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Fishy Numbers in Ainu [*]

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1. Introduction

During fieldwork conducted in the Saru River region in 1987, it was revealed that in the local Ainu dialect there exists a series of numbers which, always according to the consultant(s), was used in the counting of fish (魚の数え方). From the perspective of—for lack of a better term—standard Ainu, this is a highly unusual feature which has not been reported for other varieties. Moreover, the form of the numbers in this series greatly departs from the one known for regular numbers.

Table 1. Hokkaidō Ainu number system

	I	II	III	IV
1	*sine*	*sinen*	*sinep*	*sinenna*
2	*tu*	*tun*	*tup*	*tuna*
3	*re*	*ren*	*rep*	*renna*
4	*ine*	*inen*	*inep*	*yokina*
5	*asik*	*asiknen*	*asiknep*	*hayna* (cf. Jap. *haina* [Tamura 176])
6	*iwan*	*iwaniw*	*iwanpe*	*karaatun* (Kayano ⟨karatun⟩)
7	*arwan*	*arwaniw*	*arwanpe*	*raatun* (Kayano ⟨ratun⟩)
8	*tupesan*	*tupesaniw*	*tupesanpe*	*hanpia* ハンピア (Kayano ⟨hanpiya⟩ ハンピヤ)
9	*sinepesan*	*sinepesaniw*	*sinepewanpe*	*hanciki*
10	*wan*	*waniw*	*wanpe*	*to* (Kayano ⟨too⟩ ← Jap. *tō* [Tamura 715]

Table 1 summarizes some basic information on numbers in Ainu (see the comparative and comprehensive treatment in DAG 333-407 §§89-100). From left to right, Arabic numbers are followed by (I) regular, unmarked numbers, (II) numbers for counting

[*] I would like to offer my special thanks to Tomomi Satō and Anna Bugaeva, who read a first version of this paper.

people (note the allomorphic distribution of the human classifier or counter[1]: Vº-*n*, Cº-*iw*), (III) things in general (similarly: Vº-*p*, Cº-*pe*), and (IV) the mysterious series which is presumably used to count fish. For the sake of completeness, Table 1 contains some additional information which will become handy in the discussion below.

This brief contribution is a first attempt to explain the origin and function of this series.

2. Previous scholarship

The 1987 data resulted from the fieldwork which took place under the auspices of the "Urgent field research on ethnography of the Ainu" (アイヌ民俗文化財調査報告書) program. The information on these numbers appeared in the seventh volume which was devoted to the regions of Saru and Tokachi (Ainu minzoku chōsa 7: 76). The (main?) consultants can be found on p. 8: Nishijima Teru [b. 1896], Sawai Tomeno [b. 1909], and Yamakawa Hiroshi [b. 1914], all of them well known members of the Ainu communities from Saru and Tokachi who were active collaborators on linguistic and ethnographic matters. The mysterious numbers must be due to Nishijima Teru, because, of the three of them, Nishijima was the only speaker of the Saru dialect.[2]

The only other explicit reference to this series of strange numbers can be found in the relevant entries of Shigeru Kayano's Ainu dictionary. These numbers were recorded by Kayano on a single occasion, May 7, in 1983, that is, he did it only four years earlier than the Ainu minzoku chōsa team. And yet, the information provided by Kayano and the Ainu minzoku chōsa team does not match exactly. For one thing, in Kayano these numbers are described as being used to count people (人数を数える時に言う言葉, this information is repeated in all the entries for numbers from 1 to 10; note, however, that for 'ten' there are two entries: 325a s.v. to 'for counting (in general)' vs. 333a s.v. too 'for counting people'[3]). Kayano makes no mention to fish whatsoever.

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[1] There are other words which are described as counters in the Ainu grammar tradition. These traditionally include typical terms for physical measures, e.g., *ik* 'length (about 3 cm)', lit. 'knot, node; joint', *tem* 'length (about 1.5 mtr)', lit. 'arm, the span or distance between the tips of fingers when the arms are stretched out' or *wo* 'length (about 15 cm)', lit. 'the distance between the spread thumb and index finger', and less technical concepts like, for example, those concerned with the counting of days, e.g., *tutko rerko* 'many days', lit. 'two days, three days' (cf. *tu* X *re* X 'many X'), *-suy* 'times', lit. 'again, once more', or *to* 'day'. Japanese expressions are used as counters too, and in many cases the etymology reveals that false segmentation is at play, see, e.g., Ainu *iciri*, a term which is used to express a measure of distance, goes back to Japanese *ichiri* 一里 '1 ri', and so does Ainu *iciryo* 'money' ← Japanese *ichiryō* 一両 '1 ryō', etc.

[2] The language of Yamakawa Hiroshi (Ainu minzoku hakubutsukan 1994) and, especially, of Sawai Tomeno (see, e.g., Sawai 2006) has been the object of some research by specialists, but since it represents the dialect of Tokachi, it is of no interest for present purposes.

[3] In the Mukawa region *too* seems to be used to count things (Ainu minzoku chōsa 8: 85, the same conclusion could be reached for Saru Ainu from Ainu minzoku chōsa 7: 77, since the form for 'ten',

3. Tentative analyses: a first approach

Differences between regular numbers and the mysterious series become obvious even after a superficial examination of the data in Table 1. The etymology of at least two numbers is transparent or, rather, undisputed: *hayna* and *to* ~ *too* are seen as (dialectal) Japanese loanwords. Of special interest here is *hayna*.

Kindaichi and Chiri (1974: 11 = Kubodera 2020: 81b) claim that Ainu *hayna* comes from the Tōhoku dialect of Japanese. Mention to this word is made in the phonotactics section of an Ainu grammar in regards to the shortening of double vowels (see under *haina-are* > *hainare* 'fisherman', i.e. 延縄釣をする (haina はハヘナハの東北訛)). No further information is provided on the fact that *haina* means 'five' too or about the existence of the anomalous series.

The same kind of information (or lack of it) can be found in Batchelor's dictionary: *haina* 'a line' (149a) and the derivative *hainakani* 'wire' (149a, lit. 'metallic line').

Tamura claims that *hayna* comes from Japanese *haenawa* はえなわ (延縄) 'longline' (descriptive term made of *hae* 'to spread, stretch' and *nawa* 'line'), in reference to longline fishing. She explains that this is a technique used for open-sea fishing (系から釣り針をつけて、かごの中に入れてある。これを使って沖の漁をする。). In Tamura's dictionary there are recorded three derivatives (176-177 s.vv. *hayna-ari* 'to longline fish' and *hayna-cupu* ~ *hayna-icari* 'a cage on a longline fish-hook').[4]

Again, neither Batchelor nor Tamura mention that *haina* means 'five', and like Kindaichi and Chiri, they don't seem to be aware of the existence of an entire series of number to which *haina* belongs. In their definitions, *haina* and its derivatives are technical terms related to fishery. We still don't know why or how such a word would end meaning 'five', though now it is less problematic to understand the fish-counting connection.

The etymology of the remaining numbers, that is, 1-4 and 6-9, is not self-evident. They will be the object of discussion in next sections. Unfortunately, the opaqueness of these numbers as well as the complete lack of contextual information about their use lie behind the speculative formulations that follow.

4. Origins and functions

In what follows, a series of scenarios is presented with discussion of the pros and contras. The speculation embedded in them ranges from little demanding to simply uneconomical. All of them hinges on the fact that very likely special conditions hide behind the motivation for the existence of these strange numbers. It is well known that

that is, *to*, is the same for things and fish). It is unclear to me whether this too is connected or synonymous with the too on Table 1 for counting fish.

[4] It is unclear whether words like for example Sakhalin Ainu *ohaynahkiteh ray* 'to be drowned' (Hattori 28[3]) actually contain the term *hayna*.

under extraordinary conditions numerals act oddly. Even the simply act of counting can deviate from common practice. For instance, in shamanic songs, Ewenki (Northern Tungusic) adopts a 9-base numeric system instead of the regular decimal system (see, e.g., Vasilevič 1948: 122), thus we find *jüür yəgïr* '18', lit. 'two nines', or *diigïn yəgïr* '36', lit. 'four nines'. Therefore, the various hypotheses presented below revolve around the interaction of language creativeness and special social conditions.

4.1. Ainu-Japanese mixture

The word for 'one', *sinenna* and the other numbers with *na* could be the historical continuation of a hypothetical form *sine-p-na, with *-p* 'thing' (*sinep* 'one (thing)') and Japanese "na", perhaps a sort of hybrid formation mixing Ainu numerals and Japanese *sakana* 'fish' (< *sake* plus *na* 'vegetables').[5] The hybridity interpretation gains some credibility if we take into account that the initial segments (and the semantics) of *yokina* 'four' shows an uncanny resemblance with Jap. *yon* 'four'.

In general, this is very atypical of Ainu (no parallels are known to me) and there is no explanation as for why the Japanese word would have to be segmented *saka-na*.

4.2. Counting-out rhymes (children's play or ludling) and/or number slang

Typical among children, numbers in counting-out rhymes are characterized by being unrelated to regular numbers and by sequential analogy (a feature that also shows up in regular numbers, but in a lesser degree and with a minimal impact on the whole system). Sometimes the numbers are severely deformed due to the effects of constant oral transmission, folk etymology, etc., the motivation of which is, more often than not, language play (see, e.g., Laycock 1972 or Sherzer 1992). In some cases, these repetitive patterns seem to have as main goal to memorize long, irregular, incongruent sequences (see, e.g., the many examples in Rubin 1995). There are numerous examples in Japanese. For the sake of illustration, Bolton (1888: 10-11, 63) mentions among others, the following counting-out rhymes in Japanese:

(1) Japanese (Yokohama region)
   a. *chu, chu, ta, ka, nochu*
   b. *ichiku, tachikio, tayemosaro, otoshime, samaga, chiugara, mo, ni, owarite, kikeba, hoho, hara, no, kai*

[5] I am unaware of additional examples illustrating the regressive assimilation *pn* > *nn* which is required in this context to accept that *sinonna* comes from *sinopna. However, the fact that regressive is the general tendency in the language can be seen in many well-known sound changes, e.g., pk > kk, e.g., *yupke* ~ *yukke* 'strong', or ps > ss, e.g., *tupso* ~ *tusso* 'a cliff with a cave in it', etc.

In theory, this kind of reasoning could be applied to the mysterious numbers in Ainu. The first three numbers *sinenna, tunna, renna* are regular and it could be argued that they belong into a regular series. The rhyme in the case of *hanciki* and *hanpia*, however, occurs only at the beginning. For the remaining numbers, it is hard to find a convincing recurring pattern.

More importantly, if counting-out rhymes is the origin of the entire series, one wonders how it ended up being used to count fish.

4.3. Number slang

Numerical slang has been described at least for some creoles, e.g., in Mauritian Creole (Chaudenson 2006). The sociological context under which this kind of slang emerges is very specific (gambling, bingo games, etc.) and the ultimate motivation ranges from it being a diversion mechanism (so that tourists or authorities do not understand them) or just a humoristic device usually involving substitutions and rhymes, e.g., Reunionese Creole *sis* 'six' and its name in bingo slang *sizo fin* 'fine scissors', where *sis* [si] and the first syllable in *sizo* is homophonous (cf. French *six* and *ciseau*, respectively).

This numerical slang is hard to be detected and the fact that in the case of Ainu has been only documented after active field work matches the experiences of other linguists that have described similar slangs in the past (see, e.g., Chaudenson 2006:154). Unfortunately, without further information about the use of the strange numbers in Ainu, this remains a possibility which cannot be confirmed or denied.

4.4. Law of Hobson-Jobson for an unknown Jomonic language

The Law of Hobson-Jobson is the catchy phrase with which certain cases of admittedly poor attempts at adaptation of foreign linguistic material are conventionally named. The most famous case is the Anglo-Indian expression *hobson-jobson*, which is an adaptation of the religious lament *ḥasan ḥusayn* (that is, *Hassan! Hussein!* in the Islamic tradition).

The strange series of numbers in Ainu could be simply the last remnant of some other language present in Japan during the Jomon period. This material could have been borrowed as such or imitated somehow as in the case of hobson-jobson. Compare the Brytonic Celtic numerals to count sheep in Northern English varieties (Barry 1969), which is the only tangible evidence of Celtic influence on English dialects. The preservation of such "Jomonic" numerals in Ainu could be compared to the retention of Ainu words about the *matagi* hunters in Honshū, which is the stronger evidence (much more than place names) of Ainu presence in the main Japanese island before they were forced to move northwards.

This hypothesis is highly unlikely. Not only need we to postulate the existence of an unknown language (*Entia non sunt multiplicanda*...), but we still ignore how the words

arrived at Ainu (to say nothing of their original meaning and function).

4.5. Antilanguage and/or cryptic ends

Halliday (1978) explains that an anti-language is a special code developed with the sole goal of not being understood by a second party. The difference with jargons and the like is that these cannot be understood by others not because the users of the jargons do not wish to be understood, but by the inherited specialization of the jargon. Being unable to understand jargons is a consequence of their nature, not the main goal. Anti-languages, however, are designed with the only goal in mind of avoiding being understood. See, for example, what has to say Jahr (2003: 285) about Smoi: "During the word [...], Smoi was the ideal secret language to use. There are many anecdotal episodes told about how the Germans [...] were fooled by Mandal people speaking Smoi" (Jahr 2003: 285). Antilanguage is the linguistic reaction to a very specific social scenario, e.g. *grypsera* (or *grypserka*), which is used by inmates in jails across Poland to avoid being understood by prison officers (Szaszkiewicz 1997), or *polari* which was in use in the gay community of London during 1940s-1970s (Baker 2019).[6]

Curiously enough, the paths of antilanguage and some of the hypotheses presented above cross here. Chaudenson (2006: 160) points that number slang "[...] is also used with cryptic intent, for example, in order to give a price that will not be understood by a foreign tourist". By the same token, numbers in the so-called Lengua X of south-central Andes are said to being used by children to communicate without being understood by others (Pache 2018: 270). The numbers identified as "Lengua X" seem to be "[...] a singular epiphenomen emerging from a complex intergroup relations" (Pache 2018: 279). The same scenario cannot be posited for Ainu, as the only two parties involved are the Ainu and the Japanese, which is nothing to be compare with the multilinguistic background of the numbers in Lengua X.

If applied to the Ainu case at hand, the first we need is to describe a scenario where such numbers are in order. What situation could have caused the emergence of such a series of numbers to be used in a cryptic manner, presumably not to be understood by the Japanese? One is immediately reminded of the infamous stereotype (in the literature known as *Ainu kanjō* (アイヌ勘定) or simply Ainu counting, see, e.g., Tabata 1993: 33-34, Siddle 1995) introduced by some Japanese visitors according to which the Ainu

[6] These are examples of languages which have been created for the purposes of not allowing others to understand what it's been said; more ironic are cases where languages which originally have been created for the comprehension of multilingual societies are used at some point as antilanguages, e.g., the American Indian trade pidgin Chinook Jargon or C(h)inuk Wawa, "[...] used into the 1960s as cryptolect on short-wave radios by Native fishermen around Vancouver Island, since rival Japanese fishermen did not understand the language" (Grant 1996: 1187)

were unable to count or to tell their age, as one would expect of a barbarian race.[7] The Japanese took advantage of the situation. They paid the Ainu less for what in justice were more goods.

I suggest the following scenario. It is not so that the Ainu introduced strange numbers to avoid mutual comprehension with the Japanese while trading (it simply does not make sense why the Ainu would have to conceal the exact number of goods which they wish to sell), but rather that the requirement of using exact numbers, as expected in trading, broke well known religious norms (see, e.g., Chiri 1957 for some examples of the effects of taboo in the Ainu language). Many authors (see, e.g., Fujimura 1995: 119-120) have explained that the use of accurate numbers among the Ainu could break religious taboos. If someone utters his age, the spirits could think that that person has lived long enough and could put an end to that person's life. If someone tells the number of bears he has hunted, the spirits could take it as an idle boast and bring misfortune to the hunter. Therefore, saying aloud the accurate number of salmon and trout captured could be wrong from a religious viewpoint (particular mention is made of salmon and trout in Fujimura 1995). The Ainu could have devised a series of numbers to avoid telling the exact quantity of fish in the course of trade activity with the Japanese. This chronology would indirectly explain why there is no trace of the strange series of numbers in classical Ainu literature. By the same token, this hypothesis would find some indirect support in the fact that it is documented in the southwestern part of Hokkaidō and nowhere else, for it is there where the most intense contact has been happening from the very beginning in the particular history of Japanese-Ainu contacts, and it is there where the fishing industry reached the highest pick in economic terms.

Though this hypothesis seems reasonable, we lack documentation that would support it. However, on one hand, this scenario does not pose extra questions and offers an answer in unambiguous terms regarding the motivation for the emergence of the numbers. It is unclear whether such an explanation would account for the fact that sources are undecided whether the numbers are used to count fish or people. On the other hand, unfortunately, it does not help in finding etymologies for the individual numbers.

5. A Few more unusual numbers

For the sake of completeness, in this section two atypical numbers will be briefly mentioned: *earasamne* and *atuyta*. There seems to be no apparent connection with the

[7] Harrison (2007: 167-200, see pp. 189-190 and 192-193 on Ainu) offers a very illustrative catalogue of counting systems and the various stages at which linguists may find them. These stages include full replacement, transition from one system to another, or complete loss (without testimonies as to how the previous system looked like).

strange series. However, they share one remarkable feature: it is not entirely possible to be specific about their exact meaning.

Batchelor has the number *earasamne* 'ten' which is only used in counting fish (88b s.v. earasamne). The internal etymology of this complex expression is unknown and no apparent solution is readily available (the segmentation │e.ar-asar-ne│ {real/complete-ten-COP} is of little use to understand the connection underlying the number itself and fish). Batchelor does not seem to include in his dictionary additional numbers used exclusively in the counting of fish like the ones in Table 1. However, Batchelor do explain, on p. 95, notes 1, 2, that "[...] in counting fish 10 is *earasamne no wan*,[8] while in counting animals 10 is *shine atuita*". This brings us the second number to be discussed here: *atuyta*.

The number *atuyta* can be apparently segmented │atuy=ta│ {sea/ocean=LOC} '(as many as) in the sea'. This analysis goes along well with the meaning of *atuyta* provided by Tamura (35 s.v. atuyta), that is, 'term for a large number (exact number unclear)'. The indeterminacy of "large, unspecified quantity" can be seen too in the Ainu dialect of Asahikawa, where we have *atuyta* '100 (people)' (Hattori 263[48], Ōta 13a s.v. atúyta[9]). It seems that 'ten' and '100' could be interpreted as large figures in certain contexts, hence the apparent, but reasonable, variation in meaning. However, Batchelor (55a s.v. atuita) is rather insistent that *atuyta* means '10' (only used in counting animals) and, therefore, provides even larger numbers, e.g., *tu-atuyta* 'twenty animals'.[10]

6. Conclusion

There is an unusual series of numbers from 1 to 10 documented for the variety of Ainu spoken around the Saru River in the 1980s. The origin and function of these numbers is unknown and available data is scanty and contradictory. Like in the case of traditional enumeration in the North of England and Southern Scotland (Barry 1969: 75), all testimonies seem to come from second hand, that is, no consultant used this numbers

[8] Note that he also explains that "[...] in counting fish 20 is *shine shike*, i.e. one bundle or one load", where *sike* is the regular word for load or whatever thing it is carried on one's back (*si-ke* {SELF-place} [?]).

[9] Ōta 13a explains that when counting animals, it means 20, sometimes 10, but when counting things, it means 100. In epic texts, e.g. Oina, the word expresses a unit for counting furs that can be ten or twenty, e.g., *hoynu atuyta* 'twenty raccoon dog furs' (but Monno Hautomutei *apud* Ōta, *ibid.*, claims that it could be ten). Curiously enough, Ōta claims that the word is not common in other dialects, and that in Asahikawa it has evolved to mean 'hundreds of, lots of X', as in *atuyta ni* 'lots of logs for firewood' or *tawara atuyta tu hot* 'hundred and twenty bags' (*tawara* ← Jap.). Such a semantic evolution has well known parallels, e.g., Standard Chinese *bǎi* 百 '100' > 'numerous, of various kinds'. Ōta admits that she ignores the Sakhalin Ainu word for this. It is *kuntu* 'a bundle of 10 skins of animals', hence *sine kunkutu* '10', *sine kunkutu sine* '11', *tu kunkutu* '20', etc. (see, e.g., DAG 365-367 §90[10.]).

[10] This is in line with the testimony of Tomomi Satō, who, in personal communication, informed me that he heard *atuyta* used by a speaker of the Chitose dialect to count dogs.

in a natural fashion, but simply remembered about them. Moreover, again similar to the case of traditional enumeration in the North of England and Southern Scotland, which is traditionally related to sheep-counting even though the record clearly shows that, if something, this is a marginal use of the numbers in question (Barry 1969: 75), we are unable to be more concrete about the original semantics of the Ainu strange numbers: fish and people are their target according to the available data.

The religious scenario put forward above (section **4.5**) is the only one which fits within what we know of Ainu culture and, to certain extend, sociolinguistics. The Japanese demands to use exact numbers could have been the trigger to introduce odd numbers to avoid the taboo. The fact that we cannot suggest etymologies for the individual numbers is not especially dramatic given the nature of their origin, be that religious, as suggested here, or otherwise.

Addendum

Below I reproduce, respelled according to modern conventions, and translate into English[11] a very short *kamuy yukar* written down by Chiri Yukie (1903-1922) and published as part of the edition of her personal notebooks (Chiri Y 1982: 114-116). The sole intention of this piece is to provide the name of Oyna-kamuy's favourite dog. More interestingly it is followed by a list with the names of the other ten dogs owned by Oyna-kamuy. It is supposed that the lists reflects the names as if Oyna-kamuy would pronounce them in one breath (これはオイナカムイが十匹の飼犬を一息に呼んだのださうです。).

[11] My translation. The original Japanese reads as follows: 片側に鹿のケトゥンジが // 片側には熊のケトゥンジがあり // 背筋の上に鹿の足跡が通っていて // 耳の間に鹿がはねている（模様のある） // 尾が立っている可愛いい牡犬よ、チョーチョー (Chiri Y 1982: 115).

	OYNA-KAMUY SETA HOTUKAR	CALLING OYNA-KAMUY'S DOG
	oararke yuk ketunci oma	On one side, stretchy skin like the *ketunci* of a deer
	oararke kamuy ketunci oma	On the other side, like the *ketunci* of a bear
	mecip kaske yukapir kus	Down the spine, deer tracks all the way
5	kisar utur yukoterke	Between the ears, a deer kicking around
	sara as ponpinne choo choo...	Charming one, the tail half-mast choo choo

1 Tana tunike tunike
2 Tokikarpo
3 Asar
10 **4** Ororinco
5 Binco
6 Anbatamakewka
7 Yuktamakewka
8 Anahuute
15 **9** Ana soronpo
10 Ana

Linguistic remarks:

Line 1: *hotukar* instead of *hotuyekar* 'to call, hail' (Hattori 57[13]).

Lines 2 and 3: *ketunci* 'frame wood for stretching animal skin' (動物の皮を張ってためのの枠木, Yukie 1982: 115). The same as *ketuncihi* 'spread out (as the skins of animals to dry)' in Batchelor 247b (here with the affiliative suffix *-hi*), and related to *ketu* 'to scrape, to separate as layers of bark in making thread' (cf. Saru Ainu *ketunke* 'to peel off' and, perhaps, *ci* 'to wither, burnt, get cooked, scalded'). Since there seems to be no direct translation available in English, I retain the original Ainu term in the English translation.

Line 4: *yukapir* is made of *yuk* 'deer' and *pir* 'wound' (Hattori 30[23]), see Batchelor 580a s.v. yuk-apiri 'deer track' and 45a s.vv. api 'wound left by rubbing', apiri 'trail, foot-print, chafing, wound left by rubbing'.

Line 5: The dog has a spot resembling a jumping (*oterke*) deer between the ears.

The shape of these dog names shows common patterns with that of the fishy numbers: segment repetition in contiguous items (*...inco*, *...tamakewka*, *Ana...*) and opaque etymologies. This list shows that the origin of the fishy names might have nothing to numerical logic, but rather we are dealing with traces of ethnolinguistic processes

which we unfortunately cannot recover anymore.

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