A CLASSIFICATION OF THE TYPES OF NOUN INCORPORATION IN AINU AND ITS IMPLICATIONS FOR MORPHOSYNTACTIC TYPOLOGY

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Ainu has Noun Incorporation (NI), as well as Quasi-Incorporation (QI). QI comes into play only after all possibilities in the NI hierarchy are exhausted. The case of Ainu NI suggests that NI and QI are not essentially unrelated phenomena, but should rather be unified to form a more general accessibility hierarchy for the inclusion of a nominal unit into a single closely-knit verbal complex (either a word or not).

В айнском языке существует как именная инкорпорация, так и квазиинкорпорация. Последняя используется только после того, как исчерпаны все возможности в иерархии именной инкорпорации. Айнский язык показывает, что именная инкорпорация и квазиинкорпорация взаимосвязаны и входят в общую иерархию доступности для включения именного элемента в единый тесно спаянный глагольный комплекс (независимо от того, представляет ли он собой слово или нет).
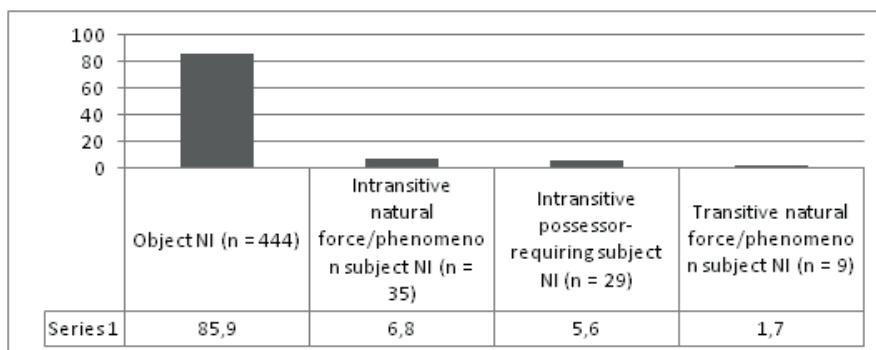
1. INTRODUCTION

Ainu Noun Incorporation (NI) can be classified into four major types (Table 1): (i) object NI (85.9%); (ii) intransitive natural-force/phenomenon subject NI (6.8%); (iii) intransitive possessor-requiring subject NI (5.6%); and (iv) transitive natural-force/phenomenon subject NI (1.7%) (see examples (1)–(4) below).[1]

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1 The data are from my recordings of the Chitose dialect amounting to about 130 hours. I am grateful to my informant, the late Mrs Nabe Shirasawa. I have previously dealt with Ainu NI in Sato (2012).

Dahl (2004) has also proposed a hierarchy of NI and QI. But our concerns are different: he focuses on the historical development in languages of different types, whereas here we would like to show by using a language with both NI and QI, namely Ainu, that there is a synchronic hierarchical relation between NI and QI. On NI, see also Mithun (1984).

Table 1 Types and percentages of NI in the Chitose dialect of Ainu

	Object NI (n = 444)	Intransitive natural force/phenomenon subject NI (n = 35)	Intransitive possessor-requiring subject NI (n = 29)	Transitive natural force/phenomenon subject NI (n = 9)
Series1	85,9	6,8	5,6	1,7

(1)   Object NI

a. The base clause:

turep   ku-ta
wild.lily   1SG.SUBJ-dig

'I dig wild lilies.'

b. NI:

ku-turep-ta
1SG.SUBJ-wild.lily-dig

'I dig wild lilies.'

(2)   Natural-force noun subject NI

sir-pirka
weather-good

'The weather is good.'

In this example, the incorporation of *sir* 'weather' is obligatory, that is, there is no base clause corresponding to NI.

(3)   Possessor-requiring noun intransitive subject NI

a. The base clause:

ku-ték-e   páse
1SG.SUBJ-hand-POSS   heavy

'My hands are heavy.'

b. NI:

ku-tek-e-pase
1SG.SUBJ-hand-POSS-heavy

lit. 'I am my-hands-heavy.' = 'I feel as if I had aged.'

The suffix *-e* is originally a possessive suffix of the noun, but here it serves to add a possessor as the subject.

(4)   Natural-force noun transitive subject NI

a.   The base clause:

koy   en-yanke
wave   1SG.OBJ-raise

'The wave raises me.'

b. NI:

ku-koy-yanke
1SG.SUBJ-wave-raise

'I am wave-raised.'

2. RESTRICTIONS AND RESCUE RULES IN AINU NI

These particular types of NI in Ainu and their frequency ratios raise the following question: Why are some of the NI types in Ainu highly frequent, while others are extremely rare? In this context, we should introduce the idea of the relative (degree of) markedness of NI, which is based on a number of restrictions, the violation of which would endanger the grammaticality of a given form, and corresponding rescue principles, which repair the damage. The restrictions are: (i) the subject NI restriction; (ii) the stranding restriction; and (iii) the ambiguity restriction. The rescue principles are: (i) the backgrounding rescue principle and (ii) the reflexive interpretation rescue principle.

Subject NI restriction

Subject NI is normally avoided. This naturally accounts for the low frequency of subject NIs in Ainu: intransitive natural-force/phenomenon subject NI (6.8%), intransitive possessor-requiring subject NI (5.6%), and transitive natural-force/phenomenon subject NI (1.7%).

Possessor stranding restriction

Stranding of the possessor of the incorporated noun is normally avoided. This accounts for the remarkably low frequency of the type intransitive possessor-requiring subject NI (5.6%) .

(5) = (3b)

ku-tek-e-pase
1SG.SUBJ-hand-POSS-heavy

literally: 'I am my-hands-heavy.' = 'I feel as if I had aged.'

In fact, *ku-* 1SG is here promoted to the subject of the entire sentence and is stranded from *tek-e* 'one's hand '.

Ambiguity restriction

The danger of ambiguity of the grammatical role of the incorporated noun (whether subject or object) restricts noun incorporation. This accounts for the extremely low frequency of the transitive subject NI type.

(6) = (4b)

ku-koy-yanke
1SG.SUBJ-wave-raise

'I am wave-raised.'

Here, *koy* 'wave' can, in fact, be interpreted as the object, so this type of NI is structurally ambiguous, though the context usually helps to choose the right interpretation.

Then, the question arises: Why are subject NIs possible in Ainu, even though they violate serious restrictions? The answer is that the rescue principles compensate for these violations.

Backgrounding rescue principle

The need to background nouns for natural forces or body parts compensates for the violation of the subject NI restriction. Body-part nouns are supposed to tend to be backgrounded because of their lower discourse relevance compared to that of their possessors. This rescue principle makes possible the constructions with an intransitive natural-force/phenomenon subject NI and an intransitive possessor-requiring subject NI.

Reflexive interpretation rescue principle

The possessor of the incorporated noun is always co-referential with the subject, that is, the interpretation of the possessor is always reflexive. The construction with an intransitive possessor-requiring subject NI becomes possible because of this rescue principle, in spite of its seeming stranding, so that an incorporated noun is modified by a stranded possessor outside the verb. This becomes clear if we look at the following scheme illustrating the interaction between reflexive interpretation and definiteness:

Subject		Possessor	
1SG	ku_i-		
2SG	e_i-	self$_i$	*tek-e-pase*
3SG	φ_i-		hand-POSS heavy

literally: 'I/you/(s)he am/are/is self's-hand-heavy.'

The possessor is unmarked, but it is automatically interpreted as reflexive (= co-referential with the subject). So, the reference of 'self' changes according to the subject. Thus, the incorporated noun is not specified for the person of the possessor proper and is, in a sense, less definite:

(7) *ku-tek-e-pase*
     1SG-hand-POSS-heavy

     literally: 'I am self's-hand-heavy.' = 'My hands are heavy.'

As already mentioned above, the frequency relationships of the different types of NI in Ainu are accounted for by the interaction between these restrictions and the corresponding rescue rules compensating for the damage caused by their violation as shown in Table 2 (see below).

The various scores in Table 2 are tentatively assigned in order to explain the differences in the frequencies among the different NI types. Object NI is the most unmarked (i.e. the penalty is zero), because it does not violate any restriction. On the other hand, in the case of a natural-force noun intransitive subject NI, the restriction on subject NI is violated. Thus, if the penalty score reaches [10] at this stage, it would be serious enough to make the form in question automatically ungrammatical even if the other conditions are equal. However, since natural-force nouns are low in salience, there is a good reason for it to be backgrounded. Here, we can estimate the rescuing effect for backgrounding as

Table 2 Types of NI and their degree of markedness

Penalties and rescue principles	Object NI	Intransitive natural-force/ phenomenon subject NI	Intransitive possessor-requiring subject NI	Transitive natural-force/ phenomenon subject NI
	85.9%	6.8%	5.6%	1.7%
Subject NI		10	10	10
Stranding			10	
Ambiguity				7
Backgrounding		–8	–8	–8
Reflexive			-9	
TOTAL MARKEDNESS	0	2	3	9

[–8]. Hence, the total penalty score of natural-force noun subject intransitive NI becomes [2], which is in accordance with its relatively low frequency (6.8%).

In contrast, the case of possessor-requiring noun subject NI is more complex. As in the case of a natural-force noun intransitive subject NI, first, the penalty score of [10] is assigned. Moreover, a penalty score [10] must be assigned to this type once again, since its construction causes stranding. So, if other factors do not operate, the total penalty score would amount to [20], which should immediately make this type of NI impossible in Ainu. However, another rescue rule, the principle of reflexive interpretation, in addition to backgrounding, reduces the total penalty score to [20]-[8+9] = [3], which is in accordance with its very low frequency (5.6%).

Finally, in the case of natural-force noun transitive subject NI, subject incorporation and backgrounding give the overall penalty score [2] as in the case of a corresponding intransitive subject NI, but since the violation of ambiguity restriction further increases the penalty score to [9], the total score comes very close to the fatal [10], and, not surprisingly, this type's frequency is the lowest of all (1.7%).

3. A GAP IN THE AINU NI TYPES

The difference in frequency in the Ainu NI types reflects the existence of a hierarchy of accessibility to NI as follows: object NI > natural-force noun intransitive subject NI > possessor-requiring noun intransitive subject NI > natural-force noun transitive subject NI. However, it should be noted that there is a

conspicuous gap in this hierarchy: a possessor-requiring noun "object" NI proper does not occur in Ainu, although it is possible theoretically.

(8)   *a-i-par-oyki*
       INDEF.SUBJ.TR-1SG/PL.OBJ.*-mouth-do.something.to

       'People do something to my mouth.'= 'I am fed by others.'
       (*Note: the use of *i-* <1SG/PL.OBJ> is restricted to oral literature.)

The reason for the ungrammaticality of this type of construction is that the subject is not co-referential with the possessor of the incorporated noun. The reflexive interpretation of the possessor of 'mouth' does not hold here. The stranded possessor *i-* 1SG./PL.OBJ restricts the meaning of 'mouth' in a unique (i.e. definite) way, which is why this type is ungrammatical.

   What is more interesting is that there is a special phrasal construction in Ainu which compensates for the gap in question:

(9)   *i-par*   *a-oyki*
       1SG/PL.OBJ.-mouth   INDF.SUBJ.TR- do.something.to

       'People do something to my mouth.'= 'I am fed by others.'

This phrase is idiomatic; its meaning is unpredictable from the meanings of its constituents.

   Adverbials cannot be inserted freely between a verb and its object. Thus, the idiomatic [O+V] phrases in Ainu can be seen as a subtype of quasi-incorporation (QI), as discussed, for example, in Booij (2009: 5) for Dutch, because they are a kind of "tight phrasal lexical units". In other words, they form a phrase grammatically, but a "lexical" unit semantically. Other examples of quasi-incorporation in Ainu are given below:

(10) ka_1 $opas_2$ literally: 'to run$_2$ to one's surface$_1$' = 'to save'

(11) ka_1 $oyki_2$ literally: 'to do something to$_2$ one's surface$_1$' = 'to take care of'

(12) kes_1 $anpa_2$ literally: 'to catch$_2$ one's end$_1$' = 'to chase'

(13) tom_1 $oytak_2$ literally: 'to talk to$_2$ one's center$_1$' = 'to persuade'

(14) $aske_1$ uk_2 literally: 'to take$_2$ one's hand$_1$' = 'to invite'

(15) par_1 $oyki_2$ literally: 'to do something to$_2$ one's mouth$_1$' = 'to feed'

Thus, the case of Ainu NI suggests that NI and QI are not essentially unrelated phenomena, but should rather be unified to form a more general accessibility hierarchy for the inclusion of a nominal unit into a single closely-knit verbal

complex (either a word or not). It may also be concluded that we can build a hierarchy of NI, and that QI comes into play only after all possibilities in this hierarchy are exhausted: possessor-requiring noun object incorporation is not permitted in Ainu and it is substituted by quasi-incorporation, a unit phrasal in form but "lexical" in semantics.

4. EVIDENCE FROM OTHER LANGUAGES

In order to support the assumption adduced in the previous section dealing with Ainu NI and QI, let us consider other languages with both NI and QI. Although only marginally, Dutch has the object + VT type NI (Shimizu 2005: 51), as in $stof_1$-$zuigen_2$ 'to dust$_1$-suck$_2$' = 'to vacuum'. In contrast, QI, as in *piano spelen* 'to play the piano', is not so rare:

(16)   Dutch (Booij 2009: 13)

Ik kan niet piano spelen.
I   can   NEG   piano   play.INF

'I cannot play the piano.'

The implication of the situation in Dutch is as follows: because of the difficulty of using object NI in Dutch, QI appears very early in the hierarchy, even in the position of the most unmarked object NI. On the other hand, it is interesting to note that Frisian, a language structurally and genetically very close to Dutch, differs from the latter with regard to NI and QI in a particularly subtle way. Frisian exhibits object NI rather productively:

(17)   *Dutch* (Siebren Dyk, pers. comm.)

piano-spylje
piano-play

'to play-piano'

On the other hand, QI has limitations in Frisian. While a construction with QI, as in $spilet_1$ $piano_2$ 'plays$_1$ piano$_2$', is also possible in Frisian, a construction of the type *$slijp_1$ mes_2 'sharpens$_1$ knife$_2$' is not possible (Siebren Dyk, pers. comm.). The reason for this is clear: while Frisian seems to allow rather productive object NI, there is little room for QI in this position in the hierarchy.

   Next we shall consider examples from Swedish. Swedish does not normally allow object NI:

(18)   Swedish (Josefsson 1998: 70)

*Jag   kaffe-koka-r
I   coffee-boil-PRS

'I make coffee.'

In contrast, various adverbial relations (instrument, location, etc.) can be expressed by NI in Swedish.

(19)   Swedish (Josefsson 1998: 80)

Student-er-na foto-kopiera-de   avhandling-en.
student-s-the photo-copi-ed   thesis-the

'The students photocopied the thesis.'

I have not mentioned adverbial NI in detail with regard to the hierarchy presented here, because languages seem to vary in this respect: Ainu does not generally allow adverbial NI, while Swedish does not generally allow object NI. It seems that the two types are complementary. One reason could be the danger of ambiguity: if a language had both types, it would be difficult to determine which interpretation is intended without further conditions, that is, without any reference to the context.

   Swedish is a very interesting language with regard to NI, because it seems to allow stranding easily. Although object NI is not normally allowed in Swedish, it has a "stranding" type of NI, which is located in a lower (i.e. harder-to-incorporate) position in the accessibility hierarchy.

(20)   Swedish (Jossefson 1998: 70)

Bond-en   ving-klipp-te   gäss-en.
farmer-the   wing-cut-PST   geese-the

'The farmer cut the wings of the geese.'

In addition, Swedish allows "transitive subject" NI, which is the least accessible in the NI hierarchy:

(21)   Swedish (Josefsson 1998: 78)

Skola-n   läkar-undersök-te   barn-en.
school-the   doctor-investigate-d children-the

'The school had the children investigated by a doctor.'

Swedish seems to present counterexamples to our assumption. However, both "stranding" and "transitive subject NI" in Swedish can be seen as a kind of adverbial NI, because Swedish allows various types in adverbial NI mentioned above (Josefsson 1998: 80). So they should not necessarily be viewed as exceptions to the NI accessibility hierarchy presented here.

As the position of object NI is a gap in Swedish, we predict that Swedish can develop QI in this position. This prediction seems to be proved by the following type of example:

(22)   Swedish (Toivonen 2003: 87)

Lena   höll   tal   på fest-en.
Lena   held   speech   at party-the

'Lena spoke at the party.'

In this case, the noun *tal* has no marking and the meaning of the sequence is somewhat idiomatic.

5. CONCLUSION

I have shown that Ainu is a good example to prove a more comprehensive morphosyntactic hierarchy containing both NI and QI. Stranding NI is usually avoided and the hardest stranding NI with a possessor-requiring object is eventually compensated by QI. I have also claimed that a similar explanation is possible for such languages as Dutch, Frisian, and Swedish where both NI and QI are found. Of course, further study of a larger number of languages will be required to establish the general relevance of this kind of hierarchy. This is only a first step towards establishing such a hierarchy.

ABBREVIATIONS

1	first person	PL	plural
2	second person	POSS	possessive
3	third person	PRS	present
INDF	indefinite	PST	past
INF	infinitive	SG	singular
NEG	negative	SUBJ	subjective
OBJ	objective		

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