

Naturally!

**Linguistic studies in honour of
Wolfgang Ulrich Dressler
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Asymmetries of morphological marking*

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It is a pleasure to dedicate this article to Wolfgang Dressler, who among many other achievements was one of the first to recognise the specific interest of verbal number. While nominal number quantifies over entities, and is familiar, verbal number quantifies over events or participants in events (see Dressler 1968, Durie 1986, Mithun 1988). For example in Rapanui (the language of Easter Island: data from Veronica Du Feu 1996:192 and p. c.), there is a contrast between *ruku* 'dive' and *ruku ruku* 'go diving'. The latter form implies more than one dive, but not necessarily more than one diver. Reduplication here indicates verbal number: the event is in a sense "plural". If we examine how number, nominal and verbal, is marked morphologically we find that this marking is asymmetric in four respects. Some have been noted before, but they have not previously been treated as a single problem requiring common explanations. We discuss the four in turn.

1. Locus

Our first question is where nominal and verbal number are expressed. We might reasonably expect that nominal number should be expressed on an element of the noun phrase, typically the noun, while verbal number should be expressed on the verb. Thus in English we have *cat* ~ *cats* (nominal number expressed on the noun) and in Rapanui we note *ruku* ~ *ruku ruku* 'dive' ~ 'go diving' (verbal number expressed by reduplication of the verb). However, while the different types of number can be expressed in this way, this is not the only possibility. In *the cows are grazing* we have nominal number expressed on the verb through agreement, as well as on the noun, while in *the sheep are grazing* it is expressed only on the verb. The range of possibilities is given in Table 1:

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	nominal number	verbal number
A: primarily on noun phrase	Lezgian	not found
B: on both	Russian	not found
C: primarily on verb	Amele	Rapanui

Table 1. Locus of number with example language

Not surprisingly, we find languages in which nominal number is expressed primarily on the noun phrase. In Lezgian (a Daghestanian language), nouns mark number by suffixation, but finite verbs do not (Haspelmath 1993: 71-73, 127-136). Lezgian is therefore an example of type A.

In Russian, as in many Indo-European languages, nominal number is clearly signalled on the noun. It is marked elsewhere in the noun phrase by agreement and on the verb by agreement with the subject noun phrase (type B). There is a host of interesting questions concerning the relationship between the two types of marking in such languages: the number value expressed on the noun and that expressed through agreement may differ in particular circumstances, or there may be different systems in the noun phrase and the verb phrase (as in Modern Hebrew and in Kiowa, to take just two examples).

Most interesting is type C, as exemplified by the Papuan language Amele (Roberts 1987: 162, 201, 203 and p. c.):

- (1) Dana (uqa) ho-i-a
man 3.SG come-3.SG-TODAY'S.PAST
'The man came.'
- (2) Dana (ale) ho-si-a
man 3.DU come-3.DU-TODAY'S.PAST
'The two men came.'
- (3) Dana (age) ho-ig-a
man 3.PL come-3.PL-TODAY'S.PAST
'The men came.'

In Amele the verb must agree in number with the subject, shown above by the formatives *-i-*, *-si-* and *-ig-*. (The formative *-a* indicates today's past tense; and the unmarked NP has a definite referent, Roberts 1987: 203.) The noun may show plurality by reduplication (*dana-dana* 'men'), but this is optional. Number may also be indicated by pronominal copy, again optionally (shown by parentheses above). Thus we have nominal number which must be indicated on the verb and which may optionally be indicated on the noun phrase.

In contrast, however, verbal number is always expressed on the verb (claimed independently by Gil 1993: 281): I have not found verbal number being expressed on the noun phrase. It would require a language which allowed something like: *the children sneezed* meaning 'one child sneezed several times'.

We should ask why we find this asymmetry in the locus of nominal and verbal number marking. I suggest that number marking is found originally 'where it belongs': nominal number is marked on the noun phrase and verbal

number on the verb. As is well known, a common route for the development of verb agreement is from pronouns, which, being nominal, typically mark nominal number. When these become attached to the verb as agreement markers, we find nominal number marked on the verb. Thus for nominal number there is a progression from type A in Figure 1 to type B. There are two plausible ways for type C to develop in nominal number. Either directly from type A, in languages where number is marked on pronouns but not on nouns and the number of noun phrases can be indicated by a 'pronominal copy'. The pronominal copy could become affixed to the verb giving an agreement system. Or else C might arise from B by attrition of number marking on the noun. There is no corresponding route for verbal number to become marked on the noun phrase. Verbal number starts as type C and has no way to move to another type.

2. Values

Nominal number shows several values of the number feature. Besides the basic singular-plural distinction, we find duals (as in Sanskrit and Central Alaskan Yup'ik), paucals (Bayso, Paamese), trials (specifically for three, as in Larike and Ngan'gityemerri), while the largest systems have five values in all (Corbett in preparation). We are concerned here just with how many number values are possible, and we shall see that the contrast is clear. To avoid an over-simplified picture, two considerations should be borne in mind. First, when we say that a language has a particular inventory of nominal number values, this does not imply that they are available to every nominal. They may, for instance, be restricted to pronouns, or to animates. This is a question we shall develop in §4. The second complication to bear in mind is that there are yet other possible distinctions within nominal number, not listed above, which are available only as 'secondary' systems: these occur only when the language also has one of the primary systems.

While nominal number may distinguish up to five values, verbal number is almost always restricted to a "singular-plural" distinction; instances of the "dual" are reported sporadically (for instance in the Athabaskan and Muskogean families), but these typically involve extremely few verbs. It is not clear, however, that 'singular' and 'plural' are the appropriate terms. When glossing what some would call "plural" verbs, Foley (1986: 128-129) citing different sources on Papuan languages, uses 'one ~ some' or 'one ~ many' (Table 2):

language	"singular"	gloss	"plural"	gloss
Kiwai	agome	one drowns	iagome	some drown
	agiwai	give one	iagiwai	give some
Fasu	pari	one stays	popari	many stay
	mara	get one	mora	get many
Barai	fi	one sits	kari	many sit
	abe	take one	ke	take many

Table 2. Examples of verbal number in Papuan languages

Similarly Mithun (1988: 213) giving North American data, again from a variety of sources, uses 'one ~ group' or 'one ~ several'. I believe such glosses are more accurate and helpful, than the 'singular ~ plural' shorthand which is often employed, hence the scare quotes in the table. It seems likely that many of the instances glossed as 'plural' in the literature would be more accurately glossed as 'several'. This indeterminacy is understandable when we compare with English verbs whose semantics are like those of "plural" verbs, for example, *scatter*: in the intransitive use, one person cannot scatter, and two or three can hardly do so. Ten clearly can. Equally in the transitive use, one cannot scatter two seeds, nor three, but it is hard to say what the lower limit would be. Thus so-called plural verbs may require multiple participants, and do not show a strict singular-plural contrast as may be found with nominal number.

The indeterminacy is a helpful hint as to the nature of verbal number. It makes good sense that the number of participants appropriate for using the "plural" form would differ from verb to verb. This suggests it is part of the lexical meaning of the verb. Thus the relation of the verb to its subject or object with respect to verbal number is one of semantic compatibility, and not agreement. Hence asking which values of verbal number there are is not quite the appropriate question; rather we should ask which number-like properties can be relevant to the semantics of verbs, and we see that sometimes quantifiers such as 'many' provide a better analogue than the values of nominal number. Continuing with the comparison, it is harder to find English verbs requiring two events or participants; 'to duel' is a candidate. As we shall see (§4), such verbs are rare even in languages with well-developed verbal number.

Though the distinctions of verbal number do not closely match those of nominal number, it is still the case that there is an asymmetry; we find more distinctions made in nominal number systems than in verbal number systems.

3. Morphological means

The morphological means used to mark nominal number are extensive indeed. Nominal number may be marked by inflection (the normal situation in languages like Russian), by stem alternation and by inflectional marking together (found for a substantial minority of Russian nouns), or by alternation without inflection for number (as in Akhvakh). Within stem alternation there are various means from stress placement, through various segmental relations (including reduplication) to the end point of suppletion. Various subsystems of marking can co-exist in a given language.

Turning to the means languages use for marking verbal number, we find that stem modification (frequently reduplication) is common and that there are numerous instances of quite separate verbs being used. In the latter case the relation between the forms is often said to be one of suppletion (as though the opposition were similar to English *go ~ went*), but the use of this term is misleading. We are not dealing with suppletion here, as Mithun (1988: 214) and

Mel'čuk (1994: 383-387, 403-404) emphasise. Rather we have two different verbs. English analogies would be *kill* versus *massacre*, *hit* versus *beat*.

When the two verbal number forms are related, then we have a derivational relationship. There can be varying degrees of productivity. Thus in Tonkawa (Hoiyer 1933-38: 56-57) there are several "plural" verbs of the following type:

"singular"	gloss	"plural"	gloss
ha-idjona-	one person goes up	da-idjona-	several persons go up
ha-glana-	one person goes down	da-glana-	several persons go down
ha-ixena-	one person goes across	da-ixena-	several persons go across

Table 3. Examples of verbal number in Tonkawa

Hoiyer notes that these verbs are formed with the elements *ha-* and *da-*, which originated in the verbs *ha'na-* 'one person goes off' and *dana-* 'two or more persons go off'.

As in §3, the comparison between nominal and verbal number is in part misleading: for nominal number we may find all the inflectional means for building paradigms (though also we may find very limited means in given languages); for verbal number we find the possibility of quite separate lexical items being used and the resources of derivational morphology. Given that distinction, then the basic point still holds: more extensive means are available for expressing nominal number than verbal number.

4. Range

The range of nominals affected by number varies greatly. At one extreme are languages in which nouns typically do not mark number, like Warrgamay (Dixon 1980: 267). At the other end of the scale we have Central Alaskan Yup'ik in which almost all nouns can be treated as count nouns. This variation is constrained, however. The patterning of nominals which distinguish number is to be understood in terms of animacy. Smith-Stark (1974) suggested a version of the Animacy Hierarchy and showed that the nominals for which singular-plural is a significant opposition must constitute some top segment of the hierarchy. The claim has a good deal of support, but there are problems with it. First, some relevant data are missing (that remains the case; his article has not been followed up as well as it deserved). Second, the criteria for number differentiation are treated as equals, yet we find that conformity to the Animacy Hierarchy may vary according to the criterion. Thus number marking on the noun may allow various types of exception (as in English) while agreement conforms to the hierarchy (Corbett: in preparation, chapter 3). And third, the question of integrating different number values (in addition to the plural) is largely ignored (see Corbett & Mithun 1996 for discussion). Nevertheless, though the nouns involved in a given language may be few or numerous, systems of nominal number are basically in accord with the hierarchy.

Verbal number differs in two main ways. First, we typically find that relatively few verbs show number distinctions. A helpful view of the range of verbal number can be gained from Oron and Ibibio, both belonging to the Central Branch of the Cross River languages and spoken in Calabar Province, Nigeria. For Oron, Simmons (1956: 251) recorded 544 verbal roots, and of them just ten show verbal number (the verbs for 'buy', 'cut', 'die', 'fill', 'hatch', 'hide', 'put on', 'shoot', 'take' and 'take out'). In most cases the two forms share an initial consonant. In the case of Ibibio, Simmons (1957: 2) identified 577 verb roots, of which 24 differentiated singular and plural forms. Second, the question of the specific verbs involved is much less clear than for nominal number. Some generalizations may be made: the verbs typically denote situations where the nature of the event or state is substantially affected by the number of participants immediately involved. Many are intransitive verbs of position such as 'sit', 'stand', or 'lie', or of motion such as 'go', 'walk', 'run', 'fly', or transitives that indicate causation of motion, such as 'take', 'pick up', 'carry', and 'throw' (see Booker 1982 and Mithun 1988 on North America, Newman 1990 on Chadic, Durie 1986 generally).

There is an additional, less obvious difference, which concerns further distinctions beyond the initial number distinction. In nominal number, if there is, say, a dual as well as a singular-plural distinction, then in many languages the split follows that of the plural. That is, nouns which have a plural also have a dual. (There are several types of exception, however, as discussed in Corbett 1996.) Verbal number is rather different. According to Booker (1982: 24-25), in North America there is never just a three-way distinction; if some verbs have a three-way distinction, there will always be others which have a two-way distinction. In this respect nominal and verbal number are quite different.

5. Motivation

It is tempting to suggest that the explanation for the asymmetries observed is that nominal number is inflectional and verbal number derivational. That would be insufficient: first, the inflectional-derivational boundary is problematic; second, nominal number can arguably be derivational; and third, we would still need a reason for the proposed division between the two types of number. We therefore propose three interrelated reasons for the asymmetries.

The first can be traced to Bybee (1985b) and Mithun (1988). Bybee (1985b: 13) introduces the notion of 'relevance', which will be helpful here: 'A meaning element is *relevant* to another meaning element if the semantic content of the first directly affects or modifies the semantic content of the second.' She points out (1985b: 23) that the number of participants in a situation can have a profound effect on it (for instance where *stampede* is appropriate rather than the simple verb *run*). The number of participants is relevant for such examples, but this is not generally the case with verbs. For many verbs, it has only a marginal effect: we do not expect to find verbal number expressed for *breathe* or

compute. Hence verbal number is restricted in the part of the verb inventory in which it is expressed, and does not achieve 'lexical generality' (see also Bybee 1985a: 34-39, 1985b: 16-17, 102-105, and Mithun 1988: 231-232). While number may be equally applicable to a substantial part of the entities denoted by the noun inventory, its relevance to events varies greatly, as we have just seen, and so it tends to be limited to relatively small parts of the verb inventory. This is a potential explanation for the asymmetry in terms of range (§4 above).

The second reason follows from the first. If there are many nouns with number oppositions, this provides system pressure against lexicalization of the number opposition. The latter still occurs, but nouns whose plural and singular are not straightforward pairs can be maintained as lexemes by the pressure of the majority of regular pairings. This pressure helps to explain the variety of morphological expression of nominal marking as compared to verbal number, the asymmetry of means (§3).

The third motivation is the paths of grammaticization; it is established how nominal categories can be expressed on verbs by agreement, but there is no similar route for verbal number to attach to nouns; as we noted earlier, this explains the asymmetry of locus (§1).

How then are we to account for the asymmetry in values (§2)? We might look to paths of grammaticization here. There are routes for numerals to attach to pronouns, giving rise to the multi-valued number systems found in Austronesian languages. If there were no potential route which could give rise to multiple values for verbal number we would have explained this asymmetry too. Consider, however, the situation in Mayali (a Gunwinjguan language of Western Arnhem Land, Australia). Evans (1995: 227) quotes this example:

- (4) bamurru ga-mirnde-rii
 magpie.goose 3RD.NON.PAST-many-stand
 'There are many magpie geese, there are magpie geese all over the place'

Mirnde- 'many' is an optional prefix standing after the obligatory prefixes and before the root. Here it suggests geese stretching out in all directions; if instead *djangged-* 'bunch' were used, this would suggest a flock tightly bunched together, while *gaberrk-* 'mob' would imply they were together, but not necessarily crowded. Note that these prefixes imply the number of geese: there is nothing in the noun morphology to do so. Interestingly too, these quantifiers typically have absolutive scope, that is they quantify the subject of intransitive verbs and the object of transitives, just as is normal with verbal number. These prefixes provide a type of verbal number but they are not straightforward quantifiers. The three quoted all give information about spacial disposition as well as about quantity. Nevertheless, we are very close to verbal number. It is particularly interesting, then, that Evans (1995: 259-263) tentatively suggests the origins of various quantificational prefixes, namely that they originate from noun incorporation, adverb incorporation and gerundive incorporation. Noun incorporation is widespread (it is also very productive in Mayali) and so it is a

specially plausible source for verbal number forms. This origin would allow several values for verbal number. It seems, therefore, that the fact that we rarely find more than a binary division is not a restriction imposed by the paths of grammaticization. We should rather look again to 'relevance'; there are relatively few verbs for which the distinction between one/two/few/many participants significantly affects their semantics.

Before leaving grammaticization, we should ask whether this would be an alternative explanation for the asymmetry in range. Here we should consider a detailed hypothesis about the rise of verbal number in the South-Central Dravidian languages, due to Steever (1987). He sees its origin in 'echo compounds' (compounds formed by reduplication with one syllable replaced by a specific echo syllable, like Yiddish English *fancy schmancy*). These forms are found elsewhere in Dravidian, thus Tamil *viyāparam* 'business', *viyāparam kiyāparam* 'business and the like' (with the echo syllable *ki-*). Compound verbs could be created similarly, and Steever claims that such forms were subsequently reduced in the development of verbal number. He suggests that modern Kūi *rūs-k-a* 'stroke repeatedly' (ordinary verb base /rūsi-/ 'stroke') is derived historically from the postulated echo compound /rusi kīsi-pa/ (where *kī* is again the echo syllable, *-si-* is the unaltered part of the reduplication and *-pa* is the infinitive suffix. With this type of development, there is no structural reason why verbal number should not be widespread within the verbal lexicon.

Given Steever's study, it appears that where we find that verbal number is restricted in the range of verbs for which it is available, we should not attribute this to a restriction imposed by possible grammaticization paths. Again the explanation is more likely to be relevance: as suggested earlier, there are few verbs for which the number of participants directly affects their semantics. Yet we should not be satisfied with 'relevance' as an explanation. It is rather vague, and runs the risk of being circular; we may say that particular verbs come in pairs, according to verbal number, because number is 'relevant'. The problem is to demonstrate the relevance, apart from the existence of verbal number.

Conclusion

This investigation allows a general methodological conclusion, and a specific conclusion. The general conclusion is that care over the use of terms in morphology, whether as in the detailed work of scholars like Mel'čuk or simply through careful selection and consistent use, is more necessary than ever. Misuse of the term 'suppletion' has on occasion led to verbal number being treated as nominal number; and the lack of agreed terms has led some to consider verbal number as being geographically restricted, whereas similar systems are found widely distributed, though referred to by different terms. The specific conclusion is that we find four asymmetries pointing in the same direction, with nominal number showing greater extent in terms of locus, values, morphological means and range. However, the three explanations

offered, namely relevance, system pressure and paths of grammaticization, are separate factors pushing in the same direction rather than a single motivation.

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