The Grammaticization of Number as a Verbal Category
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Introduction

It has long been known to those who study the native languages of North America that in many of these languages some verbs show quite different stem forms depending on the number of an argument (Frachtenberg 1922b:534-5 and Sapir 1922:94). For example, a language may have two forms meaning 'kill one' and 'kill more than one'. It is an interesting question whether such stem suppletion is a type of inflection. Those who have written about it seem to agree that it is not, for it is very rarely, in the many descriptions I have consulted, described as a type of agreement. In fact Boas (1911:381) has offered an alternative to viewing suppletion for number as a type of inflection:

> the use of different stems for singular and plural belongs rather to the classification of nouns and verbs according to the form of objects and actors

Boas' words imply, in modern terms, that a number suppletive verb selects an argument of the appropriate number in much the same way that verbs select an argument whose referent has the appropriate form: in the same way, for example, that the English verb peel selects an object whose referent has a skin, or that massacre selects an object referring to a group of people.

I believe Boas was right, and in this paper I present arguments to show that the concord relations established by number suppletive verbs do not have the expected properties of verb agreement, but that they are compatible with a selectional interpretation, in which a morphological Number[1] category inherent to the verb is linked directly into the semantic representation of verbal argument structure. This semantic representation, specified for the number of an argument, accordingly enables the appropriate argument expression to be selected.

Now suppletion is a restricted phenomenon in the languages where it occurs, but it seems that with respect to verbal Number morphology it is like the tip of an iceberg. Not only suppletion, but productive verbal Number morphology too can have the properties of selectional rather than inflectional concord.[2]

This is a result of some empirical and theoretical significance. The theoretical significance is that number may be grammaticized as a morphological category inherent to the verb: it is not inevitably a nominal category. The number of participants in an event or state can be expressed as an inherent property of that event or state, or as an inherent property of the participants themselves. The empirical significance is simply that verbal Number morphology cannot ipso facto be assumed to be an instance of agreement.

The title of this paper emphasizes its theoretical significance, but the empirical issues are probably just as important. The status of agreement in grammar is very much at issue at present, with one emphasis being on finding ways to constrain the mechanism by which agreement is achieved. If instances of inherent verbal Number morphology are wrongly interpreted as agreement, this could lead to spurious problems for theories of agreement, a lot of wasted effort for those who might try to account for these problems, and a skewed theory of agreement.[3]

Suppletion for number in the world's languages

Suppletion for the number of an argument is very widespread in the world's languages. I have unearthed over 40 languages from diverse parts of the world with such suppletion, but I feel I have only scratched the surface. In all cases only a restricted set of verbs supplete for number, the reported totals ranging from a few to a few dozen. Typically the set includes some transitives and some intransitives.[4] Languages with number suppletion include Barai (Olson 1975), Fasu (Loewecke and May 1980) and Ömie (Austing and Upia 1975) from Papua; the Austronesian languages Kapingamarangi (Lieber and Dikepa 1974), Tongan and Samoan; Ainu (Batchelor 1938) from Japan; !Kung (Snyman 1970) from Africa; the Caucasus languages Georgian (Aronson 1982), Tsova-Tush (Holisky 1985) and Svan (Comrie 1981); Kaingáng (Wiesemann 1972) from South America; and a rather large number of languages from North America (at least 30 that I know of) including many representatives of the Athabaskan, Muskogean, Salish, Uto-Aztecan and Yuman families (see e.g. Goddard 1911, Jeanne, Hale and Pranka 1984, Kinkade 1977, Langdon 1970, Mason 1916, and Munro 1976), and a number of languages of whose classification I am unsure, which include Tsimshian (Boas 1911, Dunn 1979), Karok (Bright 1957), Kiowa (Watkins 1984) and Ute (Ute reference grammar 1980). The list of North American languages is not by any means exhaustive.

Usually the suppletion is two-way, with a distinction between [±singular] or [±plural].[5] However three-way suppletion is also reported, for singular:dual:plural (Karok). Sometimes a language with suppletion is reported to have certain stems which are only used in the plural or nonsingular, with no suppletive counterpart (Kinkade 1977).

The suppletives of a language will include some which show a partial phonological resemblance, so that they might justifiably be regarded as cases of irregular ablaut or reduplication: the distinction would sometimes be a very fine one. A comparable example from English is the partial resemblance of was and were in the suppletive paradigm of to be.[6]

Concord properties of number suppletion

In this section I describe properties of stem suppletion which are problematic for an agreement account, but quite consistent with a selectional interpretation.

I. Suppletion is not triggered by a surface syntactic relation; rather it selects for the number of a particular semantic role of the verb.

In every observed case of stem suppletion for number it is the the number of the principally affected argument for which the verb suppletes. The verb encodes the plurality of affect. A verb like 'kill' will supplete for the number of its object, the one killed, while 'walk' or 'die' will supplete for the number of its subject, the person undergoing the walking or dying.[7] This gives an absolutive pattern, in which the number encoded is that of the intransitive subject or transitive object. The appearance of this pattern is quite irrespective of whatever may be the dominant case marking or agreement pattern of the language, whether ergative or accusative. In every observed case of verb stem suppletion for number it is the absolutive argument for which number is marked, and in only very few of these languages is a clearly ergative pattern of case marking or agreement to be observed; one exceptional case is Tsimshian (Dunn 1979). Most have the usual accusative pattern of case marking or agreement, and some have 'active' case or agreement systems. The following example shows an accusative system of prefixal Person-Number agreement interacting with absolutive verb stem suppletion:[8]

(1) HUICHOL (Comrie 1982)

a. ne-nua
   1sgS-arrive:sg
   'I arrived.'

b. tɨɨri yɨ-huuta-tɨ me-niu?azɨani
   children two SUBJ 3nonsgS-arrive:nonsg
   'Two children have arrived.'

c. Wan Maria maa-tɨ me-neci-mieni
   Juan Maria and-SUBJ 3nonsgS-1sgO-kill:sg
   'Juan and Maria are killing me.'

d. nee Wan Maria maa-me ne-wa-qiini
   I Juan Maria and-OBJ 1sgS-3nonsgO-kill:nonsg
   'I am killing Juan and Maria.'

The absolutive pattern of stem suppletion is highly significant since it is quite independent of other syntactic characteristics of the languages examined. I propose that it derives from a link to a semantic role, the 'affected argument',[9] for want of a better term. It follows from this that in Huichol promoted objects cannot trigger the inherent verbal Number morphology:

(2) HUICHOL (Comrie 1982)

a. nee waakana ne-mec-umi?ii-ri eekɨ
   I chicken 1sgS-2sgO-kill:sg-BEN you
   'I killed you(sg) the chicken.'

b. nee waakana-ari ne-mec-uqɨ?ii-ri eekɨ
   I chicken-nonsg 1sgS-2sgO-kill:nonsg-BEN you
   'I killed you(sg) the chickens.'

In (2) the promoted benefactive eekɨ 'you:sg' triggers regular object agreement. The promotion of a benefactive to direct object means that the object agreement is triggered by the benefactive NP, since agreement is a syntactic process, triggered by the appropriate syntactic relation. However suppletion reflects the number of what is killed, in this case the demoted object waakana(-ari) 'chicken(s)'. The two Huichol stems for 'kill' have contrasting semantic structures, one specifying a single killing, the other a nonsingular killing, so that suppletion will always indicate this semantic distinction, no matter what syntactic or lexical process the stem undergoes.

For many of the languages reported to have number suppletion there is also suppletion or verb derivational morphology which distinguishes other semantic characteristics of the absolutive argument: typically its form, animacy or personhood.[10] These are obviously not good candidates for agreement. For example in Georgian some verbs supplete for whether the object or intransitive subject is a person. In some American Indian languages with number suppletion, verbs systematically select for the form, substance, animacy, or other salient semantic characteristics of the absolutive argument: in Bright's English-Karok lexicon 10 verbs for 'stand' are listed, distinguished according to whether their subject is animate, a house, a long thin object, a filled container, and according to its number.

Sometimes number suppletion is reported to interact with suppletion for other semantic characteristics of an argument. In Barai there is a fourfold contrast between 'take' with [±singular] and [±animate] object. In Kaingáng a fourfold contrast is reported by Wiesemann (1972:99) between verb stems meaning 'hand over': three take a singular object, selected according to its shape and stance, and one takes a nonsingular object, without regard to shape or stance. In Samoan a verb meaning 'go, nonsingular', without regard for direction, contrasts with verbs of directed motion selecting a singular argument (Pratt 1911).

II. Where there is discord between the number of participants bearing the appropriate semantic role and the strict morphological Number of the syntactic relation-bearing NP, suppletion will reflect the former, agreement the latter.[11]

In Navajo (Jeanne, Hale and Pranka 1984), comitative and partitive constructions show this property: suppletion is according to the number of participants, agreement according to the Number of the subject:

(3) NAVAJO (Jeanne, Hale and Pranka 1984)
a. shí ashkii bi-ɬ yi-sh-'ash
I boy him-with PROG-1sg-walk:dual
'I am walking with the boy.'
b. nihí ɬa' di-iid-ááɬ
we subset FUT-1nonsg-walk:sg
'One of us will go.'

In Moses-Columbian, a singular verb stem may be inflected for

nonsingular to indicate distinct, separate activity by individuals of a group:

(4) MOSES COLUMBIAN (Kinkade 1977)
a. yəryər -íx
DISTRIB:sit:nonsg-activity
'(People) are sitting.'
b. łəqláq -lx 1x
DISTRIB:sit:sg-activity nonsg
'Each of a group of people has a place to sit.'

In Georgian, a NP modified by a numeral is formally singular, and controls singular Person-Number agreement, but the suppletive verb is nonsingular, as one would expect:

(5) GEORGIAN (Aronson 1982)
a. ivane šemovid-a da daǰd-a
John enter-3sg and sit:sg-3sg
'John entered and sat down.'
b. čemi mšobl-eb-i šemovid-nen da dasxd-nen
my parent-nonsg-NOM enter-3nonsg and sit:nonsg-3nonsg
'My parents entered and sat down.'
c. čemi sami megobari šemovid-a da dasxd-a
my three friend:sg enter-3sg and sit:nonsg-3sg
'My three friends entered and sat down.'

In Georgian the opposite discord — nonsingular Person-Number agreement and a singular suppletive verb — occurs with the second person plural of politeness for reference to a single addressee. Here also, suppletion reflects the actual number of the intransitive subject, not its formal Number.

In Kiowa (Watkins 1984) nouns have a morphologically unmarked Number and a marked, 'inverse' (inv) Number, marked by the suffix -gɔ̀ (with several allomorphs). The inverse category's Number value is different for each of the three noun classes: for class I it is [+plural], for class II it is [+singular], and for class III, it is [+singular] or [+plural], with dual ([-singular, -plural]) as the unmarked value. The verbal system includes Person-Number agreement prefixes which treat inverse Number in the same way for all noun classes, but distinguish singular, dual, and plural when the Number is unmarked. Agreement reflects the category distinctions of nominal morphology, but suppletion follows semantic number: it ignores the unmarked:inverse distinction:

(6) KIOWA (Watkins 1984)
a. kyầy-gù è-kú·-yɔ́
Comanche-inv 3inv-lie:pl-DISTRIB
CLASS I
'Comanches are camped about.'
b. á·-dɔ̀ è-cél
tree-inv 3inv-set:nonpl
CLASS II
'A tree is standing there.'

c. á· è-cél
   tree 3du-set:nonpl
   CLASS II
   'Two trees are standing there.'
d. á· Ø-sól
   tree 3pl-set:pl
   CLASS II
   'Trees (more than two) are standing there.'

In the example (7c) from Mojave, the suppletive verb tayem 'go: nonsg' reflects the actual number of people going, but the syntactic subject is 'inyech 'I(sg)', as shown by the same-subject (ss) switch-reference morphology on the preceding verb havik 'be two:[12]

(7) MOJAVE (Pam Munro, p.c.)
a. '-iyem-pch 'I went.'
   1S-go:sg-PERF
b. 'inyech John '-ataav-k '-iyem-pch
   I(sg):SUBJ 1S-hit-ss 1S-go:sg-PERF
   'I hit John and went.'
c. 'inyech John '-havik-k '-tayem-pch
   I(sg):SUBJ 1S-two-ss 1S-go:nonsg-PERF
   'I went with John.' ('I, being two with John, went.')

III. Stem suppletion may distinguish Number features which are not nominal Number features of the language: that is, they are not formally marked in any way in the nominal morphology, neither by nouns nor pronouns.

Some clarification is in order. Not uncommonly, Number, Person, or Gender features can be specified in verb agreement morphology although demonstrably absent on the NP which 'controls' agreement (Moravcsik 1978), and of course there may be agreement with no overt NP 'controller' at all.[13] I do not consider cases like these as exemplifying anything like property III, since in every case like this that I know of, the agreement morphology is restricted to encoding features which are encoded independently somewhere in nominal morphology, either in the pronouns or the nouns:[14] the features that the verb encodes can rightly be considered nominal.[15] For example, Kiowa class I nouns are specified for [±plural], class II for [±singular], and verb agreement morphology for both these features, whether the agreement 'controller' is class I or class II (see (6) above). In some sense which I would not want to make precise here, agreement, in contrast to suppletion, is a nominal anaphor, incorporating a complex of proper nominal features.

Examples illustrating III are not very common. Munro (1976) reports that in Mojave one verb suppletes for singular:paucal:plural, but paucal is not a nominal feature of that language. In Karok several verbs supplete three ways for singular:dual:plural, although pronouns and nouns (and agreement) only distinguish [±singular].

IV. In syntactic contexts where agreement is characteristically absent, where a language systematically omits agreement morphology to form an infinitive, stems still supplete for number. These contexts include: control constructions, imperatives and attributive usage.

The following Chickasaw examples illustrate the contrast between suppletion and agreement in control constructions (9) and imperatives (10): agreement is omitted, suppletion retained:

CHICKASAW (Pam Munro, p.c.)

(8) a. hilha-li 'I dance.'
b. kii-hilha 'We dance.'
c. malili-li 'I run.'
d. kii-tilhaa 'We run.'

(9) a. malili sa-banna 'I want to run.'
run:sg 1sg-want
b. tilhaa po-banna 'We want to run.'
run:nonsg 1nonsg-want

(10) a. hilha! 'Dance!' (one or more people)
b. malili! 'Run!' (one person)
c. tilhaa! 'Run!' (more than one person)

Kiowa stative verbs may be used attributively as adjectives. Then they lose their verbal agreement inflection, illustrated in (6), but they still supplete for the number of their thematic argument:

(11) KIOWA (Watkins 1984)
a. thàlì·-kyǫ́y '(one) tall boy'
boy-tall:sg
CLASS I
b. thàlì·-kɨ́·nɨ́· '(two) tall boys'
boy-tall:nonsg
CLASS I
c. thàlì·-kɨ́·nɨ́·-gɔ̀ '(more than two) tall boys'
boy-tall:nonsg-inverse
CLASS I

V. Stem suppletion for number is preserved in derivational word formation, but inflectional agreement is not.

If suppletives select for, rather than agree with, an argument of the appropriate number, then this property follows naturally, since clearly a whole range of semantic characteristics of a stem are preserved in derivation, including those related to selection. Assassinate selects an object with human reference, and an assassination involves the death of a human being.

Causative examples are particularly common in the descriptive literature. For example Kapingamarangi damana 'big:sg' and llauehe 'big:nonsg' respectively give hagadamana 'enlarge one thing' and hagallauehe 'enlarge more than one thing'. See also Jeanne, Hale and Pranka (1984) for Hopi examples.

Kinkade (1977) provides a number of examples of deverbal noun formation in Moses-Columbian involving suppletive stems, of which the following is typical: ɬáq-lx 'sit:sg', yəɾ-ɬx 'sit:nonsg' give respectively k-ɬqlx-áẘsn 'chair' and (n)k-yəɾ̓x-áẘsn 'chairs:nonsg'.

The following example from Kiowa (Watkins 1984) illustrates the derivation of adverbs from suppletive stems: ét 'big:sg', bîn 'big:nonsg' give ét-té 'a lot' and bîn-dè 'a lot, much'.[16]

Beyond suppletion

In the preceding sections I have argued that suppletive stems select for rather than agree with the number of their argument. The conclusion to be drawn is that suppletion encodes a Number category inherent to the verb, not a nominal category.

In many of the languages surveyed here there is evidence for a more general verbal Number morphology with properties of the sort described above: suppletion is an extreme instance of a more general phenomenon. And inherent verbal Number morphology is by no means restricted to those languages with some suppletive stems. In order to show this I will report here, in a tentative and less than rigorous fashion, some of my observations. For one language which has no reported stem suppletion, Chamorro, I will provide a more detailed account of productive inherent verbal Number morphology.

Internal and external morphology

For most of the languages with stem suppletion referred to above, verbal Number morphology can be observed which is formally internal to and distinct from the most obvious candidate for Person-Number agreement morphology. The latter is usually expressed by stem-external, formally regular affixes. The former, in contrast, can take the form of partial stem suppletion, stem ablaut, or reduplication (e.g. Mojave, Yuma, Tsimshian, Kaingáng, Tsova-Tush, Kaingáng, Kapingamarangi, and Samoan),[17] often with highly irregular allomorphy and phonology.

Other languages with no reported suppletion show a similar contrast between external agreement and stem internal Number morphology (Chamorro (Topping 1973) and Kiwai (Ray 1932)).[18]

Where data was available, stem-internal Number morphology could be seen to have the concord properties described above for suppletion. For example, Kapingamarangi stem ablaut encodes the number of the absolutive argument, and is preserved in causative verb derivation (Lieber and Dikepa 1974).

Derivation v. inflection

In some of the consulted descriptions a distinction is made between derivational and inflectional processes, with the external Person-Number morphology inflectional, and the distinct Number morphology derivational. This distinction is made very explicit for Diegueño (Langdon 1970) and Karok (Bright 1957). Bright defines the noun or verb THEME as: "the end-product of all derivation and the

foundation for all inflection." This distinction is justifiable for Karok on language-internal grounds involving the ordering of rules associated with affixation. The Person-Number affixes are inflectional, and as such are ordered externally to two derivational affixes -va and -·na which derive verbs requiring a plural absolutive argument, and which both show the irregular semantic and phonological characteristics that one would expect of derivation, in contrast to inflection. For example -va forms verbs of various plural affects, as well as verbs requiring a nonsingular argument: ʔivrú·htih '(one thing) to be floating', ʔivrú́hti·h-va '(several things) to be floating'; yuh 'to spit', yú·h-va 'to vomit'; vúrunih 'to flow down (in a single stream)', vurú́ni·h-va 'to flow down (in several streams)'; taknah 'to hop', takná́·h-va 'to play hopscotch'.

Number and aspect

For several languages surveyed the stem-internal or derivational Number morphology is used for number affects more akin to aspect than concord, as well as for encoding argument number. For example Kapingamarangi stem ablaut encodes argument number for some verbs, for others a plural event: abulu '(one thing) to be sinking', aabulu '(more than one thing) to be sinking'; wele 'to burn (one thing)', wwele 'to burn (more than one thing)'; dangi 'to cry, wail', tangi 'to ring, peal, of a bell'; wanawana 'sticking out, jutting out (only reduplicated)', wwana 'to have gooseflesh, hair to stand on end'; wae 'to separate', wwae 'to separate into groups'; daa 'to extract, subtract', taa 'to bail water'. Note that the type of plural event is lexicalized in Kapingamarangi to a considerable degree.

In Tsova-Tush the aspectual category 'number of event' is for some verbs restricted to an argument number interpretation (Holisky 1985), with far weaker lexicalization than in Kapingamarangi.

Argument structure

Verb stem suppletion appears to invariably select for the number of the absolutive argument. However more productive morphologies show considerable variation in their semantic linking. Many, like Kiwai ablaut (Ray 1932) and Karok -va are absolutive, or 'affect oriented'. Others are sensitive to animacy as well (e.g. Karok -·na). Many imply group activity, and select the number of the Agent or Actor (e.g. Acehnese meu- (Durie 1985), Tagalog plural Actor focus forms (Schachter and Otanes 1972), and Yuman collective plural forms (Halpern 1946)). Some apply only to intransitive verbs (e.g. Chamorro and Palauan). The two commonest patterns, details aside, seem to be absolutive (plural affect) and nominative (group activity). Presumably these are the most natural ways of linking Number morphology to verbal argument structure.

Chamorro (Chung 1982, 1983; Costenoble 1940; Gibson 1980; Topping 1973)

Chamorro has two types of verb concord morphology:
a) Bound pronominals. For certain voice-aspect combinations of the verb, bound pronominal markers appear before the verb stem. These encode precisely the feature distinctions of the free pronouns: three persons, [±singular], and an inclusive/exclusive distinction. These markers are clearly anaphoric: a free subject pronoun is not used when they are present, except for special emphasis:

(12) pära u saga giya Guam (Gibson 1980)
IRR 3sg stay LOC Guam
'He will stay on Guam.'

b) Verb stem formatives. Two sets of verb stem forming affixes encode the feature [±plural] for certain voice-aspect combinations. These are the 'passive' or 'goal-focus' affixes which encode the number of the Agent, and the intransitive subject plural affixes: -um-/man- (Realis) and Ø-/fan- (Irrealis). These are not anaphoric: their presence does not proclude having a subject pronoun. Compare (12) with (13):

(13) s-um-aga gui' giya Guam (Gibson 1980)
-nonpl-stay he/she LOC Guam
'He/she stayed on Guam.'

I will argue here that the intransitive subject plural affixes have the concord properties of inherent verbal Number morphology, not of agreement, and in this they contrast systematically with the bound pronominal markers.[19] The first thing to note is that the plural affixes encode [±plural], a feature which is nowhere a feature of nominal morphology (except where nouns are used as predicates or are derived from verbs). Free and bound pronominals, and a small number of human nouns, distinguish only [±singular]. There is no nominal [±plural] feature for the verb to agree with.

In Chamorro, as in many languages, a formally nonsingular pronominal can be used for singular reference, but the verb must be formally nonplural (14c), as one would expect of a selectional category, which is sensitive to semantic, not morphological features. (This is just what happens with stem suppletion in Georgian.)

(14) (Costenoble 1940)
a. siña hu Ø-fañagi 'I can try.'
can 1sg nonpl-try
b. siña ta fan-mañagi 'We (>2) can try.'
can 1nonsg pl-try
c. siña ta Ø-fañagi 'I (or we two) can try.'
can 1nonsg nonpl-try

In controlled infinitives (15b), imperatives (16c,d) and in attributive usage (17b,c), verbal plural morphology is retained, but bound pronominals are absent:

(15) Adapted from Chung 1983
a. para ta fang-anta 'We (>2) will sing.'
IRR 1nonsg pl-sing
b. ta tutuhun mang-anta 'We (>2) begin to sing.'
1nonsg begin pl-sing

(16) (Topping 1973)
a. para bai hu Ø-chocho 'I will eat.'
IRR 1sg nonpl-eat
b. para ta fañ-ocho 'We (>2) will eat.'
IRR 1nonsg pl-eat
c. chocho! 'Eat! (nonpl)'
d. fañocho! 'Eat! (pl)

(17) (Costenoble 1940)
a. jajas 'tired:nonpl' : mañajas 'tired:pl'
b. i jajas na tawtaw 'the tired person'
the tired LIG person
c. i mañajas na tawtaw 'the tired people (>2)'
the tired LIG person

The plural morphology is preserved in lexical derivations, but agreement is not. (18) illustrates a causative, and (19) nominal derivatives:

(18) (Gibson 1980)
hu na'-fañ-otchu siha 'I fed them (>2).'
1sg CAUS-pl-eat they:nonsg

(19) (Costenoble 1940)
a. hanaw 'to go'; i h-um-anaw 'the goer'; i man-hanaw 'the goers (>2)'
(Topping 1973)
b. choma' 'to forbid'; fan-chinema' 'forbidden things' (>2)

The intransitive plural morphology of Chamorro demonstrates the properties one would expect for an inherent verbal category: it is preserved in syntactic contexts where agreement should be absent; it is preserved in lexical derivations; and it encodes the feature [±plural] which is not a nominal feature.

Conclusion

A wide variety of evidence shows that Number in natural languages is not inevitably a nominal category. By stem suppletion, and by more productive morphological devices, languages express Number categories which are inherent to the verb, linked to verbal semantic structure. This provides the potential for concord between verbal Number and NP Number, but this concord shows the expected properties of semantic selection rather than agreement.

The conceptual category of number can be grammaticized in two ways: as a property of things, a category of nouns and pronouns; or as a property of states of affairs, a category of verbs. The resulting morpho-syntactic properties are very distinct. Both routes of grammaticization can produce concord phenomena, but in radically different ways, with very different consequences.

NOTES.

1. For the sake of clarity I use the capitalized terms Number, Person and Gender to refer to morphological categories. Their semantic concomitants are referred to as number, person and gender.

2. I restrict myself to considering cases where the number encoded can be that of an argument. Number of event categories are closely akin to the argument number categories considered here, and not a few languages use the same formal device for both types of category, e.g. in Mojave (Munro 1976), Tsova-Tush (Holisky 1985), Chechen and Ingush (Johanna Nichols, p.c.). In so far as the number of an argument is distinguished I have included such categories for consideration.

3. The 'agreement' data (Baker 1985) from Huichol and Chamorro are spurious: they are not true agreement, for reasons given here.

4. However in a few languages only intransitive suppletives are reported, in small numbers, e.g. in Ute, Tongan, and Kapingamarangi.

5. The feature [±plural] involves a contrast between one or two [-plural] and three or more [+plural].

6. To be shows suppletion for Person and Number (and Tense). Its suppletion shows all the expected properties of agreement which are lacking for the Number suppletives considered here. There is, for example, no alternation in infinitive forms. Presumably Person is not a natural candidate for selection, so suppletion for Person is almost always a type of agreement. However in Japanese certain verbs are socially appropriate only with a referent of the right person, and of course person-deixis is a selectional feature of verbs in some languages, with different verbs for such meanings as: 'give to me' and 'give to you'.

7. The relevant distinction is not 'intial 2-hood' (Relational Grammar), since intransitive suppletives typically include such characteristically active verbs as 'eat', 'run' and 'walk'. One exception to the absolutive pattern, noted by Jeanne, Hale and Pranka 1984, is Hopi tiimoyta/noonova 'eat', which suppletes for the number of the person eating, even when used transitively. This is not a problem if the intransitive use is in some sense basic.

8. Most glosses are self-explanatory. The feature [±singular] is glossed sg/nonsg, and [±plural] nonpl/pl. S indicates subject agreement, and O object agreement. SUBJ is a subject case marker or form, and OBJ an object case marker or form.

9. Theme is a useful approximation. But note that the intransitive suppletives do not seem to conform to any particular semantic category. Note also that in Barai 'give' suppletes for the number of the Theme, but in Uto-Aztecan languages 'give' typically suppletes for the number of the Recipient (Pam Munro, p.c.).

10. Bybee (1985) points out that certain English verbs select for the number of the absolutive argument, e.g. massacre and stampede. Verbs like coauthor or coadjudicate are rather harder to find.

11. I am aware that what I call agreement often has variable properties in the contexts discussed here (see e.g. Moravcsik 1978). Agreement tends to reflect the morphological Number of argument expressions, but semantic factors can cause all sorts of complications. What I am claiming is that when agreement contrasts with suppletion there will be the proposed correlation.

12. The agreement prefixes in Mojave encode only Person, so they provide no evidence about whether the subject of tayem might be formally [±singular].

13. The idea that an NP's features fully determine or 'control' its agreement features on the verb is appealing but in practice unworkable. Moravcsik (1978) describes a number of ways in which agreement features can systematically 'disagree' with, or be more specified than the features of the 'controller'.

14. In Hopi the verbal suffix -ya indicates a plural subject, and this has properties of agreement (Jeanne, Hale and Pranka 1984). The feature [±plural] is distinguished in the morphology of nouns, but not of pronouns (Whorf 1946). More often pronouns encode features which are absent from nominal morphology (e.g. Person).

15. In this respect I disagree with Frajzyngier (1985) who ignores the role of pronouns when considering whether Number is a nominal morphological feature in a particular language. I take the view that features encoded on the verb may still be instances of agreement, even when a 'controller' is not specified for that feature. The issue is whether verbal morphology is encoding nominal features, not whether in particular instances the agreement features can be 'read off' the NP. In Frajzyngier's examples (1-3) the languages in question do distinguish a Number feature for pronouns, if not for nouns. Frajzyngier seems to treat the absolutive pattern of what I would call inherent verbal Number categories under the same heading as the ergative-absolutive morphologies found in many Australian languages. This is rather too much of a good thing. Inherent verbal Number morphology is always formally distinct from Person agreement, and its tendency to an absolutive pattern appears to be unrelated to the general morpho-syntactic organization of the language in which it occurs. The ergative-absolutive agreement systems found in Australian languages have the expected properties of syntactic agreement, and they co-occur with various ergative-absolutive characteristics found in those languages, including case marking. Frajzyngier's correlation 3 is contradicted by Uto-Aztecan languages, where absolutive patterning stem suppletion for number co-occurs with extensive nominal Number morphology: an impoverished nominal Number morphology is not a prerequisite for the existence of inherent verbal Number morphology.

16. I am not certain what the semantic contrast is between the derived adverbs.

17. In some of the languages agreement is restricted to Person (Mojave), or is non-existent (Kapingamarangi).

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