



On the Prehistory of Some Australian Verbs

Author(s): Francesca Merlan

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ON THE PREHISTORY OF SOME
AUSTRALIAN VERBS

0. INTRODUCTION. Certain verbs like *baga(-l)* 'spear', widely distributed throughout Australia in languages of the large Pama-Nyungan family, have been assumed to be synchronically as well as historically monomorphemic (Dixon 1980:418). In this paper I argue that some of these verbs were actually compound structures in what I shall call 'early Australian'--the historical levels to which this refers will be clarified as my argument proceeds. Recognition that productive compounding systems existed in Pama-Nyungan at an early period is important for two reasons. First, it points the way toward comparative reconstructive work which urgently needs to be done. Second, it suggests that revision is needed of some long-standing ideas about typological similarities and differences between attested Australian languages and prototypes. Many writers have considered Pama-Nyungan (henceforth PN) languages to be typologically more conservative than

non-PN languages found in the north of Western Australia and the Northern Territory.¹ Many modern non-PN languages, however, have productive compound verbal structures of the type I claim to have been present in ancestral PN. In the majority of modern PN languages these structures have become fossilized. Evidently PN languages have undergone considerable typological change and diversification since the early period of productive compounding.

The common assumption (mentioned in Hale 1964: 248, Dixon 1980:225) that most or all Australian languages can be shown to be genetically related at some historical level remains unsupported by rigorous historical reconstruction. Available evidence for or against this assumption is inconclusive. For example, a sample handful of 'Common Australian' (Capell 1956) monosyllabic verb roots are found as central parts of verb systems in both PN and non-PN languages, embedded in vastly different verbal inflectional systems. Dixon (1980:428) has correctly pointed to the existence of these roots as the best evidence of genetic relationships between PN and non-PN. However, even this evidence remains weak as long as the sharing of isolated verb roots remains unsupported by paradigmatic reconstruction.

The demonstration of typological similarity between modern non-PN and archaic PN, by itself, provides no evidence for or against genetic relationship between PN and non-PN at a remote time period. However, the demonstrated historical segmentability of some PN verbs will make possible more penetrating comparative analysis, including the search for cognates and/or diffused items between PN and non-PN. It is clear that we should search for archaic boundaries in forms where these were not recognized

heretofore. Thus, besides helping to clarify typological relations between extant languages and prototypes, the recognition of compounds may also facilitate the search for evidence of genetic relationships between PN and non-PN.

To provide background for the general reader, in (1) I discuss proposed typological and genetic subdivisions within Australian languages. In subsequent sections I develop the thesis that productive verb compounding existed in early PN, and that this compounding is typologically comparable to verb compounding in some modern non-PN languages. I construct the argument by discussing typological differences between attested PN languages and the (assumed) PN prototype, and then comparing verb structures in modern PN and non-PN. This comparison shows that verb compounding typical of modern non-PN is also attested by vestigial forms of modern PN languages and may be attributed to early PN.

1. GENETIC AND TYPOLOGICAL RELATIONSHIPS IN AUSTRALIA. Capell (1956) established the striking geographical localization of certain morpho-syntactic features of Australian languages. His division of languages into 'prefixing' (with cross-reference of noun phrases [NPs] by prefixes on the verb) and 'suffixing' was a typological classification. It partly parallels the later-proposed genetic division between the widespread PN language family versus other, non-PN language families. Only non-PN languages have well-developed cross-reference systems of the prefixing kind. PN itself is not unified in terms of the prefixing-suffixing distinction. Eastern PN languages such as Dyirbal, Yidiñ, and Bandjalang do not have verbal cross-reference systems: nominal clause

functions are expressed only by NPs external to the verb, and coreference relations are maintained by other means (e.g., antipassivization). A few PN languages, such as Ngiyambaa in New South Wales, and some Yolŋu languages of Arnhem Land, have systems of loosely attached clitics. On the other hand, many western PN languages such as Walmatjari have verbal cross-referencing systems. Thus the proposed genetic division between PN and non-PN tends to coincide with certain typological features such as cross-reference by verbal prefixes, but there is considerable typological diversity even within non-PN.

On the basis of a vast survey of Australian languages, O'Grady, Voegelin, and Voegelin (1966) proposed a genetic division which distinguished a large PN family, extending over most of the Australian continent, from non-PN (used here as cover term for what were identified as an additional 26 genetic families clustered in a small northern section of the continent). Hale (1964) had earlier contributed to the understanding of relationships among eastern PN languages by showing that the 'initial-dropping' languages of Cape York Peninsula (i.e., those that had lost initial consonants, exposing vowels and presenting what appear to be quite aberrant root shapes) differ from other PN languages farther south by regular phonological changes. Hale (1976_a, 1976_b, 1976_c) was able to reconstruct forms in Northern and Middle Paman, and Alpher (1972) to postulate genetic groupings within Southern Paman. O'Grady (1966) reconstructed the sound system and a considerable number of stems for Proto-Ngayardic on the basis of evidence from seven languages of Western Australia, the Ngayarda subgroup of the Nyungic group within PN. Thus, historical reconstruction within PN has

concentrated on geographically distant groups in Cape York and Western Australia.

Though some genetic subgroupings have been posited within non-PN families, little detailed comparison has been done. An exception is the work of Heath (1978*a*) on languages of the southern Arnhem and eastern Roper River region within the prefixing area. Heath demonstrates the diffusion of case desinences and other grammatical morphemes which the historical-comparative method has generally found to resist diffusion. Nevertheless diffusion has not been extensive enough to make impossible paradigmatic reconstruction by the traditional historical-comparative methods. However, the validity of 'proto-prefixing', as Heath calls the combined genetic-typological ancestor of languages he discusses and others in the area, is doubtful. Prefixing non-PN languages are sufficiently diverse so that present knowledge does not warrant the assumption of development from a common proto-prefixing ancestor.

At the continental level, some researchers have entertained the idea that all the Australian languages (with the possible exceptions of Tiwi on Bathurst and Melville Islands, and Djingili on the Barkly Tablelands, as per Dixon (1980:225)) are genetically related. The widespread features which make genetic relatedness seem probable (like the Common Australian verb roots) have not been subjected to sufficient scrutiny to distinguish common retentions from typological, lexical, and other similarities due to contact and diffusion. Most recently, Dixon (1980:225-226) has argued that present knowledge does not warrant considering PN a distinct genetic group within Australian:

. . . PN--although a useful label to cover the large class of Australian languages which have not undergone radical change that involves the development of pronominal and other prefixes to the verb, and a generally polysynthetic structure--has not yet been shown to have any genetic significance. That is, there is no justification for talking of 'proto-Pama-Nyungan', as perhaps an early descendant of p[roto] A[ustralian]. There is nothing that could be attributed to a putative proto-Pama-Nyungan which could not equally validly be assigned to proto-Australian. There is no evidence of shared innovations which would justify a period of common development for languages of the PN type.

Given the relatively small amount of comparative work done so far, it is too early to abandon attempts to establish subgroupings within Australia. Linguistic diversity in the far north has scarcely been taken into account. Besides, certain recurrent structures within PN as presently defined have not been investigated as possible evidence of common PN development distinct from other families (see remarks on conjugation markers in 2.1). Given the recognized difficulty of distinguishing retentions from diffused material in Australian languages, the important issue is to continue to test what kinds of comparative evidence may be relevant to establishing genetic relationships in Australia, and what kinds may be relevant to establishing diffusional ones. One purpose of this paper is to suggest kinds of evidence which may be brought to bear on the question of periods of common development attributable to Australian languages.

2. TYPOLOGICAL SIMILARITIES AND DIFFERENCES BETWEEN PROTOTYPIC AND EXTANT LANGUAGES

2.1 *Verb Structures in Modern PN.* Many modern PN languages have (nonderivational) verb structures

of the description: ROOT(+CONJUGATION MARKER)+INFLECTION (Dixon 1980:408). PN languages like Yir Yoront of Cape York Peninsula have several conjugations ". . . defined by and named after the phonological form of the connective suffix used when stem formatives are postposed to a verb stem" (Alpher 1973: 226). These are referred to as 'conjugation markers' (hereafter CM). In Yir Yoront there are five conjugations defined by the occurrence in certain paradigmatic verbal forms of the connective suffixes *-l-*, *-r-*, *-ŋ-*, *-ɭ-*, and *-∅-*. For example, the CM shows up in the aorist form of *l*-conjugation *moy* 'swim', aorist *moyələn* (Alpher 1973:246); the canonical shape of the aorist suffix is *-ŋ*. A survey of conjugations in various PN languages is found in Dixon (1980: 382ff). Though some PN languages (e.g., Pitta-Pitta, and some Victorian languages as per Hercus 1969) lack conjugation markers, this appears to represent a historical loss; conjugation markers are found in widely separated PN languages from Cape York to Western Australia. It is not yet clear if non-PN languages have directly comparable structures. Some non-PN languages have systems of augments added to the root in certain tense-aspect forms (e.g., Maṇarayi *bu* adds augment-*nda-* in Past Negative and Habitual, which thus are characterized by stem *bu-nda-*). In the subgroup including Mara and Warndarang, these augments originally played a part in an aspectual opposition between continuous and noncontinuous forms. Until the comparability of such augments with PN conjugation markers is examined, it remains unclear whether the development of conjugation markers may not indeed qualify as an innovation which bespeaks a period of common development of PN languages separate from non-PN.

Only a limited subset of sonorant phonemes occur as CM in the various languages. Languages differ in the total number each has. Dixon (1980:409) suggests that this limitation is due to the fact that root-final segments were historically restricted to *y*, *ŋ*, *m*, *n*, *l* or *rr* (alveolar rhotic). These segments were precipitated out, and developed into conjugation markers, as the result of various kinds of phonological disturbances--'assimilations, blendings, deletions, epentheses and the like'--at the boundary between ROOT and INFLECTION in the prototypic verb construction (ibid.).

The question of the origin of CM is important for the reconstruction of verb structures in early PN. In 3.2 I discuss evidence from two relic conjugation classes in Guugu Yimidhirr (Queensland) that (some) conjugation markers developed from earlier auxiliaries. Another factor which suggests a grammatical, rather than phonological, origin of CM is that certain ones tend to be strongly associated with either transitivity or intransitivity (Dixon 1980: 279). In Dyirbal, 80 percent of transitive verbs belong to the *l*-conjugation, while 90 percent of intransitives belong to the *y*-conjugation (Dixon 1972:54). In Dyirbal, these two conjugation markers account for highly productive alternations between transitive and intransitive verbs, for example, *daraga-l* 'break' transitive, *daraga-y* 'break' intransitive; *daruba-l* 'soak' transitive, *daruba-y* 'bathe' intransitive. In fact, the marker *l* is significantly associated with transitivity in many PN languages, and *y* with intransitivity. This suggests they are reflexes of forms which had grammatical functions, and are not simply phonological residues which have taken on grammatical functions in

different languages. CM may have developed from old auxiliaries, or also from derivational suffixes of the kind illustrated by the (synchronically productive) causativizer *-la* in Pitta-Pitta: *kurra* 'fall', *kurra-la* 'drop', also nonproductive *-lpa* (? < **la+pa*) in *kurra-lpa* 'drop'. Morpho-syntactic accounts of the origin of CM should be given careful consideration.

2.2 *Restructuring of original monosyllables in PN.* Few modern PN languages have more than ten to fifteen synchronically monosyllabic roots (Dixon 1980:387ff). There is, however, evidence which suggests that more were present at some earlier stage: there are a few monosyllables of recurrent shapes in many modern PN languages; there are also many polysyllabic verbs containing a recognizable original monosyllabic root which has been reshaped and augmented by different means in the various modern languages. An example is the root *bu* which occurs as monosyllable in the PN language Nyawaygi (Queensland coast), and in the western PN language Walmatjari as *pu*-², but in Ngiyambaa (NSW) as *buma-l*.³ These facts make it logical to assume that the root was indeed originally monosyllabic and has been restructured as bisyllabic in some of the languages, rather than that it was originally bisyllabic and subsequently became monosyllabic in some languages. In other words, the historical method dictates that we should assume as original what all languages have in common, unless there is reason to think otherwise.

Some of these original monosyllables were first identified in both PN and non-PN by Capell (1956: 90-93) as 'Common Australian'. That is, certain roots which are either continued as monosyllables or

reshaped are also found in non-PN. In the non-PN languages Maṇarayi and Ṇalakan (Roper River region, Northern Territory), the root 'hit' is also *bu*. These two languages are clearly genetically very distant from each other; indeed, it presently begs the question to say their relationship is genetic. Besides occurring as independent verb 'hit, kill' in these languages, *bu* also enters into compound formations in ways summarized in 3.1.

Certain other monosyllables do not have Australia-wide distribution; that is, some appear only in PN or perhaps in specific geographical subareas of PN. The root *ga* 'spear', cited below in several eastern languages, to the best of my present knowledge occurs only in PN.

In some PN languages all original monosyllables have been reshaped. For instance, in Pitta-Pitta (Queensland), all modern roots are minimally bisyllabic (Blake 1979:187). Most of the increments by means of which the roots have been reshaped remain unidentified; they vary greatly even with the same root. Compared with widely attested Common Australian **wu-yu-nu* 'give', in Dyirbal we find *wuga-*, in Dyirbal's neighbor Yidiṇ *wiwi-* (I assume cognacy), in Bandjalang *wula-*, Warragamay *wugi-*, and so forth. Dixon (1980:515-519) assumes that some reshapings were historically formed from monosyllabic roots plus original inflection, for example, Dyirbal *wuga-* 'give' from **wu* plus imperative suffix **-ga*. While this may be so, the identity of incrementing morphemes has not been studied. If this hypothesis regarding remodelling of monosyllables is to be persuasive, it must be possible to show the reasons (in terms of formal markedness and functional relations of forms within verbal paradigms) for which certain

verbal inflections and not others were employed as the increments. In other words, demonstration of this claim requires historical reconstruction of verbal paradigms within particular languages, a goal which is still distant for most of the PN area. More important, it must be possible to demonstrate what motivated the reshaping, in terms of analogical models provided by earlier stages of the ancestral languages. Despite these unresolved questions, it is clear that the extent of the reshaping of monosyllables in PN languages has been great from an early period.

Dixon (1980:418-419) suggests four sources of polysyllabic roots in modern PN. Besides the fusion of monosyllabic roots with inflections to form bisyllables, these are: (1) syntactic employment of nouns in verbal clause function, similar to verbalization of *butter* > *to butter* in English; (2) the continuation of original bisyllabic roots, as in the example given, **baga-l* 'pierce, spear'; and (3) the fusion of original compound structures, accounting for 'perhaps the majority of modern polysyllables'. The latter developed from structures

. . . whose first element was a nominal or the like and whose final component was a (usually monosyllabic) verb . . . the first member of which may have ceased to function in the language outside this compound and the meaning may have shifted to such an extent that the root is now felt to be monolexic.⁴
(Dixon 1980:418-419)

In (3), I comment on the last two processes at length, and in reverse order. In 3.1 I explore the nature of compound verb structures in modern non-PN, giving examples of productive compounding systems and establishing their typological characteristics. One

of the conclusions is that compounding involving nominals is not prevalent in non-PN. In 3.2 I examine the continuation in PN of roots assumed to have been originally monomorphemic, like *baga-l*. I show that some of the assumed original monomorphemic bisyllables were compound structures of the type identified in non-PN, that is, that *baga-l* < **ba-ga-l* in early Australian. I will argue that evidence for such compounds can be found throughout PN, and must go back to a very remote period which probably predates the diaspora of PN languages over the Australian continent.

3. VERB STRUCTURES IN NON-PN AND PN

3.1 *Compound and Particle-Auxiliary Structures in non-PN.* Many non-PN languages have a set (from perhaps four to two dozen) of monosyllabic, and sometimes also a few bisyllabic or trisyllabic, verb roots which function as auxiliaries in verb constructions. In such non-PN languages as Maṇarayi, most verbal meanings are expressed by pairing a nonfinite verbal element with an auxiliary. This pairing may occur in at least two different ways: one, with the nonfinite element outside the inflecting verb as associated particle; or two, with the nonfinite element within the inflecting verb as bound, initial compounding element. I shall refer to the first type as pairing of particle plus auxiliary, and to the second type as a compound verb structure. Particles constitute a very distinct part of speech: usually preverbal, they generally cannot be separated from the auxiliary by intervening constituents, and in some languages there is a moderate degree of phonological interaction at the particle-auxiliary boundary. They can undergo limited nominalizing processes

to create various types of elliptical clause structures. In a few borderline cases it is difficult to distinguish whether a form should more properly be called an adverb or a particle. One difference is that in some languages certain particles can occur only with a fairly restricted set of auxiliaries (sometimes only with one), giving different meanings depending on the pairing; but even here, the difference between adverbs and particles cannot be regarded as absolute, for generally adverbs are somewhat restricted in the range of verbs they can modify. In particle plus auxiliary constructions, the auxiliary is flanked by inflectional prefixes and suffixes--prefixes including cross-referencing pronominals as well as markers of some verbal categories, suffixes usually expressing tense and other verbal categories. In Maṇarayi, the particle is 'free' in that no inflectional prefixes occur before it, but in some languages certain inflections may precede the particle. An example of particle plus auxiliary in Maṇarayi is:

mir? *ga-ṇa-wuyan-ṇa-n.*
know -3nonpast-1Sg-3Pl-Aux-Pres

'I know them' (pl).

Here *mir?*, like other particles, expresses the main lexical content of the verb. Prefix *ga-* is obligatory in nonpast, realis verb forms in which the subject is nonthird (if the verb is intransitive), or the subject or object or both are nonthird (if the verb is transitive).⁵ Prefix *ṇa-* marks 1Sg subject, *-wuyan-* 3Pl object; *-ṇa-*⁶ is the auxiliary, and *-n* the present tense suffix for this particular auxiliary. The auxiliary *-ṇa-* can occur with other 'epistemic' particles, but is fairly rare in other pairings.

Many particles have some potential of cooccurrence with different auxiliaries, both transitive and intransitive. Causativization, which in many PN (and some non-PN) languages formally involves suffixation of derivational roots to basic transitive or intransitive verbs, in languages like Maṇarayi involves alternation of auxiliary verbs with the same particle. For instance, with intransitive auxiliary, particle plus auxiliary construction *jir -jaygi-* means 'stand', but with transitive auxiliary *jir -judma-* means 'make stand up, erect'. (This auxiliary itself is analyzable as compound *jud+ma*; its paradigmatic forms are identical to those of *ma*, the most common auxiliary in the language, capable of occurring in both particle plus auxiliary and compound verb structures. The root *ma* also functions as independent verb meaning 'to say, do'.)

In the second, compound verb type, person, number, and any other prefixes precede the bound first element, so that it is part of the inflecting verb:

ṇa-wuyan-yiri+wa-b.
 1Sg-3Pl-see-Past Punctual
 'I saw them' (pl).

It is sometimes possible to achieve greater semantic specificity by having verb particle cooccur with compound verb, as, for example:

girimbir? *ṇa-wuyan-yiri+wa-b.*
 stare 1Sg-3Pl-see-Past Punctual
 'I stared at them'.

In such cases the adverbial nature of the particle is especially clear: it modifies a verbal nucleus,

specifying more closely some more general verbal meaning.

In Maṇarayi as in many neighboring languages, a few nonfinite elements may occur either as particles with auxiliaries or as bound initial compounding elements (*wurg* -*bu*- or -*wurg+bu*- 'wash'). In Maṇarayi, however, the majority of forms enter either into one kind of construction or the other, but not both.

Most of the Maṇarayi verb roots which may function as separable (in particle plus auxiliary) or inseparable (in compounds) auxiliaries also occur as independent verbs with a more highly specified lexical meaning than the same roots have as auxiliaries. For example, -*wa*- occurs in the compound -*yiri+wa*- 'see', but as independent verb means 'visit, go to see'. The Common Australian root *bu* in Maṇarayi has full lexical meaning 'hit, kill' as independent verb, but as separable or inseparable auxiliary often makes a much more diluted or even negligible contribution to meaning; namely, such compounds as -*barañ+bu*- 'dream', -*ḍaḍ+bu*- 'tail and end vegetables', -*yum+bu*- 'leave', -*gaḷañ+bu*- 'spear' (avoidance language only),⁷ -*gaḷa+wu*- 'hang up',⁸ -*gayʔ+bu*- 'chase, hunt', -*jañja+wu*- 'swear at', -*mimij+bu*- 'touch' and about forty other common compounds. The main contribution of the auxiliary here is not semantic. It functions to integrate the form into the clause as a verbal word. There is a high correlation of certain auxiliaries with particular transitivity values. The auxiliary *bu* is principally transitive, but there are intransitive compounds with this auxiliary, for example, -*wal+bu* 'sprout, come out'. Given the very different semantics of the same phonological root as independent verb and auxiliary, one might argue that they should not be regarded as the 'same' verb. But

bu and other monosyllabic roots in Maṇarayi have particular and quite unpredictable configurations of paradigmatic tense-aspect suffixal forms, which are the same for auxiliary and independent verbs of the same shape. Thus it would be missing an important, synchronically valid generalization to regard *bu* as two 'different' verbs.

A very few compounds contain as initial bound element a form which also occurs independently as a noun. Examples of this type are *-ṇani+yug-* 'speak', analyzable as *ṇani* 'language', and *jug*,⁹ independent verb 'swear at'; also *-mungalṇ+bu-* 'fold flexible material (e.g., bark) into shape of coolamon', where *mungalḡ* occurs as independent noun meaning 'type of container'.¹⁰ Compounding involving nouns, or noun incorporation, is synchronically very limited, and appears to have been historically limited as well; very few compounds have initial elements which can be morphologically identified with any nominal forms. Noun incorporation is slightly more frequent and productive in some Arnhem languages. The relative rarity of noun incorporation is in accord with the earlier observation that while it is sometimes difficult to draw an absolute distinction between adverbs and particles on semantic and distributional grounds, it is very easy to make a distinction between basic nouns and particles. Among the most frequent shapes of initial bound elements in compounds are CVS (where S = nonvocalic sonorant), CVS? (? = glottal stop), CVC, CVSC, and to a lesser extent, CVCV and CVC₀²VC. These are also the most frequent shapes of verb particles. Sharpe (1976:705) notes also for assumed congeners of Maṇarayi, Mara, Alawa, and Warndarang that the most frequent particle shape is CVC (including CVS). Thus, though some initial elements in

compounds are nouns, their closest formal and semantic relation synchronically and historically is with verb particles where these occur as 'free' forms in the same language.

One of the neighboring languages to Maṇarayi, Ṇalakan, clearly belongs in a different genetic grouping (with other Arnhem-area languages including Gunwinjgu, Jawoṁ, Rembarṇa, Ngandi, and others) and has a slightly different range of verb construction types than Maṇarayi. Like some other Arnhem languages, Ṇalakan lacks the free particle plus auxiliary construction type. Ṇalakan has a number of monosyllabic and bisyllabic roots some of which are clearly relatable to certain ones in Maṇarayi. These may function as independent verbs without any preceding compounding element, but with all the prefixal and suffixal inflectional apparatus. These verb roots include: *bu* 'hit, kill', *wu* 'give', *ma* 'pick up, get', *ṇa* 'see', *ṇu* 'eat', *ga* 'take, carry', *ṇa* 'sit',¹¹ *ja* 'stand', *ṛabo* 'go', *wake* 'return', *mare* 'spear', *yini* 'say, do thus', *baya* 'look at, see', *bara* 'be hanging up', *mare* 'shout at, argue with', *be* 'to bite', *yo* 'sleep', *jo* 'chop down', *ṛu* 'cry' (cf. Maṇarayi *ḍu*), *wa* 'follow' (cf. Maṇarayi *wa* 'see, visit'), *ṛu* 'burn',¹² *ṇe* 'burn' (transitive), *ye* 'put down', and verbalizer *me* 'be, become'. Certain bisyllabic roots clearly were earlier productively formed compounds (for example, *jap+ja* 'to erect, make stand', but the transitive auxiliary *ja* in the modern language cannot occur by itself, unlike intransitive *ja* 'to stand' which occurs as independent verb and also in compounds). Some other bisyllabic roots formerly may have been morphologically complex but the evidence is not as clear (for example, the similarity between intransitive *-bara-* 'to be hanging'

and transitive *-bare-* 'to hang up' suggests that one or the other may contain some stem-forming element, now fused and no longer segmentable).

A good number of the roots listed above occur in compounds of the Maṇarayi kind, for example, *jebaŋ+yo* 'lie in a line', *dič+na* 'look hard at, stare at', *ñow+ga* 'make noise', *welŋ+bu* 'make a mistake', *gol+ye* 'put in water, soak'. There is also some subcategorization of different initial elements with the same inseparable final auxiliary roots, as *baya* in *wet+baya*, *jira+paya*, both meaning 'sneak up on',¹³ also *wa* in *bo+wa* 'follow a river' (*bo* is the compounding form of 'water') and *mungu+wa* 'follow', with initial *mungu* which may also occur by itself as thematic verb (see below) meaning 'to follow'.

The numerically largest class of verbs in Nalakan, however, comprises 'thematic roots'. These consist of only root (i.e., they have zero inflectional suffix) in present, imperative, and evitative forms (like *-ror?* 'clean', *-ñar?* 'die', *-qurum?* 'dig'), and auxiliary inflecting for tense and negation in other categories. Interestingly, the statistically common shapes of these thematic roots tend to be the same as common particle shapes in Maṇarayi, among the most frequent, CVC and CVS?. To make clear the comparison with Maṇarayi, we may say these are 'verbalized particles'.

One of the important morpho-syntactic differences between Maṇarayi and Nalakan is that in many more synchronic derivational processes in the latter, verbal roots are used as derivational suffixes, while in Maṇarayi causativization involves alternation of auxiliaries with the same verb particle. The most common causativizer in Nalakan is the verb root *-ga-*, for example, thematic *yeret* 'grow', causative

yeret-ga- 'raise, rear'. (See also Carroll [1976: 704-707] for discussion of verb structures in Gunwinjgu, a language which is typologically [and genetically] closer to Nalakan than to Maṇarayi.)

Though non-PN languages show variety in verb constructions, all have at least some compound or particle plus auxiliary formations, and contain verb roots which may be (formally and/or semantically) identified with independent verbs of the same shape.

The compound constructions in Australian languages contrast with compound verbal constructions of a type common in Papuan and some African languages. These languages make use of multiply conjoined verb and/or clause constructions and are sometimes referred to as 'serialized'. Many Papuan languages, for instance, show a distinction between 'final' and 'nonfinal' forms of the verb. The former is a fully inflected finite verb which comes at the end of a clause or clause chain. The latter is usually a nonfinite verb which may or may not define its own clause (see Foley forthcoming for discussion) but does not occur as the final verb of a well-formed sentence or text. By stringing together nonfinal verbs to express complex meanings, many Papuan languages make do with fewer verb roots than do languages where similar complex meanings are lexicalized (e.g., where English has 'bring', such languages may have serialized 'take+come'). In the serial construction, it often happens that a final verb may be preceded by a great number of conjoined nonfinal verbs, and nonfinal and final verbs may not always have the same subject(s) or object(s).

The Australian particle plus auxiliary and compound constructions are typologically quite distinct from these. One of the main features that

characterizes the non-PN Australian types is the pairing with a verb root--frequently monosyllabic--of an initial element (bound or free) whose relation to the verb is rather like that of adverbial specifier to verbal nucleus. This is also unlike the nominal-verb relation in typical noun-incorporating structures, which are only rather weakly represented in non-PN languages, compared to the other types.¹⁴

3.2 *Continuation of Original Disyllables in PN.*

Another proposed source of modern PN polysyllabic verbs besides fusion of compounds is the continuation of original disyllables like **baga-l* 'spear'. This example is a particularly interesting one, for a very strong argument can be made that at an extremely remote period this and certain other verbs were compounds of the sort described in non-PN (for statistical support of arguments made in this section, see the introduction to the Appendix).

The verb *baga-* (*paka-*) in the meaning 'spear, hit' is widespread in PN languages. See Table 1 for its occurrence in some PN languages Australia-wide; this listing is suggestive and not exhaustive. Though Yolŋu may have cognates (cf. Riŋarŋu *baka?*, a noun meaning 'two-pronged spear') I have so far been unable to find clear cognates in thirteen languages of the non-PN prefixing area.¹⁵ An exhaustive search needs to be made of all non-PN vocabularies under this and related meanings (dig, scratch, etc.). Though it cannot unequivocally be said that cognates of *baga(-l)* do not occur in non-PN until this is done, nevertheless likely cognates are not readily discernible. This is in striking contrast to the recurrence of *baga-* throughout the PN area. The distribution of this form in the same or similar meaning across the continent in PN languages suggests that it

TABLE 1: Distribution of *baga*(-1) 'spear' and
Related Meanings

Dyirbal ¹	<i>baga</i> -1	'pierce, spear'
Yidiñ ¹	<i>baga</i> -1	'dig, pierce, spear'
Pitta-Pitta ¹	<i>paka</i>	'whittle, dig'
Guugu Yimidhirr ¹ (CYP)	<i>baga</i> -1	'dig'
Tjaapukay ¹ (CYP)	<i>paka</i>	'spear'
Yanga-Mbara (CYP)	<i>paka</i>	'spear'
Ngiyambaa ²	<i>baga</i> -1	'dig'
Warlpiri ³	<i>paka-rni</i>	'strike, hit, chop'
Thargari ⁴	<i>paka</i> -1	'copulate with'
Pandjima ⁴	? <i>paka</i>	'break, come apart'
Yinyjibarndi ⁴	? <i>pa</i> :	'break, come apart'
Proto-Pama-Maric	* <i>paka</i>	'spear'
Proto-Wati	? * <i>waka</i>	(cognate?)

Note: See O'Grady (1966:86) for historical loss of intervocalic nonapical stops. 1 = Queensland, 2 = New South Wales, 3 = Northern Territory, 4 = Western Australia, CYP = Cape York Peninsula.

represents a retention within the modern languages from a very remote period, and not a recent diffusion.

The main point I wish to demonstrate is that the verb *baga*- at a very remote period was a compound verb of the kind illustrated from non-PN in which an initial element was paired with auxiliary *ga* to give the meaning 'spear, hit'. This can be inferred from two facts: first, in a few modern languages *ga* still occurs as an analyzable root 'spear' alongside now-frozen, earlier compounds like *baga*-; second, in a

number of modern PN languages *ga* recurs as second element in a significantly large number of verbs which have meanings relating to spearing, hitting, stabbing, piercing and the like. I have so far surveyed a small number of PN languages which clearly either have *ga* as synchronically segmentable verb root, and/or show evidence of an older productive compounding system in which *ga* was an auxiliary used to form verbs with meanings related to spearing and piercing. Some of these results are summarized in Table 2; others are discussed below.

In order to compile the material summarized in Table 2, I extracted all verbs from available lexicons and organized them by final syllable, so that, for example, all *ga* verbs were listed together. (See Appendix for full listing of verb sets in five languages.) Where verbs of a certain final syllable belong to different conjugations, the conjugation markers are cited in the forms. Where it was possible to make a count of a reasonable-sized wordlist, I indicate the number of verbs which end in a certain syllable over the total number of verbs in the lexicon. For example, in Dyirbal, 25/226 with reference to *ga* verbs means there were 25 out of a total of 226 verbs in the wordlist, or approximately 11 percent of the total. Clearly, not all these verbs seem to contain an old compounding auxiliary *ga* 'spear'; some, like *wuga-l* 'give', are reshaped forms of old monosyllables as discussed in 2.2. But of the 25, there are 10 separate listings which on semantic grounds show evidence of continuing an auxiliary *ga* 'spear' in now-frozen compounds. For Dyirbal, these verbs are *baga-l* 'pierce, spear', *balga-l* 'hit, kill', *ban̄ga-l* 'paint, write', *dal̄nga-l* 'cut', *nal̄ga-l* 'poke with stick', *wir̄nga-l* 'scrape, scratch', the

TABLE 2: *Verbs with Final -ga*

Dyirbal 25/226, 10 below assumed to continue old auxiliary -ga 'spear'	
baga-l	'pierce, spear'
balga-l	'hit, kill'
baŋga-l	'paint, write'
daŋga-l	'cut'
ŋalga-l	'poke with stick'
wirŋga-l	'scrape, scratch'
waga-y	'spear'
wirŋga-y	'scrape, scratch' (intrans.)
ŋuga-y	'grind'
ɟurga-y	'spear'
Yidj 28/221, 5 and possibly also sixth below continue -ga 'spear'	
baga-l	'dig, pierce, spear'
balŋga-ɾ	'hit with stick'
daga-l	'cut, sever'
ɟalŋga-l	'chop, cut up'
yungga-l	'grind'
balga-l	? 'make, build'
Pitta-Pitta 26/173, only 3 may contain -ga (-ka) 'spear'	
paka	'whittle, dig'
palka	'split'
kananŋka	? 'spear, stab'
Guugu Yimidhirr 17/approx. 140, only 5 or 6 continue -ga 'spear'	
ngulngga-l	'hit, beat, kill, chop'
baga-l	'scratch, dig, stab, poke, sting, peck'
wangga-rr	approx. as above
dhulngga-l	'rub on, paint'
duuga-l	'bury, dig'
balga-l	? 'make, do, fix, wash'

TABLE 2--Continued

Ngiyambaa 41/approx. 400, only 5 assumed to continue -ga 'spear' which also occurs as productive com- pounding root	
baga-l	'dig'
yaŋga-l	'rub with abrasive'
bugga-l	'hit with flabby object'
biri:nga-l	'scratch with stick'
ḍilanga-l	'pierce'

intransitive counterpart *wirŋga-y* 'scrape, scratch', *waga-y* 'spear', *ruŋga-y* 'grind', *ḍurŋga-y* 'spear'. In Yidiŋ, for *ga* the figures are 28/221, of which the first five listings at the very least appear to continue an auxiliary *ga* 'spear'. In Pitta-Pitta, the figures are 26/173 for *ka* (Blake uses voiceless stop symbols), but I have listed only the three which may fairly certainly be assumed to contain the root under discussion. In Guugu Yimidhirr there are 17 *ga* verbs, and in Ngiyambaa 41 *ga* verbs out of the approximately 400 verbs from a working wordlist. I have not listed all the Ngiyambaa verbs, but only those which may conservatively be said to continue the auxiliary in question. There is a recurrent form *balga-l* (*palka-l*) in Dyirbal, Yidiŋ, Guugu Yimidhirr, and Pitta-Pitta; this also occurs widely in Cape York (e.g., Sutton 1976:109). The same form appears in different parts of the continent associated with two principal meanings: on the one hand, 'hit, kill', and on the other, 'make, build'. While it seems likely that the first continues the auxiliary in question, it is not clear whether forms meaning 'make, build' may be historically identified with it. In Ngiyambaa

many occurrences of final *ga* must be identified with a different auxiliary of motion: examples include *ɲarga-y* 'move, shift', *wirga-y* 'limp', *yu:ga-y* 'move', and *wayuŋga-l* 'stir' (*wayuN-* is synchronically identifiable as a bound modifier meaning '(move) in circles'; see Donaldson 1980:202). Though not all instances of final *ga* relate to the 'spear' auxiliary, it is certain that in a number of PN languages there is a core of verbs which continues this auxiliary. These verbs evidently were analyzable members of verb-compounding systems like those described for non-PN, in that different initial elements could combine with the same auxiliary root to give a variety of meanings all having to do with a single, central concept expressed by the auxiliary. It is also possible that the same initial elements could productively combine with different auxiliaries, as happens to a greater or lesser extent in modern non-PN languages.

These assumptions would be strengthened by demonstrating the occurrence of *ga* 'spear' as independent root outside of frozen compounds. There are examples of this from eastern PN languages, and I will give two, the first from Cape York and the second from New South Wales.

Gog-Nar (outside the initial-dropping area of Cape York; see Sutton 1976:100, map), has the verb *ki* 'hit, kill' (Breen 1976:254). Despite the fact that both *ka* (*ga*) and *ki* (*gi*) are high-frequency syllables in all Australian languages, there is internal evidence from Gog-Nar that modern *ki* reflects **ka* which has undergone a change in vocalism. There are a number of cases in Gog-Nar where alternations between *a* and *i* are found in different paradigmatic forms of the same verb root (see paradigms, Breen

1976:254), and in many of these, *a~i* in Gog-Nar correspond to *a* in other PN languages. Thus, Gog-Nar has past tense *ɣina-ŋ* 'be, sit', present and other tense forms *ɣini-m*, where many other PN languages show *a*-vocalism *ɣina-* throughout their paradigms. Based on comparison with other languages, it is reasonable to assume that Gog-Nar *ki* 'spear' reflects **ka*. In Gog-Nar there is a verb of reciprocal meaning *kari* 'to fight (each other)', which Breen (1976:256) suggests ". . . may be derived from *ki* 'hit' by means of an earlier reciprocal marker, but this is not productive in the language at present." One way of conceiving the historical relationship between *ki* and *ka-ri* would be to assume that the latter, perhaps because in reciprocal meaning it always occurred with suffix, failed to participate in changes in vocalism which affected the nonreciprocal form **ka*.¹⁶

Ngiyambaa retains *ga* 'spear' as one auxiliary of compound verb constructions. A compounding system in Ngiyambaa remains partly productive. Unusual in New South Wales languages, this system is worth describing briefly (from Donaldson 1980). Ngiyambaa has both monomorphemic and compound verb constructions. Nine of the monomorphemic roots are monosyllables, many of them relatable to Common Australian forms (see Donaldson 1980:155 for these). One kind of verb construction consists of one of a set of 21 'bound modifiers', followed by one of a set of verbal roots. There are 8 transitive compound verb-forming roots, and 5 (morphologically and semantically) related intransitive ones. Donaldson analyzes the bound modifiers (1980:201-202) as divisible into three semantic groups, 'action'-, 'result'-, and 'object-oriented'. The action-oriented ones include such forms as *gunuN-* 'energetically' and *mulan-* 'repeatedly', the

result-oriented modifiers are descriptive of types of activity, for example, *bun-* 'change', *ga-* 'break', *wirba-* 'split'; and the object-oriented modifiers include such meanings as *mu:n-* 'do to all', *garu:n-* 'do to none', *gibayN-* 'do in return to'.¹⁷ The 8 bound transitive verbs which may occur with modifiers of action and object (but not result) types are:

Transitive	Intransitive
-ma-l 'do with hand'	-ma-y
-giyama-l 'heat' (do with heat as instru- ment)	-giya-y
-DHinma-l 'hit'	-DHinma-y 'get (self) hit'
-bi-l 'move away'	-bi-y 'move away'
-DHa-l 'do with mouth'	
-DHi-l 'do with foot'	
-ya-l 'speak'	
-ga-l 'pierce'	-ga-y 'get (self) pierced'

At a higher level of distinction of types of verbal meanings, *-ma-l* (which as specific auxiliary means 'do with hand') contrasts with intransitive *-ma-y* as 'do (it)' transitive, versus 'do' intransitive.

An example of modifier plus compounding auxiliary is:

- (a) *gunu-mi-yi*
energetically-do-past
'did it energetically'

In addition to bound modifier plus auxiliary forms as the only verb of the clause, compound verbs containing bound modifiers of 'action' or 'object' types may occur in apposition to another verb of the same transitivity and final inflection. These provide additional information specifying the predicate meaning more narrowly. Examples are:

- | | | |
|-----|---|--------------------------------|
| (b) | <i>gunu-mi-yi</i>
energetically-ma-past | <i>ba-gi-yi</i>
dig-ga-past |
| | 'dug energetically' | |
| | | |
| (c) | <i>gunuŋ-gi-yi</i>
energetically-ga-past | <i>ba-gi-yi</i>
dig-ga-past |
| | 'dug energetically' | |

Note in (c) that it is possible for both modifier and lexical verb to have the same compounding auxiliary (-*ga*- 'pierce'). As shown by examples like (b) and (c), classes of verbs can be established according to the bound roots which may occur in the appositional compounds (Donaldson 1980:205).

The important point is that *ga* 'pierce' as compounding auxiliary in an appositional verb occurs with such roots as *baga-l* 'dig', *wuraŋa-l* 'sew', and *dhu-r* 'prick, spear'. The first of these also contains *ga* frozen as part of the root. Though *ga* can subcategorize other verbs as part of a synchronically productive compounding system, *baga-* cannot occur without *ga*. Also, *baga-* as appositional verb does not add another occurrence of *ga*. Thus it seems that the modern compounding system is a continuation of a much more ancient one within which some compound forms had already been reanalyzed as monomorphemic.

Bandjalang (see glossary in Crowley 1978) has only a few forms ending in *-ga* which seem relatable to an auxiliary 'spear'; *ba:ga-* 'break' may be cognate with *baga-*, but the correspondence of long and short vowels is uncertain. Also *galga* 'chop, split, cut up' may continue the 'spear' auxiliary.

In sum, the verb *baga* 'spear, pierce' is widespread throughout PN. There is evidence from a number of PN languages of *ga* 'spear' as separable, monosyllabic verb root. Clusters of verbs containing this root as frozen auxiliary occur in a number of PN languages. There seem to be greater numbers of such verbs in eastern PN languages than western ones, but *baga-* itself is found continent-wide. Several inferences can be made from these facts. First, synchronically monomorphemic *baga-* was historically **ba-ga-* composed of initial element plus auxiliary; second, it may already have been a frozen compound at the period of its wide distribution; third, compounding involving *ga* and other roots continued to be productive into a more recent period in eastern PN languages than elsewhere in PN. Indeed, compounding is still moderately productive in Ngiyambaa. It is clear that *baga-* continues from an historical period and ancestral language(s) sufficiently remote to account for its modern continental distribution--and it is to this remote stage that I apply the label 'early Australian'. It seems that only a small handful of such frozen compounds are found in PN languages continent-wide, and also that more eastern than western PN languages have productive or frozen compounds containing roots relatable to those of the widespread frozen forms. The preferable hypothesis to account for these facts is that the handful of shared compounds were distributed over the continent

as frozen compounds, not as vital, analyzable ones. The reanalysis of forms like **ba-ga* > **baga-* must have begun at a very early period, and compounding must have continued to be productive with other forms until different times in various PN languages.

I have shown by example from non-PN compounding systems that a root as auxiliary usually does not retain all the lexical specificity it has as independent verb. While this makes the semantics of auxiliaries somewhat more difficult to establish, it bears repeating here that the typological nature of compound structures in many Australian languages is that of semantically specific initial element to general verbal nucleus. Thus the fact that in some frozen compounds *ga* has a somewhat diluted meaning in comparison with its full meaning, 'spear', does not rule out my argument. In fact, this situation makes the frozen PN forms look rather more comparable to those non-PN cases in which the auxiliary retains some general lexical meaning, which, however, is not as full as that of the same root as independent verb.

The root *ga* is not the only one that can be analyzed as part of an old compounding system. Here I present evidence for two others, the analysis of the original function and meaning of the second somewhat less certain than that of the first.

A root which resembles *ga* closely in its synchronic distribution as independent verb, and as productive and frozen auxiliary, commonly begins either with lamino-dental or lamino-palatal *ɟa-* or *ɟa-* 'do with mouth, eat'. In Ngiyambaa, *DHa-l* is one of the compounding roots.¹⁸ *DHa-l* productively subcategorizes such verbs as *dha-l* 'eat', *ɲa:ruN-y* 'drink', *nhuga-l* 'swallow', and *ɟi:nɟa-l* 'lick' (Donaldson 1980:208). The verb *ɟi:nɟa-l* contains frozen

auxiliary *ḍa-l*. Donaldson (1980:210-212) says of the homomorphism between the final segments of modern (frozen) verbs and certain of the compounding auxiliaries:

The conclusion suggested (though not proven) by the evidence is that the final syllables of verbs in the L, predominantly transitive, conjugation, that are synchronically unanalyzable, originated as (mainly transitive) verb-forming auxiliaries, auxiliaries which were either bound monosyllabic roots, as in the synchronic compound verb system, or free monosyllabic verbs which have since been lost as independent L verbs (except for three), leaving traces of their former auxiliary function only.

The verb *ḍa* occurs as an independent root 'eat' in Bandjalang. Thus in some eastern PN languages *ḍa~ḍa*, like *ga*, is identifiable synchronically as a verb root.¹⁹

As widely distributed in PN languages as *baga-* is a verb meaning 'bite'. This verb variously has the form *baḍa(-l)* or *baḍa(-l)* (or equivalent spelling depending on orthography). A number of bisyllabic or polysyllabic verbs containing *ḍa* or *ḍa* as final element, with meanings relating to eating or doing with the mouth, are probably frozen continuations of earlier analyzable compounds. Table 3 shows the extent of the geographical distribution of 'bite', but again is suggestive and not exhaustive. Table 4 shows semantically related, frozen compounds in a number of PN languages. The presentation of these verbs is the same as in Table 2; total numbers of verbs with final *ḍa* or *ḍa* are indicated but only those assumed to contain the root in question are actually listed.

As is the case with compounds containing *ga*, the number of frozen compounds containing *ḍa* or *ḍa* is much greater in eastern languages than in western

TABLE 3: *Distribution of baḡa(-l), baḡa(-l), etc., 'bite'*

Dyirbal ¹	baḡa-l	'chew, bite'
Yidiṇ ¹	baḡa-l	'bite'
Pitta-Pitta ¹	patya	'bite'
Wik ¹ (CYP)	patya	'bite'
Tjaapukay ¹ (CYP)	paya	'bite'
Umpila ¹ (CYP)	patha-l	'bite'
Yagir ²	iṇḡa	'bite' (-ḡa only)
Warlpiri ³	paja-rni	'taste, savour'
Yinyjibarndi ⁴	pa:	'bite' (see note Table 1)
Walmartjari ⁴	paja-rr	'bite'
Ngaluma ⁴	paca	'eat, bite'

Note: See Hale (1964:258) for lenition in Northern Paman; I am uncertain what the conditions for lenition in Southern Paman languages like Tjaapukay may be. 1 = Queensland, 2 = New South Wales, 3 = Northern Territory, 4 = Western Australia, CYP = Cape York Peninsula.

TABLE 4: *Verbs with Final -ḡa or -ḡa Assumed to Reflect 'eat, do with mouth'*

Dyirbal	baḡa-l	'chew, bite'
	buṛṇḡa-l	'eat vegetable food'
	guṇḡa-l	'drink'
	nuṇḡa-l	'kiss'
	maṇḡa-y	'eat vegetable food'
Yidiṇ	baḡa-l	'bite'
	baṇḡa-l	'try, taste'
	maḡa-n	'suck, chew'

TABLE 4--Continued

Guugu Yimidhirr	buny \dot{d} ya-l	'lick, drink'
	dyidya-l	'lick, drink'
	nyuny \dot{d} ya-l	'lick, drink'
Ngiyambaa	\dot{d} u \dot{d} a-l	'suck'
	\dot{d} i:n \dot{d} a-l	'lick'
	ma \dot{d} a-l	'chew'
	ma \dot{d} a-y	'be after some-one sexually'
	giga \dot{d} a-y	'eat one's fill'

Note: In Ngiyambaa, some compounding is still productive, e.g., *wana \dot{d} a-y* 'leave someone to eat', *wana+ \dot{d} a-*.

ones, pointing again to the more recent productivity of compounding involving this root in the east. The extensive distribution of 'bite' suggests an historical level more remote than that to which the geographically more restricted, frozen compounds may be attributed.

It is unclear whether any non-PN languages have cognates of \dot{d} a~ \dot{d} a. Maṇarayi *ja* 'eat' (initial lamino-palatal stop), Jawoṁ *jara* and *jaṇ* (alternative stem forms of 'eat'), and Ngarinyin verb particle *minjal* 'eat' are suggestive enough to demand close examination.²⁰ At present, due to insufficient reconstructive and comparative work in both non-PN and PN, little more can be said about these non-PN forms except that they are strikingly similar to PN ones.

The third element I claim is an old auxiliary root is more controversial than *ga* or \dot{d} a~ \dot{d} a. This is the form *-n(a)*, frequent in PN languages as the final element of verbs of motion and stance. Table 5 lists

TABLE 5: Verbs with Final -na in Some or All
Paradigmatic Forms

Bandjalang 15/298	dja:na	'stand up, stop'
	yana	'go'
	ye:na	'live, dwell'
	yuna	'lie down'
	wana	'leave, abandon, let go'
	-wan-a	'become, be'
	bina	'fall'
	-bin-a	'go'
Dyirbal 7/226	ɟana-y	'stand'
	yana	'go'
	ŋina-y	'sit, stay'
Yidiŋ 8/221	ɟana-n	'stand'
	wuna-n	'lie down, sleep'
	ŋina-n	'sit'

these verbs for some languages. Certain verbs recur cross-linguistically (*yana* 'go', *ɟana~ɟa:na* 'stand', *wuna~yuna* 'lie') suggesting that throughout much of eastern PN these can be attributed to retention from a common proto-language, perhaps with subsequent remodelling within particular languages. Cognates of these many PN languages have final -n; these are considered members of an *n* conjugation (e.g., Nyawaygi *ya-n* 'go'). Numbers of *n* conjugation verbs are generally small (as low as three), but they generally include one or two transitives, such as Nyawaygi *maa-n* 'hold in hand'. This seems quite at odds with an assumed historical function of *n(a)* as

intransitive auxiliary. An explanation is suggested for this below.

Verbs containing *-n(a)* have not been previously considered as possible earlier compounds. They have been regarded as earlier monosyllables which underwent reshaping and incrementation. The fact that known monosyllabic roots such as *wu-* 'lie' or *nhi(i)-* 'sit' occur with *-n(a)* in many modern languages has been cited as evidence that they originally belonged to the *n* conjugation, and in some languages lost their conjugation marker:

Very many languages have disyllabic roots *nyina-y* 'sit', *jana-y* 'stand' and *guna--wuna-y* 'lie'; the second syllable here certainly suggests that the original monosyllabic roots belonged to the *n* conjugation. (Dixon 1980:487)

The historical segmentability of verbs like *wu-n(a)*, *ḍa-n(a)*, *ya-n(a)* is not disputed: the widespread occurrence of at least *wu-yu* 'sleep' and *wa~ya~ga* 'go' indicates that a historical boundary must be recognized within the forms. The issue is the historical analysis of *-n(a)*. If *n(a)* is regarded only as historical conjugation marker, a mere phonological residue without grammatical function, it is impossible to explain its frequent occurrence with certain intransitive verbs and its paradigmatic distribution in some eastern languages such as Bandjalang.

Bandjalang provides evidence for *-n(a)* as lexico-grammatical formative. (Information comes from Crowley 1978.) Most of the Bandjalang verbs with final *-na* are listed in Table 5. The verb 'die, become extinct' is given in the glossary as both *bala:na* and *bala:rwa*; these have a common initial element, but its underlying shape is obscure. There

are three polysyllabic Bandjalang verbs (*bagulawana* 'use a boat', *djilamuna* 'float', *manga:lina* 'join together') for which no etymologies are obvious, and it is not clear that *-na* should be segmented in any of these. Besides *wana* 'leave, let go' there is an enclitic verb base *-wan-a* 'become, be'. In Bandjalang *-wa* is synchronically analyzable and productive as a root meaning 'go' (see also Ngiyambaa above), while *-na* recurs with motion and stance verbs. It is likely that enclitic *-wan-a* and *wana* are combinations of **wa+na*, and have diverged semantically due to functional specialization and grammaticalization of *-wan-a*.

In Bandjalang, few original monosyllables remain: the majority have been reshaped. Reshaping of monosyllables is intimately connected with the question of the functions of *-na*, which occurs finally in that form and nonfinally as *-n-*.

Crowley (1978:97-101) shows that certain ones of a number of irregular (originally monosyllabic) Bandjalang verbs were extended by the addition of two morphemes in different paradigmatic forms. One increment, *-ga-*, was added in present, future, and past indefinite forms, and the second, *-bi(:)-*, in intensive, purposive, participle, and causative forms. The irregular verbs which take these increments (shown here with *-ga-*) are *ga:nga* 'take', *ɲaŋga* 'do what' (<*ɲaŋ* 'what'), *yiŋga* 'bite', *buŋga* 'kill, hit', *baŋga* 'kick', *duŋga* 'cry', *biŋga* 'fall', *ye:nga* 'sit, stay', *yaŋga* 'go', *-wenga* inchoative, *ba:nga* 'die', *ba:nga* 'emerge'. All of these verbs show nasal+*ga*. The last six with *n+ga* are exactly those verbs which in certain forms (e.g., imperative) have final *-na*: *yana* 'go', etc. Thus full *-na* of such forms is to be identified with *-n-* in *-n-ga*. In particular (see the

paradigms, Crowley 1978:98), these verbs have *-nga* in future, present, past indefinite, and *-n-bi(:)-* in intensitive and causative forms. Stem forms used in subordinate (relative and time) clauses lack the nasal, and for some of these verbs, the subordinate stem optionally or obligatorily adds *-ya*. Thus the subordinate form of 'sit' is *ye:ya*, that of 'emerge' *ba:ya*. These subordinate forms provide strong evidence first for the (historical) segmentability of initial CV roots *ye:*, etc., and second, for an original grammatical function of formative *-n(a)* which appears in certain parts of the paradigm but not others.

The irregular verbs like *ga:ŋga* 'take', *yŋga* 'bite', and *bumga* 'hit' never occur without final nasal *-ŋ-* or *-m-* in any paradigmatic forms. This suggests that these nasals, whatever their historical source, are not identifiable with *n(a)*.

The distribution of *-n(a)* in Bandjalang is, I suggest, consistent with the view that this is an old auxiliary. Its continuing presence in the modern imperative forms indicates that the earlier imperative construction for these verbs consisted of ROOT+AUXILIARY. Gumbaynggir paradigms (Eades 1979:301) also provide evidence of originally grammatical functions of *-n(a)*.

Guugu Yimidhirr (Haviland 1979) is one of the languages which has a small number of transitive verbs in its *n* conjugation. Paradigmatic evidence from Guugu Yimidhirr, however, indicates that not all modern occurrences of *-n(a)* are attributable to the same historical source. Some particulars of Guugu Yimidhirr conjugations (from Haviland 1979) are given to show that not all verbs of this class contain the same morpheme, either historically or synchronically.

There are three major and two minor conjugations in Guugu Yimidhirr. The major classes are L, R, and V: (long vowel characterizes the nonpast form of verbs in this class); minor classes are MA and NA, so called because formatives MA and NA each must be added to a small number of monosyllabic roots to create paradigmatic forms. There are only three MA conjugation verbs. These (shown with nonpast forms of MA) are *nha-maa* 'see', *wu-maa* 'give', and *wal-maa* 'rise, get up, ascend'. The NA conjugation verbs are *wu-naa* 'lie, sleep, exist', *maa-naa* 'get, marry' and verbalizing formative *-ma-naa* 'cause'. (The initial root of *wu-* 'sleep' is cognate with monosyllables distributed all over Australia many of which have been incremented, e.g., Bandjalang *yu-na*, Nalakan *yo*, etc.) The paradigmatic forms of *wu-naa* 'lie' are:

Nonpast	<i>wu-naa</i>
Past	<i>wu-nay</i>
Imperative	<i>wu-naa</i>
Purposive	<i>wu-na-nhu</i> (purposive suffix - <i>nhu</i>)

The NA transitives 'get' and 'cause', however, have imperative suffix *-rraa* and past suffix *-ni*. As for other monosyllabic roots in Guugu Yimidhirr, certain inflections for all NA verbs are built on a stem consisting of root plus additional formative. The two verbs 'get' and 'cause' have stem formative *-ni-*, but *wu-naa* has stem formative *-na-*. Thus the two transitive NA verbs have the same paradigmatic forms, while intransitive *wu-naa* has forms different from these. The conclusion must be that the NA formative of the transitives is not the same as that of the intransitive. In other languages where both transitives and

intransitives are now within small *n*-conjugations, it is likely that the historical source of *n(a)* was not the same for all the verbs. (This seems to be the situation in Gumbaynggir also, where *ma:(n)* 'take' has some paradigmatic forms which differ from those of *ya(:)(n)* 'go'. See Eades 1979:301.)

Haviland (1979:89) notes that speakers of Guugu Yimidhirr are reanalyzing and regularizing these minor conjugations. Younger speakers often treat *wu-naa* 'lie' paradigmatically as if it were a regular V: conjugation verb *wunaa*. For example, they use imperative *wunii*, appropriate for a V: conjugation verb but considered incorrect by older speakers.

The remnant MA and NA conjugations of Guugu Yimidhirr provide very important direct evidence for the hypothesis that the *n(a)* of motion-stance verbs was historically an auxiliary formative. It has been reanalyzed as part of extended verb roots in some modern languages and reduced to mere connective element in others. This provides an alternative explanation for the distribution of *n(a)*, and is consistent with other evidence presented that compounding is archaic in PN.

4. CONCLUSIONS. Compound structures in early Australian provide an analogical model for the extensive restructuring of monosyllables known to have taken place in Australian languages. The suggestion (Dixon 1980:418) that this reshaping accounts for some of the modern bisyllables and polysyllables seems incontrovertible; the idea that some of the reshaped verbs may consist of root plus old inflection may be correct but needs to be shown by reconstruction. Even if the source of increments can be shown, the question remains as to what served as model for the

reshaping, since there is no inherent reason that monosyllables should be eliminated from languages as they evidently have been all over Australia. I suggest that the compound structures of ROOT+AUXILIARY typical of some modern non-PN languages were also found in early Australian. These were (minimally) bisyllabic verbal constructions which served as model for the reshaping of monosyllabic roots, and progressively became frozen at different times in the different languages. Probably a good number of old auxiliary roots can be detected by comparative work, under the assumption of the existence of earlier compound structures. What is now required is the beginning of careful extended comparison, and I think this may in many cases be most fruitfully done between languages which are recognizable as very closely related to each other. For example, comparison within a single dialect group, and then between evidently closely related ones, would begin perhaps to produce the regular phonological and morphological correspondences that are needed to establish the extent of earlier compounding.

One of the intriguing things about Australian languages is that strikingly similar form-meaning pairings are found all around the continent. These similar forms often do not merely suggest or resemble one another, but are actually identical in form and often, at least to a great extent, in phonetic detail. This sometimes may be disheartening, because it makes apparent diffusion harder to distinguish from common retention. It is therefore all the more necessary to search carefully for correspondences between forms whose functions are understood, and it is also desirable to be able to carry on this search at boundaries and within morphemes that represent

different apparent historical levels of development. The recognition that some PN verb structures, as well as non-PN ones, were complex provides some ideal environments for this search. Of course, it must be recognized that as old compound verb constructions were in the process of becoming fossilized in the various languages, many diverse developments were taking place; for example, some PN languages completely revamped their auxiliary systems, others at some time in the past generalized certain CV roots as auxiliaries, and so forth. Important evidence for earlier states of affairs will probably be found in small, isolated residues, as Indo-European historical linguistics has already shown. For instance, a tiny pocket of several verb forms may tell us more about an earlier stage, and be more important for comparative purposes, than large numbers of regularized or levelled forms within languages.

It is likely that extensive comparison will result in considerable revision of some current ideas about relationship of PN to non-PN languages, and of the typological similarities between extant languages and prototypes. Although there is no evidence to contradict the view that eastern PN languages like Yidiṁ reflect an older situation in the lack of cross-reference of major NPs, nevertheless the present vital and generally morphologically transparent auxiliary systems of many non-PN languages appear to reflect an older situation in comparison with languages like Yidiṁ and Dyirbal, where archaic compound verb structures have become fossilized. Comparison of the verb structures will demand simultaneous attention to productive and fossilized verbal derivational forms (little has been said about the latter here), and to inflectional categories, as well as to

the verb roots themselves. The task of comparing initial elements promises to be even more demanding, because these are more diverse than final roots, but this task can be more confidently undertaken in light of the demonstrated segmentability of verbs from an historical point of view.

Finally, this comparative work will clarify the extent to which particular verb roots are found in non-PN as well as PN languages. I suggested that the conjugation markers are structures whose comparability to elements in non-PN languages remains to be determined. This determination should make clear whether or not the conjugation markers are to be regarded as innovations in PN (subsequently lost from some of the languages), which bespeaks a period of separate PN development. If so, there may be reason to think in terms of 'proto-PN' distinct from the (various) proto-non-PN languages. I have observed that certain archaic frozen compounds like *baga-* are common in widely separated PN languages but are not (to the best of my present knowledge) found in non-PN. There is more doubt about the distribution of *ḍa~ḍa* 'eat', which may occur in non-PN. Certain verb roots, among them some of the Common Australian ones first identified by Capell, are undeniably found in non-PN as well as PN. Whether this is due to retention from a very remote common ancestor, or diffusion at an early period, remains to be determined (and no doubt light will be shed on this by the study of conjugation markers and verbal augments in PN and non-PN). But clearly an intensified search for shared verb roots, both as independent roots and compounding auxiliaries, will help to clarify whether such sharing may reflect common genetic origins of PN and non-PN at a remote period, or simply extensive diffusion

from a very early date.

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SYDNEY UNIVERSITY

NOTES

¹For example, Capell (1956:79) regards Western Desert as closer to Common Australian than some other languages in that it has retained a degree of flexibility in ordering of elements that compose the word, but does not directly oppose PN to non-PN in this respect. Dixon (1980:226) sees a direct contrast between 'least-innovatory' PN and 'most-innovatory' non-PN, compared to an assumed Australian prototype.

²Hudson (1978) uses voiceless stop symbols *p*, *t*,

k, etc. There is no voiced-voiceless or tense-lax stop contrast in most Australian languages, so that *p* of Hudson's orthography is equivalent to *b* of other orthographies.

³Conjugation markers in all languages where they occur are set off by a hyphen.

⁴Given these proposed sources of polysyllables in PN, and the presence of many monosyllables in non-PN, it is puzzling to find statements such as the following, that "languages in the non-PN area are highly innovative . . . having developed complex verbal structures [whereas] PN languages are in comparison rather conservative" (Dixon 1980:256). This seems to be based on assumptions about the typological structure of ancestral forms quite opposite to the notions embodied in the suggested four processes of remodelling of monosyllables.

⁵If both subject and object are third person, then a different prefix is required.

⁶Underlining is used to mark retroflex segments.

⁷Maṇarayī has an avoidance style characterized, among other things, by the substitution for everyday lexemes of special ones used only in avoidance style. Avoidance style *-galañ+bu-* replaces everyday *-galg+ma-* and a few other verbs relating to spearing.

⁸Lenition of *b* > *w* is regular here after vowels.

⁹Lenition *j* > *y* is regular here postvocally.

¹⁰The final stop of the noun stem is converted to the homorganic nasal by a phonological process which is not very frequent at this boundary type, but is obligatory at the boundary between noun and non-zero case or number suffix. This process is infrequent at this boundary because very few nouns are compounded in this fashion.

¹¹Different paradigmatically from *na* 'see'.

¹²Different paradigmatically from *ru* 'cry'.

¹³The segment *b* tenses to *p* at this boundary.

¹⁴A less common verb structure in Australia than the two types described has been termed 'phrasal'. Phrasal constructions have been identified in some PN, especially Cape York, languages; see, e.g., Breen (1976:251) on Gog-Nar. These are complex structures like *yel yem*, literally 'eye-throws' = looks. In some respects these appear to be like noun-incorporating structures, and indeed are unlike compounding in non-PN in that nominals are principal constituents of the verbal phrase.

¹⁵These include Maṇarayi, Ṇalakan, Rembarṇa, Jawoṇ, Ṇalkbon, Ngandi, Gunwinggu, Ngarinyin, Alawa, Bunaba, Gupapuyṇu, Warndarang, Mara.

¹⁶Sutton (1976:108) records *ka* 'hit' for Mbara in southern Cape York, but in this initial-dropping area where historical phonological developments include loss of C_1V_1 , it is quite possible that this form continues proto-Paman **paka-* and not an independent monosyllable. (A number of Cape York languages, incidently, have other frozen compounds with auxiliary *-ga* (*-ka*) 'spear', e.g., Wik *yaka-* 'cut' [Hale 1976c:55].)

¹⁷Result modifier *ga-* 'break' could be etymologically related to *ga* 'spear', while *bun-* 'change' is probably related historically to Common Australian **bu* 'hit' and object-oriented modifier *ṇa* 'test' to **ṇa* 'eat'.

¹⁸Donaldson writes this with initial morpho-phoneme, since $\underline{d}\sim\bar{d}$ in some environments.

¹⁹Many PN languages have words for or relating to 'mouth' which resemble $\underline{d}\underline{a}\sim\bar{d}\underline{a}$. Dixon (1980:407) proposes proto-Australian *DHaw(a)~DHaa* 'mouth'. This

form is based on similarities among languages and is not a reconstruction. In some languages a few verbs seem to contain a nominal root 'mouth' in a type of noun-incorporating or instrumental-prefixing fashion; Dyirbal (*da:*)*wurgan* 'yawn', Walmatjari *ja-nganyja* 'bite' (< *nganyja* 'eat', perhaps incremented Common Australian monosyllable *ŋa* 'eat'). Close comparison of greater numbers of related noun and verb forms may shed light upon synchronic and historical derivational processes in the various languages.

²⁰The vegetable noun class marker *mi-* occurs in a number of PN languages (Dixon 1980:273), and similar ones occur in some non-PN languages (e.g., *mu-* in Nalakan). Such markers are relatable to some recurrent forms of nouns meaning 'vegetable food'. One Ngarinyin word for 'vegetable food' is *me*; if the first syllable of the verb particle *minjal* is related to this word, the second syllable may be relatable to the verb root 'eat'.

APPENDIX

This appendix shows the verb lists for Bandjalang, Dyirbal, Yidiṇ, Pitta-Pitta, and Walmatjari (all PN) from which comparative materials were drawn. Guugu Yimidhirr glossary is to be found in Haviland 1979. Donaldson is putting together an extensive Ngiyambaa glossary.

Orthographic conventions are not completely standardized for Australian languages even where this would be possible. Most Australian languages have no phonemic contrast for tense versus lax (or voiceless versus voiced) stops in any position, but writers have variously chosen to use voiceless or voiced symbols, depending on the language. Ṽalakan is the only language cited which has significant tense-lax opposition. I use tense stops *p*, *t*, *t̪*, *č*, *k* and lax *b*, *d*, *d̪*, *j*, *g*. For some languages the retroflex series is marked by underlining; Hudson uses combinations of *rt*, *rl*, *rn* to represent retroflex consonants. The representation of palatal consonants is various. For Maṅarayi and Ṽalakan, I use *j* and *ñ* for lamino-palatals; Dixon and Crowley use *ɟ* and *ɲ* in Dyirbal, Yidiṇ, and Bandjalang; Blake uses *tʷ* and *nʷ* in Pitta-Pitta, and Hudson uses *j*, *ny*, *ly* in Walmatjari. Again, for velar nasal I use *ŋ* along with Dixon, Crowley, and Blake, but Hudson prefers the digraph *ng*. For retroflex rhotic I use *ɽ*, but Dixon uses *ɹ*, and Hudson contrasts retroflex *r* with vibrant *rr*. Of the languages here, only Pitta-Pitta and Ngiyambaa have a lamino-dental series, with diacritic thus: *t̪*. For the palatal semivowel Dixon, Blake, Hudson and I use *y*; Crowley uses *y* in the grammar but *j* in the glossary. Crowley's usage for some consonants also differs in grammatical description and glossary: he

uses *q̣* and *ɲ* for lamino-palatals in the grammatical description, but *dj* and *nj* in the glossary. Also, Crowley's system of vowel transcription is different in grammatical description and glossary. One of the main differences is that in the description (1978: 13-21) four vowels are identified, *i*, *e*, *u*, and *a*, but in the glossary there is additionally a vowel *o*. I can find no explanation of this change in orthography.

For those unfamiliar with PN languages, it is worthwhile to cite briefly the kind of *prima facie* evidence which suggests the historical complexity of synchronically monomorphemic verb roots, and further, the identifiability of particular compounding roots.

There are 929 forms in the Yidiɲ glossary (Dixon 1977), 220 verbs and 708 other parts of speech. If we compare the occurrence of the most frequent final syllables in verbs with the occurrence of the same syllables finally in other parts of speech, we find their observed frequency in verbs is greater than that which would be predicted by the null hypothesis. Yidiɲ roots can only end in *m*, *n*, *ɲ*, *l*, *r*, *ɾ*, *y* or a vowel. All verb roots are vowel-final. In making the comparisons between verbs versus other parts of speech, I have allowed in the 'other' category all those forms which end in the same final syllable as occur in the verb category, *plus* any final sonorant; thus in the 'other' category, final syllables *ba*, *bar*, *bay*, *bal*, *baɾ*, and so forth are all counted, and compared to the frequency of verb-final *ba*. Even thus prejudicing the data against the significance of the rate of final *ba* and the other four most frequent finals in verbs, we find their higher frequency is statistically significant. The five most frequent

verb-final syllables are *ba*, *ga*, *qi*, *da*, and *bi*. The only factor which may skew the results in the case of one final syllable is that, besides occurring as obligatory final in some verbs, *-qi* is a productive intransitivizer. No such factor exists in the other cases. The following chart shows actual numbers of final syllables in 'verb' and 'other' categories, expected numbers (E) of the syllable verb-finally, calculated on the basis of its occurrence in other parts of speech (in every case its actual frequency in verbs is higher than expected), and the level of significance of its occurrence in verbs calculated with one degree of freedom (in every case this figure is under the 5 percent level, indicating that there is minimally less than one chance in 20 that the frequencies of occurrence could be due to chance; in most cases the probabilities are far smaller).

Syllable	Verbs (n=221)	Other (n=708)	(E)xpected in Verbs	χ^2	Level of Signifi- cance
ba	31	48	14.96	17.00	< .10%
ga	28	60	18.72	5.55	<5.00%
qi	22	15	4.68	64.80	< .01%
da	20	13	4.07	64.00	< .01%
bi	16	28	8.73	5.44	<5.00%

In Dyirbal, where there are 226 verbs in the glossary, frequencies of most common final syllables in verbs are much the same as in Yidiñ, except that *ga* is slightly less frequent, and *qi* considerably so. The numbers are *ba* = 47, *ga* = 25, *qi* = 8, *da* = 16, *bi* = 22; see verbs listed below.

The tests in Yidiñ similarly show that certain

final syllables occur in verbs with greater than expected frequency. Similar tests were performed (with similar results) on other languages, but I will not display these figures here. But is there also evidence of a statistically significant form-meaning correspondence for some of these final syllables? Let us take the assumed compounding auxiliaries discussed in this paper, *ga* and *ḡa-ḡa*. Relevant questions are: how many of the verbs ending in these syllables in each language have meanings relating to piercing or spearing on the one hand, or doing with the mouth on the other, and how does this compare with frequencies of occurrence of these meanings over all other verbs?

Examining all Dyirbal verbs which end in *ga* ($n = 25$), we have mentioned (Table 2) that 10 of these, or 40 percent, have to do with spearing. Allowing approximately the same semantic tolerance that is permitted in judging the meanings of verbs ending in *ga* to have to do with piercing or spearing, we find there are only 16 other verbs in the entire remainder of the verb list of this semantic description, amounting to 7.9 percent of the remainder. These verbs are *babil* 'slice, peel', *gibay* 'scratch', *gibal* 'scratch', *ḡurmbaybal* 'rub', *ḡulbal* 'split with a tomahawk', *minbal* 'hit with long implement', *ḡanbal* 'pierce, dig, spear', *nudil* 'cut, sever', *dudal* 'mash with stone', *yidil* 'rub', *bunḡul* 'hit with long flexible object', *baḡil* 'split', *daliy* 'deliver blow', *bundalay* 'fight', *ḡiral* 'poke' *baḡal* 'punch'. There are 6 *ba* verbs that must be allowed given the degree of semantic freedom; there are overall 36 *ba* verbs, so that these represent 16.66 percent of verbs of that final syllable. This figure, though not as large as the 40 percent of *ga* verbs, is significant

enough to warrant further investigation of the semantics of *ba*. (Note there is a strong correlation of *ba* with transitivity in Bandjalang, Dyirbal, Yidiñ, and Pitta-Pitta.) If 40 percent of the remaining verbs (as is the case for the *ga* verbs) were associated with a meaning 'spear', there would be additionally 80 such verbs in the remaining vocabulary instead of 16. The χ^2 value of the form-meaning association in *ga* verbs is 60.84, <.01 percent probability of null hypothesis.

In Yidiñ, of 28 *ga* verbs at least 5, or about 18 percent, have to do with spearing or related motion. Over the rest of the verbs, there are an additional 13 verbs which are semantically similar, (or 6.02 percent), while 35 would be expected. These verbs are *mulbin* 'cut', *yubin* 'rub', *bulbal* 'grind', *gibal* 'scrape', *dandar* 'rub', *gundal* 'cut', *yangin* 'split, slice, tear', *bunḡan* 'strike, beat, kill', *burḡanbaḡal* 'dig', *ḡulal* 'dig', *yaga+ḡaral* 'split in half' (a compound, *ḡaral* as independent verb means 'erect'), *baḡal* 'deliver blow', *duyil* 'fight with spears'. There is no strong association of any other auxiliary with these meanings. The χ^2 value of the *ga* form-meaning association in Yidiñ is 13.83, <.1 percent probability. (In Yidiñ, 'paint pattern' is a compound containing *mulbin* 'cut', *gamaḡ+mulbin*. In Dyirbal, 'paint' is *baḡal*, a *ga* verb which I have included among those having to do with spearing and piercing. Here as well as in non-PN languages I know, there is a recurrent semantic association between 'spearing' or 'piercing' and 'painting', also now with 'writing'.)

In Bandjalang, few if any of the 30 *ga* verbs seem to contain the auxiliary in question. We already know that *ga* was added as increment to extend

monosyllables (Crowley 1978:97-101). It seems likely that the Bandjatang *ga* increment cannot be semantically identified with the 'spear' auxiliary. In Pitta-Pitta, possibly only 3 of the 25 *ka* verbs seem to contain the auxiliary in question. In many others, *ka* seems related to motion (in transitive and intransitive verbs; see below *ɣarrka* 'follow', *ɲaŋka* 'stay, sit', *ɬarrka* 'stand', *ɬuka* 'take', *kaŋka* 'bring'). In Walmatjari, the reader will find that *ka* is always preceded by a nasal, *-ŋka*, and appears to be an increment to which no lexical meaning can be assigned, nor its historical identity ascertained without further work.

Turning to *ɖa-ɖa*, I will briefly summarize numbers of verbs with that final syllable relating to 'do with mouth, eat', and compare them to the occurrence of verbs of similar meaning over entire vocabularies in several languages. In Dyirbal there are 16 *ɖa* verbs; conservatively, 5 of them continue the auxiliary in question (*baɖa-l* 'chew, bite', *buɣɣɖa-l* 'eat vegetable food', *guɣɖa-l* 'drink', *ɲuɣɖa-l* 'kiss', *maɣɖa-y* 'eat vegetable food'), and probably a sixth does as well (*maɣɖa-l* 'point out'), since in many Australian groups a typical pointing gesture is made by pursing and pointing the lips. Thus about 37.5 percent of *ɖa* verbs contain the auxiliary. Over the rest of the vocabulary, 11 other verbs have similar meanings. These are: *ɣubiɣ* 'eat meat', *gimbiɭ* 'blow', *nuɣbiɭ* 'test, try', *guɣɖuɭ* 'bite', *buɣay* 'swallow', *ɖaŋay* 'eat vegetable food', *maymiɣ* 'visit for food', *yulmiɣ* 'eat', *ɖuɣay* 'drink', *bayal* 'sing', and *buɖu+buyal* 'puff'. These constitute about 5 percent of the remaining verbs. The χ^2 value of the association between *ɖa* and meanings having to do with the mouth or eating is about 57, or $<.01$

percent probability of null hypothesis.

In Yidiñ, 3 of 14 *qa* verbs (*baqa-l* 'bite', *maqa-n* 'suck, chew', *banqa-l* 'try to do, taste') contain the auxiliary. Of the remaining *qa* verbs, at least *giqa-n* 'do quickly' is transparently a verbalization of the adjective *giqa* 'quick'. Therefore *qa* verbs which contain the auxiliary relating to 'do with mouth' constitute about 23 percent of the remaining 13 *qa* verbs. Over the remaining verbs in the lexicon, there are an additional 11 that have related meanings. These are: *daraban* 'rinse mouth', *buybuṣ* 'blow, spit out', *gilqul* 'bite', *bugan* 'eat', (*qa:*)*wurgan* 'yawn', *mangan* 'laugh, smile', *gaman* 'vomit', *gawal+qanan* 'call out' (compound), *guybil+qanan* 'whistle' (compound), *wuṇan* 'drink, swallow', *biyal* 'blow'. These comprise about 5.21 percent of remaining verbs; notice here also there is no strong association with any particular final syllable. The χ^2 value of the *qa*-meaning correspondence is 27.6, <1 percent. One fact that does emerge is that final syllable *ya* is a strong candidate for former auxiliary status in Dyirbal and Yidiñ. It occurs in Yidiñ *biyal* 'blow, push', and the compound *buḍu+biyal* 'blow off bad luck'. The root *ya* occurs in Ngiyambaa as compounding auxiliary 'speak'. The suggestiveness of the association between shape *ya* and a meaning relating to speaking or blowing/puffing is strengthened when we notice Dyirbal *bayal* 'sing', *buyal* 'blow, puff', *diranayal* 'threaten', also compounds *buḍu+buyal* and *wuṇḍurm+buyal* 'blow, puff'. (See also Bandjalang *wi:ya* 'say, speak to, tell', *jarbaija* 'betroth', also *wei:ja* 'say, tell' which may be a variant of *wi:ya*.) In short, *ya* seems to be a former compounding auxiliary within at least a subarea of PN; wider correspondences may emerge from further

comparison.

The association between the putative auxiliary $n(a)$ and intransitive verbs of motion and stance is extremely high, as least in eastern PN languages (Dyirbal, Yidiñ, Bandjalang, Guugu Yimidhirr, etc.). Since absolute numbers of such verbs are low, I leave the reader to check these in the following verb lists.

These facts show beyond reasonable doubt that the outlines of an extremely ancient compounding system can be discerned in eastern PN at least. In western PN languages such as Walmatjari, numbers of possible final syllables are limited, and the development of those verb systems has evidently been somewhat different. Nevertheless, the strength of eastern PN evidence is considerable, and shows that productive compounding continued in those languages until recent times. More work is required to illuminate the extent of former compounding in PN at different historical levels.

Bandjalang

Phonological inventory (Crowley 1978:7):

	Labial	Apical	Laminal	Dorsal
Obstruent	b	d	ɟ	g
Nasal	m	n	ɲ	ŋ
Lateral		l		
Rhotic		r		
Semivowel			y	w
Vowels high			i(:)	u(:)
mid			e(:)	
low				a(:)

Possible CV final syllables:*

bi	di	ɟi	gi	mi†	ni	ɲi†	ŋi†	li	ri	yi	wi†
be†	de	ɟe	ge	me†	ne	ɲe†	ŋe	le	re	ye	we
ba	da	ɟa	ga	ma	na	ɲa†	ŋa	la	ra	ya	wa
bu†	du†	ɟu	gu†	mu†	nu†	ɲu†	ŋu†	lu†	ru†	yu†	wu†

Total verbs listed here = 229 (does not exhaust all verbs in Crowley 1978; see note relating to *ma* verbs).

-bi = 3		burba	brush, wave
bu:mbi	blow, smoke	dalba	throw away
jerbi	chant, sing	di:ba	sew up
ɲi:mbi	ask for, request	djaba	help
-ba = 37		djanba	wash
-ba	causative, de-	djigarba	sneeze
	locutive	djulba	jump
ba:djba	roar	djureiba	row, paddle
balaba	blow at	dulba	kill by squeezing
baluba	put out fire	eiba	say ei!

*For each language listed in the Appendix, possible CV final syllables that do not in fact occur are noted by a dagger (†).

gaiba	put inside	djinde	carry, take
gje:rba	spill	djuli:nde	wade (alternately dju:li)
guiba	roast		
gundi:ba	go yonder (<gunde:)	gaijinde	swim
guni:ba	make do (<guni 'do')	gawande	run with
		janinde	go with
gu:rba	hide	jeininde	go with, carry
gurba	precede	juibande	move, shift
janbi:ba	send, make go	-nde	carry (enclitic)
jareŋba	scream, make noise	nja:djinde	find
ji:ba	become stuck	nundadjinde	look after, take care of
jogombeba	say no, refuse		
maŋurba	light (fire)	wande	climb, go up
mi:umba	show, point to	-(n)da = 15	
naba	hit, strike	bagunda	cut up
niŋba	make quiet (<niŋ 'quiet')	bi:nda	bury
		bu:nda	singe
njariba	call, give name to	di:nda	carry, take
walba	hang up	djinda	shove
wandanba	make strong	djumbi:nda	wash away
woba	look for, search here and there	djunda	push
wu:ba	tell, order, command	ginda	do, make
		jaŋanda	bring here
wu:rba	hide (intr.)	jandi:nda	take along
ŋaiju:rba	groan	jenda	sit with, stay with
ŋa:rba	growl (cf. ŋu:rba1 'growl', noun)	maganda	meet, encounter, catch up
		manda	scratch, pinch
-(n)di = 4		minda	cut through
bani:ndi	fall	ŋunda	wait
dandi	embrace		
junamandi	leave (<ju+na+ma)	-di = 1	
ŋagi:ndi	run away	gainɗi	lend
-(n)de = 13		-de = 5	
bande	smell	badje	hit
ba:nde	arrive	burdje	become hurt

Prehistory of some Australian verbs

maḡe	stick, adhere	ye:nga	sit, stay
minḡe	laugh at	yanga	go
waḡe	speak, tell	-wenga	inchoative
-ḡa = 4		bala:nga	die
biḡa	split, cut up	ba:nga	emerge
ga:ḡa	pursue	ba:ga	break
gaḡa	ache	bouga	comb
mibanḡa	be jealous of	bulbiḡa	drum (<bulbiḡ 'drum', noun)
-ḡu = 1		bunjuga	discuss
buliḡu	bump	burga	change
-ḡi = 3		dalgaiga	dry (<dalgai 'dry', adj.)
guru:gi	swell	djalga	clash, knock
mi:uḡgi	be born	djuga	drink
numbuḡgi	return, go back	gaḡga	call, shout
-ḡe = 10		galga	chop, split, cut up
baḡgaḡe	crackle	ge:ga	come down, descend
bara:njbunḡe	become sore	guiga	hunt
djambagḡe	try (sic)	guri:ḡga	happen long ago (<guri: 'long ago')
djaḡe	kneel	ju:gurga	await
djiḡe	be how	ma:ga	light fire
djumḡe	leak, drip	naga	whisper
gaḡḡe	swim	njaḡga	do with what (<njaḡ 'what')
giḡḡe	act thus	wi:rga	steal
ja:ḡe	help		
njaḡḡe	shut		
-ḡa = 30		-ma = 62*	
ga:ḡga	take	baḡgilima	shoot
naḡga	doubt		
yiḡga	bite		
buḡga	hit, kill		
baḡga	kick		
duḡga	cry		
biḡga	fall		

*Many -ma verbs have trans-
parent or partly transparent
etymology; for example, djerar-
burma 'mix, mingle' contains
the root djerar 'one'. Consult
glossary in Crowley 1978.

ba:nbinjma	arouse	gumbunjma	finish
banma	put on	guniqma	bake
baribunma	dream	jaburma	do once
ba:rima	cover up	jaɾmajaɾma	swear
beleima	separate	janbi:njma	make go
bilinduma	cover with feathers (bilin)	ja:rma	copy, imitate
binbi:njma	drop, let fall	jaruma	swim
bogolma	make good	ji:lama	go where
buma	kill, strike	junama	put, place
dagaima	kill	ma	go, make, do
dandurma	make strong	manjaima	feel
diraɾurma	fill	maruganma	initiate
dabi:njma	feed	mi:lma	capture
djaɾma	make bad, spoil, ruin, destroy	muguma	shut, close
djaɾuima	annoy, make angry (<djaɾui 'enemy')	mujuma	caulk, stop
dja:nama	make stand	nama	hold, grasp
djerarburma	mix, mingle	ɲagilima	turn into
djunbarma	make flyblown (<djunbar 'blow- fly')	ɲaranjma	ask
djuwaima	put in middle	ɲi:ma	squeeze
du:nima	float	ɲuima	tell the truth
dunma	split open	waɾma	work (waɾ)
duranbinjma	rear	waigandima	put on top of
gabi:ɲgama	launch	waija:lima	raise, lift
galama	come, go	waima	lift
gilama	go that way	waraima	do for long time
gindi:rma	act peculiarly	wi:lima	find
girurma	smoothe	wulima	find
gudjurma	joke	wu:bilima	lose
guigarma	make hole	wubi:njma	make eat, feed
gulada:ma	put away	wuɲandjerima	upset
guluima	make hole	-ni = 6	
		gara:ni	do severely
		gini	do, make (cf. ginda)

Prehistory of some Australian verbs

maguni	try	-ŋa = 3	
njalagini	lie to, cheat	ganŋa	hear, know, feel, smell, sense
wa:ni	hit, strike		
ŋambu:ni	be slow (<ŋambu:r 'slow')	garinŋa	sink, drown, submerge
		njaŋa	make
-ne = 5			
djigine	do what	-li = 2	
djiŋane	do how	dju:li	wade
gagune	try, practice	waija:li	fly
jaŋine	bring	-le = 16	
jeŋane	bring, take	baŋile	dance, kick
		bamale	paint oneself
-na = 15		banjga:le	stalk, crawl
bagulawana	use a boat	bardjile	look on, watch
bala:na	die	bundaga:le	approach
ba:na	arise, appear	ɖale	collect, catch
bina	fall	gandjile	marry
-bin-a	go	garaile	hurry
dja:na	stand up, stop	na:ŋmile	look back
djilamuna	float	nanmile	stick, adhere
jana	go, travel	njaŋile	have the matter with
je:na	sit, dwell, live	njuga:le	discuss, talk about
yuna	lie down		
maŋga:lina	join together	waigimile	look back
wana	leave, abandon, let go	wu:bile	forget
-wan-a	become, be	wulbile	whistle
wuŋanbina	cross over (<wuŋan 'over')	-la = 2	
ŋariŋbina	cross over (<ŋariŋ 'over, across')	dju:la	follow, track
		wula	give
-ŋe = 3			
baŋe	go away, tread	-ri = 3	
gaŋe	tie up, bind	gu:ri	wash oneself
ŋu:djiŋe	sweat (see Crowley 1978:463n)	na:ri	play, dance
		wa:ri	carry

-re = 2		-we = 4	
gaware	run, slip	bugumwe	have sexual desire
wuṇandjere	fall over, cap-size (<wuṇan 'over')	djuwe	drink
		ga:biwe	arrive
		ṇu:ṇuwe	become dusk
-ra = 9		-wa = 26	
bira	throw, fish	bagarguwa	go further
bura	peel, take off	bala:rwa	die (cf. bala:na)
da:ra	rub	birwa	strip
dju:ra	split open, crack	bougwa	spear, pierce
dra	shiver (sic)	bouwa	build
ginjara	make bed	djuiguwa	go down
guijara	wash	du:wa	dig (up)
jagara	follow, pursue	gaiju:guwa	go further
mu:djara	crush	gaiwa	set (sun)
-yi = 1		gara:wa	hurry, be quick
bu:ji	pull, drag, draw	giwa	do, act
-ye = 2		gougwa	cut off
geije	enter, leave	gouwa	break
ṇamgeije	dive	guijawa	revolve
-ya = 12		guju:guwa	wave
bagarbaija	miss	guri:wa	groan (guri:)
baija	arise, get up	gu:rwa	encircle
balagaija	dodge, avoid	ṇurwa	encircle
balaja	die	jaṅguwa	come
buguja	open, split	malaiguwa	go around
bui:ja	go through	mu:wa	pick up
djulba:ja	jump	na:wa	upset, capsize
djuluija	go down	numbungilwa	go back, turn
gi:ja	speak, tell	-w-a	go
jarbaija	betroth	ṇalawa	seek, look for
wi:ya	say, speak to, tell	ṇandanga:-law	cook on green sticks (ṇandan)
weija	say, tell		

Dyirbal (from Dixon 1972)

Phonological inventory:

Labial	Apical	Laminal	Dorsal	Retroflex
b	d	ɟ	g	
m	n	ɲ	ŋ	
	l			
	r			
w		y		ɻ

Vowels: a, i, u

Possible finals:

bi	di	ɟi	gi	mi	ni†	ɲi	ŋi	li†	ri	ɻi	wi†	yi
biy	diy†	ɟiy	giy	miy	niy	ɲiy†	ŋiy	liy	riy	ɻiy†	wiy†	yiy†
ba	da	ɟa	ga	ma	na	ɲa†	ŋa	la	ra	ɻa	wa†	ya
bay	day	ɟay	gay	may	nay	ɲay†	ŋay†	lay	ray	ɻay†	way†	yay†
bu†	du†	ɟu	gu	mu†	nu	ɲu†	ŋu	lu†	ru†	ɻu†	wu†	yu†

Total verbs = 226

-bi = 20		mabil	cross river
babil	slice, peel	maɟirabil	sit, stay
balbulubil	motion downriver	nuɻbil	test, try
bawalbil	go	walmbil	raise, lift
bayɟubil	motion downhill	yalibin	come
bubil	pull away from	yambil	fly
burbil	pick fruit	-biy = 2	
dabil	throw handfuls	barmbiy	shine, glitter
dawulubil	motion upriver	ɻubiy	eat (meat)
dayubil	motion uphill	-ba = 36	
ɟabil	stop someone doing something	balbal	roll
ɟalnbil	dance	balbulumbal	wash downriver
ɟinbil	jump	baɟarmbal	ask
gimbil	blow	bawalmbal	lead
guyabil	cross river	bilmbal	push

buybal	hide	-bay = 11	
darubal	soak	darubay	bathe
dumbal	touch sore place	dimbay	carry
ɖarbal	join together	ɖiwunbay	call ɖiwu
ɖaymbal	find	gaɖilmbay	pretend
ɖubumbal	hit with rounded implement	gibay	scrape, scratch
ɖurmbaybal	rub	marbay	frighten
gibal	scrape, scratch	ŋabay	bathe
gidimbal	tickle	ŋaɖɖambay	plan difficult action
gindimbal	warn	ŋuɖbay	return
gubal	cover up	waymbay	go, walkabout
gudaymbal	pass by	wurbay	say, speak
gulbal	block, shut	-di = 5	
gunbal	cut	budil	carry in hand
guwumbal	gather up	bundil	take out
mabal	set alight	nudil	cut, sever
maymbal	plaster	wadil	have sex with
minbal	hit with long implement	wandil	motion upriver
muymbal	extinguish	-da = 9	
ɲambal	paint with flat of hand	dindal	stand (trans.)
ɲanbal	pierce, dig, spear	dudal	mash with stone
ɲabal	soak	gadal	build camp, make
ɲambal	hear, listen to	gindal	look with a light
ɲanbal	ask	gundal	put in
ɲaɖbal	get fright	madal	throw
ɖulbal	split with tomahawk	mundal	lead, take
wabal	look up at	muyumadal	give up (also munumadal)
wambal	build mia-mia	wandal	hang up, scoop up
wuyubal	tell	-day = 7	
yubal	put down	banday	burst out
yululumbal	rock, nurse	bunday	break
		daday	motion downriver

Prehistory of some Australian verbs

ganday	burn	ḡarḡḡay	stare
ginday	look with a light	ḡunḡay	blame
miyanday	laugh	-ḡu = 4	
ḡanday	call out	bunḡul	hit with long, flexible thing
-ḡi = 5			
biḡil	hit with round thing	guyḡul	bite
		miḡul	take no notice of
ḡunḡil	take skin/clothes off	ḡaḡul	cook, burn
ḡaḡil	lose, ignore	-ḡi = 1	
wayḡil	motion uphill	bunḡil	lie down
yiḡil	massage, rub	-ḡiy = 2	
-ḡiy = 3		duyḡiy	look in, over
baḡiy	fall	walḡiy	look over
wuḡiy	grow up	-ḡa = 14	
yirḡunḡiy	laugh	baḡal	pierce, spear
-ḡa = 11		balḡal	hit, kill
baḡal	chew, bite	baḡal	paint, write
baḡal	follow	daḡal	wash downstream
bunḡal	pull up	daḡal	cut
buḡḡal	eat (vegetable food)	ḡilḡal	throw, pour water on
ḡaḡal	pass by without seeing	galbabagā	wash clothes
		galḡal	leave it be
garuḡaḡal	pass by	ḡigal	allow or tell someone to do
gayḡal	break	maḡal	pick up
ḡunḡal	drink	ḡalḡal	poke with stick
maḡal	point out	ḡuḡal	watch someone going
muḡal	divide	wirḡal	scrape, scratch
ḡunḡal	kiss	wuḡal	give
-ḡay = 5			
buḡay	bathe		
maḡay	eat (vegetable food)	-ḡay = 11	
		baḡigay	duck away
waḡay	call name of	baḡagay	return home

bulgay	swallow	mulmay	dive
ḡangay	eat (vegetable food)	walmay	arise, get up
ḡurgay	spear	-niy = 2	
nagay	bank of river breaks	baniy	come
		guniy	search for
ṇugay	grind	-na = 3	
wagay	spear	banal	break off
walagay	return home	bandubanal	bend over
wanḡagay	step over	yana	go
wirṇgay	scrape, scratch	-nay = 4	
-gu = 1		dabaḡanay	duck
baygul	shake, wave	ḡanay	stand
-mi = 3		munay	vomit
barmil	look back	ṇinay	sit, stay
ṇarmil	listen to, hear	-nu = 1	
wamil	watch someone	yanu(1)	go
-miy = 2		-ṇi = 1	
maymiy	visit someone for food	banil	split (log)
yulmiy	eat	-ṇi = 1	
-ma = 9		nalṇil	shake, sieve
biḡamal	copulate	-ṇiy = 1	
durmal	cook, burn	yulṇiy	dance
ḡulmal	squeeze	-ṇa = 2	
ḡuymal	crawl under something	buḡal	motion downhill
ganḡamal	follow	ḡurṇay	drink without stopping
ṇimal	catch, hold, squeeze	-ṇu = 1	
ṇuṇimal	see, look at	nayṇul	throw
ṇuymal	do properly	-liy = 5	
waraymal	step over	balbaliy	roll over
-may = 3		barmiliy	look back
manmay	move camp	biliy	climb

Prehistory of some Australian verbs

daliy	deliver blow	-ray = 5	
dingaliy	run, play	bayŋguray	sing
-la = 2		dagaray	break
bilal	give, send	duŋgaray	cry, weep
wulay	vanish, get lost	waymbaray	go round
		yuŋaray	swim
-lay = 2		-ri = 1	
bundalay	fight	nařil	answer
walawalay	dance	-ra = 4	
	shake-a-leg	bařal	punch, drive
-ri = 1		buřal	see, look at
maril	follow	đuřal	crawl
-riy = 4		yuřal	give through
buŋgaymariy	call name	-yi = 2	
gilgariy	jump	bayil	turn, stir
maybariy	call out	mayil	come out
wariy	fly	-ya = 6	
-ra = 5		bayal	sing
dagaral	break	buđubuyal	blow, puff
daral	do badly	buyal	blow, puff
đaral	stand	diranayal	threaten
đural	wipe, rub	đuyal	peel, take off
niral	poke	wuŋđurmbuyal	blow, puff

Yidiṁ (Dixon 1977)

Phonological inventory exactly the same as that of
Dyirbal

Possible finals:

bi di ɟi gi mi ni ɲiʔ ɲi li ri ɕi wi yi
ba da ɟa ga ma na ɲaʔ ɲa la ra ɕa wa ya
bu du ɟu gu muʔ nuʔ ɲuʔ ɲu luʔ ruʔ ɕuʔ wuʔ yu

Total verbs = 220

-bi = 16		daraban	shake, rinse mouth
bambil	cover	daɕban	slip, slide
binaɕbambil	forget	dimban	carry on shoulder
daybil	pick up and take	ɟiliɕguban	be jealous of
ɟabil	stop, tell not to	ɟimban	catch
ɟinbil	struggle, wriggle	ɟugarban	have unsettled mind
ɟiɕmbin	play up, mis-behave	ɟumbal	copulate
gamaɕmulbin	paint in pattern	gabal	give birth to
gaymbin	do to all of a set	gamban	crawl
gilbil	throw away	wurban	look for, seek
gumbil	pick up	gaɕban	hide
gurbil	be soaked	gaybaɕ	make body feel good
mulbin	cut	gaymbaɕ	follow, sneak up on
nambil	hold (down)	wuɲaban	hunt
numbin	look around for	gibal	scrape
ɲarɲambil	approach	yumbaɕ	send message to
yubin	rub	guban	burn, cook
-ba = 30		lululumbal	rock baby
banban	be cold	mabal	light fire, burn; lift
baɕman	go	yulbal	sneak up
biban	look back at	nibal	show
bulbal	grind, rub	waymban	fly
dandaban	dance about		

Prehistory of some Australian verbs

naban	bother	-du = 1	
wamban	wait for	ḡadul	put blanket out
wayban	go around	-ḡi = 22	
-bu = 1		baṇḡil	find
buybuḡ	blow, spit at	bani:ḡin	grumble
-di = 5		biṇḡin	jump down
badin	cry, weep	buḡin	tell, call name
budil	put down, marry	bunḡil	burst, explode, collide
ḡili+budil	look after	burṇḡin	finish off, make die
ḡirbi+budil	promise to do		
nari+budil	put in hole (ḡnari 'hole')	dunḡin	feel happy, lively, play
-da = 20		ḡanḡin	shift camp
bargandan	pass by	ḡura:ḡin	shed hair
biḡar+wandan	dream	guḡil	smell (tr.)
dandadan	rub	gunḡin	return
dandaḡ	rub	gunḡin	break
dindal	erect	gurḡil	be soaked
dudal	throw	miḡil	block
ḡili+gundal	stop looking	muri:ḡin	scream
ḡudan	go down	naṅga:ḡin	tell, speak
ḡundan	hang down	niya:rḡin	sit
gadan	come	waṅga:ḡin	wake up, get up
garangandan	glow (sky)	wuḡin	grow up
giḡar+gundal	paint in pattern	wuyuba:ḡin	talk, speak
gundal	cut	yaḡil	walk about
maḡindan	walk up	yiraba:ḡin	bathe
mundal	pull		
nadal	peel skin off	-ḡa = 14	
naḡu+wandan	dance	baḡal	bite
	shake-a-leg	baḡar	leave
nuyar+gadan	think about	baṅḡal	try to do, taste
nuyar+wandan	think	baṅḡar	follow
wandan	fall, drop	biḡar+baḡal	dream about

bunđan	strike, beat, kill	baŋgan	pass by
qadāl	turn against	barŋgan	praise
qunđar	wade across stream	baygaŋ	feel sore, have pain
giđan	do quickly (<giđa)	bugan	eat
mađan	suck, chew	burgal	pull out
manđan	fill up body	burŋgal	snore
nirđar	put sitting down	dagal	cut, drop, sever
walnđal	select best of	danđan	take out
wuđan	cross river	dugal	catch, fetch, grab
-đu = 5		đalnđal	chop, cut up
bunđur	fan	đanđal	grumble, growl at
gilđul	bite	(đa:)wurgan	yawn
nuŋđur	smell	đigal	pour water on
wađul	cook, burn	đunđan	run, move quickly
waruŋu+ gilđul	dream about	gaŋgu+đunđan	take short cut
-gi = 7		gugal	call out to
burgin	walk about	maŋgan	laugh, smile
đanđil	get caught, snagged	nulgal	wake up
đargin	embed	nuŋgar	smell
magil	climb up	ŋanđan	forget
warŋgin	turn around	walnđal	float
wigil	make feel sick, sated (but cf. wigilwigil 'sweet')	wulŋgan	covered by water
yanđin	split, slice, tear	yagaŋ	hunt away
-ga = 28		yaŋŋan	be frightened
bagal	dig, pierce, spear	yunđal	grind
balgal	make, build	-gu = 1	
balnđar	hit with stick	walnđuŋ	peep in, around at
		-mi = 2	
		birmin	wait for
		yaymil	ask
		-ma = 8	
		bilmal	clear ground
		đaqaman	jump over

Prehistory of some Australian verbs

ḍurman	copulate	-ḥu = 1	
gaman	vomit	nayḥuḥ	throw
landimal	teach (English loan)	-li = 3	
milmal	tie up	binagalin	forget (bina+ga-li-n)
numan	move about		
ḥumal	smell (tr.)	biḥḥḍalin	run
		galin	go
-ni = 2			
manin	catch in a trap	-la = 8	
nanil	growl, swear at	balan	open out, widen
-na = 8		bilan	enter
binan	think, hear (but cf. bina 'ear')	ḍulal	dig
		gulal	break, break up
ḍanan	stand	malal	feel with hand (but cf. mala 'palm')
ḍubun+ḍanan	squeak		
gawal+ḍanan	call out	nilan	hide
guybil+ḍanan	whistle	waymbalan	roll
ḥinan	sit	wulan	die
wulḥgu+ḍanan	sing wulḥgu style	-ri = 4	
		ḍanḍirin	feel frisky
wunan	lie down, sleep	ḍarin	be submerged
-ḥi = 1		warin	jump
gayḥin	warn not to	yilarin	be scattered
-ḥa = 8		-ra = 8	
binarḥal	listen to, hear (bina+ḥa-l)	ḍaral	erect, put up
binarḥal	tell, warn	ḍili+ḍaral	stare at
burganbaḥal	dig	ḍiḥay+ḍaral	sneeze at
gumbiraḥal	pick up	ḍirbi+ḍaral	promise to do
manḥan	be frightened	ḥari+ḍaral	put in hole and cover
wuḥan	drink, swallow	ḥural	show by lifting
wuyubaḥal	tell, call	waran	shift camp
yunḥan	cross river	yaga+ḍaral	split in half

- <i>ɣi</i> = 1		giwan	be stirred up
giɣin	shout in play	miwal	lift, pick up
- <i>ɣa</i> = 5		wawal	see, look at
bambaɣan	be nervous	- <i>yi</i> = 2	
baɣal	deliver blow	bayil	come out
bina+baɣal	deafen	duyil	fight with spears
ɣiɣal	hang up		
wiɣan	be bent	- <i>ya</i> = 2	
- <i>wi</i> = 2		biyal	blow, push
ɣuwin	swim	buɣu+biyal	blow off bad luck
wiwin	give		
- <i>wa</i> = 4		- <i>yu</i> = 1	
burwal	jump	ɣuyun	wriggle

Pitta-Pitta

Phonological inventory (Blake 1979:187):

	Bilabial	Apico- alveolar	Retro- flex	Lamino- dental	Lamino- palatal	Dorso- velar
Stops	p	t	<u>t̪</u>	t̪	tʲ	k
Nasals	m	n	<u>ɳ</u>	ɳ	nʲ	ŋ
Laterals		l	<u>ɭ</u>	ɭ	lʲ	
Rhotics		r rr	<u>ɻ</u>			
Glides	w				y	w
Vowels:	i, a, u					

Possible finals:

pi ti† ti t^yi ki† mi† ni† ni pi† n^yi† qi
nti n^yt^yi
pa ta ta t^ya ka ma na na† n^ya† na† qa
ntV ntV n^yt^ya
pu† tu† tu† tu† t^yu† ku† mu† nu† nu† nu† n^yu† qu†

li li† li ri rri ri wi yi†
la la† la† ra rra ra† wa ya
lu lu† lu† ru† rru† ru† wu† yu†

Total verbs = 167

- <i>pi</i> = 2		kat ^y irra	insert
wapi	look for	<u>n</u> arra	cover, bury
pirrpi	descend	<u>t</u> urupa	straighten
- <i>pa</i> = 19		<u>t</u> arra	press
<u>t</u> inpa	run	<u>t</u> irra	sew
pi <u>t</u> ipa	find	pirra	pour
<u>t</u> umpa	lie	<u>t</u> irapa	cook
kurralpa	drop	pipa	see, look at
wampa	shoo	wapa	look for (cf. wapi)
<u>t</u> apa	push, scoop up	kapa	send word
nanupa	insert		to

yarralpa	scold	kuṭi	pull
wakunpa	bark	piṭi	hit, kill
-ta = 1		-ṇṭi = 3	
ṭata	refuse	yanṭi	burn
-ntV = 7		ṇalapunṭa	skin
manta	weigh heavily	punṭa	suck
pinti	count	-ṭa = 2	
n ^y inta	scratch	ṇuṭa	return
mirrinta	scratch	ṇiṭa	steal
punta	break	-t ^y i = 8	
wanti	wait	mut ^y i	sleep
ikanta	swallow	wat ^y i	cook
-ṭi = 1		walakat ^y i	cook
pinapuṭi	walk	ṇanakat ^y i	cook
-ṭa = 4		ṇat ^y i	see, look at
yuta	swim	ṭat ^y i	eat
pata	hold	karrat ^y i	shiver
kita	call out	it ^y i	die
pata	call someone something	-(n ^y)t ^y i = 5	
-ntV = 9		wan ^y t ^y i	get up
kanta	go	ṇun ^y t ^y i	give
minti	play	ṭun ^y t ^y i	cry
panta	crack	wilṭawan ^y t ^y i	sweat
manta	take from	pan ^y t ^y i	be ill
ṭirrapinta	open	-t ^y a = 2	
ṇunta	grease	it ^y a	dance
ṇalawanti	skin	pat ^y a	bite
ṇarapinta	forget	-(n ^y)t ^y a = 2	
manukanta	worry	ṭin ^y t ^y a	chop
		ṭinapin ^y t ^y a	track
-ṭi = 4		-ka = 25	
paṭi	come	ṇarrka	follow
kaṭi	climb	ṇaṅka	stay, sit

Prehistory of some Australian verbs

tarrka	stand	wilakana	hide
ika	be full	ɲɪŋkukana	go out
mamaka	grab	tɪrrkamaru-	
tuka	take	kana	cook
kaŋka	bring	manuwunku-	
katipalka	hit on the head	kana	forget
irrka	touch, feel	paririkana	learn
turrka	rub	yulkakana	sulk
paka	whittle, dig	kit ^y ikana	be happy
palka	split	mil ^y awil ^y ir-	
kananŋka	spear, stab	ikana	grimace
taŋkataŋka	weave	kurratiŋa-	
t ^y ilawaŋka	mix	kana	be giddy
punŋka	make fire	- <u>ni</u> = 1	
paŋka	hear, listen to	wini	arrive
ŋarapunka	forget	-ŋV = 3	
yanka	tell	manŋi	gather, hunt
karrka	shout	taŋŋa	winnow
wiyuŋka	whisper	tɪrrapiŋa	ask
wanka	sing		
punka	blow	- <u>li</u> = 4	
katuluka	cough	wakili	shake
iŋka	kiss	tarrpali	weigh heavily
-ma = 7		ŋanupali	enter
inima	carry on shoulder	tarupali	speak
ŋutaŋma	bring back	- <u>la</u> = 6	
kunma	enclose, hem in	mapala	camp out
waŋkuma	stir, swing around	ɲala	peel
takuma	see, look at	kurrala	drop
waŋama	know	yaŋtɪla	burn
tima	drink	waɪtɪla	make fire
-na (all consist of -ka+na)		tarrkala	erect, make stand
= 10			
n ^y unukana	be tired	- <u>lu</u> = 1	
		tɪlu	cook

- <u>ʒi</u> = 1		- <u>rra</u> = 7	
<u>ṇu</u> ḷi	squeeze	kurra	fall
- <u>ri</u> = 14		<u>ṇirra</u>	send
wiri	sharpen, grind	<u>ṭirramarra</u>	open
t ^y ilkuyari	shine	<u>ṭarra</u>	block
mari	get	karra	tie up
ma <u>ṭ</u> ari	leave	piṅkipurra	divide up
<u>ṭa</u> pukuri	shut	ṇulukurra	yawn
mun ^y t ^y umu-		- <u>ri</u> = 4	
n ^y t ^y ukuri	pack up	wapari	hunt, gather
<u>ṭun</u> ^y t ^y ikuri	tie, join	ṇari	breathe
wilakuri	hide	ṇaṅka <u>ri</u>	give birth to
pan ^y t ^y ikuri	spread	palka <u>ri</u>	ache
<u>ṭu</u> t ^y urukuri	straighten	- <u>wi</u> (all <u>ṭaw</u> i) = 3	
<u>ṭa</u> ri	kick	ma <u>ra</u> <u>ṭa</u> wi	drop
kuri	cut	<u>ṭa</u> wi	throw
ut ^y akuri	overcook	ka <u>ti</u> <u>ṭa</u> wi	knock over
piṅkukuri	extinguish	- <u>wa</u> = 7	
- <u>ra</u> = 3		warruwa	smell; cover, bury
kira	blow	puwa	smell
kara	answer	<u>ṭu</u> wa	hit
pura	urinate	ya <u>ḷa</u> wa	cook
- <u>rr</u> i = 4		<u>ṇa</u> rawa	hear, listen to
<u>ṭa</u> ri	crawl up, creep up; spear, stab	<u>ṭa</u> wa	pretend
<u>ṭa</u> ri	jump	kawa	vomit
mil ^y aṅkarri	drown, die	- <u>ya</u> = 1	
warri	shift	wiya	laugh

Walmatjari

Phonological inventory (Hudson 1978:4):

	Bilabial Bilabial	Apico- alveolar	Apico- postalveolar	Lamino- alveolar	Dorso- velar
Stops	p	t	rt	j	k
Nasals	m	n	rn	ny	ng
Laterals		l	rl	ly	
Vibrant		rr			
Semi- consonants	w	y	r		
Vowels: i, ii, a, aa, u, uu					

Possible finals (final long vowel excluded):

pi ti rti+ ji ki+ mi+ ni+ rni+ nyi+ ngi+
 pa ta rta ja ka ma+ na+ rna+ nya+ nga+
 li+ rli+ lyi+ rri wi+ yi+ ri+
 la rla lya+ rra wa ya+ ra+

Total verbs = 92

- <i>pi</i> = 1		takurryanta	go in
kampi	tie up	tikirryanta	return
- <i>pa</i> = 3		jartamanta	drive away
kampa	ask	puranyanta	pass by
mapa	rub, paint	parayanta	climb up
yinpa	sing	turtuyanta	climb down
		warnta	pick up
-(<i>n</i>) <i>ti</i> = 6		purpanta	go and fetch
kurnakwanti	turn around	lanta	pierce
jupanti	jump down	junganta	cut
wanti	fall	ngartakpanta	make
pulukwanti	dive	pirtimanta	make
yutanti	sit down	jurumanta	wait
ranyjiwanti	hide	ngarnti-	
-(<i>n</i>) <i>ta</i> = 21		manta	ask
yanta	go	jangkumanta	answer

winkirmanta	yawn	wurlwurl-	
parntimanta	smell	manyja	be sore, ache
puumanta	blow	tiimanyja	be sore, ache
kalymanta	lick	-(ng)ka	= 21
pujumanta	finish	waangka	follow
-rta	= 1	wajilpungka	pursue
tarrparta	hold onto	laparnkarra-	
		kangka	run away
-ji	= 7	turtangka	get up
kanyji	dance	kangka	carry
tungkarra-		ruwarra-	
kuji	put standing	kangka	push
ranyjikuji	hide	wirrptar-	
manyji	burn	rangka	push
nyurnungkuji	swallow	tarrangka	throw
ngurranga-		tarrapungka	throw
kuji	marry	parlipungka	find
-(ny)ja	= 17	yungka	give
murtayi-		pungka	hit with rigid implement
manyja	crawl	nilypungka	punch
kapartpanyja	leap	nyulypungka	squeeze
lapanja	run	nyaka	see
nyumukpanyja	bathe	muupungka	look for
jawumanyja	swim	jinjinyungka	tell to do
kirranyja	stay, sit	japirlyungka	ask
yukanyja	lie down	lungka	cry
wilmanyja	lose	warralpungka	laugh
purljuk-		kurlpungka	test, try
panyja	burst		
manyja	speak	-la	= 1
jartayi-		jula	tell
manyja	call out		
ngurrmanyja	thunder	-r ^l la	= 1
kuukuumanyja	thunder	karla	cut
nganyja	eat		
janganyja	bite	-rr ⁱ	= 7
		rijikarri	play

Prehistory of some Australian verbs

karri	be standing	kutikarra	cover
warri	search	papajarra	call out
pinakarri	listen to (< pina 'ear')	pajarra	bite
purlkajarri	grow up	kuripa- karra	vomit up
jajapjarri	be itchy	ngukupa- jarra	kiss
pirlajarri	die	ngajarra	give birth to
-rra = 8		-wa = 1	
yutukarra	put down	luwa	hit with thrown implement
tarnikarra	hang up		

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