Map 1: Non-Pama-Nyungan language families

1. Southern Daly
2. Western Daly
3. Eastern Daly
4. Northern Daly
5. Anson Bay
6. Kungarakany

7. Larrakiyan
8. Limilngan
9. Umbugarla / Ngumbur
10. Gaagudju
11. Giimbiyu
12. Maningrida

1   *Introduction: Comparative non-Pama-Nyungan and Australian historical linguistics*

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The present volume brings together detailed comparative work on a number of non-Pama-Nyungan languages of Northern Australia, and is the first book-length study to span this linguistically complex region, containing as it does perhaps 90% of Australia's linguo-genetic diversity in an eighth of its land area. Many papers originated at a workshop held at the 1989 Australian Linguistics Society conference at Monash University, but several have been written specially for this volume. It has been said that no language changes faster than a proto-language, and in the intervening period a great deal of new descriptive data on non-Pama-Nyungan languages has accumulated, as well as careful sifting of complex data, which has led many of the authors to completely revise or develop their arguments since the original workshop. Hence, the delay in the appearance of the volume reflects some major shifts in position on the part of some authors.

In the first part of this introduction I identify what I see as the main issues in comparative non-Pama-Nyungan studies. In the second to fourth parts I look at issues of subgrouping, reconstruction and areal influence that pertain to particular non-Pama-Nyungan families or subregions. In the fifth part I return to the issue of whether one can carry the process of reconstruction back to deeper levels than the families themselves, that is back to some level from which all or most non-Pama-Nyungan families are descended. Since many of the papers are relevant to several of the above issues, I integrate references to them throughout this introduction, rather than dealing with them sequentially.

1   Comparative non-Pama-Nyungan and comparative Australian

The timing of this volume reflects a swing back to the incorporation of non-Pama-Nyungan material into comparative Australian linguistics. The view of comparative Australian expounded in Dixon's 1980 *The languages of Australia*, which has been taken as

the orthodox position for the last two decades,[1] is dominated by data from Pama-Nyungan languages. This was understandable given the paucity of detailed grammatical materials available on non-Pama-Nyungan languages at the time, and the excitement generated by a string of brilliant grammars of Pama-Nyungan languages that had been barely known before the 1970s. A similar Pama-Nyungan focus was reflected in the first four volumes of the influential *Handbook of Australian languages* series; until the fifth volume (published in 2000) all grammars contained therein were Pama-Nyungan, apart from Crowley and Dixon's (1981) evaluation of Tasmanian and Keen's (1983) grammar of Yukulta, which was then believed to be Pama-Nyungan and in any case belongs to one of the groups, Tangkic, that is closest to Pama-Nyungan.

In contrast, grammars of non-Pama-Nyungan languages coming up to modern standards of description[2] were mostly later in coming. The bulk of them did not appear until the last fifteen years, with many others still forthcoming or in preparation, and until these are completed all hypotheses about comparative non-Pama-Nyungan must remain highly provisional. Meanwhile, several papers in the current volume make available new synchronic material germane to comparative work — see particularly the papers by Breen and Belfrage on the Garrwan languages, by Harvey on Matngele and Kamu (Chapters 6, 7), and by Evans and Merlan on Dalabon.

A second factor delaying the progress of comparative work on non-Pama-Nyungan languages has been the great complexity of the data. As the reader will determine from a paper like Ian Green's, with its intricate unpicking of the many prefixal paradigms in the South Daly languages, the application of the comparative method to morphological reconstruction in Northern Australia is a slow and painstaking task. Green writes that '[s]ome of the ... auxiliaries, including those for which comparative data has been available for almost two decades, are in fact so strikingly alike ... that one must wonder why the true genetic status of these two languages has remained undocumented for so long'. However, I suspect that the limits of human pattern-recognition are so strongly challenged by such complex data that it often takes a decade or two of immersion in them (as Green himself has done) before the parallels can be articulated properly. Detecting comparable parallelisms across the sixty or so non-Pama-Nyungan languages is likely to keep non-Pama-Nyunganists busy for decades before we have anything like a complete set of hypotheses about the interrelationships of the non-Pama-Nyungan languages. For example, no-one has yet taken on the task of systematically comparing Nunggubuyu and Anindilyakwa,[3] despite their being two adjacent languages with rather similar structures (Heath 1984:638). Similarly, a comparison of Tiwi with its nearest neighbours, the Iwaidjan family, will have to wait first for a proper synchronic description of the languages of the Iwaidjan family (Evans 2000) and a reconstruction of Proto Iwaidjan — a task that will take at least another ten years.

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[1]   And has been the basis for further published work by Dixon and others: see for example Dixon (1997), Sands (1996).

[2]   This is not to deny the importance of such early work as the grammars in Capell (1962), or the grammar of Kunwinjku ('Gunwinggu') by Oates (1964), but merely to state that they lack either the phonological precision or the comprehensive treatment of morphological paradigms needed to carry out really accurate comparative work.

[3]   Though see Heath (1997) for some proposals.

2   The genetic position of the non-Pama-Nyungan languages

Clearly the type of contribution non-Pama-Nyungan languages make to the deeper task of reconstructing Proto Australian will depend on where they are situated within the greater Australian phylum (or family, depending on one's views). In this section I examine the relationship between proposed classifications of Australian languages and the sorts of features they attribute to Proto Australian.

Leaving aside the proposals of Schmidt (1919) and Kroeber (1923), now largely superseded, four main types of relationship have been proposed. For convenience, I will refer to these as (a) the rake model, (b) the diffusion model, (c) the binary model, and (d) the Pama-Nyungan offshoot model. We now consider each of these in turn.

(a)   THE RAKE MODEL. On this model, Pama-Nyungan is a genetic construct but non-Pama-Nyungan is not. Non-Pama-Nyungan, on this model, is an aggregate of over twenty families, each on a par with Pama-Nyungan, with no higher-order grouping of non-Pama-Nyungan families proposed. This view is implicit in the comprehensive classification of Australian languages by O'Grady, Voegelin and Voegelin (1966) and O'Grady, Wurm and Hale (1966), as well as the classification in Wurm and Hattori (1981) which largely repeats the 1966 classifications. Figure 1 shows a fragment of this classification, with its rake-like structure, in diagrammatic form.
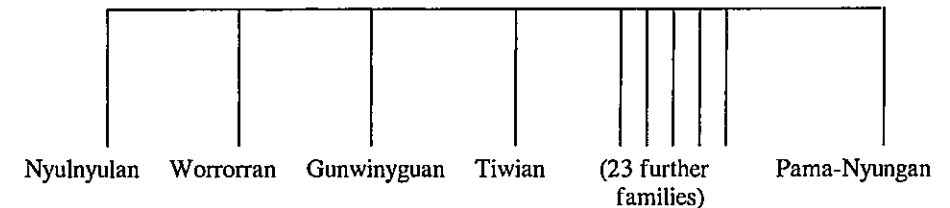

Nyulnyulan   Worrorran   Gunwinyguan   Tiwian   (23 further families)   Pama-Nyungan

**Figure 1:** The rake model of non-Pama-Nyungan

It is likely that the authors of this classification regarded it as provisional, pending detailed reconstructive work. Its main value is to highlight the uneven distribution of genetic diversity in Australia, with a complex mosaic of non-Pama-Nyungan languages in the north-western eighth of the continent and a single family, Pama-Nyungan, spread over the remainder. Among other implications, it suggests a north-western origin for the first colonisation of Australia, a consequence first pointed out by Hale (1962).

(b)   THE DIFFUSION MODEL FOR NON-PAMA-NYUNGAN. In various publications, Dixon (1980, 1990, 1997) has repeatedly articulated a model in which 'so-called nonPN languages have undergone extensive grammatical changes which have altered their typological profiles; PN languages have not undergone changes on this scale and are certainly typologically closer to pA' (Dixon 1980:226). On this view,

> Pama-Nyungan – although a useful label to cover the large class of Australian languages which have not undergone radical changes that involve 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 pA. 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 any shared innovations which would justify a period of common development for languages of the PN type. (Dixon 1980:255–256)

Figure 2, which represents Dixon's position schematically, shows the general typological trait of pronominal prefixation as not corresponding to any genetic grouping.
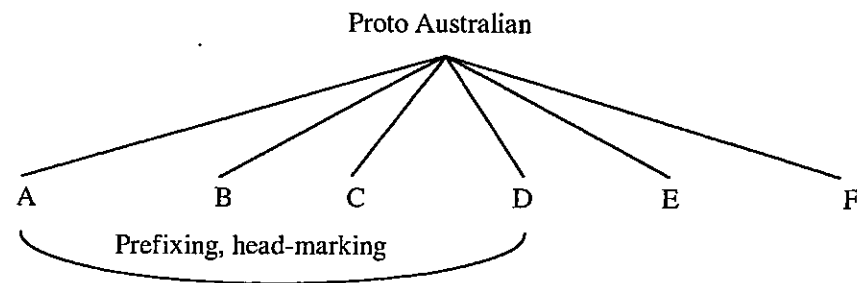
Figure 2: The diffusion model: Pama-Nyungan (E, F) left as a residue through the diffusion of prefixing and head-marking typology through a number of distinct groups (A, B, C, D) in the non-Pama-Nyungan areal bloc (implicit in Dixon 1980).

There are four major problems with Dixon's position.

Firstly, the extent and intensity of diffusion it needs to assume are far greater than the levels attested in detailed studies of intense cases of diffusion in Australia. The most detailed studies of diffusion in Australia have been Heath's various studies of intensive diffusion in Arnhem Land (Heath 1978, 1979, 1981). Yet while these found evidence for diffusion of invariant allomorphs, such as ergative/instrumental -*thu* from Yolngu into Ngandi, they found no examples of diffusion of sets of allomorphs comparable to the complex -*lu* ~ -*ngku* ~ -*thu* ergative/instrumental set or the -*la* ~ -*ngka* locative set found right across the Pama-Nyungan languages. It is also worth noting at this point that some of Heath's examples of 'diffusion' turn out in fact to be shared retentions now that we have better reconstructions of proto Gunwinyguan. See the paper by Alpher, Evans and Harvey, which reconstructs the 'thematising augment' -*thu* and the inchoative -*th:i* in Gunwinyguan, whereas Heath had seen them as borrowings into Ngandi from the Yolngu language Ritharrngu, and Harvey (Chapter 8) and Evans (2001), which present evidence for a similar non-diffusionist analysis of the situation with laminodental stops.

Secondly, the above-quoted claim that 'there is nothing that could be attributed to a putative Proto Pama-Nyungan which could not equally validly be assigned to proto-Australian' is simply false, and is an artefact of the heavy reliance on Pama-Nyungan data in his Proto Australian reconstructions. This point was made in the reviews of Dixon (1980) by O'Grady (1981) and Heath (1982a), as well as more recently in Heath (1990):

> From a methodologically conservative point of view, we should really take Dixon's "Proto-Australian" reconstructions as Proto Pama-Nyungan, since the descriptive materials used are from Pama-Nyungan languages. (Heath 1990:403)

Seeing Pama-Nyungan as a daughter subgroup radically changes the picture of 'Proto Australian'. Once substantial non-Pama-Nyungan data is factored in, the limitation of many of Dixon's 'Proto Australian' features to Pama-Nyungan languages makes them

unattributable to Proto Australian and instead suggests they are Pama-Nyungan innovations. We return to this point in connection with the Pama-Nyungan offshoot model below.

Thirdly, Dixon's position underestimates the degree of structural diversity in the nonPN languages by lumping them all together as having undergone 'radical changes that involve the development of pronominal and other prefixes to the verb, and a generally polysynthetic structure' (Dixon 1980:255–256). But there are great typological differences between, let us say, the Gunwinyguan languages with their single SO/OS–IN–V pattern (IN = incorporated nominal) for all verb stems, without the encoding of directional information, the Iwaidjan languages with their Directional–SO/OS–V pattern, with no noun incorporation but complex suppletion for directionality, and the Daly pattern of a large number of distinct SO+TAM paradigms on different auxiliaries. Now it is certainly true that many non-Pama-Nyungan languages have been moving in the direction of greater head-marking — see Reid's paper, which gives a beautiful example of such changes occurring in Ngan'gityemeri in the last seventy years. But there are likewise cases of changes in the opposite direction — see the description of 'dependentward migration' in languages of the Djerragan family in McConvell's paper, this volume.

As mid-level reconstruction proceeds, the great antiquity of rather different systems of pronominal prefixation within the non-Pama-Nyungan languages is beginning to emerge. This is perhaps illustrated most clearly by the detailed reconstruction of irregular pronominal prefix paradigms in Proto Southern Daly auxiliaries in Ian Green's paper. The evidence from the lexicon and other parts of the grammar points to a huge time gap for the split of Southern Daly from its nearest relatives, and the forms of the reconstructed pronominal prefixes bear little resemblance to those found in other non-PN prefixal systems, such as in Gunwinyguan.

A fourth problem with Dixon's position is that, across many (probably not all) of the non-PN languages, the resemblances are not simply typological/ structural but extend to specific forms. This holds whether we look at pronominal prefixes (see Harvey, Chapter 16), verbal inflections (see Rebecca Green's paper, taking in a number of families of Arnhem Land), detailed aspects of the syntagmatic structure of the verb (see §6 of this introduction), or details of the noun class morphology (see, for example, Clendon 1999). For at least a large subset of the non-Pama-Nyungan languages, the growing number of such formal features, often highly idiosyncratic, increasingly point to deep-level shared inheritance rather than just typological convergence.

This is not to say that Dixon's model does not have two distinct advantages. Firstly, it would account for the very low level of cognacy within the Pama-Nyungan family. The only way proponents of a Pama-Nyungan subgroup can account for such low figures within their model is to assume either widespread lexical borrowing from substrate languages, or a great time-depth for Pama-Nyungan (which would then entail an even greater time-depth for Proto Australian). Secondly, there are aspects of the typological transition from the head-marking, pronoun- or gender-prefixed template assumed for pre-Pama-Nyungan to the dependent-marking, non-prefixed pattern found in Pama-Nyungan for which we still lack a convincing account. Nonetheless, we now have some interesting typological parallels documented for the Mindi family (see Green 1995), and a sketch of how the 'Pama-Nyungan transition' might have occurred is contained in Evans and Jones (1997).

(c)   THE BINARY MODEL. Another approach to the classification of Australian languages is to make a first split into two groups, corresponding more or less closely to the Pama-Nyungan vs non-Pama-Nyungan division. Although Capell's (1956) division into 'prefixing' vs 'suffixing' languages was purely typological, and subsequent work has identified examples of prefixing languages within Pama-Nyungan and non-prefixing non-Pama-Nyungan languages (see §3 below), there is nonetheless an overall correlation between typological and genetic classifications.

Heath (1978) explicitly uses the term 'prefixing languages' 'as a genetic label, so that we can speak of 'Proto-Prefixing' and the like' (Heath 1978:3), and continues this approach to classification in more recent publications (Heath 1990) in which he goes on to propose reconstructed morphology for pronominal prefixes on verbs (Heath 1990), noun class prefixes on nouns (Heath 1987) and verbal suffixes (Heath 1990) for 'proto-prefixing'. Figure 3, schematised from the above works by Heath, represents what I take to be his overall view of Australian classification.
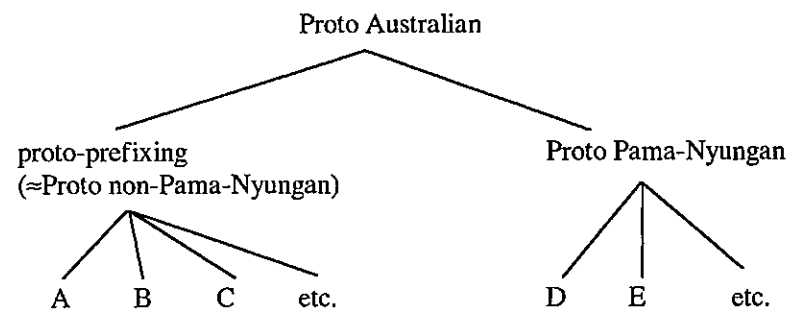

Figure 3: Non-Pama-Nyungan (=prefixing; A, B, C, etc.) and Pama-Nyungan as two early branchings of Proto Australian (after Heath 1990)

Focusing on the prefixing languages, Heath has proposed reconstructions of their complex morphology, which reveal a number of features shared by several of what O'Grady et al.[4] regarded as distinct 'families', and made some progress in the subgrouping of non-Pama-Nyungan languages. For example, he has demonstrated that Nunggubuyu and Ngandi share sufficient features to be identified as belonging to the same family, rather than Nunggubuyu being a family-level isolate as proposed by earlier investigators. (But see the paper by Alpher, Evans and Harvey on some disagreements with the positioning of Nunggubuyu/ Ngandi vis-a-vis Gunwinyguan). Blake's (1988) work on pronouns and case has likewise demonstrated sufficiently widespread similarities within the non-Pama-Nyungan languages (Blake uses the term 'Northern') that he is able to reconstruct a 'northern' free pronoun set, distinct from the Pama-Nyungan set (the latter virtually identical with Dixon's (1980) 'Proto Australian' pronoun set).

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4   In this chapter, 'O'Grady et al.' refers to both O'Grady, Voegelin and Voegelin (1966) and O'Grady, Wurm and Hale (1966), which contain the same analysis, one in monograph form and the other in map form.

Despite these achievements of the binary model, it fails to account for certain facts of the relationship between Pama-Nyungan and non-Pama-Nyungan. Firstly, virtually all investigators have seen the Pama-Nyungan languages as less diverse than the non-Pama-Nyungan ones, a fact most clearly reflected in the large number of non-Pama-Nyungan families set up in the O'Grady, Voegelin and Voegelin classification. Secondly, we now have at least one phonological innovation (initial laminalisation) attributable to Proto Pama-Nyungan: Pama-Nyungan has merged the initial laminals and apicals that are distinct in most non-Pama-Nyungan languages (Evans 1988). Thirdly, the growing evidence for the lack of various Pama-Nyungan features in all non-Pama-Nyungan languages has shifted many grammatical morphemes from the category of retentions from 'Proto Australian' to innovations in Pama-Nyungan. For example, whereas the 'Proto Australian' dative *-gu* has widespread nonPN attestation, the 'Proto Australian' ergative/instrumental *-lu ~ -ngku* and locative *-la ~ -ngka* are looking more and more likely to be a PN innovation (see above). Further, some of these Pama-Nyungan innovations can now be given plausible sources based on their development from non-Pama-Nyungan precursors: an example is the development of the Pama-Nyungan system of 'conjugation markers' by the analogical remodelling of a more irregular paradigm retained in the Gunwinyguan languages (see the paper by Alpher, Evans and Harvey).

Taken together, these considerations favour the fourth type of classification, to which we now turn.

(d)   THE PAMA-NYUNGAN OFFSHOOT MODEL. In his important article 'Preliminaries to a proto Nuclear Pama-Nyungan stem list', Geoff O'Grady (1979) developed his earlier classification by suggesting that Pama-Nyungan was a relatively recent daughter node within a larger Stammbaum containing most extant Australian languages. Of the attested Australian languages he excluded only Anindilyakwa and the Tasmanian languages from membership in a lineage descended from 'Original Australian'. In O'Grady's terminology what most subsequent authors have called 'Pama-Nyungan' he termed 'nuclear Pama-Nyungan', to which he adjoined the Gunwinyguan and Tangkic languages in the slightly larger 'Pama-Nyungan' group. Figure 4 reproduces the relevant parts of his 'hypothetical genealogy' of selected Australian languages; it is simplified by omitting various lineages that have not survived to modern attestation, and which he included in order to stress the likelihood that many other families and even phyla may have been spoken on the Australian continent, before dying out with no trace other than possible substrate effects.

A number of hypotheses have been proposed to account for the expansion of the Pama-Nyungan language over much of the continent (see Wurm 1972; O'Grady 1979; Evans & Jones 1997; Evans & McConvell 1998). Without going into details here, we can summarise the main features of the model as (a) the assumption that, prior to Pama-Nyungan expansion, the level of genetic diversity across the presently Pama-Nyungan part of the continent was comparable to that now found in the non-Pama-Nyungan area, and (b) widespread language shift to Pama-Nyungan then took place, leaving at most some substrate influence from the earlier languages.
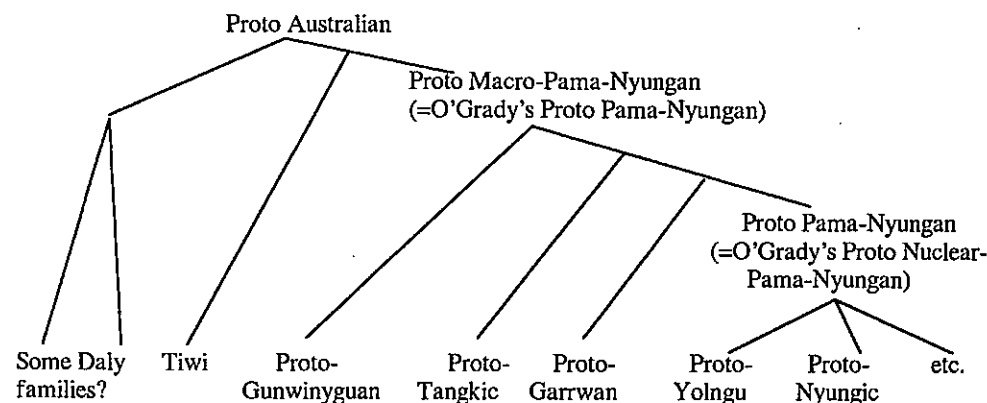
Figure 4: The Pama-Nyungan offshoot model, with Pama-Nyungan as an offshoot sharing immediate ancestry with some non-Pama-Nyungan groups, after O'Grady (1979), Evans and Jones (1997)

The versions of this model proposed in Evans and Jones (1997) and Evans and McConvell (1998) identify the Garrwan family as a close sister of Pama-Nyungan, and link certain morphological and phonological innovations of Pama-Nyungan to stages in the splitting off of Proto Pama-Nyungan and its predecessors. For example, the distinctive Pama-Nyungan free pronoun set is not seen as emerging in one go, but as an accretion of individual lexical innovations; the pronoun set found in the Garrwan family is a sort of halfway point, and significantly has yet to show the effects of initial laminalisation on the second person plural pronoun (*NHvmbala* in Pama-Nyungan, but *nimbala* in Garrwan), compatible with the positioning of laminalisation as an innovation that occurred at the level of Pama-Nyungan proper. Nonetheless, the position of Garrwan remains something of a puzzle; the papers by Breen and Belfrage on Garrwan provide further material that needs to be taken into account, though neither author makes claims about its position within higher-level classifications.

At the same time, the Pama-Nyungan daughter model suggests that non-Pama-Nyungan languages will be of greater importance for the reconstruction of Proto Australian than the Pama-Nyungan languages are: as a daughter subgroup on a par with, say, Gunwinyguan (or perhaps even a daughter thereof, e.g. Ngandi-Nunggubuyu), features of or absences from the Pama-Nyungan languages carry no privileged evidentiary weight in deep-level reconstructions, despite the huge number of Pama-Nyungan languages offering synchronic material. Morphemes that are widespread in non-Pama-Nyungan languages, such as the reciprocal suffix *-NHTHu- ~ -NHTHi-* (see the paper by Alpher, Evans & Harvey), or the pronominal prefixes to the verb discussed in Harvey's Chapter 16, are not invalidated as Proto Australian candidates merely because of their absence from all Pama-Nyungan languages, which may reflect quite specific and relatively recent developments. Conversely, a past form like Walmatjari *-rni ~ -ni*, which Dixon (1980:385) cites but does not reconstruct back to the level of Pama-Nyungan, preferring to reconstruct past suffix **-NHu* on the basis of various other Pama-Nyungan languages, assumes greater plausibility as an ancient retention in the light of the widespread non-Pama-Nyungan past suffixes in *-ni* (see the paper by Alpher, Evans & Harvey).

The same applies, of course, to the lexicon. Although our research on non-Pama-Nyungan lexical reconstruction is even more primitive than that on its grammar, it now looks likely

that many of the words in Capell's 'Common Australian vocabulary' are restricted to Pama-Nyungan: such terms as *bula* 'two', *jina* 'foot', *gujarra* 'two' and *bina* 'ear' do not occur outside Pama-Nyungan, suggesting they are Pama-Nyungan lexical innovations, whereas other terms like *jarra* 'thigh', *lirra ~ dirra ~ rirra* 'tooth' and *gugu* 'water' are attested in both Pama-Nyungan and non-Pama-Nyungan and are hence plausibly attributed to a much deeper level, perhaps Proto Australian or perhaps an ancestor of Pama-Nyungan and most but not all nonPN.

In fact, I believe it is premature to make any proposals about Proto Australian until we have a better-established subgrouping of the non-Pama-Nyungan languages. The above remarks are merely intended to illustrate the way in which the projected time-depth of particular elements present or absent in Pama-Nyungan depends on the location of Pama-Nyungan in the overall classification of Australian languages.

There is a second consequence of the Pama-Nyungan daughter model, not available with the other three models: explanations for Pama-Nyungan forms can be sought in non-Pama-Nyungan languages. On the other hand, if Pama-Nyungan is merely an equal sister to non-Pama-Nyungan (à la Heath), or a typologically or areally-defined collection of sisters (à la Dixon), then non-Pama-Nyungan forms cannot be used to explain Pama-Nyungan forms (except by postulating borrowing). Yet on the offshoot model we can expect that non-Pama-Nyungan languages will often furnish plausible evidence regarding the origins of Pama-Nyungan forms. So far there has been negligible research on these lines — obvious points of departure would be the sources for the innovated Pama-Nyungan free pronouns, the distinctively Pama-Nyungan case suffixes (ergative/instrumental *-lu/-ngku*, locative *-la/-ngka*, accusative in *-NHa*, ablative in *-ngu*), and nominalising/participial *-NHTHa-*, as well as the developments of vowel and consonant length as contrasted in Pama-Nyungan and non-Pama-Nyungan. Within this volume, the paper by Alpher, Evans and Harvey on verb conjugations advances some hypotheses about how the Pama-Nyungan conjugational system may have emerged from a system more like that reconstructable for Proto Gunwinyguan.

3 Internal classification of the non-Pama-Nyungan languages

Existing classifications of non-Pama-Nyungan languages postulate some twenty-seven coordinate language families, with no higher-order subgroupings, and many of the families having a single member. Even this understates the number of assumed non-Pama-Nyungan families, since the linguistically diverse area around the Alligator Rivers, simply left as 'unclassified', contains at least two highly divergent languages: Limilngan (Harvey 2001) and Umbugarla (Davies 1989), each with their own claim to family-level isolate status.[5]

Comparative work over the last two decades, including many of the papers in this volume, has substantially revised this picture, grouping many of these families together, reassigning some languages into and out of non-Pama-Nyungan, and splitting other families. The following paragraphs summarise the changes since the O'Grady classifications; Map 1 summarises the resulting overall picture.

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[5]   In addition, there are likely to have been further families in the region, though these died out before they could be recorded properly. Ngardug, at the south-eastern corner of Van Diemen's Gulf, is an example. Other languages of the region, such as Buguniidja and Ngurmbur, were said by people alive in the 1980s to have been close to Umbugarla, but without recorded material it is impossible to be sure of their status.

(a) Work by Chadwick (1984), Nordlinger (1998) and Green (1995) has shown that what was formerly known as the Djingili-Wambayan family should be grouped with the Djamindjungan family in the so-called Mindi family. This family is geographically discontinuous: a column of Pama-Nyungan languages (of the Ngumpin-Yapa subgroup) separate the Jingulu-Wambayan languages, which are spoken in the Barkly Region, from the Djamindjungan languages, spoken in the Victoria River District. Wambaya and Jingulu, long seen as anomalous because they are non-prefixing non-Pama-Nyungan languages, appear to have developed noun-class suffixes through the suffixing of noun-class-prefixed demonstratives. Further, they appear to have reduced a small set of pronominally-prefixed verbs to the status of a second-position auxiliary (in Wambaya), which in Jingulu (= Jingili, Djingili) has gone on to develop into a complex verbal suffix. Although this lumping has gained wide acceptance, a recent conference paper by Nordlinger and Green (2001) has argued for a more sober assessment of the evidence, pointing out the paucity of clearly shared innovations, and the small number of vocabulary items distinctive to this family. In addition, they point out that there is no evidence for grouping Jingulu together with the remaining Barkly languages, which they term the Ngurlun subgroup (Wambaya, Gurdanji and Ngarnka). Rather, both Jingulu and the Ngurlun languages appear to have independently converged on the suffixing, dependent-marking typology of their southern neighbours.

(b) The Tangkic languages of the Southern Gulf of Carpentaria have been removed from Pama-Nyungan and are now regarded as a distinct non-Pama-Nyungan family (Blake 1988; Evans 1995). Evaluation of the materials on Minkin, originally treated as a family-level isolate, suggests it too should be subsumed under Tangkic (Evans 1990). Blake (1990) has suggested that the auxiliary in Yukulta, the most conservative language of the group, retains vestiges of the pronominal prefixes found in most non-Pama-Nyungan groups, and indeed the auxiliary may be a degenerate pronominally prefixed verb, as in Wambaya.

(c) Yanyuwa, from the Borroloola region, originally classified as a family-level non-PN isolate, has been shown to be Pama-Nyungan and indeed to belong to the Warluwarric subgroup (Blake 1988; Carew 1993; Brammall 1991). Again, the resulting family is geographically discontinuous.

(d) The Garrwan languages, Garrwa and Wanyi, have been shuffled back and forth between Pama-Nyungan and non-Pama-Nyungan in existing classifications: O'Grady et al. (1966) treated them as a distinct non-Pama-Nyungan family, Blake (1988) included them as Pama-Nyungan, but revised his view in Blake (1990:62), stating that 'Karwan [=Garrwan – N.E.] is basically non-Pama-Nyungan and ... the Pama-Nyungan pronoun forms are intrusions'. Despite being relatively close to Pama-Nyungan in their pronominal and case morphology the Garrwan languages share a number of verb formatives with Wambaya (Nordlinger 1998:159) and it is not clear at present whether this is due to borrowing or shared inheritance. The papers in this volume by Breen and Belfrage expand our synchronic understanding of these two unusual languages, and furnish new material on the lexicon, the functioning of auxiliary elements, and the conjugational system, that will need to be taken into account before the puzzling position of these languages can be understood. Breen's paper, in particular, mentions a tantalisingly large number of morphological items shared with Wambaya/Gurdanji, though he refrains from proposing a link between these two groups.

(e) The Daly River languages were treated as a single family in Tryon's (1974) early classification, but recent research has resulted in extensive splitting and reclassification. Ian Green's paper argues for a South Daly family that groups together Murrinh-Patha (treated as a family-level isolate by earlier classifications) with Ngan'gityemeri. Work in progress by Green, Reid and Harvey then splits the remaining Daly languages into four families:

- Eastern Daly, containing Kamu and Matngele (see Harvey, Chapters 6 and 7)
- Northern Daly, containing Malak-Malak and Tyeraity
- Anson Bay, containing Paccamalh and Pungu-Pungu
- Western Daly, containing Marrithiyel, Marranungku, Emi and others

Of these four groups, possible remote connections to the east have been proposed for the Eastern Daly languages, which appear to have some affinity, albeit remote, with the Gunwinyguan languages of Arnhem Land (Harvey, Chapters 6, 7). The overall picture that emerges from recent work on the Daly languages is that they have much more genetic diversity than originally believed, but that this has been overlaid and partly erased by strong convergence in a Daly River Sprachbund. The effects of this convergence on two languages at the eastern boundary of the Daly region are discussed in the above-mentioned papers by Harvey.

(f) In Arnhem Land there has been substantial reduction in the number of families postulated. To begin with, the Gunwinyguan family has been expanded both eastward and westward, to include Nunggubuyu (see papers by Alpher, Evans and Harvey, and Harvey, Chapter 8), and the 'family-level isolate' Warray, now regrouped with Jawoyn into the Western subgroup of Gunwinyguan (Harvey, Chapter 10). The further possibility of including Anindilyakwa within 'Greater Gunwinyguan' would follow from Heath's remarks about the closeness of Nunggubuyu to Anindilyakwa (Heath 1978, 1990, 1997), but so far no-one has risen to the challenge of assessing the genetic position of Anindilyakwa in detail. Arguments for extending Gunwinyguan so as to include Mangarrayi, another family-level isolate in the O'Grady classification, are given by Alpher, Evans and Harvey in their paper, but Merlan (Chapter 12) disagrees with this assessment, arguing instead that it should be grouped with the Maran languages. A possible solution to this dilemma may come from including them within an even broader 'Arnhem' grouping (see below), to which both sets of shared features could then be attributed. At the same time as the above languages have been added to Gunwinyguan, other languages have been provisionally excised for lack (at present) of clear evidence of close relatedness: Wagiman, and Wardaman/Dagoman/Yangman, which were all included as Gunwinyguan both by O'Grady et al. (1966), and by Harris (1969).

In North-Central Arnhem Land, the classification by O'Grady et al. postulated three distinct families in the Maningrida region: Burarran, comprising the two languages Burarra and Gun-Gorrogone (=Gurr-goni), and the two family-level isolates Nakkaran (containing just Na-kara) and Gunabidjian (containing just Ndjébbana, aka Gunabidji). Rebecca Green's original presentation at the 1989 conference brought together evidence for far-reaching morphological parallels between these four languages, justifying their inclusion in a single 'Maningrida' family. In the expanded version of that paper included in the present volume, she goes on to find evidence that many of

the same grammatical elements are in fact more widespread, occurring for example in the Maran languages along the Roper River, and in Mangarrayi. This suggests there is strong prima facie evidence for a higher-level 'Proto Arnhem', which would include these languages, plus greater Gunwinyguan, plus a number of others: Gaagudju, Kungarakany, and possibly Wagiman/Wardaman. It is too early to tell whether other families of Arnhem Land — Iwaidjan, Tiwi, Geimbiyu, Umbugarla, Larrakiya and Limilngan — can be linked to this higher-level grouping.

(g)   The Kimberleys is the area that has undergone the least change in classification. Stokes and McGregor, in Chapter 2, furnish more detailed information than was available in the 1960s, but that essentially confirms the classifications made by O'Grady et al. The three other Kimberley families proposed in O'Grady et al., namely Worrorran, Bunaban and Jarragan, have likewise come through unrevised.[6]

4 Lexical reconstruction and historical phonology

Taken together, the above proposals reduce the number of groupings within nonPN to around twenty, and it is likely that further research will uncover other connections as we begin to compare reconstructed proto-systems rather than modern languages. Progress will remain slow, however, until purely morphological comparisons can be supplemented by reconstructed lexicon and studies of historical phonology, allowing us to bring phonological innovations and etymologically-informed vocabulary comparisons into our purview.

Work on lexical reconstruction has been hindered for non-Pama-Nyungan languages by the lack of substantial dictionaries. At present there are fewer than ten book-length dictionaries: Ungarinyin (Coate & Elkin 1974), Bardi (Aklif 1999), Tiwi (Lee 1993), Nunggubuyu (Heath 1982b), Anindilyakwa (Groote Eylandt Linguistics 1993), Burarra (Glasgow 1994), Kayardild (Evans 1992) and Lardil (Ngakulmungan Kangka Leman 1997). It should therefore come as no surprise that there has until now been no substantial study of historical phonology in any non-Pama-Nyungan subgroup.

Harvey's study of the Proto Gunwinyguan lexicon (Chapter 8) is the first serious attempt to tackle historical phonology in a non-Pama-Nyungan family, and shows how much can be done in this area. The phoneme inventory reconstructed by Harvey for Proto Gunwinyguan differs significantly from Dixon's 'Proto Australian' phoneme inventory. It contains five vowels without a length distinction (against Dixon's three vowels plus length), and paired singleton and geminate (or perhaps long and short) stops (against a single series in Dixon's 'Proto Australian'), and two laminal stops (laminopalatal and laminodental), though only a single laminal nasal (laminopalatal). A further noteworthy feature of Harvey's reconstruction is the high specificity of plant and animal vocabulary reconstructable for Proto Gunwinyguan. This contrasts starkly with the paucity of such vocabulary currently reconstructable for Proto Pama-Nyungan (Koch 1997; Nash 1997; Evans & Jones 1997). It is an interesting question whether this is due to the more homogeneous ecology of the

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[6]   An intriguing unpublished conference paper by Saunders (1999) claimed that the previously undocumented language Andajin may be a mixed language sharing Bunaban and Worrorran traits. However, at this point there is insufficient data to evaluate this claim properly, or to eliminate the effects of code-switching in the speech of the sole surviving speaker on whose knowledge the paper was based.

Gunwinyguan as opposed to the Pama-Nyungan area, the greater closeness of the languages compared, or the lack of substrate influence in Gunwinyguan.

Returning to the issue of historical phonology, the existence of two stop series is in fact widespread in the Top End and the untangling of genetic and areal features is particularly complex here. Heath (1978, 1984) took the view that the single stop system in Nunggubuyu descends from an ancestral system with two stops (at the level of Proto Ngandi-Nunggubuyu), with the long/voiceless series continuing as stops and intervocalic short/voiced stops leniting to semivowels. Harvey's Gunwinyguan reconstruction confirms this, and identifies Mangarrayi as another language which has lost the contrast. A recent study by Gabina (2001) of the historical phonology of the adjoining Maningrida languages likewise finds clear evidence for reconstructing a long/short stop contrast in that family, though the initial stock of Proto Maningrida long stops has been augmented by a number of language-specific innovations such as the development of long stops from clusters and at certain morpheme boundaries. With the adjoining Pama-Nyungan languages in the Yolngu enclave, on the other hand, the position is less clear: are they the sole heirs to a Proto Pama-Nyungan two-series system, or did they develop it under areal influence from their two-series neighbours? Although the usual assumption that Proto Pama-Nyungan had just one stop series would imply that the Yolngu double series is an areally-motivated innovation, at present this is based simply on what is typical across Pama-Nyungan; Wood (1978) argues for it being an innovation, though without giving a worked-out scenario. And for other language families of the region, such as Iwaidjan and Maran with their single stop series, and the Daly River languages with their double series, we lack any idea of whether the proto-languages had one series or two.

5 Problems of diffusion and areal features

In an area as multilingual as northern Australia,[7] linguistic diffusion and the consequent development of areal features is bound to be widespread. Alpher's (1976) studies of linguistic diffusion in Cape York, and Heath's (1978, 1979) examinations of linguistic diffusion in Eastern Arnhem Land demonstrated high levels of indirect and direct morphological borrowings between languages; in the latter case this crossed the Pama-Nyungan/non-Pama-Nyungan divide. Many subsequent studies have demonstrated widespread diffusion and Sprachbund phenomena — see for example Hercus (1987) and Rigsby (1997). Continuing this tradition, in the present volume, are the studies of direct and indirect diffusion in the Daly Region by Harvey (Chapters 6 and 7), and of mutual structural adaptation between Pama-Nyungan and non-Pama-Nyungan languages in the Victoria River region by McConvell (Chapter 3).

Significantly, the focus in these papers is on indirect (structural) diffusion, rather than on the direct diffusion of morphemes. Throughout the last two decades there has been a tendency to overstate the importance of direct diffusion in Australian linguistics, so that in the complex matter of deciding between diffusion and inheritance the default explanation

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[7]   For discussions of the extent of multilingualism in the Top End see Elwell (1982) and Brandl and Walsh (1982).

has been taken to be diffusionist by some authors.[8] The most serious example has been the dismissal of Pama-Nyungan as a genetic group on the basis of putative areal diffusion (see above). Another example is the claim that the nominal gender system including the prefixes *ma-* (vegetable) and *gu-* (neuter), widespread in non-Pama-Nyungan and in my view reconstructable to very deep levels, could owe their distribution to diffusion rather than inheritance. These prefixes form part of a four- or five-class system that I also believe to be reconstructable, but the form and content of the other three classes is less clear and no papers in the current volume discuss it.[9] Heath (1978:88) is one who suggested the ubiquity of this system could result from diffusion:

> [I]t should be indicated that the spread of noun-class systems over much of north-central and north-western Australia may well have been largely accomplished through direct diffusion of the actual affixes, rather than by independent developments in each language group.

However, the evidence that Heath assembles for direct diffusion of noun classes in eastern Arnhem Land is limited to the form of certain non-human prefixes in Warndarang. His arguments (Heath 1978:90) that the *n*-less forms in Warndarang have been borrowed from pre-Nunggubuyu are tendentious and other explanations are equally plausible, such as the possibility that only Warndarang has preserved the relevant forms.

Apart from the need to use careful evidence from internal alternations, and to integrate the findings of historical phonology (both of which are amply pointed out by Heath), three types of consideration need to be given.

Firstly, the appearance of data from further afield can suddenly alter the interpretation of features shared between neighbouring languages: a feature X, shared by neighbouring L1 and L2 in different subgroups, may look diffused while one only considers the local area, but be more plausibly treated as inherited once it is shown to be present in a third group. Consider the fifth, neuter-type, gender in Warndarang, with form *(r)a-*; Heath attributed it to borrowing from Nunggubuyu on the basis that within the family containing Warndarang, namely Maran, no other language attests this gender. But the likelihood that this form descends through Proto Maran rather than through borrowing is increased when one realises that distant Maung also has a fifth, neuter-type, gender, in *a(K)-*. The paper by Alpher, Evans and Harvey is another example of how a widened purview can reveal putative diffused innovations as areally-shared retentions: it identifies two morphemes which, though claimed by Heath (1978) to have been borrowed into Gunwinyguan (specifically Ngandi) from Yolngu (specifically Ritharrngu), turn out to be retentions shared by both groups, once one brings in evidence from groups further afield (such as Warray and Dalabon).

Secondly, the need for reconstruction of paradigms and irregularities cannot be overemphasised. As Nichols (1996:52) points out, '[p]aradigmaticity imposes co-occurrences and an ordering on a set of forms each of which, if taken individually, would be much too

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[8]　Obviously both diffusion and inheritance are present throughout Australian languages. However, in terms of scientific heuristics, I believe it is problematic to take diffusion as the default position. This is because, if we take the classical inheritance approach as our starting point, it is easy to falsify (e.g. through exceptions to regular correspondence sets), whereas if we take diffusion as the starting point, falsification is much more difficult, since every appeal to shared features can be explained as due to yet more diffusion.

[9]　See Clendon (1999) for a recent comparison of Worrorran and Nunggubuyu, and Sands (1995) for a compilation of much of the relevant data.

short for its consonantal segments to reach the individual-identifying threshold. The co-occurrences and ordering allow a probability level for the whole subsystem to be computed as the product of the probabilities of the individual forms and categories.' Suppletive sets, or even sets of allomorphs, are unlikely to be diffused en bloc; rather at most a single allomorph will be borrowed.

Thirdly, the mere fact that some feature is found just in adjoining languages of different groups does not automatically require an explanation in terms of diffused innovations, since diffusion can also support shared retention (Evans 2001). This is one possible explanation of the anomalous situation reported in Ian Green's paper, where adjacent languages share scores of paradigmatic irregularities, despite percentages of shared vocabulary below 15%: that over an immensely long period, bilingualism between the two languages may have preserved parallelisms in detailed structure at the same time as the more conscious process of differentiating vocabulary led to widespread lexical divergence.

6 Evidence for deeper-level relatedness

The primary focus of our discussion so far has been reconstruction at the level of the individual family. However, the amount of shared morphology across non-Pama-Nyungan languages is sufficient that deeper-level reconstructions are likely to prove rewarding.

I will now give a taste of the sort of evidence that points to the relatedness of nearly all non-Pama-Nyungan languages, and allows a reconstruction of specific areas of verbal and nominal morphology. (I say 'nearly all' because there remain a few of languages of the Darwin region — Limilngan and Larrakiya — as well as many languages of the Daly River, in which the reflexes of the forms to be assembled below barely appear). To avoid clutter I will select a few representative morphemes from half-a-dozen witness languages that represent most of the diversity found among the nonPN languages, as well as possessing a good geographical spread.

Most nonPN languages, and by presumption the proto-language from which they descend, have the following basic structures for noun and verb:

Noun:	Verb:
Ncl – Root – Case	S/O/FUT – Root – RR – TAM

Figure 5: Basic structures for noun and verb in Proto Australian and most nonPN languages

Over most of the non-Pama-Nyungan area (excluding Tangkic and Garrwan), the verb is the most complex part of speech morphologically.

The prefixal system encompasses prefixes for subject, object and futurity, as well as a suffix -*n* that mostly follows the object morpheme (object morphemes are of course absent if the verb is intransitive). The ordering of these elements is complex: a constraint on the order of subject and object is rivalled by another, stronger constraint that first and second person morphemes precede others, while the placement of the future/potential morpheme *%pana%*

(often reducing to *pa*, *na*, or *ana*)[10] depends on the syllabicity of the other prefixal elements and the placement of morpheme boundaries between them.

An idea of the similarities between different nonPN languages can be gained by comparing the following six forms of the verb 'hit' in Maung and Nunggubuyu, the first spoken on the north Arafura coast of Arnhem Land, and the second also in Arnhem Land, but on its eastern coast. They belong to quite distinct nonPN families and no investigator yet has proposed any genetic or areal link between them (except at the level of Australian languages as a whole).[11] The forms for 'he hit me', and 'she hit me' are given in the future and two non-future forms. The root for 'hit', a reflex of *pu* as in most Australian languages, has (probably independently) lenited to *wu* in both these languages, although *pu* is still found in certain environments, not shown here, such as after nasals. And two of the three tense/aspect/mood suffixes are cognate: past 1 -*ng* and past 2 -*ni*, the two forms basically expressing a perfective vs imperfective contrast in both languages (see the papers by Alpher, Evans & Harvey and Evans & Merlan for discussions of such systems within Gunwinyguan). In Nunggubuyu the form for 'hit' has been somewhat disguised by vowel changes in the two past tenses,[12] but the original *u* is preserved in the future as well as in other tenses not shown here (nonpast3 *wu:'* and evitative *wumaŋun*).

(1)   'he > me'
Maung	*ngani-wung*	*nganpani-wu*	*ngani-wuni*
Nunggubuyu	*ngani-wang*	*ngampani-wumana*	*ngampani-wini*
	1OBJ.3mSUB-hitP	1OBJ.FUT.3mSUB-hitF	1OBJ.3mSUBJ-hitP2
	'he hit me'	'he will hit me'	'he was hitting me'

(2)   'she > me'
Maung	*ngannga-wung*	*nganpanga-wu*	*ngannga-wuni*
Nunggubuyu	*ngangi-wang*	*ngampangi-wumana*	*ngampangi-wini*
	1OBJ.3fSUB-hitP	1OBJ.FUT.3fSUB-hitF	1OBJ.3fSUBJ-hitP2
	'she hit me'	'she will hit me'	'she was hitting me'

As can be seen, the prefixal morphemes are arranged with first person (*nga-*) preceding third person (*ni* if masculine, *nga-* (Ma) or *ngi-* (Nu) if feminine). An object marker -*n* is placed after the first person prefix, which is in object function here. In Maung this -*n* disappears before another *n*, and in Nunggubuyu, where the morphophonemics is more complex, it assimilates to *m* before *p* and is lost before any other nasal; wherever it occurs, it is shown in bold for ease of identification. Finally, a future marker *pa-* (identical in both languages, at least in this environment) is placed (in these cases) between the object marker and the third

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10   Clendon (1999), in his discussion of features shared by Worrorra and Nunggubuyu, gives a form *-ᵇwa(n)- (i.e. *wa(n)-* alternating with *ba(n)-*) for a prefix with 'counterfactual' semantics; the forms match well with the Maung prefix. A full-scale comparison of this prefix across non-Pama-Nyungan has yet to be undertaken.

11   Though Rebecca Green's higher-order 'Proto Arnhem' construct may eventually turn out to subsume Maung, she does not include the Iwaidjan languages within this group.

12   In the paper on Proto Gunwinyguan verb inflections by Alpher, Evans and Harvey, this verb is reconstructed with ablaut in the past perfective (*pom* ~ *pong*). The Nunggubuyu form -*wang* represents the levelling of *a* and *o* that has occurred in Nunggubuyu phonology; we do not know enough about Iwaidjan historical phonology to know whether -*wung* derives from *a* merger of *u* and *o*, or contains an original *u* vowel.

person subject. In Nunggubuyu this future marker has been extended to a general non-punctual marker and is also used in some non-future tenses, e.g. the 'past 2' which typically has an imperfective meaning. As a result of these changes, Maung reuses prefixes from the first column in the third, while Nunggubuyu reuses prefixes from the second column instead. Despite these language-specific changes, the complex inflected words considered here show clear similarities between Maung and Nunggubuyu in form, word structure, and the combinatorics of specific morphemes.

These forms are only a tiny fraction of the paradigm, and once one compares whole paradigms (with upwards of fifty elements, some of which, such as the 'I > you' and 'you > me' combinations are notoriously unstable) across fifty or more languages it is easier to lose the thread. However, to show that the resemblances are not simply bilateral I now give a slightly broader sample of eight languages and seven paradigmatic values (Table 1); see Harvey (Chapter 16) for a much fuller survey of intransitive prefix forms. Only the first combination above ('he > me') is included, in the fifth row, and in most languages this has the form *ngan-* rather than *ngani-*, possibly because in most languages the third person masculine pronoun is encoded by *φ* rather than *ni-*.[13] In this diagram I have bolded elements which, in a given language, appear to be ancestral and derivable from the postulated proto-forms given in the right hand column (I label this 'pX', Proto X, to emphasise that this may not go all the way back to 'Proto Australian'). Without going into the details it should be clear that there is substantial comparability of forms across the seven representative languages, which were chosen to span the full nonPN area. (In Kwini there are no transitive forms, so only subject forms are given; this is typical of the way a single principle, such as the discontinuation of object marking, can lead to the loss of a great deal of information from the paradigm).

Table 1:   Selected prefix forms in seven nonPN languages

	Maung	Tiwi	Nung	Wambaya	Kwini	Kune	Wardaman	Ungari-nyin	pX
1sg	**nga-**	**ngərrə-**	**nga-**	ngi-	ngv-	**nga-**	**nga-**	**nga-**	nga-
2pl	**kurr-**	ngatə-	nurru-	kirri-	kirr-	ngurri-	nu-	**kurr-**	kurrV-nVrrV-
3pl	awa-	pu-	wurru-	irri-	pirr-	pirri-	wurr-	purr-	pVrrV-
1sg/3*	ngi-/nga-	ngərrə-	nganu-	ngi-		**nga-**	**nga-**	**anga-**	nga-
3*/1sg	**ngani-**	yiməni-	**ngani-**	kini-ng-		**ngan-**	**ngan-**	**ngan-**	ngan(i)-
3pl/1sg	**ngantu-**	puməni-	**ngampi-**	irri-ng		**nganti-**	**nganpurr-**	**nganta-**	nganpu-
1sg/3pl	**ngawun-**	**ngawəni-**	ngarra-	ngi-		**ngapin-**	**ngawun-**	**punga-**	ngapun-

For a fuller consideration of the intransitive prefix forms, the reader is referred to Harvey's paper in this volume (Chapter 16), which postulates an eight-valued system, with four persons (first inclusive, first exclusive, second, and third) intersecting a two-valued number system of the minimal-augmented type (so that he would gloss my 1sg, 2pl and 3pl above as 1 minimal, 2 augmented and 3 augmented). The two forms *kurrv-* and *nVrrV-* each have such widespread reflexes across non-Pama-Nyungan that Harvey argues both should be reconstructed; the conditioning factor between these two forms (which may have

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13   Though it is also possible it derives from *ngani* by loss of the final vowel.

been some sort of tense/aspect/mood category, for example) has yet to be worked out. For the transitive forms we await a systematic study. An important double point demonstrated in this paper is, on the one hand, the need to reconstruct pronominal affixes and free pronouns separately, and on the other, the relatively greater stability of the bound over the free pronominal forms.

Turning now to another site on the verbal word, and sampling derivational rather than inflectional morphology, consider the marking of reflexives and reciprocals. The paper by Alpher, Evans and Harvey (Chapter 11, §3.19) considers cognate reflexive and reciprocal morphemes across a range of non-Pama-Nyungan languages, and postulates distinct reflexive and reciprocal suffixes which have often merged in modern descendants (sometimes generalising the reflexive, at others the reciprocal). Again, we are able to postulate clear form–meaning–combinatoric triplets for a deep-level common ancestor; significantly, we are here able to find cognates in Pama-Nyungan languages as well (Kulin, Djabugay, Warrgamay) for this suffixal slot.

As a third illustration of shared similarities, consider the system of noun class or gender prefixes found in most nonPN languages, as shown in Table 2, below.[14] Right across the nonPN area one finds evidence of descent from an ancestral system of at least four, possibly five classes: masculine (I), feminine (II), vegetable (III), certainly one neuter (IV) and possibly another (V).[15] For most classes there are at least two distinct allomorphs, whose function is not clearly understood but which were probably portmanteaux representing noun class plus another category, either case or a TAM category.[16] The same pairs of forms (e.g. masculine *yi-* and *ni-/na-*,[17] feminine *(y)iny-* and *nga-*) recur in language after language; in some

languages such as Wambaya and Tiwi they have shifted from prefix to suffix,[18] and in other languages (e.g. Tiwi) may survive only as fossilised forms on a few lexemes.

While space precludes us from a fuller survey of shared grammatical morphology in non-Pama-Nyungan languages, it should be clear from the preceding examples that the similarities in both nominal and verbal morphology are substantial and intricate. They also occur in parts of the grammatical system which one expects to be immune to diffusion, so they cannot be attributed to language contact. It may still be too early to tackle their systematic reconstruction head-on. First we need much sharper characterisations of intermediate systems at the family level, as represented by most of the papers in the current volume, and attention to historical phonology and lexical reconstruction in a way that is here represented here only for Nyulnyulan (Chapter 2) and Gunwinyguan (Chapter 8), in both cases in a rather preliminary way. But the number of affix points on nominals, adjectives and verbals at which distinct paradigmatic sets are comparable over most of the non-Pama-Nyungan languages provides a rich vein for historical linguists to mine in the years to come.

Table 2: Noun class prefixes (in some cases frozen) in nine nonPN languages

Class:	I Masc	II Fem	III Veg	IV Neut	V Neut 2
pNPN	yi- ni-	yiɲ- ŋa-	ma- mi-	ku-	a-
Maung	[y]i- (absV, Adj) ni- (ergV) nu- (some Adj)	iɲ- (absV, Adj) ŋa- (ergV) niɲ- (some Adj)	ma- (absV, most adj) ŋa- (some Adj)	aŋ- (absV, most adj) wu- (most Adj)	ak- (absV, most adj)
Tiwi	-ni suffix. Frozen [y]i- prefix e.g. yiraɹa 'two (masc.)'	ŋa - suffix Frozen [y]iɲ- prefix e.g. yiɲtaɹa 'two (fem.)'	Frozen mu- prefix e.g. muruwaṯi 'casuarina' cf. K ɹukuṯi 'casuarina'	Frozen wu- prefix e.g. wuɹara 'belly'	
Umbugarla[19]	ki-, k-, na-, niṯi-	kiɲ-, niŋku-, ŋimpili-	ma-, mi-, m-, maṯi-	ku-, kw-, nu-	
Wambaya	-yi (abs) -ni (n.abs)	-ŋa (abs) -ŋa (n.abs)	-ma (abs) -mi (non.abs)	-ka/-wa (abs) i-/ki- (non.abs)	
Kwini	nv- (verbal) n- (nominal)		m[v]- (verbal and nominal)	w[v]- (verbal and nominal)	a[n]- (verbal) a- (nominal)
Kune[20]	na-	ŋal-	man-	kun-	
Wardaman	yi- (animate, human, meat)		ma-	wu-	
Nunggubuyu	na- (contin.) yi:- (punc.)	ŋara- (contin.) yi:- (punc.)	mana- (cont.) ama- (punc.)		
Ungarinyin	a- (body part)	ɲa- (body part)	ma- (body part)	wu- (body part)	
Warndarang	ŋa-	ɲi-	ma-	wu-	[r]a-

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14   Unfortunately the track disappears here also in PN, which loses its prefixes. One PN language, Yanyuwa, has noun class prefixes but these are a redevelopment, though a complex case since the forms are cognate with nonPN; the most likely scenario is that the prefixes survived on demonstratives, from which they were regrammaticised as nominal prefixes.

15   Whereas the other four exhibit reasonable agreement in their semantic content across languages, this is less clear in the case of the fifth class *(r)a-* : it is focused on animals in Ngandi and Gwini, but the Maung *aK-* class is focused on plants, meteorological phenomena and abstracts. It may be the these prefixes are simply non-cognate, although the comparable class in Nunggubuyu *(ana-)* contains both life-form terms of fauna, and many specific flora terms.

16   Portmanteaux of noun class plus case are found in Nungali, for instance (Bolt, Hoddinott & Kofod 1971:69), where the Class IV prefix has the absolutive form *nu-* and the dative/possessive form *ki-/ku-*, Class II has the absolutive form *nya-*, the ergative/instrumental/locative form *nganyi-*, and the dative/possessive form *ganyi-*. In other languages a range of different conditioning factors apply, e.g. punctual vs non-punctual in Nunggubuyu (i.e. conditioned by tense/aspect/negation), while in Umbugarla and to a lesser extent in Maung they are conditioned by the lexical item they attach to. The whole pattern suggests that an old paradigm of noun class by case has collapsed in most daughter languages, with reassignment of function to the variants on different bases in different languages, and categorial loss of all but one variant in others. See also Heath (1987) on evidence for the presence of an accusative series for these prefixes.

17   In Anindilyakwa (Leeding 1989, cited in Sands 1995) both *n(i)-* and *y(i)-* are found, the former for human males and the latter for nonhumans with masculine characteristics. A hypothesis which would account for the recurrent association of both *n-* and *y-* initial forms with Class I / Masculine across the non-Pama-Nyungan area would be to postulate an original system of the Anindilyakwa type, with collapse of the distinction in most daughter languages, either with selection of one or the other form (e.g. *yi-* in Wardaman but *na-* in Warndarang) or retention of both forms but with a change in the conditioning of the choice to case (as in Maung) or aspect (as in Nunggubuyu).

18   In Wambaya this happened by postposing demonstratives (which included the prefix) to the modified noun; when the demonstrative grammaticalised to a suffix this left the erstwhile prefix in suffix position. See Green (1995) and Nordlinger (1998).

19   In Umbugarla the form of noun-class prefixes partly depends on phonological factors, but the main conditioning factor is lexical. For example, the masculine prefix is *ki-* or *k-* before *-calak* 'short', *-arik* 'bad', *-rrinkir* 'one' and *-artan* 'small', but *na-* before *-rari* 'big' and *-rrungurla* 'heavy'. See Davies (1989:44–46).

20   Prefixes are no longer productive but are in sister dialects. In Kune they remain on large numbers of noun roots; the masculine prefix has been generalised to all adjectives as agreement has been lost.

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