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SAKHALIN AINU UTAR ~ UTAH AND COMMON AINU *-R*

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Abstract

In this brief contribution, a more accurate treatment of the sound correspondence Hokkaidō Ainu -r# vs. Sakhalin Ainu -r^v# ~ -N# is offered. Explaining the particularities of such a correspondence requires introducing a non-trivial modification of the traditional synchronic description of Sakhalin Ainu morphophonemics.

1. Introductory remarks

The traditional position regarding Ainu dialectology states that there are at least two large zones corresponding geographically to the islands of Hokkaidō (the ancient land of *Ezo*) and Sakhalin (in Jap. *Karafuto*).¹ Though additional Ainu speaking

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¹ Abbreviations and other conventions: CA = Common Ainu, CAU = causative, HA = Hokkaidō Ainu, Jap. = Japanese, NOM = nominalizer, PA = Proto-Ainu, PL = plural, POSS/DET = possessive/determinative, PRT = particle, SA = Sakhalin Ainu, SG = singular, A = transitive subject. In tables, unless otherwise noted, HA corresponds to Saru Ainu (Southern Hokkaidō Ainu), CA reconstructions come from RPA (page), “reference” directs to AHJ (page_[item number]). Sōya Ainu (Northwestern Hokkaidō Ainu) materials come from ASJ. Note that ⟨h⟩ = [x], but in intervocalic and final positions is voiced, being closer to [ɣ], whereas ⟨ʔ⟩ = [ʔ] (glottal plosive), ⟨y⟩ = yod, ⟨ʷ⟩ = a “vocoid” or echo-vowel, usually an ultrashort vowel (for further details, see Asai 1976). “→” stands for morphological process (e.g. derivation or noun composition), “↪” for borrowing, “⇒” for analogical extension, “=” for (originally) clitic junction. Proto-Ainu reconstructions pre-date Common-Ainu, i.e. the changes assumed for this stage took place

territories have been successfully identified, e.g. the Kurile Islands, the southernmost tip of Kamchatka and even the easternmost regions of the Amur basin, these are usually subsumed under the Hokkaidō branch.² The Hokkaidō-Sakhalin division is the result of rather recent events, having originated after “the Great Migration” which occurred in the 13th c. whereby part of the Ainu population originally located in Hokkaidō migrated to Sakhalin and the Kuriles under the pressure of the Japanese (bearers of the “Satsumon Culture”) expansion (*vid. i.a.* Janhunen 2002: 8–11).

There is notable diversity within the HA cluster of dialects (the existence of at least three groups, namely Southern, Northeastern, and Northwestern, is customarily recognized), whereas SA presents much more uniformity, though there are noticeable differences in the speeches of Rayciska and Nayro.³ Provided the value of this fact is not underestimated, it is possible to notice several important isoglosses, both phonological and morphosyntactic,⁴ separating HA and SA. In the domain of historical phonology, the most conspicuous difference is, without a shade of doubt, the merge of /p t k r/ in coda position⁵ in conceptual forms⁶ (i.e. dictionary-forms) in SA, esp. Rayciska (AGD 19–22 §4 [3]), e.g.

before the branching off of the historical languages, during a hypothetic period of homogeneity and stability of the parental language, e.g. PA *ti > CA *ci. “Pan-Ainu” refers to the generalized presence in both SA and HA of a given structure or lexical item regardless of its diachronic specifics.

- ² Kodama (1970: 1–80) offers a balanced discussion with historical, philological and dialectological information (for a more linguistic-based approach, see Asai 1974). The importance of the proper philological analysis of old documentation for Ainu dialectological studies has been emphasized by Satō on several occasions (see, most notably, 2004).
- ³ As one of the reviewers correctly point out, there are significant differences in the morphology of West Coast Sakhalin (represented in the literature by Murasaki’s works) and East Coast Sakhalin (e.g. Piłsudski’s materials) dialects owing to the fact that the latter is much closer to Hokkaidō and, therefore, influences are to be expected. In the domain of phonology, however, these influences are minimal, and therefore, they will be ignored altogether, for they have no impact on the issue which is discussed in the present contribution.
- ⁴ A few specialists consider that the opposition of Hokkaidō vs. Sakhalin is best defined as one between two languages, rather than two dialects. The most explicit statement at this effect belongs to Kindaichi (1941: 61; note that the name of the author appears as “Kindaiti” on the book cover, according to old-fashioned Japanese transcription conventions).
- ⁵ Grammars traditionally include here /c/, but this is technically impossible, for this sound cannot appear in final position (the canonical syllable type in SA is [C₁]V(V)[C₂], where C₂ = /s m n w y h/, *vid. i.a.* Murasaki 1998: 3). This misunderstanding might have been motivated by examples such as *mat > mat ‘woman’ ⇒ *macihi* (the corresponding POSS/DET form) with regular palatalization of /t/ before /i/. On the other hand, one could eventually add /s/ on the basis of words like *nis* ‘handle’ < *nih < *nit ⇒ *nicihi*, with regular */iC/ > */ih/ > /is/, where C = /p t k/. The main difference is that, in the former, the original /t/ is recoverable (it actually belongs to the conceptual form), but, in the latter, /s/ does not reveal which of the plosives is etymologically original, and the conceptual form only shows /s/ (the primary origin of which could, in theory, be any of the CA sequences */ip it ik ih is/).
- ⁶ The term conceptual, already accepted in the field of Ainu studies (Tamura 1988: 81), though confusing, corresponds to the absolute, bare or non-inflected form in other traditions.

#	HA	SA	CA	Gloss	Reference
1	<i>rap</i>	<i>rah</i>	*trAp (147)	feather	182 ₂₀
2	<i>pet</i>	<i>peh</i>	*pet (125)	river	215 ₂₄
3	<i>itak</i>	<i>itah</i>	*itak (98)	speech, language; to speak	56 _{1,4}
4	<i>utar</i>	<i>utah</i> ~ <i>utar</i> ^a	—	relative, comrade	38 ₃

From a synchronic viewpoint, this feature is treated as a morphophonemic rule (Murasaki 1979: 12–13), since the original consonants, i.e. /p t k r/, surface in the presence of various suffixes, e.g. CA *itak ‘speech, language; to speak’ > HA *itah* id. \Rightarrow *itak-ih*i {speech-POSS/DET} ‘(his/the) speech’ or *itak-ah*ci {to speak-3PL.A} ‘they speak’.

This paper deals with the sound correspondence illustrated in (4), because (a) it is very irregular (the immense majority of CA sequences with *-r# continues as -Vr^V in SA, instead of the alleged -h), and (b) there is a very marginal treatment involving what seems to be nasalization, i.e. *-r# > SA -N# (with N = /n m/) that, to the best of my knowledge, has not been covered in the specialist literature.⁷ I argue in §2 that *-r > -h occurs only in a highly frequent group of words and it may have been originally the result of generalizing a well known sandhi-rule (put another way, the sound change *-r > -h was born out of a syntagmatic (phrasal) analogy). As for *-r > -N, it will be shown in §3 that all the available examples are invalid one way or another.

2. CA *-r > SA -h

The sound change CA *-r > SA -h is actually attested only in a handful of words: *utah* ‘people; relative(s)’, *kuh* ‘person; man’ (vs. HA *kur*), *oah* ‘one’ (vs. HA *oar*). If these forms are tabulated against their HA cognates, the impression is generated that there is a neat sound-correspondence SA -h vs. HA -r. This may seem reasonable, taking into account the fate of the CA plosives in SA. Notwithstanding first impressions, in the immense majority of cases, what is found is actually the trivial one-to-one correspondence HA -Vr# vs. SA -V₁r^V₂# (with V₁ = V₂, where <V> stands for a vocoid or echo-vowel, a copy of the vowel in the preceding syllable,⁸ *vid. i.a.* RPA 21–22), e.g.

⁷ Curiously enough, Chiri (1942/1973: 473) mentions that SA /r/ may change into (a) /n/ before the dental consonants /t r/ in and beyond morpheme boundary, (b) /-h/ (his <x>), and (c) /-t/ before another /t/, with eventual dissimilation, e.g. *kapar*^a *tuki* ~ *kapar tuki* > *kapat_tuki* > *kapax_tuki*. Unfortunately, he does not provide an explanation for any of those changes, therefore he is unintentionally unable to establish what factors would distinguish (a) from (c). Chiri’s points (a–c) shall be addressed in the following paragraphs.

⁸ The apparent automatic, predictable nature of the vocoid casts some doubts on its phonological status. In consequence, Murasaki’s practice of writing it as a full vowel, e.g. /sirpirka/ =

#	HA	SA	CA	Gloss	Reference
5	<i>kisar</i>	<i>kisar</i> ^a	*kisAr (104)	ear	5 ₃₆
6	<i>kikir</i>	<i>kikir</i> ⁱ	*kikir (103)	insect	180 ₆
7	<i>ker</i>	<i>ker</i> ^e ~ <i>kiro</i> [*]	*ker (101)	foot (wear), shoe; leg	87 ₁₉ (only <i>kiro</i>), SAJ 83A (only <i>kiro</i>), AEP 250 ₁₃₂ (s.v. <i>kere</i>), 259 ₂₀₆ (s.v. <i>kiro</i>)
8	<i>ipor</i>	<i>ipor</i> ^o	*ipOr (97)	color; counte- nance, facial complexion, look	282 ₁
9	<i>setur</i>	<i>setur</i> ^u	*sEtur (136)	back	14 ₁₁₇

* The SA form *kiro* (< *kir-u, with the POSS/DET suffix) may be a contamination of (PA *tikir >) HA *cikir* and SA + Kuril Ainu *kema*, both meaning 'leg and foot' (RPA 144, AHJ 17₁₃₆). Note that *kema* is attested in Yakumo, Horobetsu and Nayoro along with *cikir*, whereas Saru seems to have only *kema*. This is contradicted in Tamura's dictionary, where both words are glossed (1996: 52, 292), though *cikir* with the meaning of 'animal leg' (it may be pertinent to mention, as one reviewer points out, that in the Chitose dialect *cikir* means both 'animal leg' and 'human leg', the second attested in oral literature, see Nakagawa 1995: 254). All but Nayoro are Southern HA dialects.

If one takes RPA as being statistical representative, there is a total of 54 items (CA reconstructions) with final *-r. Out of these, 18 have no SA cognate or the one available is etymologically problematical. The rest, i.e. 36, has SA cognate,⁹ but not even one shows the sound change *-r > SA -h. It is safe to conclude that this sound change is, at best, marginal.

What is its origin? Why does it apply only to a handful of words? The answer to both questions rest on the particularities of Ainu phonotactics.

Ainu /r/ has different phonological realizations (they greatly depend on the speaker), one of them being characteristically plosive, namely [t] ~ [r] (*vid. i.a.* Asai 1976; Tamura 1988/2000: 19; Murasaki 1998: 2; also AGD 30–31 §6.3, RPA 16–18). This would in principle allow /r/ to be subjected to the same treatment as /p t k/, namely to change into /h/ in final position or before another consonant. However, the fact that most words with final -r are not subjected to the sound change CA *-r >

[sir'pir'ka] = <siripirika>, perhaps should be subjected to revision. The problem regarding the phonological status of the vocoids is identical to the one of the glottal plosive in Anlaut before vowel (also reflected in Murasaki's orthograph as <'), though this is a much more extended practice also common among HA specialists) which, judging from the conclusions drawn in such contributions as Shiraishi (1999), should have been already solved in favor of the non-existence of these elements as phonological units in Ainu. Notwithstanding all that, this issue requires a full assessment involving both synchronic and diachronic descriptions.

⁹ The main source of RAP is AHJ. Many of the 36 items are etymologically connected. By problematical, it is meant the following three instances: *rar 'eyebrow' > SA *raru* and *tur 'dirt' > *tur*^u, -hu ~ *tur*, -ihi (the same holds true for *kur 'shadow', see RPA 107, 130, 149). From this perspective, ex. (7) above, namely *ker*^e ~ *kiro*, would have to be taken as problematical, but it is the only example with the sequence *er*^e.

SA *-h* must suffice to prevent us from taking this as the single trigger to account for words like *utah*, *kuh*, and *oah*. There must be something else.

There are two processes here into action:

- a) consonant clusters with homorganic stops are solved with the aspiration of the first member, i.e. CA *TT > SA *hT* (or *isT*, if PT *iT), where T = plosive, e.g. CA *Eg ‘to come’ (RPA 85, AHJ 64₆₆) > HA *ek* vs. SA *eh* ⇒ *ek-te {to come-CAU} > (*ette >) *ehte* ‘to send’.
- b) regular assimilation of /r/ to a following consonant, i.e. CA *rC > *CC, where C = especially, though not exclusively, a plosive. If C happens to be T, then it is possible to find a sound change chain [a+b], e.g. SA *unahpe* ‘aunt’ < *unappe < HA *unarpa* (AHJ 43₄₃) or *sissimoye* ‘earthquake’ < *sihsimoye < *sis-simoye (?) < HA *sirsimoye* (AHJ 212₃).¹⁰

In the light of these processes, correspondences such as HA *otta* & SA *ohta* ‘in, at’, from PA *or=ta {inside-LOC}, the *r*-form being preserved in HA & SA *orowa* < PA ~ CA *or-o=wa {inside-POSS/DET=PRT} ‘from, by’ (both are grammaticalizations of different inflected forms of the noun *or ‘inside’, see RPA 121), can be understood as being entirely regular.

Furthermore, this set of rules allows us to speculate about the primary origin of *-h* in the words mentioned above. These terms are very often used in word compounds, e.g. SA *oahtek* ‘one-hand’ < *oattek (attested in Kindaichi’s *Ainu monogatari*, see SAJ 116b) or *oahtepa* ‘one of two’ < *oattepa < oar-te-pa (attested in Piłsudski’s materials, cf. 1912: 156, line 11), both with *oar*^(a) ‘one of a pair, one of two’. It would be possible to assume *mutatis mutandis* the same development for *utah*, namely [utah#C-] < *[utaC#C-] < */utar#C-/. All in all, the presence of *-h* in the conceptual forms, i.e. SA *utah*, *kuh*, and *oah*, is the result of extending analogically the *h*-form which originally was confined to word compounds or other junctures at major syntactic sequences. The following two sentences from Piłsudski’s materials show what that context may look like¹¹:

- (1) <Án-koro póm matekaći hemánu kú^x síno ankónde kumpe korámupéte anki.>
 1PL.A-have small girl person which person really 1SG.A-have-CAU PRT ignorance
 1PL.A-do
 ‘I know not indeed to whom I should give my little girl’.¹² (PM 174, line 23)

¹⁰ In some cases it may seem that this sound change also affected sequences with two /r/, even though there is already a well known phonotactic rule by which /r/ + /r/ > [n_r] (see §3[a] below), e.g. HA *urar* ‘fog’ < CA *urar > SA *urar*^a ~ *urah* (SAJ 187a) ⇒ *urar-ru ~ urah-ru > *uurahruu* (AHJ 227₃₇). I understand that the base *urah* may be not dependant of its presence in noun compounds, i.e. it may have independently risen and, only afterwards, been used in noun compounds.

¹¹ The rest of examples in Piłsudski’s texts have *kur*^a and *utar*^a (AEP 286, 504, respectively), unless *uta* < *utah* is considered a remnant. Note that <makax> is not the result of dissimilation after the sequence */makaN_manu/, but the regular outcome of pre-SA *makap, the suppletive PL pair of *makan* ‘to go, come’ (Tamura 1988/2000: 38; had been because dissimilation, then why <póm matekaći> did not undergo the same process?).

- (2) <Śištur uškane neja ċiše sǒjket uta makax manu.>
 get.lost while PRT house yard people come.PL PRT
 ‘Losing (their) way, they came to the court of that house (it is said).’ (PM 104, line 9)

It is possible to add other expressions extracted from the same corpus, e.g. <Koho^x tokešne> ‘late in the evening’ (PM 174, line 33), where the first word is convincingly analyzed by Piłsudski as the contraction of the noun compound †ko ohor^(o), with *ohor^(o)* ‘long time’. The reality of the middle stage is confirmed in another text, cf. <ohot-tókeš>, from †ohor^(o) tokeš (PM 149, line 4, see Piłsudski’s remarks on p. 153 [4]).

Why is analogically extended only in these three words? The most reasonable explanation implies to resort to frequency. This is especially true for *utah*, since as is well known, this word has been grammaticalized as plural marker (this is a conceptually straightforward grammaticalization which should not stop us). As a matter of fact, it may have been already common in the parental language to signal collectivity by attaching the noun *utar* ‘people’ to human, more generally animate, nouns, e.g. (Pan-Ainu) *aynu* ‘person’ → *aynu-utar*, *hekaci* ‘boy’ → *hekaci-utar*, *kamui* ‘god’ → *kamui-utar*, *aoka(y)* ‘some people’ → *aoka(y)-utar*. However, the generalization of its usage has become more systematic in SA (in general, see AGD 164–167 §37 [1–3], with references),¹³ where it has been extended to signal plurality of objects too (though this may have already begun much earlier, so it is in the Epic Ainu language, cf. Kindaichi 1936.I: 48–49 §47). Some examples from East Coast Sakhalin¹⁴:

- (3) <Tura makánte, mi kosóndo utara emújk’e utara ašink’e, [...]>
 near go.up-CAU dress precious PL all PL take.off-CAU
 ‘Having brought (them), they took all the silk dresses off [...].’ (PM 90, line 74)

¹² As Tamura (1988/2000: 64) explains,

[i]n quotational sentences, and also in stories and other tales that are passed down, the indefinite may be used instead of the first person. In folk tales and epic poetry, when main characters recite (or sing) stores of themselves, the main character uses the indefinite person. [...] in sacred epic poems, one person referring to themselves may use the first person plural, and this appears to be the old form of referring to oneself [...].

Note that HA ending *an-* corresponds to both 3PL and indefinite, whereas in SA, where there is no indefinite category, we find only 3PL *an-* undertaking both functions.

¹³ This may have areal motivations, since Nivkh, the Tungusic languages, and Russian (in that order of prominence regarding the impact on Ainu) spoken in Sakhalin make all extensive use of plural markers with both human and nonhuman referents. In all these languages, the plural marker (or markers) can be posited for the parental language, therefore if secondary, it is a very early feature which cannot be possible affected the Ainu facts. Although Taronci, the author of the only Ainu epistolary collection known to us (the remittent was B. Piłsudski), made use of constructions such as *ainu-utara...okayhci* ‘айну utara...окаяхци’ (Majewicz 2004: 17, lines 33–34), where *okay* ‘to go (PL)’ in theory does not require the plural ending *-hci*, this can hardly be ascribed to the fact that he knew some Russian. This seems rather a typical example of language attrition through loss.

¹⁴ West Coast Sakhalin behaves in the very same way at this respect. For the sake of illustration, cf. examples in Murasaki (1976): p. 4, line 17 <cep’uta> ‘fishes’; p. 29, line 17 <poopoh’utah> ‘offerings’, p. 77, lines 14–15 <moci’uta> ‘rice-cakes’, p. 93, line 14 <cise’uta> ‘houses’, with the variant *uta* < *utah* in allegro pronunciation, cf. p. 4, line 6 <hekacita> ‘children’, from *hekaci utah*), etc.

- (4) <Neja cíbo utara ax súy, tu súj, neja cíś utara wáxka jóxte.>
 these row PL one time two time these boat PL water catch¹⁵
 ‘Those rowers once (or) twice pulled a stroke.’ (PM 100, lines 31–32)
- (5) <[...], ájnu korope utara ekoro-číki, [...]>
 the.Ainu wealth PL 2SG.A-have when
 ‘[...] when thou wilt possess the wealth of the Ainu [...].’ (PM 127–128, lines 187–188)

Frequency may also be used as an explanation in the case of *oah* and *kuh*, though this must be necessarily much more restricted, given the semantics of these two items. Semantic closeness of *oah* with the numeral classifiers for things *sineh*, *tuh* or *reh* (from *sine* ‘one’, *tu* ‘two’, *re* ‘three’ + *-p ‘thing’) and of *kuh* with *utah* (note additionally that *kur is a Pan-Ainu marker to derivate *nomina actoris* nouns) may have contributed to the consolidation of the *h*-variant. In these two cases, the frequency argumentation remains open to discussion, for it is admittedly a bit fuzzier.

It is very significant that no *h*-form has totally replaced its corresponding conceptual form, the proper way to quote them being *utar*^a ~ *utah*, *kur*^u ~ *kuh*, and *oar*^a ~ *oah*. This fact would lend indirectly some support to the secondary origin of the latter.

3. CA *-r > SA -N

There is a small group of words for which the sound correspondence HA -r# vs. SA -N# should apparently be postulated (N stands for the archiphoneme of /n/ and /m/). It was reported already a century ago (Laufer 1917: 202–203, it is not mentioned in RPA or AGD), but, to the best of my knowledge, it has received no attention in the specialist literature. I will show that none of the comparisons is valid, and therefore, the sound correspondence must be abandoned.

This correspondence sharply contrasts with the more regular HA -Vr# vs. SA -V₁r^V₂# dealt with in the previous section. The number of instances reflecting is indeed very limited. The most frequently quoted are shown in the following table (for additional examples, see Chiri 1942/1973: 480 [ʃ], ʃʌ]¹⁶).

#	HA	SA	CA	Gloss	Reference
10	<i>etor</i>	<i>esum</i> (= Sōya*, 20a)	—	nasal matter	5 ₃₂
11	<i>kiputur</i>	<i>kistom</i> (Sōya <i>nanuhu</i> , 47B)	*kip-utur (103)	forehead	3 ₉

¹⁵ Idiomatic expression: ‘to row’, lit. ‘to hook the water with oars’ (AEP 228).

¹⁶ Most cases of *r* ~ *n* alternation brought up by Chiri show the presence of a contiguous nasal, eventually of another /r/, which could have triggered the assimilation or dissimilation of /r/ (sometimes even at distance), e.g. *menoko* (Jap. borrowing) ~ *meroko* ‘female, woman’, *mimi-gane* (Jap. borrowing) ~ *ninikari* ‘earrings’, *erum* ~ *enum* ‘the place on the end of an arrow for poison’, *torar* ~ *tonari* ‘thongs of leather’, *hunara* ~ *hunana* ‘to look for, search’, &c. Final full vowels most likely correspond to the POSS/DET formation, i.e. †*tonar* ⇔ *tonar-i*.

#	HA	SA	CA	Gloss	Reference
12	<i>mukkur</i>	<i>muhkun(a)</i> (Sōya <i>mukkur</i> , 47A)	*mukku (112)	flute, pipe	177 ₁₃
13	<i>kore</i>	<i>konte</i> (Sōya <i>kore</i> , 39A)	*ko-C-dE (105)	to give < *kor-re {to have-CAU}	80 ₁
14	<i>nukare</i>	<i>nukante</i> (= SŌYA, 51B)	—	to show < *nukar-re {to see-CAU}	143 ₁₀₃

* There should come as no surprise to find out that Sōya Ainu, the northernmost dialect of HA, shares the same words with SA in exx. 10 and 14, since Sōya is the transitional dialect between HA and SA, though many other features set them clearly apart (for instance, there is no trace of the sound change /-p -t -k/ > /-h/ in Sōya).

The primary origin of the irruptive nasal element in exx. 10–14 is not always the same, and requires a case-by-case analysis. Before doing that, a note on Ainu sandhi rules is in order. On the light of recent research, they may be divided into two groups¹⁷:

- a) *r*-alternation: /r/ + /t/ > [t_̣r], /r/ + /c/ > [t_̣c], /r/ + /r/ > [n_̣r],¹⁸ /r/ + /n/ > [n_̣n]
 b) *n*-alternation: /n/ + /s/ > [y_̣s], /n/ + /y/ > [y_̣y]

Shiraishi (2001) has conclusively demonstrated that rules in [a], whereby /r/ cannot be followed by a [+COR] consonant (progressive assimilation before /r/ & dissimilation before /n t c/) occurs both within and across words (free-syntactical application), whereas rules in [b] (regressive assimilation targeting for place and continuacy) are much more restricted: they only apply to frequent, reiterative word sequences, e.g. /pon seta/ → [poy_̣seta] ‘little dog’. There is an imprint in the Ainu language that grants a special status to the mutual interaction of /r/ and /n/. How can be this of any help to account for the exx. 10–14 above?

1. /u/ in *esum* (Murasaki 1976: 137) < *etor may perhaps be the result of blending *etu* ‘nose’ < *etu (AHJ 5₃₁). To the best of my knowledge, the sound change /t/ > /s/ is nowhere attested in Ainu. I believe that to invoke Japanese interference (Jap. *tu* = [ɕu]) could have motivated that /tu/ > /su/) is not the most convincing explanation. There are insurmountable problems: (1) why does such an interference affect the marginal word *esum* but does leave untouched the common term

¹⁷ The exact distribution of these rules is tied to dialectological considerations. For instance, Bugaeva (2004: 14–15) explains that at least four of the most common sandhi rules are not attested in Chitose (Southern HA). Notwithstanding, there is some room to assume that the full set of *r*- & *n*-alternations productively applied already in the parental language stage (RPA 32).

¹⁸ The articulatory motivation of the sound law in this *sandhi*-rule, namely */r/ > *[hr] > [nr] (for the intermediate stage, see §2[a]) may be explained by rhinoglottophilia, a well known affinity between the feature of nasality and the articulatory involvement of the glottis. It has been described for a variety of genetically unrelated languages, both synchronically and diachronically, e.g. Irish, Yiddish, Basque, Naxi, Thai or Ponapean (*vid. i.a.* Hetzron 1969; Matisoff 1975).

etu ‘nose’, and (2) [ɛu] is acoustically very different from /su/, even more when it is noted that Ainu has the required phonetics to render Jap. [ɛu], as regularly happens in the idiolects of some southern varieties of HA (for instance, in the Samani dialect, see a brief mention in RPA 15 and Sato 2002: 104, with *etu* ~ *ecu* depending on the speaker).

Chiri (1954/1976: 318) proposes that it is a contraction of *etu* + *sum* ‘oil (as food)’ (AHJ 93₁₁) and adds *etusin-kar* ‘to wipe one’s nose, sniffle; to snort, grunt’ < †*tetusum-kar*. I find the latter connection very unconvincing, since there is no reasonable way to account for the change *-sum- > -sin-. As for the former, it is conceivable that *sum* ‘oil’ could be used to refer to the *mucus*, but the evolution **etusum* > *esum* requires still some elaboration. I believe that it could be paralleled to the evolution assumed for other noun compounds, e.g. *susu-ham* > *susam*, with an intermediate stage **susham* (with syncope) and simplification of the disliked cluster /sh/. Hence, **etusum* > (**etsum* > **essum* >) *esum*, perhaps as in SA *usi* ‘lacquer’ vs. Sōya + HA *ussi* vs. Bihoro *hupsi* (Northwestern HA, initial *h-* is regular, but secondary) < Jap. *urusi* ‘lacquer’ (AHJ 125₈₇).

All in all, it is obvious that HA *-r* and SA *-m* are not etymologizable in this item: HA *etor* is a non-segmentable word, whereas SA reflects most likely a noun-compound, whose second element cannot be compared to the last segment of the HA form.

2. As in the previous case, ex. (11) may be a noun compound. The identification of the components, however, is unclear. Taking into account the HA forms, the second may tentatively correspond to *utur* ‘space (between)’. However, the resulting initial element, i.e. †*kip*, must be interpreted as *kep* ‘forehead’, a word that, as far as I can tell, only Chiri quotes (1954/1976: 27). Vovin (RPA 103) does not include the SA form among the cognates of his **kiputur*, perhaps assuming that it is unrelated. Regardless of the inclusion or exclusion of SA, the origin of the internal cluster is obvious: /ist/ < /iht/ (< /itt/? < /ipt/. The middle stage is attested in the Shumshu Kurile Ainu dialect (all Kurile dialects vanished by the 19th c.), cf. †*kiptur* ‘frontal [bone] (czołowy; *frontalis*)’ (Dybowski/Radliński 1892: 93). Syncope is a very common phenomenon in the history not just of SA, but, generally speaking, of Ainu (for the link of syncope with voiceless vowels, see Shiraishi 2003), e.g. HA *kasiike* vs. SA *kaske* (AHJ 239₃₉), HA *tomotuye* vs. SA *ton-tuye* (AHJ 66₁₆), HA *asiknep* (*pakno*) vs. SA *asneh* (*pakno*) (AHJ 267₈₃). Chiri, who mentions two variants of the SA term, namely *kixton* & *kiston*, proposes that the second member corresponds to *tom* (> *ton*) ‘inside, middle’ (cf. AHJ 240₄₄ *tom* ~ *tum* id., attested in both HA and SA, perhaps the first component in such words as SA *tonke* ‘middle’ or HA *tumam* ‘hips, waist’).¹⁹

¹⁹ This is all well motivated from a semantic viewpoint. It is possible to add that there cross-linguistically are semantic parallels connecting the etymology of forehead with the idea of brightness, e.g. Sanskryt *bhāla-*, Old Prussian *ballo* or Albanian *ballë*, all of them apparently from a root **bhel-* ‘to shine, be bright’ (Buck 1949: 218 §4.205). On this account, it may perhaps be worth mentioning HA *tom* ‘to sparkle, shine’ (AHJ 224₁₇), but since this word is absent from the SA vocabulary, the connection with *kistom* remains speculative at best.

It seems reasonable to assume that SA *kistom* is a noun compound sharing its first element with HA, i.e. †kip (= *kep*), but with a different second component. Therefore, as in [1], these two words cannot be compared.

3. Ex. (12) involves a well known cultural item: the Jew's harp. Among the Tungusic languages, including those spoken in Sakhalin, it is possible to find very similar, though not identical, terms, e.g. Lower Amgun Negidal *muhänä*, Ulcha *muhälä*, Orok *muhänä*, Nanay & Kili *muänä*ⁿ, Kilen *määnä* and Written Manchu *mekeni* ~ *mekeñen* 'a mouth harp with a metal tongue' (Cincius 1975: 554a; Ikegami 1997: 130), all of them can be easily traced back to Proto-Tungusic *muk(k)änä (if simple *-k-, then Manchu would have to show *-h-*, cf. Benzing 1956: 28–29, unless it is a later borrowing?). The segmentation of this word in smaller units can be practiced neither in Tungusic, nor in Ainu terms, put another way, it is etymologically opaque in both languages. There are two possible scenarios depending on what direction we assume for the journey of the word:
 - a) Tungusic → Ainu (a typical "continental borrowing" in Ainu, see Ikegami 1994; Kara 1998): progressive vowel assimilation in the Ainu parental language. SA preserves the final segment *-n* due to its closeness to the Tungusic languages. However, the HA cognate may have been modified as the result of folk etymology, replacing the final nasal by *-r(i)* on the basis of superficial similarities with *makiri* 'knife' (another continental borrowing) and similar words.²⁰
 - b) Tungusic ← Ainu: the most likely point of departure is HA preserving the parental form with final *-r, hence the need to explain the origin of SA *-n*. In order to avoid going into wild speculation, the simplest solution might be to assume that the outcome of one of the sandhi-rules explained above, i.e. *-r + r-* & *n-* > [-n_R], extended from the contextual form, i.e. †muhkur...R-, to the conceptual form, i.e. *muhkun(a)*, in the same fashion as *utah*, *kuh* or *oah* in §2 (cf. some of the instances mentioned above in fn. 10, e.g. *mimigane* [Jap. borrowing] → *ninikari* 'earrings', &c.). This would be the origin of the Tungusic forms, namely pre-SA *mukkun → (Southern) Tungusic *mu(k)-kän(ä), though the particulars of the Tungusic vocalism remain obscure.²¹

²⁰ Although I ignore whatsoever how to implement the following information, it may be worth noting that the general plural marker in Tungusic is *-r* (Benzing 1956: 76–78 §87). The rules governing its formation are quite straightforward: bases ending in *-n* take *-r*, otherwise they take *-l* (this includes vowel, *y-*, *l-* and *r-*bases), e.g. Literary Ewenki *urä* 'mountain' ⇒ *urä-l*, *adil* 'net' ⇒ *adil.i-l* & *bur* 'island' ⇒ *bur.i-l* (*i*-epenthetic vowel insertion), *gujäy* 'pretty' ⇒ *gujäyl*, *oron* 'deer' ⇒ *oro-r*. Exceptions cover kinship terms and collectives. Could the *ri*-forms in Ainu be the reflect of original plural formations in Tungusic (even though semantically this seems unlikely)?

²¹ Unfortunately, there is no space in this brief contribution to discuss the issue at large. It is assumed that Proto-Ainu was spoken uniquely in Hokkaidō (at the beginning perhaps in the northern regions of Honshū too), the expansion towards the islands being a much later phenomenon. The parental language of the modern Southern Tungusic languages was somewhere used around the Amur region. The borrowing of words such as CA *mukkur requires the participation of the parental languages, otherwise it is very difficult to explain the distribution

Irrespective of which scenario is chosen, it should be obvious by now that SA -*n* cannot be directly compared to HA -*r*, for there are reasonable doubts regarding its inherited status, i.e. it may well have a secondary origin.

4. Exx. (13–14) require some elaboration. From a synchronic viewpoint, the most productive causative suffix is C^o-*te* ~ r^o-*e* ~ V^o-*re*.²² This is the situation in most HA dialects. In SA, however, there is no r^o-allomorph. The causative formation of three r^o-verbs, namely *kor* ‘to have’, *kar* ‘to do, make’ and *nukar* ‘to see’, presents a conspicuous correspondence between HA and SA. Through mechanisms which we don’t yet fully understand, the same three verbs in SA belong to the V^o-class (perhaps originally **koro* and *(*nu*)*kara* with final full vowels?). The following table shows the current forms (for the sake of contrast, double-causative formations are also included):

CA	HA	SA
* <i>kor</i>	<i>kor</i> ⇒ <i>kore</i> (⇒ <i>korere</i>) have ⇒ give (⇒ make X give)	<i>kor^o</i> ⇒ <i>konte</i> (⇒ <i>konte-re</i>)
* <i>kar</i>	<i>kar</i> ⇒ <i>kare</i> (⇒ <i>karere</i>) do ⇒ make, let X do (⇒ let X make X do)	<i>kar^o</i> ⇒ <i>kante</i> (⇒ <i>kante-re</i>)
* <i>nukar</i>	<i>nukar</i> ⇒ <i>nukare</i> (⇒ <i>nukarere</i>) see ⇒ show (⇒ make X show)	<i>nukar^o</i> ⇒ <i>nukante</i> (⇒ <i>nukante-re</i>)

The following scenario seems to account for what happened in SA: in accordance with the sandhi-rules described above, attaching the causative formant (V^o)-*re* to original *r*-bases, as happens to be the case with *(*nu*)*kar* and **kor*, would have yielded †(*nu*)*kan.re* and *kon.re*, from ***nukar-re* and ***kor-re*, respectively.²³ The newly coined bases †*kon* and †*nukan* replaced the old ones, perhaps owing to the fact that the *n*-bases surface very often, e.g. in auxiliary (periphrastic) constructions like *kor^o* + *rusuy* ⇒ /*kon_rusuy*/ ‘to want to have’, converbials like *kor^o* + *no* ⇒ /*kon-no*/ ‘while doing’, and also, eventually, in nominal formations like *cisekor^o* + *nispa* ⇒ /*cisekon_nispa*/ ‘house master’, etc.). The causative formant must be adjusted to the new phonetic context in analogy to other *n*-bases such as *oman* ⇒ *oman-te* ‘let go’ or *wen* ‘to be bad’ ⇒ *wen-te* ‘to break’. For the

across modern languages. For instance, how a word initially borrowed in Sakhalin could get into Hokkaidō and spread so thoroughly? One of the simplest solution is to assume that CA (PA?) was initially spoken somewhere on the Amur region before migrating to Hokkaidō. It goes without saying that this migration would have to predate the “Great Migration” mentioned above in §1.

²² The most thorough functional description of the causative as a verbal category in Ainu is Bugaeva (forthcoming).

²³ A simplistic solution would be to assume regressive assimilation, i.e. ***kor-te* > *konte* (AGD 75 §14.2). This goes against Ainu phonotactics, since /r(#t/ > [t()t], as explained in §3[a]. Also, this hypothesis works with the assumption that all C^o-bases required -*te*. This apparently leaves with no explanation the origin of HA *kore* and (*nu*)*kare* (what would be the basis for the analogical reinterpretation of †*ko* and †(*nu*)*ka* being the stems to which add V^o-*re*?).

sake of brevity, I call *konte* and (*nu*)*kante* “Naert causatives”, since the etymological explanation described above was first envisaged by P. Naert (1958: 205, see AGD 611 §183.II).

The logical last stage of this process would be to replace the current “infinitives” *nukar*^(a) and *kor*^(o) by *(*nu*)*kan* and **kon*.²⁴ However, this has not happened yet (and given the life prospects of Ainu, it is more than likely that it will never happen).²⁵ The reason why this is so may rest on the fact that the infinitives, for example *kor*, are still vividly represented in grammatical contexts, such as the possessive construction, where the *n*-form, frequent only in verb-like contexts, never surfaces. This may have prevented the ultimate replacement of *kor* by †*kon*.

	BASE	CAUSATIVE
Stage I	<i>kor</i> ^(o)	⇒ ** <i>kor-re</i> > ** <i>kon-re</i>
Stage II	† <i>kon</i>	⇒ <i>kon-te</i>

To summarize the previous etymological inspections, exx. 10–11 show that SA final segment *-m* (~ *-n*) cannot be directly compared to HA *-r*. These are noun compounds which are made up of different components. Technically speaking, SA *kistom* is not a valid cognate of HA *kiputur*, the same holds true for SA *esum* when confronted with HA *etor*. Therefore, HA *-r#* vs. SA *-m#* is a ghost-sound correspondence. Ex. 12 may contain what seems to be again a final nasal of foreign origin (Tungusic?). As for the Naert causatives in exx. 13–14, SA *-r* has undergone a regular sound change according to sandhi rules. Therefore, /*n*/ in these forms cannot be, again, directly compared to HA *-r*.

4. Conclusions

Generally speaking, the evolution of CA **-r* in SA can be summed up as follows:

	nonconditioned “trivial” (regular)	(1) $-V_1r^{V_2} (V_1 = V_2)$
CA <i>*-r</i> >	conditioned “sandhi” (irregular)	(2) $-h...C < *-C[\#]C-$ (3) $-n...R < *-r[\#]R- (R = /r n/)$

²⁴ There is in SA a large group of (movement) verbs showing competing forms in the SG, e.g. *rikis* ~ *rikin* (SG) & *rikip* (PL) ‘to rise, go up’ (AHJ 240₄₆) ⇒ CAU *rikiste* (SAJ 144b). They bear testimony to the analogical extension of the resulting causative stem. Note that final /*p*/ is preserved in *rikip* (the expected development is ***rikih* > ***rikis*) in order to avoid the potential confusion with the CAU base and, afterwards, the new created SG pair.

Down to the particulars, point (1) is a trivial sound correspondence: SA develops a vocoid in order to avoid the presence of /r/ in final position. This tendency can be also observed in HA to some extent (Asai 1976). As for point (2), this is an innovation that concerns solely SA. It refers to the situation whereby the segment /h/ resulting from a simple cluster dissimilation rule is extended beyond its initial context. Point (3) describes a mechanism which is shared by both HA and SA. The manifestation in SA, however, differs notably from the one in HA, where there are no traces of the effects documented in SA. Among these, Naert causatives (*kor*^o, *nukar*^a ⇒ †kon, †nukan) have substantially remodeled their paradigms on a straightforward analogical basis.

It is crucial to emphasize that the instances illustrating points (2–3) surfaced perhaps due to frequency issues (this is most obvious in the cases of *utah* and *kuh*, used in morphological contexts as plural and *nomina actoris* markers, respectively). Many other words falling within the range of the required phonetic contexts of the sandhi rules could have potentially been subjected to the same changes, but they did not.

It follows from the previous discussion that a modification in the synchronic description of the SA morphophonemics must be introduced. In Murasaki's wording, /p t k c r/ → /h/ when in final position or after /y/. As it has been explained in §1, /c r/ cannot be included in the general rule /-T/ > [-h] together with /p t k/, the former on phonotactics grounds (/c(i)/ only from /ti/) and the latter due to etymological considerations (as exposed in §2). On the other hand, the inclusion of /s/ seems recommendable, though it requires a good deal of explanation regarding the etymological multiplicity of its primary origin (see fn. 4 above).

Excursus. On the deictic bases *tara* and *tah*

In order to avoid eventual confusions, SA *tar*^a 'that' is not related to *tah* 'this (emphatic)', i.e. these two deictic elements do not have the same relationship as *utar*^a and *utah*. Generally speaking, Ainu demonstratives are secondary formations, the base of which is generally taken to be one of the three PA spatial bases, namely *te '(right) here', *ta(-) 'here' and *to(-) '(over) there' (*vid. i.a.* AGD 320–328 §86, Tamura 1988/2000: 261–263). Without further evidence, it may be speculated that the HA pattern is more archaic, for it preserves a much more marked deictic system (three vocalic degrees, i.e. *e : a : o*) which would have been simplified in SA.

²⁵ These forms are not attested in Batchelor's Ainu materials, in spite of the fact that such lemmata may be found in the pages of his dictionary. Batchelor, who for instance defines *kon* as the contraction of *kor*^o (1889/1903: 237a, see also p. 208a s.v. *kan* "Short for *kara*"), seems to ignore the fact that *kon* only appears in very specific contexts, cf. his examples: *e-kon-reihei* 'my name' and *ku-kon-nispa* 'my master', with regular /rr/ > [nr] and /rn/ > [nn].

		HA	SA	CA
I	NEARBY (SAME PLACE)	<i>tan</i> ~ <i>tap-an</i>	<i>tan</i> ~ <i>tah</i>	*te 'here' (> Saru <i>te=ta</i> '(at) here', cf. SA <i>te'orokehe</i> 'here') *te-an 'this'
II	REMOTE	<i>ta-an</i>	<i>taa</i> < † <i>ta-an</i> , cf. PL <i>taan-okay</i>	*ta 'there' (> Saru <i>ta-an=ta</i> '(at) here', cf. SA <i>ta'orokehe</i> 'there') *ta-an 'that'
III	FURTHER AWAY	<i>to-an</i>	<i>tara</i> < † <i>tar^a-an</i> , cf. PL <i>taran-okay</i>	*to '(over) there' (> Saru <i>to-an=ta</i> '(at) there', cf. <i>ta'aante'orokehe</i> 'way over there') *to-an 'that'

As it can be easily inferred from the table above, SA *tar^a* functionally corresponds to HA *toan*, whereas SA *tah* is the cognate of HA *tap* '(like) this' (with regular *-h* < **-p#* < CA **-pe*), used as an emphatic variant of *tan* in both HA and SA, especially, though not exclusively, in non-attributive contexts, as in Rayciska *tah kuani ku-koro-pe-he* {this I 1SG.A-have-thing.NOM-POSS/DET} 'this is mine (lit. this is my thing)' (AHJ 316₇₁) or, more didactically, *tah hemata* 'what is that?' (Murasaki 1998: 16).

To the best of my knowledge, there is no convincing explanation for the etymology of the segment *-r^a* in SA. It is tempting, though indemonstrable, to link it, on an areal basis, to the corresponding spatial deictics of Tungusic (languages with which SA has been in contact for several centuries), e.g. Orok *tari* 'that', PL *tarisal* (Petrova 1967: 68–71) or Sakhalin Ewenki *tar* 'that', PL *tar.i-l* 'those' (Bulatova 1999: 26) < Proto-Tungusic **tar(i)* 'that' (Benzing 1956: 112–114). There is no trace of such a feature in Nivkh, the third language making up the linguistic landscape of Sakhalin.

References

- AEP = Majewicz A., Majewicz E. 1986. *An Ainu-English Index-Dictionary to B. Piłsudski's Materials of 1912*. Poznań.
- AGD = Dettmer H. 1989. *Ainu-Grammatik*. [vol. 1(A–B): *Texte und Hinweise*]. Wiesbaden.
- AHJ = Hattori S. (ed.). 1964. *Ainu-go hōgen jiten*. Tōkyō.
- ASJ = Tezuka Y. (ed.). 2007. *Ainu-go Kitami. Sōya hōgen jiten sōan*. Asahikawa.
- PM = Piłsudski B. 1912. *Materials for the study of the Ainu language and folklore*. Cracow.
- RPA = Vovin A. 1993. *A Reconstruction of Proto-Ainu*. Leiden.
- SAJ = Ōtsuka R. (ed.). 2007. *Saharin ainu-go jiten*. Furoku: *Ainu-go Kushiro-Shironuka hōgen, Tokachi hōgen, "wa"–"ai" jiten*. Asahikawa.
- Asai T. 1974. Classification of Dialects: Cluster Analysis of Ainu Dialects. – *Bulletin of the Institute for the Study of North Eurasian Cultures* [Hoppō bunka kenkyū] 8: 45–136.
- Asai T. 1976. A Note on Ainu 'r'. – *Bulletin of the Institute for the Study of North Eurasian Cultures* [Hoppō bunka kenkyū] 10: 191–205.

- Batchelor J. 1889/1903. *An Ainu-English-Japanese Dictionary*. Tokyo, London.
- Benzing J. 1956. *Die tungusischen Sprachen. Versuch einer vergleichenden Grammatik*. Wiesbaden.
- Buck C.D. 1949. *A Dictionary of Selected Synonyms in the Principal Indo-European Languages*. Chicago, London.
- Bugaeva A. 2004. *Grammar and Folklore Texts of the Chitose Dialect of Ainu (Idiolect of Ito Oda)*. Suita.
- Bugaeva A. [forthcoming]. Causative Constructions in Ainu: A Typological Perspective with Remarks on Diachrony. – Kulikov L., Seržant I. (eds.). *Transitivity and voice in Indo-European and beyond. A diachronic typological perspective*. Amsterdam.
- Bulatova N.Ja. 1999. *Jazyk saxalinskix èvenkov*. Sankt-Peterburg.
- Chiri M. 1942/1973. Ainu-gohō kenkyū. – *Chiri Mashiho chosakushū*. [vol. 3]. Tōkyō: 455–585.
- Chiri M. 1954/1976. Bunrui ainu-go jiten: ningen. – *Chiri Mashiho chosakushū*. [bekkan 2]. Tōkyō.
- Cincius V.I. (ed.). 1975. *Sravnitel'nyj slovar' tunguso-man'čžurskix jazykov*. Leningrad.
- Dybowski B., Radliński I. 1892. Słowniki narzeczy ludów Kamczackich. I. Słownik narzecza Ajnów, zamieszkujących wyspę Szumszu w łańcuchu Kurylskim przy Kamczatce. – *Rozprawy Akademii Umiejętności. Wydział filologiczny. Seria 2.1*: 53–119.
- Hetzron R. 1969. Two notes on Semitic laryngeals in East Gurage. – *Phonetica* 19: 69–81.
- Ikegami J. 1994. Ainu-go no tairiku go-teki yōso. – [n.e.]. *Ainu-go no tsudoj*. Sapporo: 159–169.
- Ikegami J. 1997. *Uiruta-go jiten*. Sapporo.
- Janhunen J. 2002. On the Chronology of the Ainu Ethnic Complex. – *Bulletin of the Hokkaido Museum of Northern People [Hokkaidō ritsu hoppō minzoku hakubutsukan kenkyū kiyō]* 11: 1–20.
- Kara Gy. 1998. Review of RPA. – *Eurasian Yearbook* 70: 201–202.
- Kindaichi K. 1936. *Jojishi ainu yūkara no kenkyū*. [2 vols]. Tōkyō.
- Kindaichi 1941 = Kindaiti K. 1941. *Ainu life and legends*. Tokyo.
- Kodama S. 1970. *Ainu. Historical and Anthropological Studies*. Sapporo.
- Laufer B. 1917. The Vigesimal and Decimal Systems in the Ainu Numerals: With some Remarks on Ainu Phonology. – *Journal of the American Oriental Society* 37: 192–208.
- Majewicz A. 2004. Epistolary Ainu. – *Linguistic and Oriental Studies from Poznań* 6: 7–64.
- Matisoff J.A. 1975. Rhinoglottophilia: the mysterious connection between nasality and glottality. – Ferguson Ch.A., Hyman L.M., Ohala J.J. (eds.). *Nasalfest. Papers from a symposium on nasals and nasalization*. Stanford: 265–287.
- Murasaki K. 1976. *Karafuto ainu-go*. Tōkyō.
- Murasaki K. 1979. *Karafuto ainu-go. Bunpō-hen*. Tōkyō.
- Murasaki K. 1998. *Karafuto ainu-go. Nyūmon. Kaiwa-hen*. Tōkyō.
- Naert P. 1958. *La situation linguistique de l'ainou, I: Aïnou et indo-européen*. Lund.
- Nakagawa H. 1995. *Ainu-go Chitose hōgen jiten*. Tōkyō.
- Petrova T.I. 1967. *Jazyk orokov (ul'ta)*. Leningrad.
- Sato T. 2002. A Basic Vocabulary of the Samani Dialect of Ainu. – *Hokkaidō daigaku bungaku kenkyū-ka kiyō* 106: 91–126.
- Satō T. 2004. *Kobunken ni yoru ainu-go shohōgen no hikaku kenkyū*. Sapporo.
- Shiraishi H. 1999. How Phonological is the Glottal Stop of the Ainu? – *Journal of Chiba University Eurasian Society [Chiba daigaku yūrashia gengo bunka ronshū]* 2: 210–222.
- Shiraishi H. 2001. Prosodic Structure and Sandhi Phenomena in the Saru Dialect of Ainu. – van de Weijer J., Nishihara T. (eds.). *Issues in Japanese phonology and morphology*. Berlin, New York: 141–157.

- Shiraishi H. 2003. Vowel devoicing of Ainu: How it differs and not differs from vowel devoicing of Japanese. – Honma T., Okazaki M., Tabata T., Tanaka S. (eds.). *A New Century of Phonology and Phonological Theory. A Festschrift for Professor Shosuke Haraguchi on the Occasion of His Sixtieth Birthday*. Tokyo: 237–249.
- Tamura S. 1988/2000. *The Ainu Language*. Tokyo. [originally published as: Ainu-go. – Takashi K., Kōno R., Chino E. (eds.). *Gengogaku daijiten*. Tōkyō. Vol. 1: 6–94].
- Tamura S. 1996. *Ainu-go Saru hōgen jiten*. Tōkyō.

