

Ergativity, Number, and Agreement

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ERGATIVITY, NUMBER, AND AGREEMENT
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Summary: In the present paper I propose the following (1):

1. The category number may be encoded in the nominal, the verbal, in both, or in neither system.
2. If the number of the patient is encoded in the verbal system, then the subject of the intransitive will also be encoded by the same device. In addition, the number will be encoded in the adjectives, if the language has any.
3. If the verbal encoding of number includes the patient, the encoding of number in the nominal system will be severely limited, or nonexistent.
4. It is proposed to reassess number agreement, and for some languages to view it as a cooccurrence of independently encoded devices to mark plural.

1.0 IS NUMBER A NOMINAL CATEGORY ONLY?

Traditional and contemporary linguistics assumed that the locus of the category number is the noun (e.g. Hopper and Thompson 1984:718). Instances of number encoded in the verbal system or in the modifiers are usually interpreted as phenomena of agreement, essentially redundant in the sense of information theory. Although in some languages such an interpretation of agreement may be justified, there are languages in which the number encoding in the verb must be considered to have the nonredundant function of being the primary marker of this semantic category, e.g., Onondoga (Northern Iroquoian):

- 1 a. *cihá kahnyá.ha?*
 'the dog is barking'
- b. *cihá knihnyá.ha?*
 'the dogs (dual) are barking'
- c. *cihá kotihnyá.ha?*
 'the dogs (plural) are barking' (Chafe 1970:31) (2).

In 1 a., b., and c. the number distinction is indicated by affixes to the verb while the noun *cihá* remains unmarked for number. Similarly, in Pero (West Chadic):

- 2 a. *kpéemùn lée- kò*
 woman give birth-Compl
 'woman gave birth'
- b. *kpéemùn léyyí- kò*
 give birth-Pl
 'Woman gave birth to many children'
- 3 a. *nī-díg-kò mīnà*
 1sg -build-Compl house
 'I built a house'
- b. *nī-dikkú-jū-kò mīnà*
 build- Pl
 'I built many houses'

One cannot talk about the agreement phenomena in 1-3 for the

simple reason that there is nothing in the sentence for the verb to agree with.

Since the category number may have its locus totally or partially in the verb, we should postulate at least two types of number encoding: one nominal and the other verbal. Languages may have only one or both types of encoding available.

2.0 TWO TYPES OF VERBAL ENCODING

From the point of view of the function of the number marking two types of encoding can be distinguished: the type in which the number marker indicates only the number of one of the arguments of the verb, and the other in which it indicates plurality both of action and of the number of one of the arguments. The first type is familiar from I.E. languages. The second type, illustrated by the Pero examples above, is also encountered in languages from other families.

2.1 Correlation 1

The following correlation seems to occur: When the verb encodes both plurality of action and plurality of one of its arguments by the same device, the argument so encoded is patient, and the number encoding in the verb will also include the subject of the intransitive.

Compare the following examples from Pero with the ones already given:

- 4 a. gbáali tódd-áani
calabash break-Stat
‘The calabash is broken’
b. gbáali tóddō-t-áani
PL
‘Calabashes are broken’

The plural form of the transitive verb in Pero never indicates the number of the agent. Compare 5 with 2 and 3:

- 5 m̀n-d̀g- k̀ m̀nà
1pl built-Compl house
‘We built a house’ (Frajzyngier in press.)

This pattern has been observed in other Chadic languages: in Mandara (Frajzyngier 1984a), Mopun, and it probably exists in other Chadic languages (Frajzyngier 1984b). Polish, like most I.E. languages, has the verb encoding the gender, number, and person of the surface structure subject. But it also has a prefix po-, one function of which is to indicate plurality of action, e.g.:

- 6 a. Po-stał w kolejce
stand in line
‘He stood in line (for quite some time)’
b. Po-leżał w królewskim łóżu
lie in royal bed
‘He lay for some time in the royal bed’

Po- may also indicate plurality of an argument, and according to the hypothesis the number marking through this device will have

ergative characteristics, e.g.:

- 7 a. Po-otwierał okna
 Pl- open-Sg window-Pl
 'He opened [all] the windows'
 b. *po-otwierał okno
 window-Sg

- 8 a. *Po-spadał
 fall-Sing
 but: po-spadali
 fall-Pl
 'They fell down' (3)

I did not have an opportunity to check whether Correlation 1 occurs in all languages in which plurality of action and plurality of one of the arguments are marked by the same device.

2.2 Correlation 2

If the verb encodes the number of the patient, the number encoding will have ergative characteristics, e.g., in Shokleng:

- 9 a. tā wū ti pənū mū
 he(A) 3-Nom he(P) shoot-Sing Active
 'He shot him'
 b. tā wū mē pin mū
 he 3-Nom Distr they shoot-Pl active
 'He shot them'
- 10 a. tā wū tē mū
 he 3-Nom go-Sg Active
 'He went'
 b. ɔŋ wū mū mū
 they 3-Nom go-Pl Active
 'They went'

When the agent is plural and the patient is singular the verb is singular rather than plural:

11. wū ti pənū mū
 they 3-Nom he shoot-Sing Active
 'They shot him' (Urban in press.)

The correlation holds for most of the Caucasian, Chukotko-Kamchatkan, and Australian languages. It is also true for all languages for which Correlation 1 was true, because in those the plurality of action also encodes plurality of patient: therefore those languages meet the necessary condition of the Correlation 2. All languages that I have examined that mark the number of patient in the verb comply with Correlation 2. Nevertheless, I cannot theoretically exclude the possibility of the existence of languages in which a transitive verb will encode the number of the patient and yet have a system of number encoding exclusively nominative, i.e., one in which the number of patient is encoded by one device, and the number of agent and subject of intransitive by another device. Hence, despite the existence of considerable evidence, I propose it as a hypothesis only. This hypothesis, although based on the semantic feature number, deals essentially with the ergative phenomena. Nothing that follows

depends crucially on this hypothesis.

3.0 RELATIONSHIP BETWEEN VERBAL AND NOMINAL PLURAL

3.1 Correlation 3

There appears to be another correlation that has not been observed previously:

If a language encodes the number of patient and of some other argument, including the number of action, then the number encoding in the nominal system will be constrained in a manner different from when the number encoding in the verb does not include the patient. In particular, the number encoding in the nominal system will be constrained to certain syntactic relations or semantic classes of nouns. Languages with number encoding in the ergative pattern constitute a subclass that will be covered by the above hypothesis.

I will offer an explanation of this phenomenon after presenting the evidence for it.

3.2 Evidence

Pero

There are no morphological devices to mark plural in the nominal system. There are only a few nouns, predictably [+human] for which the number is indicated by suppletion.

Shokleng (Brazil)

It appears that there is no nominal encoding of number in this language nor in the closely related Kaingáng (Wiesemann 1972).

Australian languages

Number specification is optional in most Australian languages... (Dixon 1980:75). In Dyirbal the plurality of nouns may be optionally indicated by reduplication. The verbal system encodes the person and number of arguments, and moreover this encoding has ergative characteristics.

Penutian

With respect to number distinction in Takelma nouns, Sapir 1922:247 writes: 'As a rule it is not considered necessary in Takelma to specify the singularity or plurality of an object, the context generally serving to remove the resulting ambiguity'. The verb in this language marks plurality through reduplication. Sapir 1922:127 states: 'The frequentative idea may have reference in the repetition of the act itself or to the plurality of the transitive object or intransitive subject affected'. He gives following examples: wog 'arrive' wogowa 'k' 'many arrived'; lebe 'pick up and eat (seeds)' le^ep^elap^e 'pick and eat many seeds'.
Yuma

It appears that there is no number marking in the nominal system. Halpern 1946:264 states: 'The noun theme generally may have either a singular or a plural significance: maxwá 'badger' or 'badgers'. The verbal system has a well-developed number marking system. There are two fundamental types of plural: Plural of intransitive verbs which indicates collective plural subject, and 'distributive object form indicating primarily action

performed on a number of different objects` (Halpern 1946:276). In addition, Halpern states that the verbs of transitive meaning are normally conjugated for both these plurals. The examples he gives have an indication of either the plural subject of an intransitive or the plural object of a transitive, e.g.: taspér `to tighten` > taspí.r `to tighten many`; ayér `to fly` > ayá.r `to fly (collective)`.

Basque

In Basque only nouns that are definite may have the plural marker. In Basque and in Summerian the adjective is marked for number. When a noun occurs in construction with adjectives it is not marked for number, e.g.:

- 12 a. soldado eta aintzindari erneak
 soldier and officer brave-Pl
 `brave soldiers and officers` (Basque, Lafitte 1944:121)
- b. digir-gal-gal-ene `All great gods`
 god great -Pl-Pl (Summerian, Diakonoff 1967:58-60)

In Chukotko-Kamchatkan languages nouns are divided into two classes, human and nonhuman. In the human class, nouns are marked for number in all cases, but in the nonhuman class the nouns are marked for plural only in the absolutive.

4.0 WHERE DO THE NOMINAL NUMBER MARKERS COME FROM?

Although it has been shown that in many languages there is no number marking in the nominal system, nevertheless some languages discussed here have such markers, and they may be considered counterevidence to the hypothesis about the correlation between plural marking in the verb and nominal number marking. In the present section I propose to examine these nominal markers with the purpose of assessing their implication for the hypothesis.

4.1 Chadic

In Frajzyngier 1977 it has been shown that two of the most frequent number markers in nouns, reduplication and affixation of a, have been borrowed from the verbal system. Another type of marking plural consists of adding the morpheme identical with 3 p. pl. pronoun.

4.2 Chukotko-Kamchatkan

In virtually all languages of this group the nominal plural marker is related to the 3 p.pl. object marker (see the Chart for details).

4.3 Ket

In Ket the nominal plural marker is identical with the plural marker of 3 p. intransitive subject and transitive object. In Eskimo the number markers on verbs and nouns are identical.

4.4 Lakhota

There is no nominal plural in this language, except in the vocative. The plural is then formed with the suffix -pi. This marker, with a different stress, also indicates plural subject or object of the animate nouns (Davidson, p.c.).

4.5 Australian

The occasional number marking in nouns through reduplication is related to reduplication in the verbal system where it indicates that an activity is done many times, or a reciprocal action (Dixon 1980:433).

4.6 Caucasian

Most Caucasian languages have several ways to mark nominal plural.

For the Abkhaz-Adyghe family, Kumaxov 1969 states that it is not possible to reconstruct the nominal plural marker for the proto-language of the family. In at least one language of the family, Adyghe, the nominal plural marker -xe- is related to the 3 p.pl. marker on intransitive verbs -x, e.g., maklo 'he goes' maklox 'they go' (Kumaxov 1967:157). In at least one language from each of the remaining two families of Caucasian languages, the nominal plural markers are identical either with the pronominal plural markers or with the verbal plural markers. Compare the following examples from Xinalug (Desheriev 1967:671), which marks the nominal plural by suffixes -r, -n and -d:

- 13 a. kin-d-mae 'he ate'
 b. kin-dur-mae 'they ate'
 14 a. cakku-d-mae 'he will carry him up'
 b. cakku-d-r-mae 'he will carry them up'

In Avar the plural marker for all classes is -r or -l. The latter is also the marker of plurality in pronouns, e.g., g'eb 'that' g'el 'those' (Madieva 1967).

5.0 EXPLANATION

In this section I propose a functional explanation for Correlation 3.

In a number of works Klimov (see Klimov 1977) observed that many languages have a poorly developed nominal marking of plurality. He attributed this property to active typology, without explaining, however, how this typology had been responsible for such and no other number marking. He considered presence of suppletive plural verbs in some languages to be a compensatory device to mark plurality in view of the paucity of nominal plural marking. I could not find anything in the descriptions of active typology that could be considered a cause of the lack of number marking in the nominal system. Moreover, the lack of number marking in the nominal system is characteristic of languages with no active typology features, e.g., Chadic. Since it has been shown in the present paper that the lack of number marking in the nominal system is linked with the presence

of extensive number marking in the verbal system, the two must be examined as to whether or not they are in a cause-effect relationship.

The first hypothesis one may consider is that the lack of number marking in the nominal systems triggers number encoding in the verbal system. Such a hypothesis, although theoretically plausible, must be rejected in view of the presence of languages, such as Chinese, in which there is no number encoding in either the verb or the noun. Moreover, such a hypothesis will have no way of explaining why in some languages with number encoding in the noun there is still number encoding in the verb, as in many I.E. languages.

The second hypothesis: Since there is systematic and extensive number encoding in the verb, the communicative need to encode number in the nominal system is greatly diminished. In a normal speech situation nouns very seldom occur alone. In most cases they are parts of larger constructions that often involve verbal or adjectival predicates or modifiers. In languages where number is either exclusively or predominantly encoded in verbs and adjectives, the only nouns whose number will not be specified in a sentence will represent the argument not encoded in the predicate or modifier. It is for this argument that one would expect the nominal encoding of number to emerge first. The ergative encoding of number now becomes important because in it both the number of the subject of an intransitive verb and the object of a transitive verb are marked. What remains unmarked in these languages is only the agent of the transitive. Kumaxov 1969:58 postulates that in the Abkhaz-Adyghe family, number distinction emerged first in the ergative case (the only case marked for number in contemporary Ubyx), and later it spread to other cases. In Lakhota the noun is marked for number only in the vocative, i.e., when it occurs without other constituents that might have encoded the number distinction.

In view of what has been said, the situation in Chukotko-Kamchatkan languages becomes interesting because in the nonhuman nouns it is the absolutive rather than the instrumental serving as ergative that is encoded for number. The explanation for this may lie in the fact that in these languages verbs with two arguments can occur in either an ergative or a nominative construction. In the latter there would be no way to determine the number of arguments.

6.0 WHERE DO THE AGREEMENT SYSTEMS COME FROM?

Agreement is usually understood as a phenomenon in which some feature of one constituent in a sentence triggers the presence of a feature in another constituent (cf. Moravcsik 1978, Plank 1984).

Tacitly, agreement is treated as adding redundancy to the grammatical system of language, whereby the information available from some other element of grammar is reinforced.

The data presented in the present paper indicate a possibility of a radically different approach to the phenomenon of agreement. Number encoding in the verb may be seen as an independent indication of this semantic category. Subsequent number encoding in the noun is also independent indication of the same semantic category. Synchronic evidence for this interpretation is provided by languages in which, even when both types of encoding are available, only one is used. Thus in Bachama (Chadic, Biu-Mandara) there is number distinction in verbs often correlating in intransitive clauses with a singular or plural subject, and in transitive clauses with a singular or plural object. Sometimes, however, the singular or plural forms of the verb is at variance with the number of the subject or object, and appears to be independent of such concords, and to relate directly to semantic factors in the situation (Carnochan 1970:101). Similarly, in Old Georgian the verb agreed in number with agent when it was marked with the suffix -n but not when it was marked with the suffix -eb (Chikobava 1967:57). In many languages the noun, when modified by a numeral is not marked for number. What on the surface appears to be an agreement phenomenon may in fact represent cooccurrence of two constituents that encode independently the same semantic category. In time, such cooccurrences, if frequent, may be reinterpreted as a true agreement phenomenon, in which a feature of one constituent triggers the presence of a feature in another constituent.

CORRELATIONS OF NUMBER FEATURES

Language	Nominal pl.		Verbal pl.			Adj pl.	
	Ergat	Absol	Ag	Pat	Subj		
Basque	-k	-k		+	+	+	-k
Ubyx	+	-		?	+	+	
Avar	-r	-r		-r(Frequentative form)			
Tabasaran	-ar						-ar
Itelmen		-?n					-?n
Kerek		-fkku					-nakku
Alutor		-w					-wwu
Koriak		-v'					-v'
Chukchee		-t					-t
Eskimo		-t					-t
Biloxi		-					+
Dakota		-pi (Voc. only)					-pi (Anim).
Siuslaw	-	-					+
Coos		-		R	+	+	(R)
		(Kinship terms are marked.)					
Takelma	-	-				+	+(R)
Khoasati				R	+	+	(R)
Yuman	-	-				+	+
Mayan	(Generally the same markers can mark the plural of either noun or verb.)						
Dyirbal Red.		Pl. of action	Red.	+	+		
Kaingang	-	-				+	+
Shokleng	-	-				+	+

FOOTNOTES

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Quizar and David Rood for information on Mayan and Lakhota.

2. Chafe states: 'As is often the case with the semantic units of a noun, dual and plural in these sentences have been postsemantically transferred from the noun to the verb' (Chafe 1970:31). It appears that this explanation was motivated by the traditional assumptions about the locus of the category number.

3. This discussion of Polish was stimulated by an exchange many years ago with Francesco Antinucci.

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