

Associative forms in a typology of number systems: evidence from Yup'ik¹

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A general typology of number systems has to confront the problem of variation both in the number values in different languages and in the inventories of nominals involved. We start from the Smith-Stark Hierarchy and extend this approach to additional numbers (such as dual and paucal). Associative plurals appear to undermine this typology, if we treat them as a third number. Either the associative plural or the ordinary plural proves to be exceptional.

The morphology of associative marking in Central Pomo and in Central Alaskan Yup'ik suggests that this is the wrong approach. In Central Pomo the associative contains an original plural segment. More significantly, Central Alaskan Yup'ik provides the ideal combination of three numbers and complex morphology to demonstrate that associatives should not be treated as additional numbers. Associativity and number are realized separately, which shows that associatives are a separate category interacting with number. This allows us to maintain the typology proposed.

1. INTRODUCTION: REQUIREMENTS FOR A TYPOLOGY OF NUMBER SYSTEMS

The attempt to construct a typology of number systems appears to be greatly complicated by the existence of associative forms. These forms consist of a nominal plus a marker, and denote a set comprised of the referent of the nominal (the main member) plus one or more associated members: Hungarian *János-ék* (*János*-ASSOCIATIVE) 'John and his family/friends'. We shall show how the typological problem arises and then, with data from Central Pomo and from Central Alaskan Yup'ik, demonstrate how it can be

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resolved. We shall be concerned with nominal number: verbal number (quantification over events or participants) is also a complex problem, but not one for which associative forms are of direct relevance. Analyses of verbal number are given in Durie (1986) and Mithun (1988a); for nominal and verbal quantification more generally see Gil (1993).

In trying to establish a general typology of nominal number, a major difficulty is the number of variables. We find that the number of number values varies dramatically from language to language, from those with singular and plural to those with additional duals, trials, quadrals and paucals. At the same time, the number of nominals involved in the number system shows considerable variation too. A reasonable approach is to use a version of what has been termed an Animacy or Topicality Hierarchy to determine the nominals with the highest involvement in the number system, and from these to determine the possible values (singular, plural, dual, etc.) of the number category in a given language. The possible inventories of number values are subject to a typology of number systems.

We therefore outline the hierarchy, in the version proposed by Smith-Stark (1974) in section 2, before going on to the problem which associative plurals cause for such an approach (section 3). We consider data from Central Pomo which suggest a possible solution (section 4). Then we move on to even clearer data for resolving the problem from Central Alaskan Yup'ik (section 5).

2. THE SMITH-STARK HIERARCHY AND THE PROBLEM OF MINOR NUMBERS

We wish to establish the inventory of count nouns of particular languages as a basis for establishing the possible patterns. In part this is an oversimplification, since Allan (1980) has argued that countability is a characteristic of noun phrases and not of nouns. However, as he points out:

Even though countability is characteristic of NP's, not of nouns, it is nonetheless a fact that nouns do show countability preference – insofar as some nouns more often occur in countable NP's, others in uncountable NP's, and still others seem to occur quite freely in both. (1980: 566).

Thus strictly speaking we are investigating the countability preferences of nominals.

In doing this, Smith-Stark (1974) proposed the following version of the Animacy Hierarchy:

(1) *The Smith-Stark Hierarchy*
speaker > addressee > kin > rational > human > animate > inanimate
 (1st person pronouns) (2nd person pronouns)

He suggests that plurality 'splits' a language if 'it is a significant opposition for certain categories but irrelevant for others' (1974: 657). Plural number is distinguished in some languages, for example, on first and second person pronouns and nouns referring to rational beings, including humans, but not those referring to animals or inanimate objects. While languages make the split in different places, the claim is that the inventory of items which show plurality (whether through direct marking or indirectly through agreement) must involve some top portion of the hierarchy. There is a good deal of data supporting his claim, though he also notes a small number of less straightforward cases.

Consider now the question of further number values. It is possible for a language to have an additional number value, say the dual, which patterns with the plural (that is, the same 'split' applies to dual and to plural). Typically in such a language if a noun has a dual it also has a plural, and vice versa. Smith-Stark assumed that this was the normal situation in his brief consideration of numbers other than the plural, though he did note a potential problem (1974: 669 fn. 6). In fact, there are several instances of such number values which may pattern in ways that are not in accord with the Smith-Stark hierarchy. These are found for a relatively small proportion of the nouns of a given language, and we have termed them *MINOR NUMBERS* (Corbett 1995, section 2).

To take just one example of a minor number, consider the North-East Caucasian language Avar. It has singular and plural and, for a limited number of nouns, a paucal. The paucal is used when the number of referents is restricted ('a few'), the ordinary plural for larger numbers ('many'). (Sulejmanov (1985), from whom the data are taken, calls them 'restricted plural' and 'unrestricted plural'.) Examples of nouns with three number forms include the following:

(2) *Paucals and plurals in Avar*

SINGULAR	PAUCAL	PLURAL	GLOSS
nus	nús-al	nus-ábi	daughter-in-law
boróq	boróq-al	bórq-al	snake
kután	kután-al	kútn-al	plough
bel	bél-al	búl-duł	spade
žul	žúl-al	žul-ál	brush

Sometimes, as in the last example, the difference between paucal and plural is marked only by the position of the stress. Sulejmanov says only that this three-way opposition is available for a restricted group of nouns; he lists 89 which have the contrast. Of these, one is a kinterm (*nus* 'daughter-in-law') and a further eight denote non-human animates; the rest are inanimates. It appears that the nouns which have a distinct paucal form are not in general high on the Smith-Stark Hierarchy. Avar demonstrates that of the inventory

of nouns which are within the number system, some delimited group may have a further number opposition. In languages like Avar the distribution of these forms is not subject to the Smith-Stark Hierarchy and they constitute a minor number (for further examples see Plank (1989: 296–312), Kibrik (1992: 15), Corbett (1995)). Note that these minor numbers involve nominals which have an additional number; they are the converse of the familiar problem of defective nouns, where a small number of nouns lacks one of the major numbers which they might be expected to have (thus English *scissors* lacks the singular).

Though minor numbers require a relaxation of the typology of number, they do not vary without constraint. We propose three criteria:²

First, they involve a proportion of the nouns of a given language which is relatively small by comparison to those involved in the major number(s), where being a major number involves splitting the noun inventory, taking some top segment of the Smith-Stark Hierarchy.

Second, the possible minor numbers are drawn from the inventory of major numbers. That is, a number which can operate as a minor number will be found in another language operating as a major number.

Third, a language with a minor number must have a number system which would match an otherwise attested system of major numbers (e.g. singular – dual – plural as opposed to the unattested *singular – trial – plural) both with the minor number included and without it.

The effect of these claims can be illustrated by our Avar example. The Avar situation, with major singular and plural and minor paucal, fits in the typology of number systems because:

1. The number of nouns with paucal forms is relatively small by comparison to those with only singular and plural forms.
2. The paucal, here functioning as a minor number, is also found as a major number, for instance in Yimas.
3. Major singular, major paucal and major plural is an occurring system (as in Bayso), and major singular and major plural is also an occurring system (as in English).

The relevance of these claims concerning minor numbers for associatives is that the latter are also potential counter-examples to the extension of the Smith-Stark Hierarchy to constrain the distribution of nominals for all

[2] These are an improvement on the account in Corbett (1995).

number values. We need to indicate why the same 'escape mechanism' is not available for associatives, and hence why the latter apparently pose more serious problems for a typology of number systems.

3. ASSOCIATIVE PLURALS: APPARENT COUNTER-EXAMPLES

Consider first Hungarian (a Finno-Ugric language spoken in Hungary, data from Edith Moravcsik, personal communication):

- (3) János
'John'
- (4) János-ok
'John-PL' (more than one John)
- (5) János-ék
John-ASSOC.PL
'John and associates', 'John and his group', 'John 'n them'

In Hungarian, the particular members of the group may vary according to circumstances (family, friends and so on), but they will be human and near-equals. The associative plural ending can be added mostly to proper names and to nouns for kinterms, titles and occupations; examples formed with ordinary common nouns are strange.³ The associative plural forms function

[3] Thus we find:

- | | | | | | |
|------|-------------|---|-------------------------------|---|---------------------------|
| (i) | apa | / | apá-ék | / | apá-m-ék |
| | father | | father-ASSOC.PL | | father-I.SG.POSS-ASSOC.PL |
| | 'father' | | 'father and his group' | | 'my father and his group' |
| (ii) | elnök | / | az elnök-ék | / | az elnök úr-ék |
| | president | | DEF president-ASSOC.PL | | DEF president Mr-ASSOC.PL |
| | 'president' | | 'the president and his group' | | 'Mr President and group' |

The last form, including *úr* 'Mr' could be used as a form of address to the President (asking, for instance, when the president and associates will do something) but not as a form of address to the group. As mentioned above, nouns for professions can take the associative form:

- | | | | |
|-------|-----------|---|-----------------------------|
| (iii) | tanító | / | a tanító-ék |
| | teacher | | DEF teacher-ASSOC.PL |
| | 'teacher' | | 'the teacher and his group' |

However, it is not available for other common nouns:

- | | | | |
|------|-------|---|-------------------------|
| (iv) | ember | / | *az ember-ék |
| | man | | DEF man-ASSOC.PL |
| | 'man' | | 'the man and his group' |

As in the text, the Hungarian data were kindly supplied by Edith Moravcsik (personal communication).

as plurals for subject-verb agreement, and in object position they control definite object agreement on the verb.

Since nouns for kinterms and some others denoting humans have two forms (associative plural and ordinary plural), we might expect to find the same with the personal pronouns. What we actually find is the following:

(6) *Personal pronouns in Hungarian*

	SINGULAR	PLURAL
1	én	mi
2	te	ti
3	ő	ők

Each pronoun has only one plural form. The first and second person pronouns have suppletive plurals, while the third person pronoun, whose position on the Smith-Stark Hierarchy is somewhat uncertain (Smith-Stark 1974: 664), uses the regular plural marker, as in: *nő* 'woman' *nők* 'women'.⁴

At first sight, we have a straightforward violation of the Smith-Stark Hierarchy: the associative plural is available for a middle segment (nouns denoting kin and some other humans), rather than a top segment including the personal pronouns. However, Moravcsik (1994) proposes that in fact the first and second person plural pronouns universally illustrate associative plural (group plural) meaning: '*We* and *you-PLU* are semantically group plurals in that *we* normally means "I and some others" (rather than "more than one speaker") and the normal meaning of *you* is also "you and some others" rather than "more than one listener".' (The idea that these pronouns can have associative meaning goes back at least as far as Jespersen (1924: 192).) Moravcsik further links this interpretation specifically to the Smith-Stark Hierarchy, and continues: 'It therefore makes sense that a special plural, such as the group plural, that applies to less than all nominals should apply to personal pronouns and human nouns, and to proper names and kinterms in particular.' Thus if we treat the associative plural as a separate number, it is possible to claim that the top segment of the hierarchy is indeed involved. In some languages just the first and second person pronouns are involved, while in others, like Hungarian, kinterms and even other nouns denoting humans are involved.

There are two problems. The first is the less serious. If the first and second person pronouns are associative plurals, why is this not clear in their form? (For a discussion of the forms of plural pronouns, including instances which have regular plural morphology, see Myrkin (1964).) A simple answer might be that the form need not be transparent, so long as there is some formal contrast, such as that between English *I* and *we*. The more serious problem

[4] Éva Csató points out (personal communication) that, in the oblique plural forms, pronouns of all three persons include a number marker; this is similar to the ordinary plural, not to the associative marker.

concerns the ordinary plural. If the first and second person plural pronouns are associative plurals, then the ordinary plurals become exceptional, since they would typically involve some central segment of the hierarchy. We would have to say that the claims of the Smith-Stark Hierarchy relate to associative plurals. The considerable data on the distribution of ordinary plurals, which have been partially understood by reference to the hierarchy, would now all be problematic.

It might be argued that we have been over-simplifying by viewing the pronouns as being either ordinary plurals or associative plurals. The first person plural may be an ordinary plural, if rarely, and the second person plural is often used as an ordinary plural. (Jespersen (1924: 192) states that the second person plural can be of either type). It could therefore be suggested that the associative plural is a part of the plural, and the personal pronouns cover the whole plural range. But this merely blurs the issue. If the associative plural is a part of the plural, why should we not treat the dual as part of the plural (since 'two' is included in 'more than one')? We cannot do this because the dual (in the languages which have a dual) shows a regular form-meaning correspondence, which demonstrates that it forms a separate number. The Smith-Stark Hierarchy is precisely a typology of formal contrasts. It is the lack of a formal contrast in the pronouns, as compared to formal contrasts like Hungarian *Jánosok* (plural) versus *Jánosék* (associative), which makes the pronouns a clear problem with respect to the Smith-Stark Hierarchy.

If we wish to continue claiming that the associative plural is a separate number, a last escape mechanism would be to claim that it is a minor number (like the paucal in Avar). This is unsatisfactory, as our data from Hungarian show. First, it appears that the associative plural meaning is available for the first and second person plural pronouns as well as for some 'higher' nouns: the problem is the lack of a form-meaning correspondence. And second, recall that minor numbers always correspond to a major number; that is to say, any number postulated as a minor number is found in another language as a major number. But no instance of an associative plural functioning as a major number parallel to an ordinary plural has been found. Thus, as before, either the associative plural or the ordinary plural would fail to fit the typology. (Since the associative is not found as a major number, it cannot possibly meet the more stringent criterion for minor numbers, namely that the language with a claimed minor number must have a number system matching an attested system of major numbers both with the minor number included and without it.)

We try two ways forward. First we look for straightforward morphological evidence on the relation between associative and plural. In Central Pomo we find suggestive diachronic evidence that they are, or rather, were separate. Second we look at a more complex number system, and here we are able to confirm the conclusion suggested by the Central Pomo data.

4. CENTRAL POMO

Some insight into the status of the associative distinction comes from Central Pomo, a language of the Pomoan family indigenous to Northern California. Central Pomo itself is spoken 100 miles north of San Francisco, with one dialect on the coast at Point Arena/Manchester (the name of one 'rancheria', the California term for a small reservation) and two dialects 50 miles inland, on the Russian River near Ukiah. Only a handful of speakers remain.⁵

Number is specified in Central Pomo in multiple areas of the grammar and lexicon. The number distinctions found on nouns, pronouns, adjectives and verbs operate independently of each other and differ in important ways. A full account of the system can be found in Mithun (1988b). We focus here on nominal number and its relation to associative marking.

Only a small set of nouns have plural forms, most denoting human beings ('man', 'woman', 'child', 'old woman', most kinsmen). Several of the plural forms are simply irregular, but others can be seen to be formed with a suffix *-(t)ay*. It takes the shape *-tay* after vowels:

- | | | |
|-----|--------------|------------------|
| (7) | <i>máːta</i> | <i>máːta-tay</i> |
| | woman | woman-PL |
| | 'woman' | 'women' |

The initial *t* does not appear after consonants:

- | | | |
|-----|--------------|-----------------|
| (8) | <i>čáːč̣</i> | <i>čáːč̣-ay</i> |
| | person | person-PL |
| | 'person' | 'persons' |

The plural forms are generally used only when their referents are significantly individuated. Pronouns, by contrast, systematically show distinct singular and plural forms whenever they refer to humans.

In addition to the relatively restricted plural marking for nouns, Central Pomo also has an associative marker *-təya*. Its use can be seen in (9):

- | | | | | |
|-----|--|---------------------------|-----------|---------------|
| (9) | Norman Ball = <i>təya</i> | <i>lów-ač̣ = ya</i> | <i>ʔe</i> | <i>muːl</i> . |
| | (name) = ASSOC | talk . PL-IMPRF . PL = PE | COP | that |
| | 'Norman Ball and them were talking about that.' ⁶ | | | |

The verbal morphology in (9) reflects the plurality of the subject. The verb root *lów-* 'talk' is inherently plural, denoting conversation in a group, and the suffix *-ač̣* is the plural form of the imperfective aspect.

The associative phrase can also fill other grammatical roles. In (10) it functions as the grammatical patient of the verb 'discuss'.

[5] We are grateful to Mrs Frances Jack (Hopland Rancheria), Mrs Salome Alcantra and Mrs Florence Paoli (Yokaya Rancheria) and Mrs Winifred Leal and Mrs Eileen Oropeza (Point Arena Rancheria) for sharing their knowledge of their language.

[6] Hyphens (-) are used here to indicate affix boundaries, and equals signs (=) for clitic boundaries. Central Pomo contains a rich inventory of evidential markers, among them the clitic = *ya* that marks information known from direct personal experience (PE).

ASSOCIATIVE FORMS: EVIDENCE FROM YUP'IK

- (10) Eileen = $\underset{\cdot}{t}$ oya-l = wa ma čanó·-d = a?
 (name) = ASSOC-PAT = Q 2.SG talk.SG-IMPRF.SG = IMMED
 'You're discussing Eileen and them?'

The associative enclitic appears with proper names, as in (9) and (10) above, and with kinterms as in (11):

- (11) Ma- $\underset{\cdot}{t}$ hé- $\underset{\cdot}{t}$ o·ya híntil čanú šǰúduw-ay ǰi-n
 3.POSS-mother-ASSOC Indian word not.know-PL be-as
 'Because their parents don't speak the Indian language.'

The associative also appears with indefinite pronouns, which are used as interrogatives as well:

- (12) Bá· = $\underset{\cdot}{t}$ oya = wa mída nap^hó-w?
 who = ASSOC = Q there sit.PL-PRF
 'Who [all] is living there now?'

The shape of the associative = $\underset{\cdot}{t}$ oya is distinct from that of the noun pluralizer - $\underset{\cdot}{t}$ ay. If we look at the forms of the pronouns, however, we see evidence suggesting that the associative = $\underset{\cdot}{t}$ oya includes an original plural marker.

(13) *Personal pronouns in Central Pomo*

	AGENT		PATIENT		POSSESSIVE	
	SG	PL	SG	PL	SG	PL
1	ǰa·	ya	$\underset{\cdot}{t}$ o·	yal	k ^h e	yá·ǰk ^h e
2	ma	máya	m $\underset{\cdot}{t}$ o	máyal	mk ^h e	máya·ǰk ^h e
3	mu·l	mú· $\underset{\cdot}{t}$ uya	mú· $\underset{\cdot}{t}$ u	mú· $\underset{\cdot}{t}$ uyal	mú·k ^h e $\underset{\cdot}{t}$	mú· $\underset{\cdot}{t}$ uya·k ^h e $\underset{\cdot}{t}$
3R ⁷	$\underset{\cdot}{t}$ i·	$\underset{\cdot}{t}$ íya	$\underset{\cdot}{t}$ i· $\underset{\cdot}{t}$ o	$\underset{\cdot}{t}$ íyal	$\underset{\cdot}{t}$ i·k ^h e $\underset{\cdot}{t}$	$\underset{\cdot}{t}$ íya·k ^h e $\underset{\cdot}{t}$

The plural segment -ya appears clearly in the second person and the third person long-distance reflexive pronouns, somewhat less clearly in the first and basic third person forms due to the historical erosion of certain unstressed initial syllables. The same plural segment -ya appears in the associative: = $\underset{\cdot}{t}$ o-ya.

The situation in Central Pomo has provided a valuable hint. It suggests that the present associative marker was probably formed from separate associative and plural segments, which would in turn lead us to believe that number and associativity should be treated as separate categories. It is possible to analyse the Hungarian data in a similar way. The associative suffix -*ék* might be segmentable into two components, associative -*é-* plus a plural element -*k-* also visible in the nominal plural suffix -*ok* and third person pronominal plural *ők*. See Moravcsik (forthcoming, section 2.1.6) for a discussion of the advantages and disadvantages of this approach.

[7] The forms marked '3R' are part of a set of special empathetic/logophoric/long-distance reflexive pronouns.

5. CENTRAL ALASKAN YUP'IK

To make further progress, a good strategy, as is often the case with number, is to look at a more complex system involving a third number. If we analyse a language with a dual in addition to singular and plural, then theoretically we might find two outcomes:

1. Four numbers; singular, dual, ordinary plural, associative plural.
2. Three numbers: singular, dual, plural, plus an additional category – associativeness, which we would expect to be available for dual and plural.

We now examine a language with three numbers and associative forms.

Our data are from Central Alaskan Yup'ik, which is spoken in southwestern Alaska in the Yukon–Kuskokwim Delta and Bristol Bay areas. According to Jacobson (1993: 1) there were in 1993 approximately 20,000 Central Alaskan Yup'iks, of whom some 10,500 spoke Yup'ik. Children learn Yup'ik as their first language in about half of the Yup'ik villages.⁸ Central Alaskan Yup'ik is one of the Yup'ik group of languages within the Eskimo branch of the Eskimo–Aleut family. Since this language is vital to our claims, a brief sketch will be helpful.

5.1 *Sketch of Central Alaskan Yup'ik*

Verbs, which may be intransitive or transitive, contain pronominal suffixes referring to their core arguments. They distinguish singular, dual, and plural number in all persons. There is no gender, but there is a long-distance reflexive used, roughly speaking, for an argument in certain kinds of dependent clauses that is coreferent with the subject of a higher clause. The pronominal suffixes are preceded by one of a set of mood markers (indicative, optative, interrogative, subordinative, and various connectives). Because so many features are distinguished by the pronominal suffixes, and because their shapes vary with the mood, the number of pronominal forms is quite large.

Nouns also take inflectional suffixes, which mark an elaborate case system with a basic ergative/absolutive pattern. The singular, dual, and plural forms of the unmarked absolutive case of 'kayak' can be seen in (14), (15), and (16):⁹

[8] We are very grateful to George Charles and Liz Ali, both of Bethel, Alaska, for sharing their intuitions on their language, and to Tony Woodbury for helpful discussion.

[9] It is interesting to note that there are very few nouns which have singular forms only. One example is *meq* 'water'. (Abstract nouns with meanings like 'happiness' are generally not used.) Most nouns that would correspond to English mass nouns are typically interpreted as count nouns in Yup'ik when dual or plural suffixes are added. For instance *uquq* (sg.) 'oil', *uqik* (dual) 'two sealpokes or jars of oil', *uqut* (pl.) 'three or more sealpokes or jars of oil'. Relatively few nouns are defective in terms of number in other ways. There are some which have only the plural, such as *micugnissuutet* 'radio':

- (14) qayaq
'one kayak'
- (15) qayak
'two kayaks'
- (16) qayat
'three or more kayaks'

Possessed nouns contain transitive suffixes that match those on verbs: the possessor is coded like the ergative, the possessed like the absolutive (as illustrated in the Appendix). The form is then further inflected for case.

5.2 Associative forms in Yup'ik

Inflectable words in Yup'ik, as in other Eskimoan languages, consist of an initial root (traditionally termed a 'base'), optionally followed by any number of derivational suffixes ('postbases'), then by inflectional suffixes ('endings'). There are hundreds of these postbases, many with meanings corresponding to those of roots in other languages ('to buy an X'), many with meanings typical of derivation in other languages (nominalization), some with meanings typical of inflection elsewhere ('habitually'). There is a postbase in Central Alaskan Yup'ik that appears on proper names only, to give forms meaning 'N and family' or 'N and companion(s)':¹⁰

- (17) cuna
'Chuna' (name; absolutive singular)
- (18) cunankut ayag-tu-t
Chuna . ASSOC . PL go-INDIC-3 . PL
'Chuna and his family/friends left.'¹¹

-
- (i) niicugni-ssuut-et nipe-s-ki
listen-INSTR . NOMINALIZER-PL go . OUT-CAUSE-OPTATIVE . 2 . SG/3 . PL
'Turn off the radio!'

Another example is *alliertet* 'one-piece trousers with attached fur socks', also found only in the plural. Such nouns typically refer to objects consisting of multiple parts.

Other nouns have dual and plural but no singular. Thus *uskurak* 'dog harness' is dual in form, appears with dual pronominal suffixes on the verb, and can be used for one dog harness or two. Three or more dog harnesses would be *usukurat*. There is no singular form **uskuraq*. *Atasuak* 'summer trousers' functions similarly. For comparative data on the dual in Eskimo languages see Hammerich (1959).

[10] The associative is not available for kinterms. This may be because they would need to be followed by transitive pronominal suffixes to indicate possessor and possessed (N and N's kinsman), which would lead to considerable morphological complexity with the associative, especially if the whole had then to be inflected further for case. Note that our data are from the dialect known as General Central Alaskan Yup'ik; for similar data on the Chevak dialect see Woodbury (1981).

[11] The absence of an overt tense marker indicates present and immediate past.

chronically from *t* followed by *i*.) The first person dual and plural forms contain a special segment in addition to the number suffixes, however: *-ku-*. This segment is certainly reminiscent of the associative suffix *-nku-*. While for simplicity we give only the intransitive forms here, in the transitives, the forms containing first person dual and first person plural absolutes also have the same segment *-ku-*.

In addition to the regular pronominal suffixes, Yup'ik contains a set of independent pronouns used for special emphasis or contrast. The first person forms can be seen in (ii). Those in the first row are used for core arguments (ergatives or absolutes). Obliques are formed on the base illustrated in the second row with the locative case *-ni*. (Other oblique cases – ablative, terminalis, vialis, aequalis – show the same stem but have different endings.)

(ii) *First person forms in Central Alaskan Yup'ik*

	SINGULAR	DUAL	PLURAL
ERG/ABS	wii/wiinga	wangkuk	wangkuta
LOC	wangni	wangkugni	wangkutni

We return to the first person forms below. The second person forms are as follows:

(iii) *Second person forms in Central Alaskan Yup'ik*

	SINGULAR	DUAL	PLURAL
ERG/ABS	elpet	elpetek	elpeci
LOC	elpeni	elpetegni	elpeceni

The basic third person forms are:

(iv) *Basic third person forms in Central Alaskan Yup'ik*

	SINGULAR	DUAL	PLURAL
ABS	ellii	elkek	ellait
ERG	elliin	elkenka	ellaita
LOC	ellini	elkegni	ellaitni

There is an additional third person long-distance reflexive form, sometimes abbreviated 3R. This form is used for arguments that are coreferent with the subject of the clause or of a higher clause.

(v) *Long distance reflexive forms in Central Alaskan Yup'ik*

	SINGULAR	DUAL	PLURAL
ABS/ERG	ellmi	ellmek	ellmeng
LOC	ellmini	ellmegni	ellmeggni

In most of these forms, traces of the original dual *-k* and plural *-t* can be discerned. What is of special interest to us here is the shape of the first person pronouns ((ii) repeated for convenience as (vi)).

(vi) *First person forms in Central Alaskan Yup'ik*

	SINGULAR	DUAL	PLURAL
ERG/ABS	wii/wiinga	wangkuk	wangkuta
LOC	wangni	wangkugni	wangkutni

These forms are derived from the proximate restricted deictic demonstrative adverb *wa-*. It appears with the locative suffix *-ni*, for example, in *wani* 'right here, before me' (Woodbury 1981: 232–2, Jacobson 1984: 410). In the singular, the demonstrative base *wa-* is followed by the first person pronominal suffix *-(ng)a*. The velar nasal (ng) in the first form follows a pattern of 'velar dropping' between single vowels. Where there is velar dropping between two original low vowels, the vowels are raised. Thus original *wa-nga* appears as *wii*, the first alternant of the first person singular pronoun. The second alternant is the result of a second addition of the first person pronominal suffix: *wii-nga*. (The velar nasal remains in this form because it is preceded by two vowels.)

The other first person pronouns (*wangkuk*, *wangkuta*, *wangni*, *wangkugni*, *wangkutni*) show a common base *wang-*, consisting of the deictic root *wa-* followed by the first person pronoun *-(ng)a*. The *-a-* of this pronoun regularly appears as schwa word-internally, and disappears in certain phonological contexts like those above. (Since the velar nasal is not flanked by two single vowels, it remains.) The endings of the dual and plural forms, *-k* and *-ta* are as expected: the *-k* is the regular marker of dual number, and the *-ta* is an older form of the plural that still appears elsewhere as a regular marker of plural. What is intriguing is the internal segment *-ku-* that appears between the first person base and the number markers. This segment does not appear in any of the other dual or plural independent pronouns, but it does appear in the first person dual and plural pronominal suffixes, and strongly resembles the associative suffix *-nku-*. We thus find an intriguing situation: first person dual and plural pronouns seem to share a special associative segment, distinct from the number markers, and not found in any of the other pronouns. This is what we might have expected, since the natural interpretation of these first person forms is indeed associative, as we discussed earlier. If just one pronoun had forms similar to associatives we would expect it to be the first person.

The two segments are not identical. The associative marker that appears with nouns is *-nku-*, while the marker that appears in first person pronouns is *-ku-*. As Tony Woodbury (personal communication) has pointed out to us, the initial *-n-* of the associative is a reflex of an original plural marker *-t*, recognizable by its idiosyncratic junctural properties. It regularly appears as *n* before *k*. As a result, we have apparently found a highly significant result: the associative construction consists of an original plural element *-n-*, followed by an element particular to the associative, *-ku-*, then followed in turn by distinct number specification, either dual *-k* or plural *-t*. The special

element of the associative, *-ku-*, appears as well in both the bound and the independent pronominal paradigms, but only in the non-singular first person, just the location where we would expect associative meaning.

The apparent coincidence of forms may, unfortunately, be less significant than at first appears. The special segment *-ku-* appears in one other location of Yup'ik morphology as well: it systematically forms non-singular bases of demonstrative pronouns, a large and elaborate set of forms in the language. Its use can be seen in the sample dual and plural forms of the demonstrative *tamana* 'that one' (extended, i.e. moving, long, or of large extent; from Jacobson (1984: 658, 660)).

(vii) *Sample dual and plural forms of tamana 'that one'*

	SINGULAR	DUAL	PLURAL
ABS	tamana	tamakuk	tamakut
ERG	tamatum	tamakuk	tamakut
LOC	tamatumi	tamakugni	tamakuni

The segment *-ku-* may thus have originated as a simple marker of non-singular number and been exploited in that capacity independently in the formation of the demonstrative pronouns, the first person pronouns, and the associative. Several alternative scenarios remain possible, however. The segment may have had an original associative meaning that was applied independently to the demonstratives, the pronouns, and associative nominals. Alternatively, it may have had an original non-singular meaning that was exploited to form demonstratives, but may have taken on an associative meaning when applied to either the associative construction or the first person pronouns, which was then exploited for the formation of the other. Perhaps a closer reconstruction of the histories of the three elements will some day tell us more.

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