Grammatical Categories in Australian Languages

edited by R.M. W. Dixon

Linguistic Series No. 22
Australian Institute of Aboriginal Studies
Canberra

Humanities Press Inc., New Jersey U.S.A.

1976
7. Substantival hierarchies: addendum to Silverstein

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0. Abstract

In paper 6, ‘Hierarchy of Features and Ergativity’, Michael Silverstein has provided us with the formal and conceptual apparatus for dealing with a wide variety of morphosyntactic problems involving the notion of substantival hierarchical partitions. Since Australian languages seem to have more than their fair share of hierarchical phenomena, it behoves those of us investigating these languages in the field or library to assess or reassess our data in the light of this theoretical breakthrough, and to describe the new twists, extensions, and perhaps counterexamples which may crop up. The present paper is offered in this spirit.

It has two parts. In the first, I describe the split case system of Ritharrngu, and comment on the split systems of the Dyirbal group. In the second and longer part, I describe the direct/inverse patterning of pronominal prefixes in Nungubuyu and Ngandi and outline their historical connection to prefix systems in other Australian languages.

1. Ritharrngu and Dyirbal

Ritharrngu is the southernmost of the Yuurlngu languages of northeast Arnhem Land. Although there are no bound pronominal affixes attached to verbs, the independent pronouns indicating the subject, direct object, and indirect object are normally attached as enclitics to the first major constituent of the clause. Some reduction occurs in enclisis; for example, the first singular Nominative pronoun is *yara* when genuinely independent, usually *ra* as an enclitic. Enclitics for the major case categories are normally used even when they cross-reference an independent NP in the same clause.

The basic case system for independent and enclitic pronouns is accusative. That is, there is a *-φ* Nominative suffix for transitive and intransitive subject, and an Accusative suffix *-pha*/*-na*/*-nha* for direct object.

Examples:

(1.1) *ga*-wala + gu-na + *(ga)ra*-φ 
   see-Past 3Sg-Acc 1Sg-Nom  
   ‘I saw you (Sg).’

(1.2) *wa:ni*-nha + *(ga)ra*-φ 
   go-Past 1Sg-Nom  
   ‘I went’.

Low-ranking third person categories (inanimate and ‘lower’ animate, see below) take the regular 3Sg Nominative pronoun *ga*(i)-φ, but instead of 3Sg Accusative *(gi)-nha* they take *φ*. Thus (1.3) could have either a high-ranking or low-ranking third person as subject, but the two types are distinguishable when they function as direct objects as in (1.4) and (1.5):

(1.3) *wa:ni*-nha + *ga*(i)-φ  
   go-Past 3Sg-Nom  
   ‘He/it went’.

(1.4) *ga*-wala + *(gi)-nha + *(ga)ra*-φ  
   see-Past 3Sg-Acc 1Sg-Nom  
   ‘I saw him’. (high-ranking)

(1.5) *ga*-wala + φ + *(ga)ra*-φ  
   see-Past 3Sg-Acc 1Sg-Nom  
   ‘I saw it’. (low-ranking)

The split between high- and low-ranking third person is intermediate between the human/nonhuman and animate/inanimate splits. High-ranking third person includes humans, but also certain large or intelligent animals such as kangaroos and dogs. Low-ranking third person includes inanimates, but also animate beings of small size or lacking human-like intelligence and personality qualities, for example, fish and insects.

The accusative system is found only with pronouns. Many nouns have an ergative system, with Ergative -*du*-y contrasting with Nominative -φ; the latter case is used for object and intransitive subject. Note that the Nominative has a different meaning in the pronominal accusative system than it has here in the nominal ergative system.

Other nouns have the ‘doubly-marked’ system, where Nominative -φ is restricted to intransitive subject function and where both transitive functions are marked by nonzero suffixes, Ergative -*du*-y and Accusative -*ga*. The choice between the ergative and doubly-marked case systems appears to correlate exactly with the distinction between high- and low-ranking third person pronouns. Thus *guy* 'woman' and *garjmali* 'antelope kangaroo' take the doubly-marked system, while *guya* 'fish' and *jarjmali* 'stone spear' take the ergative system.

Examples:

(1.6) *ga*-wala + *(gi)-nha + *ga*(i)-φ  
   see-Past 3Sg-Acc 3Sg-Nom kangaroo-Acc fish-Erg  
   ‘The fish saw the kangaroo’.

(1.7) *ga*-wala + φ + *(gi)-φ  
   see-Past 3Sg-Acc 3Sg-Nom spear-Nom woman-Erg  
   ‘The woman saw the spear.’

The examples show that both high- and low-ranking nouns take Ergative -*du*, but only high-ranking nouns take Accusative -*ga*. Note that nouns and the pronominal enclitics which cross-reference them do not always agree in case. For example, in both (1.6) and (1.7) the Nominative enclitic *ga*(i)-φ cross-references an Ergative noun.
Demonstratives appear to fluctuate between the doubly-marked and ergative systems (that is, the two nominal rather than pronominal systems), and the choice does not correlate entirely with reference to high- or low-ranking categories. More fieldwork is necessary to elucidate these facts.

In summary, we have the following overtly distinguishable hierarchical equivalence classes:

(1.8)  
X₁: pronouns (accusative)  
X₂: human and 'higher' animate nouns (doubly-marked)  
X₃: demonstratives (doubly-marked or ergative)  
X₄: inanimate and 'lower' animate nouns (ergative)

The Dyirbal situation is similarly complex. Though sometimes considered to show only a single split, between first and second person pronouns and all other substantives, in fact Dyirbal proper has four distinct equivalence classes. There are also some variations in this respect among the dialects in the Dyirbal group.

In the Dyirbal and Mamu dialects, first and second person pronouns have accusative morphology. Aside from the usual irregularities, there is basically a Nominative suffix -φ for intransitive and transitive subjects, and an Accusative suffix -φa/-na for transitive object. The human interrogative pronoun has a doubly-marked system: Nominative -φna, Ergative -φdu, and Accusative -φuna. Most nouns, including all nonhuman ones, have the ergative system with -φ. Nominative for intransitive subject and transitive object, and various nonzero Ergative allomorphs like -φu and -φdu for transitive subject. However, personal names and some other human nouns can optionally take Accusative -φa instead of Nominative -φ in transitive subject (but not intransitive subject) function, so these nouns fluctuate between a doubly-marked and an ergative system. Actually, this -φa is really -φal followed by Nominative -φ. The evidence for this is that -φal is optionally used before the Dative and Locative case suffixes as well. Nevertheless, the optional use of -φal instead of -φ in the transitive subject function distinguishes this function from that of intransitive subject, which never takes Oblique -φa.

Third person 'pronouns' are really articles which are normally attached to following nouns. When the noun is deleted (this being the equivalent in Dyirbal of English Pronominalisation) the article can stay behind, functioning much like an English third person pronoun. These articles appear to show the same case marking as the following noun, or the noun which had been following were it not deleted. Therefore articles appear to have the same case system as nouns rather than first and second person pronouns. However, there is no indication from Dixon that articles can take Oblique -φa (for example, Accusative allomorph -φal) even when the following noun does, so we must assume that articles stick to the ergative system characteristic of most nouns. The equivalence classes of Dyirbal and Mamu are therefore these:

(1.9)  
X₁: first and second person pronouns (accusative)  
X₂: human interrogative pronoun (doubly-marked)

X₃: personal names and some other human nouns (doubly-marked or ergative)  
X₄: inanimate and some human nouns, and articles (ergative)

The Giramay dialect, however, shows some variations on this pattern. To begin with, the first singular and second singular pronouns show a special Nominative ending -ba for intransitive subject only, so the forms which are etymologically identical to the Dyirbal and Mamu Nominative (applying in these two dialects to intransitive and transitive subject), first singular pada and second singular pinda, are restricted to transitive subject function in Giramay and must therefore be relabelled as Ergative. These two pronominal categories have the doubly-marked system. For other first and second person pronouns we find the accusative system with no distinction between Nominative and Ergative cases.

Another difference is that Giramay does not show a special Accusative form for the human interrogative pronoun 'who?'. The form wajhuna, which resembles Dyirbal and Mamu waju/nuna restricted to transitive object function, is also used for intransitive subject function in Giramay. The Ergative form is wajdu as in the other two dialects. The interrogative pronoun therefore has the ergative system.

Since Dixon does not make any comments to the contrary, we can assume that Accusative -φa-φ can be optionally used with personal names and some other human nouns, as in the Dyirbal dialect. The equivalence classes for Giramay are therefore these:

(1.10)  
X₁: nonsingular first and second person pronouns (accusative)  
X₂: singular first and second person pronouns (doubly-marked)  
X₃: personal names and some other human nouns (doubly-marked or ergative)  
X₄: nonhuman and some nonpersonal human nouns, human interrogative pronoun and articles (ergative)

The splits found in Ritharrgu, Dyirbal/Mamu, and Giramay generally conform to those considered natural by Silverstein. Significant points are these: (a) the split in Ritharrgu mid-way between the two classic gender splits, human/nonhuman and animate/inanimate; (b) the importance of the singular/plural opposition for the hierarchy in Giramay. It is also interesting to note that third person pronouns are treated somewhat differently in Ritharrgu than they are in Dyirbal/Mamu/Giramay. I would suggest that this can be motivated in terms of the different formal characteristics of the third person pronouns in these languages. In Ritharrgu, third person pronouns pattern syntactically like first and second person pronouns; all have independent and enclitic forms, all are obligatory as subject-markers and usually as object-markers, etc. It is therefore natural that third person pronouns go along with other pronouns in case marking. On the other hand, in the Dyirbal group the third person 'pronouns', as noted above, are basically articles which appear to be obligatorily preposed to independent nouns. Since they are normally juxtaposed to nouns it is not very surprising that they agree with them in case marking. Whether this kind of correlation would hold for a large sample of languages I cannot say, but it would be worth trying to find out.
2. Direct/inverse pronominal complexes

Some languages of Australia and North America have tightly-structured combinations of bound subject- and object-marking pronouns which are based on a hierarchical partition of pronominal categories. The present section is intended to elucidate the structure of such systems and to clarify the historical origin of the systems found in Nunggubuyu and Ngandi, two prefixes languages of eastern Arnhem Land.

In the Algonquian family of North America, combinations with subject higher-ranking than object are called direct, while those with the opposite relationship are called inverse. Direct combinations are relatively simple morphologically. Inverse combinations are essentially like direct combinations—morphologically except that a special Inverse morpheme *ekw- is added. The hierarchy is this (with X1 highest-ranking):

\[
\begin{align*}
X1 &: \text{first and second person} \\
X2 &: \text{third person animate proximate} \\
X3 &: \text{third person animate obviative} \\
X4 &: \text{third person inanimate}
\end{align*}
\]

The term proximate has no reference to deixis. Rather, it is the morphological category assigned to the syntactically primary third person animate NP in a clause. If there is only one third animate NP, it is proximate. If there are two or more such NPs, one is chosen as proximate—usually the one which occurs first (leftmost) in the clause. All other third animate NPs in the clause are obviative. (Sometimes there is also a sauobviative distinct from obviative, but we will disregard this here.)

An example of a direct combination is 1Sg → 3I nan (first singular subject on third inanimate object). In the corresponding inverse combination, 3I nan → 1Sg, the Inverse morpheme *ekw- is added.

From this description we can see that *ekw- in the 3I nan → 1Sg combination indicates two things:

(a) the higher-ranking element (here 1Sg) is the transitive object, and
(b) the lower-ranking element (3I nan) is the transitive subject. It is thus simultaneously an Ergative affix linked to the 1Sg morpheme and an Accusative affix linked to the 3I nan morpheme. It is further restricted to occurring only when the pronominal content of the transitive subject/object pair is of the type with *ekw- subject/object relationship of the two pronominals in question: 3I nan → 1Sg is semantically less natural, and statistically less common, than 1Sg → 3I nan.

In effect, then, the direct/inverse system of Algonquian is a special instance of what Silverstein calls global hierarchical splits. That is, one cannot assign case-marking morphemes to either major NP (subject, object) in a transitive clause until the hierarchical status of both major NPs is known.

As I use the term, the true direct/inverse system as found in Algonquian can occur only when the subject- and object-markers are bound to each other, or jointly bound to some other element such as a verb. A global system applied to morphologically autonomous nouns and pronouns would not be quite the same, since a nonzero case morpheme added to the object could be clearly identified as Accusative (rather than Ergative) even if there are global restrictions on its use, and similarly a case morpheme attached to the subject could only be interpreted as Ergative. In Algonquian, one cannot tell whether *ekw- is Accusative or Ergative.

However, a system with global hierarchical restrictions on an Accusative or Ergative morpheme (or both), such that the morpheme(s) can be used only in inverse combinations, would closely approximate a true direct/inverse system. In Silverstein's presentation of Dalabon, for example, we find Ergative -yi only in certain subject-object combinations, mostly inverse. Suppose for the sake of the argument that -yi is added to transitive subjects (nouns and independent pronouns) only in inverse combinations. Then we could imagine a series of simple developments which would convert this system into an Algonquian-like direct/inverse system.

First, -yi becomes restricted to independent pronouns and in particular is no longer used with nouns. This could be accomplished by developing a distinct Ergative allomorph for nouns, or by allowing nouns to drop the Ergative entirely. Secondly, subject and object independent pronouns, with case suffix zero or -yi (the latter only for transitive subject in inverse combinations) become elicitised and eventually affixed to verbs. The new pronominal prefixes which result from this replace the old, inherited pronominal prefixes. For example, 'You saw me', which in attested Dalabon is 2Sg -yi 1SgPrf-saw, where Prf is the inherited 2Sg -yi 1Sg-saw in this hypothetical new language. Here, since -yi is used only in inverse combinations, and since it is attached jointly to the subject- and object-markers (2Sg, 1Sg), we can no longer tell whether it is Ergative or Accusative, so we must relabel it the Inverse morpheme.

This is an example of how an originally Ergative morpheme can become an Inverse element. As will be shown below, the Nunggubuyu Inverse morpheme is an old Accusative affix. It is likely that Algonquian *ekw- ultimately reflects either an Ergative or an Accusative morpheme, but without additional comparative evidence we cannot only guess.

These considerations will provide some background for the descriptive and comparative analyses of Australian morphological systems which follow. However, there is one additional terminological problem which ought to be resolved first. As I understand it, for Algonquianists the term 'direct' applies to those combinations where the subject is in X1 and the object in X2 such that i < j (the subject outranks the object) or i = j (the subject and object are hierarchically equivalent). It is important, however, to distinguish these two additional comparative evidence we can only guess.

This terminological distinction is of little importance in Algonquian, because no X2 → X3 combinations occur (there can be only one proximate NP, aside from underlying structures restructured by Reflexivisation), and since X2 → X3 combinations are impossible or rare. However, in the Australian languages I will deal with, the equipollent combinations are more numerous, and in many respects are structurally unlike direct combinations, although they share with them the absence of an Inverse morpheme.

Nunggubuyu is spoken in southeast Arnhem Land. It has pronominal prefixes marking the pronominal category of subject and object, attached to the verb. Aside from a rather substantial array of first, second, and human
third person pronominal categories, there are also six nonhuman noun classes (NA, NGARRA, ANA_{wa}, ANA_{ga}, MANA, WARRA). Each nonhuman noun is assigned to one of these classes on an essentially arbitrary, nonsemiotic basis.

Excluding these nonhuman classes for the moment, the hierarchy reflected in the Nunggubuyu direct/inverse system is as follows:

(2.2) X₁: first and second persons
X₂: third person human plural (3Pl)
X₃: third person human singular (3MSg, 3FSg)

Since nonhuman classes do not distinguish number (at least in the pronominal prefixes we are dealing with), the labels 3Pl, 3MSg, and 3FSg are to be interpreted as categories only.

We would expect that all six nonhuman classes would either go into X₁ or would form a final equivalence set X₄. In fact, however, three nonhuman classes are in X₄, two are in X₃, and one is in X₂. This is a result of the fact that certain nonhuman classes have morphological affinities to the human classes in X₂ and X₃. These affinities, manifested by showing the same noun-class prefixes with independent nouns (in one of the two series of such noun-class prefixes), and the same or similar morphemes in pronominal prefixes added to verbs are as follows:

(2.3) WARRA ~ 3Pl
NA ~ 3MSg
NGARRA ~ 3FSg

For example, 3Pl and WARRA independent nouns take prefix wara-, NA and 3MSg nouns take prefix na-, and NGARRA and 3FSg nouns take yara-. It is possible to distinguish the nonhuman classes from the human categories, since the former also show a special Punctual prefix series (WARRA wara-, NA na-, NGARRA yara-) which does not occur with human nouns, and there are other minor differences. We do not therefore have complete morphological identity between WARRA and 3Pl, for example, but there is a substantial morphological affiliation and this has implications for the hierarchy. The following principle sums the situation up:

(2.4) If a nonhuman class is morphologically affiliated with a human category in equivalence class X₁, then C is also in X₁.

The revised Nunggubuyu hierarchy is this:

(2.5) X₁: first and second persons
X₂: 3Pl: WARRA
X₃: 3MSg; 3FSg: NA: NGARRA
X₄: ANA_{wa}: ANA_{ga}: MANA

The three nonhuman classes which have no affinity to human categories form the lowest-ranking equivalence class X₄.

It would appear that this is a counterexample to Silverstein's universal theory, since from the latter we expect human nouns to always outrank or equal nonhuman nouns, whereas here we find that nonhuman WARRA nouns outrank human 3MSg and 3FSg categories. However, this is only a counterexample if we take Silverstein's paper as making absolute claims which can never be violated. In the present instance we have a conflict between the universal tendencies described by Silverstein and the language-specific principle (2.4), and it is the latter which overrides the former. From this kind of data it follows that we must interpret Silverstein's paper as making claims which apply universally in the sense of conflicting language-specific principles. In other words, Silverstein's universal hierarchy may be justified at its limits by the course of being fitted into the morphological grid of particular languages.

The hierarchy is reflected both in the ordering of the subject- and object-markers and in the rule inserting the Inverse morpheme /'N/- (unspecified nasal, with ablaut of preceding unspecified vowel or u-vowel, but not i-vowel, to an a-vowel). In those cases where the subject-marker and object-marker are in different X-sets, the higher-ranking pronominal comes first (leftmost) and the other follows. Thus an X₁ element like 1sg ga always precedes an X₄ element like ANA_{wa} /-wa-/: 1sg → ANA_{wa} yawar, ANA_{wa} → 1sg yungu /ga /-N-wa-u/.

In the equipollent combinations, where both pronominals are in the same X-set, the result is often an analysable portmanteau (for example, φ for all X₄ → X₄ combinations), or a difficult and opaque combination which can be segmented and analysed only at a highly abstract level far beyond the limits of 'psychological reality'.

Inverse /'N/- is inserted between the subject- and object-markers in inverse combinations. Examples:

(2.6) a. 3Pl → 1sg yamhi /ga /-N-wa-ga/ vs 1sg → 3Pl yara /ga /-w3-ya/ (1sg /ga/-, 3Pl /-w3-ya/- or /-w3-ya/-)

b. 3MSg → 3Pl wait /-wa-wat /-N-wat/- vs 3Pl → 3MSg wam /wa-wat /-w3-wat/- (3MSg marked overtly only by the masculine morpheme /-wat/-)

c. ANA_{wa} → 3MSg nigu /-i-wa-wa/- vs 3MSg → ANA_{wa} niwu /-w3-wa/-

The Ngandi language is spoken in an area geographically contiguous to the Nunggubuyu-speaking region. In Ngandi we find a rather similar direct/inverse system, but the Inverse morpheme is /gu/-, which should be distinguished from 1PIE excl allomorph /gu/- and nonhuman GU-class morpheme /-gu/- Inverse /-gu/- is more restricted than Nunggubuyu /-N/-, since it is incompatible with certain following morphemes and is therefore absent from several combinations where we might expect it to occur. In fact the only morphemes before which it can occur are /-na/- (3MSg and nonhuman NI-class), /-na/- (3FSg and nonhuman NA-class), and /-a/- (nonhuman A-class).

On the other hand, the ordering hierarchy is more complete and more clear-cut than in Nunggubuyu:

(2.7) X₁: first person exclusive (3Pl) X₂: second person
As in Nunggubuyu, number-specified categories like 3PI are human, while categories designated by the class-prefix written in capitals are nonhuman. The low rank of the GU class can be explained in that it is dominated by abstractions, toponyms, body parts, floro terms, and the like, whereas both the A and MA classes have higher proportions of animate nouns. The NA and N class have morphological affiliations to the 3MSG and 3FSg classes, respectively, and are assimilated to the hierarchical status of the latter by the same principle which operates in Nunggubuyu. Ngandi has no nonhuman classes corresponding to the Nunggubuyu WARRA class.

The higher-ranking pronominal comes first in both direct and inverse combinations, again as in Nunggubuyu. In equippollent combinations we find subject-object order in the case of X₂, object-subject order in X₃ and in the one analysable X₄ equippollent combination (3FSg/NA → 3MSG/NT). X₀ → X₆ is ambivalent in this respect, while remaining X₄ → X₄ combinations show portmanuete φ₁ → X₁ → X₁ and X₂ → X₂ types are impossible.

As noted earlier, inverse /-gu₃/- can occur only before X₁ morphemes and the X₄ morpheme for the A class. Therefore it cannot occur in X₃ → X₄ combinations, for example, and consequently we have possible ambiguity between these and the corresponding direct combinations X₁ → X₂. This ambiguity is in most cases resolved by the ad hoc device of using different allomorphs for certain pronominals depending on case (transitive subject vs. object). For example, the 1PIExcl → 2PI combination is gura: /gu₃/-/gur-/ with 1PIExcl /gu₃/-/gur-/ while 2PI → 1PIExcl is rama: /rama/-/rama-/ with 1PIExcl allomorph /rama/. Although /-gu₃/- cannot occur on the surface in some combinations which we would like to consider inverse on grounds of semantics and ordering relations, for example, X₁ → X₄ and X₆ → X₁, it is possible to explain this as due either to an ad hoc morphological restriction on /-gu₃/- or to a rule actually deleting /-gu₃/- from such combinations. In the latter analysis we can posit a level where /-gu₃/- has been added in all inverse combinations, and it is only a low-level morphological deletion rule which results in the skewed surface realisation of /-gu₃/- Even in the former analysis where /-gu₃/- is never present in such combinations as X₁ → X₄, X₂ → X₂, we can still speak of an inclusive concept of inverse combinations, and formulate the rule inserting /-gu₃/- as follows: add /-gu₃/- between object- and subject-marker in all inverse combinations (condition: /-gu₃/- cannot directly precede such-and-such morphemes). Thus beneath the surface wording we can conceive of a sharper underlying direct/inverse patterning.

One fact which might appear puzzling at first is that /-gu₃/- shows up in 'equivalent' A → A and MA → A combinations, both of which take the surface form gur-e: /gu₃/-/gur-e/- after a morphological rule neutralising initial MA with A markers. This is not so surprising however, when we recall from Silverstein’s treatment of Dalabon that the global rules determining the distribution of ergative /-yi/ treat inanimate-on-animate like inverse combinations. Ngandi, though not Nunggubuyu, does the same, so we can say that /-gu₃/- is added to all inverse combinations and to all X₅/X₆ → X₅/X₆ combinations, subject to the morphological compatibility conditions mentioned several times earlier: A → A and MA → A are the only X₁/X₅ → X₁/X₅ combinations where /-gu₃/- is compatible with the following morpheme.

The next question is the historical origin of the Nunggubuyu and Ngandi systems. It is obvious from the fact that /-N/- is used in Nunggubuyu while noncongate /-gu₃/- is used in Ngandi for the inverse morpheme that the historical connection between the two systems is somewhat remote. Nevertheless, I will claim that a proto-system can be partly reconstructed containing the seeds of both the Nunggubuyu and Ngandi systems. Furthermore, it is possible to connect /-N/- and /-gu₃/- with two ancient Australian morphemes —Accusative *-u (a) and Dative *-u. By developing these correlations I believe that it will be possible to undertake a detailed comparative and structural analysis of the pronominal-prefix systems found in most languages in Arnhem Land and the Kimberleys, and to therefore clarify the genetic relationships among these languages.

In the present paper I will confine myself to a discussion of data from Ngarinyin in the Kimberleys, the Mara-Alawie group (Wardarang, Mara, Alawia) in the Roper River area, and Gunwinggu in eastern Arnhem Land. Comparison of these data will enable us to define the broader comparative problem, make some initial correlations, and account for the development of the Nunggubuyu and Ngandi direct/inverse systems.

The Ngarinyin transitive pronominal prefixes are shown in Table 1. The object-marker is always first, so that all the forms in each vertical column begin with the same element, except that a special 1SG allolmorph /u/- is used in the 3SG → 1SG and a special 3PI allomorph /o/- is used in the 3SG → 3PI form. In the 1/2 → 3 forms there is an overt object-marker following the object-marker, for example, 1SG /u/- in 1SG → 3PI bu-ru-. However, in the remaining combinations the subject-marker is reduced to either zero or a basically plural morpheme /-r/-, which is related to Plural / ru/- found in the 1PI → 3 and 3PI → 3SG forms ( /-d/- is used after nasals and occasionally after vowels, while /-r/- is only used after vowels). In some cases singular and plural subject-markers are neutralised, so that 2PI → 1PIExcl and 2SG → 1PIExcl are both /-d/. The main point of interest is the use of the morpheme /-r/-, which can be taken as Accusative. As can be seen, /-r/- tends to be restricted to what would be inverse combinations in Nunggubuyu or Ngandi. Suppose we adopt the following hierarchy for Ngarinyin:

(2.8) X₁: first and second persons
X₂: 3PI (human)
X₅: 35G (including 3 nonhuman)

Recognising that 2PI → 3SG (class 2) /-r/- represents four class-specified combinations, we have the following figures: /-r/- occurs in seven inverse combinations, seven equipollent, and five direct. The five direct combinations have 2PI subject, and it is possible to reinterpret the /-r/- here as a 2PI morpheme which happens to be homophonous to Accusative /-r/. Although the usual 2PI morpheme in Ngarinyin is gur- (augmented as gur-d-, gur-r-, etc., with
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The absence of Plural -L- in 1Pincl, 1PExcl, and 2P object-markers can consist of a person-marker plus Plural -ru- (related to Plural -r- and -d- in Table 1) plus -gu-. The remaining forms are rather irregular.

Table 2: Ngarrinyin dative suffixes

<table>
<thead>
<tr>
<th>Sg</th>
<th>-ra-</th>
<th>-gara</th>
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</thead>
<tbody>
<tr>
<td>1Sg</td>
<td>1PExcl</td>
<td>-ra-ru-gu</td>
</tr>
<tr>
<td>2Sg</td>
<td>1Pincl</td>
<td>-ra-ru-gu</td>
</tr>
<tr>
<td>3Sg</td>
<td>-nangu</td>
<td>-mu-ru-gu</td>
</tr>
<tr>
<td>3P</td>
<td>-nangu</td>
<td>-mu-ru-gu</td>
</tr>
</tbody>
</table>

In Ngarrinyin, spoken just south of the Roper River in southeastern Arnhem Land (hence much closer geographically to Nunggubuyu and Ngandi than to Ngarrinyin), we find both Accusative *-n- and Dative *-gu- in pronominal prefixes. However, the two morphas are no longer distinguished as Accusative to Dative. Only one object can be indicated; in general, if there is a (semantic) direct object and a (semantic) indirect object in a clause, the object-marker in the prefix added to the verb will cross-reference the indirect object. Since Alawa verb complexes typically consist of inflected main verbs followed by one of several inflected auxiliaries, different auxiliaries can be used to specify the precise semantic role function of the object-marker in the pronominal prefix.

As a consequence, -n- and -gu- are now allomorphs of a morpheme which can be called Oblique—it is sometimes semantically Accusative, at other times semantically Dative, depending on the morphosyntactic environment. The allomorph -n- occurs after vowels, while -gu- occurs after Dative and Plural morphemes (-v, -v: hereafter abbreviated as L). The paradigm of prefixal morphemes is shown in Table 3. This paradigm is supplemented by means of suffixes, with function primarily to distinguish 3Sg from 3Sg subject- and object-markers, which are not distinguished in the prefixes, except in 3Sg → 3Sg combinations. The suffixes, which resemble human noun-class markers found in nearby languages, are probably a relatively recent overlay on a historically basic prefix system.

The order of elements in the prefixes works on a hierarchical basis, as in Nunggubuyu and Ngandi but unlike Ngarrinyin. For example, both in 3P → 1Pincl and 1Pincl → 3P! the initial morpheme is 1Pincl -ru-. The basic hierarchical split in the ordering rule is between first and second persons on the one hand and 3P on the other; since the 3Sg pronominal is usually zero we cannot order it relative to the other pronominals, but the Alawa situation is consistent with a hierarchy of the type (2.8), which is valid for Ngarrinyin and with modifications for Nunggubuyu and Ngandi.

One crucial structural characteristic of the paradigms is that the 1Pincl, 1PExcl, and 2P! pronominals include the Plural morpheme -L- when they function as subject-markers, and lack it when they function as object-markers. The use of Plural -L- in subject-markers can be seen most clearly in forms with 3Sg object, for example, 1Pincl → 3Sg -ru-L-. In the case of 3P object there may appear to be no -L- in the subject-marker (the -L- which do occur are best taken as belonging to the 3P object-marker), but there is no reason why we cannot set up base forms like 1Pincl → 3P -ru-L-gu-, where the -L- belongs with 1Pincl -ru- and is subsequently deleted by a straightforward cluster-simplification rule.

Before leaving Ngarrinyin, note the special set of Dative pronominals shown in Table 2. These are suffixes, so they are not attached morphologically to the pronominal prefixes of Table 1. Note than in Table 2 there is a Dative morpheme -gu-, but it occurs only in the first and second plural forms, which
be seen clearly in forms with 3Sg subject, for example, 3Sg → 1PIncl *hu-n- (not *hu-L-gu- or the like). This is generally true of combinations with 3P subject as well, for example, 3P → 1PIncl *hu-n-u-L- (not *hu-L-gu-(u)L-)—here the final -L- belongs to the 3P subject-marker.

Curiously, it appears that we get Plural -L- with the 1Sg object-markers in 2P → 1Sg ju-L-u-L- and 3P → 1Sg gu-L-u-L-. However, I would argue that there may be a more fundamental reason for this observation. In the following syllable the liquid in the following syllable for a liquid subject may be assimilated by an irregular but nevertheless plausible phonological process. That is, I take 2Sg → 1Sg ji- as a simplification of earlier *jy-n- (cf. Ngarniyinu 2Sg → 1Sg ji-n-) with Oblique *n- following a suppletive 1Sg morpheme, and 2P → 1Sg ju-L-u-L- as reflecting *jy-n-(w)u-L-. In other words, ju-L-u-L- is to ji- as 2P → 1PIncl *hu-n-u-L- is to 2Sg → 1PIncl *hu-n-. Similarly, I would claim that 3P → 1Sg gu-L-u-L- reflects *jy-n-(b)u-L- (1Sg-Accusative-3P-Pl).

The point is that -L- is used in first and second person plural subject but not object-markers also applies to the 3P pronounal with only one modification. The maximal form of this pronounal is yu-L- initially, as in 3P → 3Sg yu-L- with zero object-marker, and -b)L- or -b)L- noninitially, as in 3P → 1PIncl *hu-n-u-L-. This full form occurs when the 3P pronounal is subject-marker, so that we find it in all forms in the penultimate horizontal row in Table 3. As object-marker, however, we get yu-n- without -L- in the 3P → 3P combination yu-n-b)L- and the 3Sg → 3P combination yu-n-. However, in 1/2 → 3P combinations the 3P morpheme yu-/y-n-(b)L- disappears, and in this situation the Plural morpheme -L- remains. Thus 2Sg → 3P wu-L-gu- (second person wu-, Plural -L- representing the 3P object-marker, Oblique -gu-).

As noted earlier, the Oblique allomorphic -gu- is used after Plural -L-, and the allomorphic -n- otherwise (that is, postvocally). There is nothing in this allomorphic distribution to suggest that either allomorphic would be associated specifically with either direct or inverse combinations. However, in view of the restrictions on Plural -L- noted in the preceding paragraphs, there is a de facto association of -n- with inverse combinations and of -gu- with direct combinations. Thus we find -n- in the majority of 3 → 1/2 combinations and in no 1/2 → 3 ones, while -gu- occurs in nearly all 1/2 → 3P combinations and in no 3 → 1/2 ones. Both -n- and -gu- occur with some equipollent combinations.

In general, my view is that the Alawa system is rather archaic, and that a proto-system along these lines is a suitable basis for deriving the attested systems of pronominal prefixes in other Arnhem Land languages like Gunwinggu, Nunggubuyu, Ngandi, Ngulkon, etc. (to mention Warnadaring and Mara, which are subgrouped with Alawa). In particular, the occurrence of *n- and *gu- as allomorphs of an Oblique morpheme added to object-markers in transitive combinations is an important ingredient in the reconstructed proto-system. In some languages, like Warnadaring and Mara, *n- has disappeared but *gu- remains (in Warnadaring it becomes -gu- for reasons unknown). Note that in Alawa itself *n- is missing from certain combinations, such as 3Sg → 1Dulncl *hu-a-, where we might expect it.

On the other hand, there are languages where *gu- is lost while *n- remains. Such a language is Gunwinggu, where we find such combinations
as 3SG → 1SG ya-n- vs. 1SG → 3SG ya-.
Since the n- occurs in such direct combinations as 1SG → 3PI ya-be-n (1SG-3PI-Oblique), there is no strong direct/inverse patterning. The only hint of such patterning is the fact that n-cannot be added to the zero 3SG pronoun, so that in direct combinations with 3SG object the n-is missing whereas it occurs in the corresponding inverse combinations.

By comparing the Alawa (and 'Proto-Arnhem-Land') n/-gu- allomorphic alternative with the Ngarinyin forms, we can arrive at an initial hypothesis about the origin of the former. Suppose that Proto-Arnhem-Land originally had two distinct sets of transitive prefixes, one Nominative/Accusative and the other Nominative/Dative. In the former there was an Accusative morpheme *n- in at least a large number of combinations. In the latter type, there was a Dative morpheme *gu- used only following Plural -L-. The remaining Dative pronouns being irregular (this is the attested Ngarinyin system, it will be recalled). What may have happened is that the two paradigms were squashed together, forming a single subject/object transitive type containing pieces of both former paradigms. The irregular singular Dative object-markers were eliminated in favour of Accusative ones, but on the other hand plural Dative object-markers with *gu- survived, eliminating the corresponding Accusative object-markers. The retention of *gu- rather than of *n- in these plural object-markers may have been due to a combination of morphological and phonological factors. Perhaps the addition of *n- to Plural -L- created phonological problems (especially since the following verb stem normally began in a consonant), so forms with *gu- prevailed.

With such a reconstruction for Proto-Arnhem-Land it is not very difficult to see how the Nunggubuyu and Ngandi systems developed. Basically, both of these are systems where the tendency toward direct/inverse patterning has been crystallised and institutionalised. Whereas in Alawa and Ngarinyin there is only a general association of n- with inverse combinations, in Nunggubuyu this association becomes rigorous—the Inverse morpheme occurs in all inverse combinations, and in no equipollent or direct combination.

The development of *n- into Nunggubuyu Inverse *N-/*N- should cause no conceptual problems in the light of the inverse patterning of n- in Alawa and Ngarinyin. However, the development of *gu- into Ngandi Inverse -gu- does present difficulties, since if anything Alawa -gu- patterns as a direct morpheme. Hence, I feel it is possible to correlate the Ngandi and Alawa morphemes and to motivate at least the broad lines of the Ngandi developments.

The first step is to explain why *n- did not become the Ngandi Inverse morpheme. This explanation must be phonological in nature. Whereas Alawa does not have noun-class morphemes in its transitive prefixes, and Ngarinyin has them only in initial object-markers, in Ngandi and Nunggubuyu we find them in both subject- and object-markers, and usually noninitially. At present the most likely hypothesis is that the noun-class morphemes have penetrated into verbal morphology at a relatively recent date in the development of these languages. As it happens, several noun-class morphemes begin in nasals: Nunggubuyu and Ngandi -mi-/*ma- (masculine), Nunggubuyu -g/-ma- and Ngandi -ma- (feminine), Nunggubuyu and Ngandi -ma- (one of the larger nonhuman

7. SUBSTANTIVAL HIERARCHIES

Since Nunggubuyu Inverse *N-/ often has no surface phonological effect following cluster-contraction rules, we get instances of ambiguity like direct 1SG → MANA class yama- /yama- vs. inverse MANA → 1SG yama-/yama- *N-ma-. In other instances the direct and inverse combinations are distinguished only by ad hoc allomorphic alternations.

Although Nunggubuyu has tolerated the phonological evanescence of *N-, Ngandi has eliminated it and promoted *gu- to be the new Inverse morpheme *gu-. This was really the only possibility left, since *n- and *gu- were the only case-marking, relational, nonprenominal morphemes in the phonological prefix complex.

Even though Alawa shows -gu- only in direct (and some equipollent combinations, it is possible to conceive of a proto-language where *gu-occurred in a substantial number of inverse combinations. The basic rule governing the distribution of -gu-in Alawa is that it is added to object-markers ending in Plural -L-, and it is the idiosyncracies in the distribution of this latter morpheme which account for the association of *gu- with direct combinations. If we can envisage a proto-system underlying Ngandi and Nunggubuyu such that Plural -L- (in these languages in the form *r-) had different distributional possibilities, it would immediately follow that *gu-had a different distribution than Alawa -gu- has.

Perhaps the key combination in this respect is 3SG → 3PI. Alawa has yi-n-without -gu-; but only because 3PI yi- is not followed by Plural -L-. If -L-were present we would have gotten *yi-L-gu-, with Oblique allomorph *gu- and postvocals allomorph *gu-.

Suppose then that in the proto-language behind Ngandi and Nunggubuyu the 3SG → 3PI combination was *ba-ra-gu- (3PI-Pl-Oblique). At this stage there was no overt 3SG pronominal. With the introduction of nonzero n - class markers we would end up with a series of combinations like 3MSG → 3PI *ba-r-gu-n-, which is in fact the attested combination in Ngandi. Since such forms are semantically inverse, there would no longer be any association of *gu- with direct combinations. There is no evidence in Ngandi or Nunggubuyu that the 1/2 → 3PI direct combinations contained *gu-as they do in Alawa: Nunggubuyu yara- /yara- /yara- /yara- for 1SG → 3PI both reflect *ya-ba-ra- (15SG-3PI-Pl) without *gu-. Therefore it is possible that in the relevant proto-language *gu-did not occur in any direct combinations. This being the case, *gu- in the 3SG → 3PI combination could easily be reinterpreted as an Inverse morpheme, and could then have spread to other semantically inverse combinations as *n-was being phased out. The spread may have been in two stages—first *gu-extended into 3SG → 1/2PI combinations, then into 3SG → 1/2SG combinations.

I will not attempt a detailed explanation of the other idiosyncracies of Inverse -gu- in Ngandi—its incompatibility with following class-markers -gu- and -ma-, and its occurrence in the equipollent A → A and MA → A combinations. The solution to the first of these problems may involve haplogy (gu,-gu- becoming *gu-) and perhaps analogy (ma-instead of *gu-, ma- because of -gu- instead of *gu-*gu-), though the details are somewhat messy.

I wish to end this discussion by making one further general point which may be of value in describing direct/inverse systems or systems approaching
them in structure (for example, Alawa, Gunwinggu, perhaps Ngarinyin). This concerns the status of the φ-portmanteau transitive prefix, which shows up in Nunggubuyu as nonhuman → nonhuman (φ-way ‘it hit it’), in Ngandai as human 35g → 35g except 3M5g → 3M5g (φ-boy; ‘she/he hit her’, ‘she hit him’), and in Gunwinggu as 15g → 2 except 15g → 2D (φ-bom ‘i hit you’). The problem is explaining why φ- shows up in such radically different functions in the three languages.

On the basis of markedness theory, we expect to find φ- in the least marked, most common transitive combinations—namely, 35g → 35g in indicative clauses (and 25g → 35g in imperatives). This is reasonably consistent with the Nunggubuyu and Ngandai situations, but is violently inconsistent with the Gunwinggu use of φ- in the semantically highly marked 15g → 2 combinations.

I would suggest, however, that in all three languages φ- is used in structurally equivalent positions, and for essentially the same reasons. This is because in all three instances φ- represents a semantically and morphologically equipollent combination. In such combinations, there is characteristically competition between the subject and object-marking pronouns for a particular slot in the prefix complex. Because of this competition neither pronominal may succeed in occupying the slot, with the consequence that a portmanteau morpheme must be used. It is a general feature of Nunggubuyu in particular, and to some extent of other languages in the area, that equipollent combinations are portmanteaus or at best opaque, semi-analysable combinations, whereas direct and inverse combinations are morphologically transparent. Since φ- is the classic portmanteau, and the only portmanteau which can be spontaneously created, it is not surprising to find it as an equipollent prefix in various languages.

I would go beyond this and suggest that we can partially explain why Gunwinggu, rather than Nunggubuyu or Ngandai, uses φ- in the 15g → 2 function rather than 35g → 35g. This is because the 35g object-marker in the 1/2 → 35g combinations is zero in Gunwinggu (for example, 15g → 35g ya- cf. 15g intransitive prefix ya-, but nonzero in Nunggubuyu and Ngandai where class-marked morphemes are used (for example, Nunggubuyu ya-ma-15g → MANA).

If we assume that the 15g and 2 pronominals compete for a single slot and therefore cannot co-occur on the surface, we have three possibilities for the 15g → 2 combinations:
(a) use the 15g morpheme only;
(b) use the 2 morpheme(s) only; or
(c) replace both with a portmanteau.

Since Gunwinggu has inherited no nonzero portmanteau for this combination, option (c) in effect means using φ-, which can be spontaneously created at any time.

If option (a) is used, we will get 15g → 2 ya- in Gunwinggu, and this will be homophonous with 15g → 35g ya- (note that this is because the 35g object-marker is zero). This option is used only for the 15g → 2D combination, but not for the more important 15g → 2Sg and 15g → 2PI combinations. Option (b) will result in similar homophony between the 15g → 2 and 2 → 35g combinations, and is not used in Gunwinggu (though it is in Warndarang and to some extent in Nunggubuyu). Only option (c) avoids this type of ambiguity, and we find φ- in the 15g → 2Sg and 15g → 2PI combinations in Gunwinggu.

It is possible that before the origin of this φ- 15g → 2 prefix there was a φ- prefix for 35g → 35g. If so, the latter has been reshaped as a nonzero prefix to avoid homophony with the 15g → 2 prefix. In attested Gunwinggu we find 35g → 35g (ga-ri-, with ga- only in the Nonpast (it occurs in this tense in all 3 intransitive and 3 → 3 prefixes). The morpheme -ri- is probably a reinterpreted form of the old 3PI morpheme *-bY- found in many languages (Nunggubuyu, Ngarinyin, etc.).

I am certainly not claiming that we can predict exactly where the φ- will show up, or indeed whether it will turn up, in the pronounal-prefix paradigm. I am saying, however, that the use of φ- in such systems is far from random, and that by analysing the general structure of particular systems we can pinpoint the two or three combinations which are most likely to show up as a φ- portmanteau.

There need be no historical connection at all between Nunggubuyu φ-, Ngandai φ- and Gunwinggu φ-. As I have insisted, there is an internal structural motivation for the creation of such a morpheme in the prefix systems of all three languages, and φ- could have been created independently in them.

Notes
1. In view of the fact that Silverstein's paper is being published in this volume (in recently revised form), my paper has been rewritten as an addendum to it instead of a summary and explanation; the previously distributed version of my paper was of the latter type.

Data from Nunggubuyu, Ngandai, Ritharrngu, Warndarang, and Mara are taken from field notes. My field work has been supported by the Australian Institute of Aboriginal Studies.

2. What I call the doubly-marked system is what Silverstein calls the 'agentive' or 'O-A-S' system. I object to the term 'agentive' as a label for this system since this label would be more naturally applied to systems like that of Chectaw and some Siouan languages in North America where there is an Agentive case covering transitive subject and semantically agentive intransitive subject (for example, subject of 'to go'), contrasted with a Passive case covering transitive object and semantically nonagentive intransitive subject (for example, subject of 'to be sick'). The label 'O-A-S' is similarly unsatisfactory, since Dixon's lettering system using symbols O, A, and S for the major transitive and intransitive functions are not as yet in common use outside of Australia, and since they are of questionable value anyway. In particular, the label S, which Dixon restricts to intransitive subject, is likely to lead to confusion. I think the term doubly-marked is more explanatory and more generally suitable.


4. Data from Coate and Oates (1970), especially pages 31 and 94. In Table 18, D.2, the 35g → 25g combination was inadvertently omitted; this form has been recovered from other tables and commentary. I have retranscribed the Ngarinyin forms, using b, d, j, g for the stops (for example, I write jan- instead of djan-), and n for the 'palato-dental' nasal.

5. Data from Sharpe (1972, Chapter Nine). I have retranscribed the forms using the conventions described in note 4.

References

8. Nominal hierarchies in Yukulta

Patrick McConvell

I offer this paper in order to point out what seems to me a striking manifestation of the hierarchical principle as formulated by Silverstein (paper 6 above) and Heath (paper 7), in Yukulta, a language of the Gulf of Carpentaria. The original research on which this paper is based is entirely the work of Sandra Keen, presented in her valuable M.A. dissertation (1972).

The feature system for nominals used here is presented below (the distinction between dual and plural is not included as it is not relevant to the present discussion):

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<th>Non-singular</th>
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<tr>
<td>1st. dual and plural inclusive</td>
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<td>+</td>
<td>+</td>
</tr>
<tr>
<td>1st. dual and plural exclusive</td>
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<td>+</td>
<td>-</td>
</tr>
<tr>
<td>2nd. dual and plural</td>
<td>+</td>
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<td>+</td>
</tr>
<tr>
<td>3rd. dual and plural</td>
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<tr>
<td>1st. singular</td>
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<td>2nd. singular</td>
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<tr>
<td>3rd. singular</td>
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This feature system will now be used to analyse some facts of Yukulta grammar. Yukulta, in common with most Australian languages, has two classes of verbs which take objects. The first is what I shall call 'transitive', for which the object is assigned unmarked nominative case, and the subject is assigned the ergative case. A complex containing a tense marker and subject and object clitics is suffixed to the initial constituent of the sentence. Where the verb is transitive, the tense marker and clitics have special transitive forms and the complex also bears a 'transitivity marker' (*ka* or its allomorphs). For the second class, which I shall call 'middle', it is the subject which is unmarked nominative, and the object is marked dative (Keen's 'benefactive').

In the Yukulta pronominal clitic system there is a four-way case distinction:

(a) ergative, marking transitive subject; 
(b) accusative, for transitive object;  
(c) nominative, for intransitive and middle subject; and  
(d) oblique in agreement with other cases, including dative marking middle object.

In addition to this, transitive verbs may take on the appearance of middle verbs as a result of two different kinds of circumstances. That is, the transitive