to*? Why are there special forms only for two and three days? Or, why is *rerko* used only with numerals 4 to 9?

2. Towards a solution

2.1. Ainu *ko 'day': a ghost word

It is generally assumed that *tutko* and *rerko* contain a suffix **ko* meaning 'day'. Such a tacit assumption is made by numerous authors. G. Simeon, who conducted field work in Hokkaido in the summer of 1967, explicit states the following: "*ko* is the counter for days, except for the first day, where *to* is used" (Simeon 1968: 47). In Japanese literature the traditional analysis consists in segmenting *tutko* and *rerko* as {*tu-t-ko*} and {*re-r-ko*}, that is, number bases *tu* and *re*, followed by *-t-* and *-r-* as the result of reduplication (Jap. *jūfuku*) plus the element *-ko* 'day' (see, *i.a.*, Kitamichi 2003: 45 and the same in Janhunen 1999: 696). This explanation lacks internal motivation and context: in Ainu, reduplication is never used in such a manner (for the basics of reduplication in Ainu, see, *i.a.*, Tamura 2000/1988: 200-203). Furthermore, from a semantic viewpoint, why would we need a reduplicated base here? The same lack of semantic motivation can be argued in order to reject my own previous proposal whereby *tutko* and *rerko* would go back to **tu-p(a)-ko* and **re-p(a)-ko* (Alonso de la Fuente 2012: 119 fn. 25). These formations are ungrammatical (pluralizer *-pa* never appears in such contexts) and the sound change leading *p* to *-t-* and *-r-* in *tutko* and *rerko*, respectively, is unheard of in Ainu.

Alternative solutions are equally unsatisfactory. Dettmer (1989: A.399 §96) assumes that the final segment **ko* is etymologically linked to *to* 'day' and simply comments upon how remarkable ("bemerkenswert") the required *t > k* sound change is. This echoes the attempts by Gjerdman (1926: 20) and, after him, Lindqvist (1960: 18), to call attention to the variation *ko ~ to*. None of these three authors provide any answer regarding the origin of *-t-* and *-r-* or why *rerko* is used with numerals from 4 to 9.

It must be stated from the outset that the element **ko* 'day' does not exist as an autonomous lexeme. Batchelor famously presented it as such in his dictionary, contributing just one more item to the immense stock created by him. However,

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[9] In Sōya, the northernmost HA dialect, *tuto reto* (Tezuka 2007: 70b) can be taken as the result of attrition or, given the heavy influence to which it is subject from SA dialects, another trace of contact between these two varieties.

in this particular case Batchelor himself pointed out that this word only appears in compounds: 'A day. Only heard in combination with other words (e.g. *tutko, rerko*)' (Batchelor 1905: 232a s.v. *ko*). In spite of the remark, Batchelor's sloppiness regarding the false segmentation of *ko* prompted a very negative reaction by Ainu scholars (see, *i.a.*, rash comments by Chiri 1974b: 385 §72). Long-rangers ignored Batchelor's observation (and Chiri's comments, for that matter), and popularized the idea that **ko* 'day' is an autonomous word. It does not take much time nor effort to find in the specialist literature the most bizarre suggestions regarding the potential links of this word. Thus, Tailleur (1962: 245) relates it to Basque *egu(n)* 'day' and Naert (1961: 400) compares it to Tocharian A *koṃ*, B *kauṃ* 'soleil, jour'.

More reasonable comparisons have been proposed, but they all are equally unsatisfactory. Two classics in the specialist literature are Japanese *-ka* and Ghilyak (a.k.a Nivkh, see Janhunen 2016: 4 fn. 1) *ku* > counter *-x* 'day's rest on one's way'. Both already appear in Naert's work (see, *i.a.*, 1961: 400).

Vocalism in Modern Japanese *-ka* 'day counter' < Old Japanese ke_2 'day' ~ *-ka* 'day counter' < Proto-Japanese **-uka* (see, *i.a.*, Martin 1987: 69, 2003: 772 or Vovin 2004: 387-393) cannot be reconciled with Ainu **ko* (and *ko* in Japanese *ko-yomi* 'calendar' is clearly secondary). Moreover, it does not help to solve the question regarding the use of *rerko* with numbers 4 to 9.

As reported in Gruzdeva (2004: 315, data from Krejnovič 1973: 162), Pan-Ghilyak *ku* means '24-hour period', though this item, as an autonomous lexeme, does not appear glossed in modern-time dictionaries (see, however, expressions like *ku vityŋ* 'calendar' in Tangiku 2008: [1285] or *pila gu* 'gala day, holiday', lit. 'big day', in, *i.a.*, Savel'eva and Taksami 1970: 260a). The regular word for day in Pan-Ghilyak is *muyf*.[10] Also, the use of the classifier *-x* is not documented for numbers higher than five. On semantic and formal grounds, the Ainu pattern cannot be based on the Ghilyak classifier system. And most importantly, as has been explained before, Ainu formations like *tutko* and *rerko* are not documented in SA. For the time being, it is safe to conclude that Ghilyak *ku* has nothing to do with a hypothetical Ainu **ko*.

Another source of potential confusion for non-specialists are Piłsudski's West Coast SA materials, judging from Naert's handling of them. In some texts we find the expression *koho tokesne* 'near the latter end of the day', where *koho* has been interpreted by Naert as *ko-ho* 'day-AFF' (he failed to see, or just opted to ignore, that if this were the case, then the expression contains two words meaning day, i.e. *to-kes-ne* {day-limit-to.be}). However, Piłsudski (1912: 177 n. 33) suggests that *koho* could be a contraction of **ko-ohorᵒ* 'long (temps)', the latter element present in the synonymous expression *ohorᵒ to-kes* 'a late end of the day' (1912:

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[10] Bouda (1960: 396) suggested that, if the segmentation of this word is *m-uɣ-f*, then *ku* might be hidden in the segment *uɣ*, which in his view resembles the *ux* part in *nïux* 'today' (our <ï> stands for IPA <ɨ> = Soviet tradition <ы>, which under certain conditions alternates with /a/, cf. Grube 1892: 84b *nyx, nax*, Savel'eva / Taksami 1970: 217a <ных, ныух>, Tangiku 2008: 39 [174] *nawx* <наўх>, etc.). Bouda's suggestion for the etymology of *nïux* 'today' goes against the traditional conception whereby the ablative *-ux* ~ *-x* is attached to the deictic temporal base *na-* ~ *nï-* (Panfilov 1965: 185).

153 n. 4). Piłsudski never claimed that *koho* (the last /o/ is an echo vowel, hereafter transcribed *koh°*, that can be heard when followed by another word beginning with consonant) means 'day' or is in any way related to the *ko* segment in *tutko* or *rerko*.

In reality, the correct solution to this problem requires to consider forms like East Coast SA *koh* 'soon after' or West Coast SA *kor°* 'while, when ...ing; having ...-ed, after ...ing' (Majewicz and Majewicz 1998/1986: 559, cf. Dettmer 1989: B. 585-587 §166, 726-728 §214.4). These show temporal semantic extensions, after cross-linguistically very common grammaticalizations, of *kor* 'to do' and, in the case of East Coast SA, the application of the sandhi rule *-r#C > SA -h#C described in Alonso de la Fuente (2011), as in the sequence *koh… koh…* 'do and then...' (see, *i.a.*, Murasaki 1976: 165). Thus, SA *koh° tokesne* (from *kor tokesne*), i.e. *koh to-kes-ne* {soon.after day-limit-to.be}, is better translated as 'soon after the end of the day' (it must be noted that Piłsudski did not know that under the appropriate conditions *kor* changes into *koh*).

In sum, there is no such thing as an autonomous word *ko* meaning 'day' (*pace* long rangers, see recently, *i.a.*, Bengtson and Blažek 2000: 243 = 2009: 7-8).

2.2. On the origin of *tutko* 'two days' and *rerko* 'three days'

Therefore, any explanation aiming to clarify the origin of *tutko* and *rerko* must take this into account. The point of departure will not be the forms *tutko* and *rerko*, but rather the element *rerko* as used with numbers 4 to 9. The assumption, not too risky, must be made that *rerko* 'three days' and the *rerko* used with 4 to 9 are not the same word, but just accidental homophones. As shown in the discussion above, the classifier *rerko* is used to express a 12-hour unit that in combination with *kunne* and *tokap* (~ *tokam*) means 'night time' and 'daytime', respectively.

By analogical-abductive reasoning (for methodological considerations, see Givón 2000: 111-119), the assumption can be made that at some point in the past *rerko* '12-hour period' was regularly attached to *tu* 'two' and *re* 'three', as is the case nowadays with numbers 4 to 9, so it can be speculated that the result would be something like *tu-rerko* and *re-rerko*. The latter formation *rererko* could have been almost immediately reduced to *rerko* by haplology: *rererko* > *rerko*, hence the unfortunate homophony of *rerko* '12-hour period' and *rerko* 'three days' < *re-rerko*.

In section 1 the idiomatic expression *tu... re...* meaning 'several/many X' was introduced. When speakers were presented with the irregularity of *turerko rerko*, in opposition to *tupa repa* 'several years' or *tusuy resuy* 'several times', it is only natural that such incongruent sequence would be solved by analogy: *turerko rerko* > *turko rerko*. It is important to underline that the mechanism that accounts for the change *tu-rerko re-rko* > *tu-rko re-rko* is not entirely similar to the kind of analogy that applies in lexical sequences such as numbers or personal endings in verb paradigms (for classical examples in Slavic '8' and '9' after '7' and '10' or Germanic '4' after '5', see, *i.a.*, Hock 1991/1986: 197, Ramat 2012: 69, or for dialectal Greek past 3pl after 1pl and 2pl, see *i.a.* Joseph 2005). It is the frequency of the pairing in the idiomatic expression *tu... re...* that explains the fail to see such a reduction in the case of num-

bers 4 to 9. Unlike in Slavic or Germanic, the resulting forms *turko > tutko* and *rerko* led to a situation where analogy did not help in facilitating the recitation of the day-numbers (see Miller 2010: 110). Therefore, the assumption has to be made that these changes took place first in the idiomatic expression and only after they were exported to the number series.

		Stage I	>	Stage II	>	Stage III	> ?	Stage IV
		(sine rerko)		(sine rerko)		(sine rerko)		*sine-to*
Influence of	⇒	*tu-rerko		*tu-rerko		*turko		*tutko*
tu... re...		*re-rerko		*rerko		*rerko		*rerko*
		ine-rerko		ine-rerko		ine-rerko		*ine-rerko*
		asikne-rerko		asikne-rerko		asikne-rerko		*asikne-rerko*
		iwan-rerko		iwan-rerko		iwan-rerko		*iwan-rerko*
		arwan-rerko		arwan-rerko		arwan-rerko		*arwan-rerko*
		tupesan-rerko		tupesan-rerko		tupesan-rerko		*tupesan-rerko*
		sinepesan-rerko		sinepesan-rerko		sinepesan-rerko		*sinepesan-rerko*
		(*wan-rerko)		(*wan-rerko)		(*wan-rerko)		*wan-to*

In the table above, the question mark between Stage II and Stage III indicates that, regrettably, at this moment I cannot provide a satisfactory explanation for the irregular sound change *rk > tk* that occurs in *tutko*. The sound change *tk > rk* is unheard of in Ainu, and the sequence /rk/ is completely regular and allowed according to Ainu phonotactics.

Four options can be considered as working hypotheses, none of them especially attractive:

a) assimilation, although this is typical only of SA, e.g. SA *tetar[a]* < HA *retar[a]* 'white', cf. the substitution in SA *tāsoku* ← Jap. *rōsoku* 'candle' (Laufer 1917: 205);

b) Long-distance /r/-dissimilation, whereby the *r*-sounds in *rerko* caused the *r*-sound in *tutko* to change, i.e. **turko rerko > tutko rerko*.

c) contamination with Modern Japanese *futu-ka* 'two days' < Old Japanese *putu-ka*;

d) mirror analogy: $C_1VC_3C_2$ $C_1VC_1C_2$ > $C_1VC_1C_2$ $C_1VC_1C_2$, the output of which rhythmically resembles the pattern found in many onomatopoetic expressions (so-called *sakehe* or refrain) used for recitation in the Ainu *yukar* and other equally oral compositions.

There is still one big but to the entire scenario: the semantic change 'half-day' > 'day' in numbers higher than '1' remains unexplained. Going against the motto *entia non sunt multiplicanda praeter necessitatem*, I will suggest that there were originally two number series, instead of only one. Thus, the maximal system would include a stage in the parent language (Common Ainu) with one number series for 12-hour periods (marked with **ar-erko(r)* 'one of two parts') and another one for full days (marked with *to* 'day'). Since the semantics of these two number series are instable (it is very common cross linguistically that both concepts are expressed by the same word), they merged yielding System A in HA (see table below). The process was on

its way when linguistic documentation of HA became available. System B in HA, as well as SA, is the culmination of the process. Therefore, system A must be considered as archaic, and system B as innovative.

Common Ainu		HA		SA
		A	**B**	
*(sine) (a)rerko(r)	*sine to*	*sine-to*	*sine to*	*sinetoo*
*tu (a)rerko(r)	*tu to*	*tutko*	*tu to*	*tutoo*
*re (a)rerko(r)	*re to*	*rerko*	*re to*	*retoo*
*ine (a)rerko(r)	*ine to*	*ine-rerko*	*ine to*	*iinetoo*
*asikne (a)rerko(r)	*asikne to*	*asikne-rerko*	*asikne to*	*asnetoo*
*iwan (a)rerko(r)	*iwan to* >	*iwan-rerko* >	*iwan to*	*iwantoo*
*arwan (a)rerko(r)	*arwan to*	*arwan-rerko*	*arwan to*	*arawantoo*
*tupesan (a)rerko(r)	*tupesan to*	*tupesan-rerko*	*tupesan to*	*tupesantoo*
*sinepesan (a)rerko(r)	*sinepesan to*	*sinepesan-rerko*	*sinepesan to*	*sinepisantoo*
*wan (a)rerko(r)	*wan to*	*wan-to*	*wan to*	*wantoo*

2.3. On the origin of *rerko* '12-hour period'

As we have seen, *rerko* means 'three days' and '12-hour period' (e.g. Izutsu 2004: 265 s.v. *rerko* 'a day, a night; two halves of what is called a day in the present'). The latter meaning can be observed in expressions like *kunne rerko* 'night time' (lit. 'dark 12-hour period') and *tokap* (or *tokam*) *rerko* 'daytime' (*tokap ~ tokam* 'day, daytime'). One *kunne rerko* plus one *tokap rerko* makes one *to*, i.e., a full day.[11] Six *kunne rerko* and six *tokap rerko* make one week (see remarks by Ito Oda in Bugaeva 2004: 137 fn. 2, cf. Nakagawa 1995: 428).[12] There is a certainly by now very famous passage in one of the many Ainu oral compositions where these words are put into use (see, *i.a.*, Tamura 1996: 575, cf. Izutsu 2004: 265):

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[11] As is common cross-linguistically, the concepts of full day and daytime (i.e. 12-hour period of light in opposition to night time) tend to be expressed by the same word. Ainu is no exception, cf. (West Coast) SA *kunne to* 'night', lit. 'dark daytime' (Majewicz and Majewicz 1998/1986: 570 [432]) or Old Kuril Ainu ⟨toannonoschki 'Meridies', lit. 'mid-daytime' (in the *Vocabularium latino-curilice*, from the 18th c., see Murayama 1971: 11). The regular noun HA *to*, SA *too* 'day' cannot be etymologized further (unless external comparisons are brought into the picture, see, *i.a.*, Vovin 1993: 172). *to* appears in some transparent noun compounds, e.g. *kesto* 'every day' (*kes* 'every, each'), *tanto* 'today' (*tan* 'this'), *nisto* 'a clear day' (*nis* 'clouds, sky, heaven'). It remains unclear whether *to* can be positively identified in the noun *kanto* 'sky, heaven' (Slawik 1968: 196 finds *to* in *kanto* very problematic, but he does not mention the possibility of identifying it with *to* 'day'). The lack of a regular, Pan-Ainu word for night (cf. Hattori 1964: 253 [58], Murayama 1971: 352) is due to the Ainu conception of the night as belonging to the spirits, whereas the day belongs to the humankind, so that a heavy taboo exists over the former (see, *i.a.*, Ohnuki-Tierney 1973: 290).

[12] From a linguistic viewpoint, the use of six in these and other expressions is merely anecdotic. In the Ainu tradition, six is the sacred number and it has magical properties. Its presence is recurrent in ceremonies and legends (see, *i.a.*, Batchelor 1901: 306).

kunne rerko,	dark 12-hour period
no-iwan rerko,	ADV-six 12-hour periods
han kakkok kakkok,	*han kakkok, kakkok*
tokap rerko,	daylight 12-hour period
no-iwan rerko,	ADV-six 12-hour periods
kakkok cikap,	*kakkok* bird
rek kane kor	sing continuously and

'a cuckoo keeps singing for six days and six nights (i.e., a week)'

One word that appears in many expressions and collocations referring to time is *emko ~ enko* 'half' (as in *emko cup* 'half-moon', *emko e-tup* 'one and a half' or *to emko tutko* 'a day and a half', see Hattori 1964: 223 [8] *emkocup ~ enkocup* or *cupemko ~ cupenko* 'half-moon', SA *enkocuh*, and 267 [84] *emko ~ onko ~ enko*, also *enko tura tu cux* 'one month and a half', with *tura* 'to go together with', or *sine to enko* 'half day' in Otsuka 2008: 34b, 172a, cf. Tamura 2000/1988: 259). Saru Ainu *aremko* 'half', lit. 'one of two parts' (Tamura 1996: 21), is made of *emko* and the Pan-Ainu quasi-synonymous lexemes *ar-* 'one of a pair' (as in *as-sik* '(one) eye' < **ar-sik* 'one eye of a pair', for study on semantics see Kirikae 2006). The former appears as the first member in some number series involving time concepts, e.g. *ar-suy* 'once', *tu-suy* 'twice', *re-suy* 'thrice' (e.g. Hattori 1964: 265-266 [68-70]), etc. or *ar-ukuran* '(during the) last evening', *tu-ukuran* '(during the) last two evenings', *re-ukuran*, etc. (Kirikae 2006: 230), with *suy* 'time(s)' and *ukuran* '(last) evening, (last) night', respectively.

In what follows I will present the hypothesis that *rerko* comes from *aremko*. The following steps would reconcile *aremko* and *rerko*:

1. The vacillation *m ~ n* before /k/ in *emko ~ enko* is not rare. In the majority of instances, an original /m/ has undergone assimilation *mk > nk* (= /ŋk/), as in *omkotor ~ onkotor* 'thigh(s)', from *om* 'thigh(s)' (Hattori 1964: 17 [138]). However, forms with clearly secondary dissimilation have been documented in the past, e.g. *harum kotan < haru-un kotan* 'town of food' or *yamke < yanke* 'to land (a boat); to pull ashore (people)' (these examples are documented in only one source about whose reliability Chiri and Kindaichi have expressed some doubts, see 1973: 472). Therefore, there is room to speculate that *emko* is secondary, *enko* being the original form, and postulate that *aremko* may have had a variant **ar-enko*.

2. We can speculate that *enko* goes back to **erko* in analogy to *atuy-kor-ka-muy > atuy-kon-kamuy* 'seal' (Chiri and Kindaichi 1973: 480, Chiri 1976: 159 §278), where the main cause of change is assimilation, as in *erum > enum* 'mouse, rat' or *siroma > sinuma* '3S personal pronoun'. However, for the word compound **ar-erko* to yield **ar-enko* we have to postulate dissimilation, as in *torar > tonar(i)* 'thongs of leather' (Chiri and Kindaichi 1973: 480).

3. Expressions such as **tokap ar-erko* 'the shining half (of one day)' and **kunne ar-erko* 'the dark half (of one day)' (> modern *tokap rerko* 'daytime' and *kunne rerko* 'night time') paved the way to the creation of a pseudo-sequence involving **arerko*: **sine (to) ar-erko* 'one half day' (= SA *sine to enko* 'half-day', in

Otzuka 2008: 172b), *tu (to) ar-erko 'two-half days', *re (to) ar-erko 'three-half days', etc.

4. The expression *arerko (or perhaps *arerkor?) is reinterpreted as a classifier that generates a fully integrated number series for 12-hour periods: *sine arerko, *tu arerko, *re arerko, *ine-arerko, etc.

5. Vowel crasis erases the boundaries between numeral and classifier: *tu-rerko, *re-rerko, *ine-rerko, etc., with *arerko(r) > rerko 'half-day; 12-hour period' being the result of analogical replacement following the pattern of resegmentation found in higher numbers. However, vowel crasis may have occurred already at stages (3-4).

By the end of the process described in stage (5), we are back to the point of departure for discussion in section **2.2**.

There are good antecedents for points (1) and (2). However, negative remarks are in order. Regarding point (2), it seems that /rk/ only changes into /nk/ when the consonant cluster is surrounded by nasals or is contagious to another /r/. All being the same /rk/ should remain unchanged (Shiraishi 2001: 144). This means that *erko in isolation should not have changed into enko. To avoid this obstacle we can make the assumption that enko is a backformation from arenko < *arerko.[13] At this point it may be relevant to mention that rerkor has been documented along regular rerko in the Asahikawa dialect of HA (it is attested nowhere else) with the meaning '(full) day' (Ōta 2005: 178a). If the assumption is made that this enigmatic formation rerkor is an archaism, it would provide an alternative context for the required dissimilation: *erkor > *enkor > *enko, like in torar > tonar(i). This allows us to forego the back-formation scenario. Unfortunately, there are not definite answers to the following two questions: what is the origin of the final /r/ (it is in principle thinkable that we are dealing with the same kor element presented above at the end of section **2.1**) and why it disappears (no final consonant in analogy to to 'day', pa 'year', etc.?).

Finally, the variant emko might be the result of hypercorrection (?) as in the examples above: harum kotan < haru-un kotan or yamke < yanke.

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[13] Such a reinterpretation is rare, but not impossible. The expression annoski 'midnight' is generally believed to contain *an 'night' and noski 'middle, centre'. The component *an does not exist in isolation and it has been mechanically deduced using as analogy the expression to-noski 'midday' that undoubtedly contains the word to 'day' (see remarks by Chiri 1973: 132 = Chiri 1981: 246 to the effect that Batchelor, again, lists in his dictionary the autonomous lexeme *an 'night' in spite of being attested only in noun compounds) and shows the same structure as Late Old Japanese yo_1-naka 'midnight', a transparent compound of yo_1 'night' and naka 'middle' (Unger 2010: 39, cf. Modern Japanese mayonaka, with emphatic prefix ma-). Like ar-emko or ar-arke 'one of two parts', I think that the correct etymology is *ar-noski that yields annoski by regular /rn/ > /nn/. The word compound *arnoski 'the middle of two parts' has been semantically reinterpreted as 'midnight' after ellipsis of noun phrases such as annoski nociw 'in the middle of the night' (nociw 'star(s)' > 'night'). Its original meaning may have been preserved in Old Kuril Ainu ⟨toannonoschki⟩ 'Meridies', lit. 'mid-daytime', where annoski means just 'half, mid-', cf. ⟨upakannoschki⟩ 'Medianox', with upak 'just, about, roughly', i.e. 'just in the middle (of a full day)'. The regular word for night in (Old) Kuril Ainu was sirkunne (Murayama 1971: 11). By folk etymology, Ainu speakers created *an, which is present in Saru anontom < *an-hontom 'in the middle of the night' and ankes 'the time around the end of the night' (Tamura 1996: 13, 14).

The steps enumerated above yield a result that can be expressed in a linear way as follows: *ar- + *erko = *ar-erko 'one of two parts' > *ar-enko ⇒ enko > emko ⇒ aremko, or simply *ar- + *erkor, the latter independently changed into *enkor, whence enko > emko ⇒ aremko.

By now it should be obvious that the entire etymology hinges on the assumption that *ar-erko(r) and its historical continuation aremko were highly frequent words. The truth, however, is that aremko is only attested in one dialect (as happens to be the case with rerkor) and there are no examples with this word being involved in number series.

3. Internal reconstruction and etymology

Rather than dwelling on the already well known limits of internal reconstructions (henceforth IR; for insightful and brief surveys, see, *i.a.*, Crowley 1994/1992: 126-128 or Lass 1997: 237-241), I would like to call attention to the distinct levels at which IR and etymology work as tools for the historical linguist. The exercise of IR attempted at in section **2.2** solves the irregularity of the number series for counting days. As far as the main goal of IR is concerned, which is the same as of the comparative method, i.e., to explain why languages are the way they are, it is completed: we can explain the irregularity behind *tutko* and *rerko*, put differently, regularity has been restored. In Givón's words (2000: 155), IR helps us to understand that "[...] bizarre synchronic states must be interpreted as the evolutionary by-products of perfectly natural diachronic changes".

The next step, that is, the search for the etymology of *rerko* (see section **2.3**) is an independent step which, although made easier by the results obtained after the application of IR, does not imply the existence of a dependency relationship with them. Irrespective of how convincing the etymology is, it does not affect the solution arrived at with IR. The explanation for *tutko* and *rerko* presented in section **2.2** does not require in the least to explore the various possibilities about the etymology of *rerko*, much less to accept the scenario put forward in section **2.3**. IR suffices to conclude with safety that *rerko* 'three days' and *rerko* '12-hour period' are homophones and do not share a common origin.

Likewise, this case illustrates that although it is customary, in the first place, to devise the etymology of the numbers, and only after that, apply IR to the entire series (see, *i.a.*, Luján Martínez 1999: 203), there are clear exceptions to it. Here, the etymology of *rerko* runs independently of our attempt at going further back to reconstruct earlier stages of the Ainu numeral system. As a matter of fact, we can dispense with it altogether.

If we see the comparative method, IR and etymology as three different tools aiming at the recovery of unattested stages of a given language, the example discussed here shows that it is not always a matter of order,[14] but of motivation. While there

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[14] As Campbell and Grondona (2007: 23-25) aptly explain, it is a common misconception that IR should be applied in the first place. Historical linguists should be able to test the results obtained via IR and the comparative method in both orders of application "[...] in order to make certain that we are not attributing alternations from some earlier proto-language [...] to the history of an individual daughter

seems to be an obvious trigger for the changes described in the number series (the semantics and formal features of the idiomatic expression *tu... re...* 'several/many X'), such a trigger or internal motivation lacks completely in the case of the etymology for *rerko*. The relation to *emko* seems circumstantial and depends ultimately on the semantics assumed for the interpretation of the results obtained by the IR applied to the number series.

The need to postulate an entity, i.e., **ar-erko(r)*, that is unattested poses one of the most typical questions in historical linguistics research: if the main goal of this field is to explain the current state of a given language, how legitimate is the use of unattested forms, even more so when we are working with language isolates? The answer to this question is, in my view, very simple: at the end of the day, the best explanation is the one that answers more questions and leaves less unanswered. The etymology of *rerko < *ar-erko(r),* on one hand, would confirm that **ko* 'day' is a ghost word (to this conclusion it is possible to arrive at independently, as shown in section **2.1**) and, on the other hand, would lend additional support to the idea that the number series referred originally to 12-hour periods, instead of full days. Taking into account the convoluted nature of the etymology, these two aspects of it do not seem to amount much.

4. Conclusions

As I hope to have shown by the preceding discussion, the numerals for counting days *tutko* and *rerko* do not contain any word or suffix **ko* meaning 'day'. They go back to **tu-rerko* and **re-rerko*, and are the result of irregular changes due to frequency leading to attrition (Mańczak's Law). The existence of the idiomatic expression *tu…re...* 'some, several/many X', which remarkably increases the frequency with which these two numbers appear together and therefore makes possible the establishment of a kind of mental association between them, works as the main motivator for the attrition of numbers two and three only. Since the association does not exist in the case of other numerals, it is only natural that they were not subjected to attrition. This is the reason why we can still today observe the use of *rerko* with numerals 4 to 9. Therefore, *tutko* and *rerko* are not archaisms (as some implicitly assume when they see the ghost word **ko* as part of these words), but rather very innovative formations.[15]

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language instead". Since we cannot apply the comparative method to Ainu, there is reasonable doubt that *tutko* and *rerko* might actually be very archaic formations hiding a far more complicate past than the one I have described in the preceding discussion. In the eventuality that someone would argue for such a scenario, I would be left only with arguments relying on common sense and economy (and, regrettably, none of them is bulletproof).

[15] By virtue of the numerous instances of putative words for which assimilation of the consonant cluster is attested, e.g. HA *hotke > hokke* 'to lie down' or *korka > kokka* 'but, however' (see, *i.a.*, Asai 1969: 773 for the Ishikari dialect, etc.), it could be argued that the lack of such variants with assimilation in the case of *tutko* and *rerko* might be indicative of recent creation (under the assumption that newer formations have not lived long enough to develop variants). However, the existence of another group of words, this time containing unchanged *tk* and *rk* consonant clusters, on which nothing can be said with certainty about their chronology, renders the argument inconclusive.

Unfortunately, the (irregular) sound change *-rk- > -tk- in the last step *turko > tutko remains to be properly explained.

The etymology of rerko put forward in section **2.3** results from the amalgamation of various dialectal facts of rather recent occurrence. It is, by my own admission, far-fetched and not especially attractive. There is no trace of rerko in SA, whereas enko is amply documented. The only scenario that reconciles these two apparently contradictory facts is one in which Common Ainu *erko (or perhaps *erkor, see point [2] in section **2.3**) underwent all changes described above until it surfaced again as enko. At that point, rerko was actively used in the southern dialect of Common Ainu, whereas in the northern dialect (to become the future SA) rerko was replaced with analogical structures with to as HA dialects would do but at a later stage. This is the scenario just before the migration of a part of the Ainu speaking population to Sakhalin Island took place.

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