

# ***Aboriginal Linguistics***

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## **Arguments for Pama-Nyungan as a genetic subgroup, with particular reference to initial laminalization**

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### **1. PAMA-NYUNGAN — SUBGROUP OR RESIDUE?**

Blake's paper in this volume is a landmark in Australian historical linguistics. The redefined Pama-Nyungan that emerges is a much more promising candidate for a genuine mid-level genetic subgroup, clearly distinct from typological and areal groupings.

Compared to previous classifications, it clarifies the difference between a genetic classification and a typological classification into prefixing and non-prefixing — or, more accurately, into head-marking and dependent-marking (Nichols 1986), which allows us to include the suffixing Barkly languages such as Jingili with the prefixing languages in a single typological grouping. On the new classification, although most Pama-Nyungan languages are dependent-marking, and most non-Pama-Nyungan languages are head-marking, we have exceptions in both directions. Yanyuwa is a head-marking, prefixing Pama-Nyungan language, and Djinang is becoming one as it develops subject and object proclitics to the verb (Waters 1984). On the other hand, the Tangkic languages are dependent-marking, suffixing non-Pama-Nyungan languages (cf Evans 1985). Typological characteristics are at least as diffusable in Australia as they are elsewhere (e.g. Heath 1978a), and a genetic group whose boundaries coincide with a typological group must necessarily be somewhat suspect.

The fact that both the redefined Pama-Nyungan and Blake's 'northern' group show geographical discontinuities is also a welcome new feature. Most well-established genetic groupings outside Australia are discontinuous, or contain intrusive pockets from other groups — e.g. Indo-European, Algonquian, Dravidian with its relict pockets in northern India and Nepal — and it would be extremely unlikely that the prehistory of Australia were so serene that groups never became separated. Entirely continuous groups, then, are as suspect as groups that are uniform typologically. The redrawn genetic map of Australia now includes, in addition to the long-established discontinuity of the Yolngu languages, a discontinuity between Yanyuwa and other Pama-Nyungan, and between Tangkic and other non-Pama-Nyungan.

At a lower level of subgrouping, there are discontinuities between the suffixing Barkly languages of the Jingiluan group and the prefixing Djamindjungan languages north of the Victoria river (Chadwick MS), and between Warray and Kungarakany (formerly classified as family-level isolates) and the Gunwingguan languages (Harvey 1986, Evans in prep., Alpher, Evans & Harvey in prep.)<sup>1</sup>.

However, the new classification leaves open a most important question for Australian historical linguistics, and for Australian prehistory: what is the origin of the extreme imbalance between the relative linguistic uniformity of seven-eighths of the continent (the Pama-Nyungan region) and the enormous diversity of the remaining area, the Kimberleys and the Top End? Is it due, as Dixon 1980 implies, to accelerated linguistic diversification in the northern regions? Or, as Hale 1962 has argued, is the northern mosaic the legacy of a profound time depth, while the homogeneity of the rest of the continent results from a relatively recent spread of Pama-Nyungan? If the northern languages are the chief innovators, there is the mystery of why such wide divergence exists there. On the other hand, a hypothesis of Pama-Nyungan innovation would account for the picture of northern diversity and southern conformity, but create an extremely puzzling situation for prehistory, implying massive cultural or demographic change in the relatively recent past. Those looking for linguistic links outside the continent (e.g. Foley 1986) must also reckon with an answer to these questions, for it will determine whether the 'proto-Australian' forms to be compared are drawn from the Pama-Nyungan set or the Northern set.

I find Blake's answers to these questions unnecessarily equivocal. Later in this paper I will review phonological evidence that Pama-Nyungan is the innovator, but before doing so I would like to re-examine some of the conclusions Blake draws from his pronominal data.

Firstly, I think his paper confirms the assumptions made in Dixon 1980 that the ancestral language common to both Pama-Nyungan and the northern languages did not have pronominal prefixes. This conclusion is warranted on two grounds:

(a) by the great variety of affixal structures attested in prefixing languages, such as SO-V in Gunwingguan, Larakiya, Wadyiginy, Nunggubuyu and Anindilyakwa, OS-V in Yanyuwa, Gagudju and Wunambal, V S-AUX-O in Maran, S-AUX-O V in Daly, and S-V-O in Bardi, which is suggestive of independent development in the same gross typological direction, and

(b) by the lack of pronominal prefixes in the non-Pama-Nyungan Tangkic languages, which were isolated from the development of a more head-marking typology.

Secondly, removing Yanyuwa from non-Pama-Nyungan also removes the only convincing "non-Pama-Nyungan" reflexes of the Pama-Nyungan locative

and ergative. I think that Blake, like Dixon, has been led by a basically Pama-Nyungan-centric attitude to exaggerate the impact of head-marking typology on the case system, and to adopt an implausible position on the absence of reflexes of the Pama-Nyungan ergative and locative case markers. While it is true that some non-Pama-Nyungan languages (e.g. Iwaidja) have shed all core and some peripheral case marking, there remain a large number that retain it and yet *no language now classified as non-Pama-Nyungan, and not immediately adjacent to a Pama-Nyungan language which could serve as a source for loans, has a convincing reflex of ERG -ŋgul-lu or LOC -ŋgal-la*. (The Bunaban languages have ERG/LOC -yigga in Bunaba and -ŋga in Gooniyandi, but these may well be loans from adjoining Pama-Nyungan languages.) The Gunwingguan languages, probably the closest group to Pama-Nyungan, have a number of ergative forms like -yi, -yi?, which probably go back to proto-Gunwingguan and can possibly be related to an early proprietive -DHirri (cf Dixon 1980) retained in both Pama-Nyungan and non-Pama-Nyungan; other non-Pama-Nyungan languages have a wide range of forms local to each subgroup.

Dixon and Blake's position requires us to assume that non-Pama-Nyungan languages independently lost the ergative early in their development, then that a large number of subgroups innovated new ergative forms in spite of a head-marking typology disfavouring the development of core case marking. With the locative there is even less typological reason to lose case suffixes, yet convincing reflexes of -ŋgal-la are completely absent from the non-Pama-Nyungan languages, with the exception of Bunaban as noted above. A far simpler account, I suggest, is that ergative -ŋgu/-lu and locative -ŋgal-la are Pama-Nyungan innovations. This would account both for the absence of reflexes in non-Pama-Nyungan and for the great diversity of ergative and locative case markers in non-Pama-Nyungan, attributable to independent earlier developments before the onset of head-marking typology made core case-marking less important.

A third point, on which Blake remains justifiably neutral, concerns the relative antiquity of the two pronoun systems. On the one hand, the greater segmentability of the Northern pronoun system suggests (though not particularly strongly) a more recent origin. On the other, the presence in Pama-Nyungan of one form (the plural suffix -rra in NHurra) which is not a recurring partial in the Pama-Nyungan pronoun paradigm, though explicable in terms of the Northern system, is consistent with it being a relic in Pama-Nyungan of an older, Northern-type form.

A fourth point Blake mentions is the discontinuity of Pama-Nyungan (i.e. the Yolngu enclave), which he claims is suggestive of a relict group. However, this can just as easily be explained by Yolngu migration, a hypothesis for which independent biogenetic evidence exists in the form of dermatoglyphic comparison of fingerprints linking them to Central Australians (Dixon

1980:257). It must also be pointed out that non-Pama-Nyungan, too, is discontinuous, as evidenced by the Tangkic enclave.

Another crucial piece of evidence that Blake omits is that of verb conjugation markers and inflections. Dixon (1980) rightly stresses the importance of conjugation markers to Australian historical linguistics, but assigns them an origin (proto-Australian) much earlier than the evidence warrants.

Outside Pama-Nyungan the only languages with verb desinences cognate with the Pama-Nyungan conjugation markers are the Gunwingguan group, Gagudju and Mangarrayi, all of which are in Central Arnhem Land. No non-Pama-Nyungan language on the Arafura coast, the Daly region, the Barkly tablelands, the Kimberley, or the southwest Carpentaria coast contains any cognates with the conjugation markers. In Alpher, Harvey & Evans (in prep.) evidence for this is marshalled, and we argue that, although the verb paradigms reconstructable for these Central Arnhem Land languages contain segments cognate with the conjugation markers, these segments are not sufficiently well distributed through the paradigm to warrant the term conjugation marker. Their extension to conjugation markers, we argue, was a Pama-Nyungan innovation which proceeded by taking inflected forms, containing what were to become the conjugation markers, as analogical bases, thus extending their domain to much of the verb paradigms. Also relevant here is the recent work by Alpher (in press) on verb reconstruction, which finds that certain inflected verb forms can be attributed to Pama-Nyungan but no earlier.

Finally, Blake omits to examine the distribution of the nominalizer/infinitivizer -NHDHa, which has a wide distribution within Pama-Nyungan but is not attested outside it. Attestations include Western Desert *-nyja-* (Goddard 1983 on Yankunytjatjara, Clendon 1988 on Manjiljarra), Warlpiri *-ninja/-rninja/-nyja* (Hale 1974), Warumungu *-(n)j(j)V* (Evans 1982), Eastern Arrernte *-nyjə/-jə* (Wilkins p.c.), Djapu *-nal-nhal-nya* (Morphy 1983). Yanyuwa has a verbal suffix *-nhdha* which derives participial bases, among other functions (Kirton 1978). Kalkatungu (Blake 1979) has a formative *-nyja-* in the habitual, purposive and continuing verbal suffixes; the purposive *-nyjaya*, for instance, can be analysed into *-nyja* plus the dative case *-aya*. Adnyamathanha forms participles and formally identical 'affixes of contemporary action' by adding *-nhdha* or *-tha* to the verb stem (Tunbridge 1988)<sup>2</sup>. The distribution of this formative clearly suggests it is a Pama-Nyungan innovation.

My interpretation of all this data, then, is that Pama-Nyungan has innovated (a) ergative *-ŋgu/-lu* and locative *-ŋga/-la*, with their distinct allomorphy,<sup>3</sup> (b) the nominalizer in -NHDHa-, (c) a new pronoun system, (d) certain verb inflections, and (e) with Gunwingguan, whatever system of verb inflections gave rise to the conjugation markers. Most non-Pama-Nyungan languages have innovated structurally by prefixing bound pronominals, but the variety of

structures suggests a large number of separate though typologically convergent developments.

This scenario has the additional advantage of being consistent with a widely accepted principle of historical linguistics that the area of greatest diversity is the area from which the original dispersal took place (Sapir 1949, Dyen 1956, Diebold 1960). In Dyen's formulation (op. cit:625) "determinable positive migrations are from complex areas to uniform areas"; within Australia this suggests migration has occurred from the relatively complex areas of the Top End and Kimberleys to the relatively uniform area of the rest of Australia (see Hale 1962:1 and Wurm 1972 for early expositions of this interpretation).

The view of Pama-Nyungan as a valid genetic subgroup marked by shared innovations would become even stronger if we could find a distinctive phonological change shared by all and only the Pama-Nyungan languages. In the remainder of this paper I propose such a change: laminalization of initial *d* and *n* to DH and NH. I argue that the laminalization isogloss coincides nearly exactly with isoglosses for other PN innovations, and provides further support for a PN subgroup, and for viewing the 'northern' languages as a residue group in which the pronoun system and initial apicals are archaic shared retentions.

## 2. THE PHENOMENON OF LAMINAL-APICAL CORRESPONDENCES.

Various authors have noted the correspondence between initial apicals in non-Pama-Nyungan and initial laminals in Pama-Nyungan. Thus Dixon (1980:222) writes "all Australian languages have a laminal stop, *j*, and all except one (Western Torres Straits) have a laminal nasal, *ny*. Despite this, some nonPN languages have apicals in certain key cognates corresponding to laminals in other languages." As evidence he cites Kunwinjku (nonPN) *ni-* 'sit', *na-* 'see, look at' and Nyawaygi (PN) *nyii-*, *nyaa-*.

Elsewhere in the same work (1980:427) Dixon suggests the direction of change has been from laminal to apical: "there are other examples of the changes NH, NH > n and DH, DY > d" (in Kunwinjku). This is consistent with his overall position that the non-Pama-Nyungan languages tend to be the most innovative.

Blake (1988) also mentions the correspondence but does not take a stand on the direction of change: "there seems to be a regular correspondence between initial laminal nasals in roughly the Pama-Nyungan area and apical nasals in the northern area."

The question of which direction this sound change has followed is relevant to the broader question of whether Pama-Nyungan is a valid genetic subgroup, distinguished by shared innovations. In what follows I will use A as an abbreviation for 'initial apical obstruent' (stop or nasal) and L for 'initial laminal obstruent'; I shall refer to Dixon's position as the "L>A hypothesis"

(laminals become apicals in non-Pama-Nyungan) and the alternative as the "A>L hypothesis".

Now it is by no means obvious which direction the change should proceed in, since there are examples within Australia of both diachronic change, and morphophonemic alternations, in both directions. Examples of *laminals becoming apicals* are

(a) Nunggubuyu (NPN) has merged initial /ny/ and /n/ in favour of /n/ (Heath 1984:632).

(b) Uwinymil (NPN) has initial and intervocalic /d/ corresponding to /j/ in related languages (Mark Harvey, p.c.), e.g. Uwinymil *yadeng* 'went', Kungarakany *yojong*, Warray *yajiny*.

(c) Kunwinjku, Mayali and Rembarrnga (NPN) sporadically change initial /j/ to /d/ — cf Kunwinjku & Mayali *dany* 'stand-P.IMPF', *daginy* 'stand-P.PF', Rembarrnga *dany* 'stand-P.IMPF', but palatal-initial forms in other Gunwingguan languages: Jawoyn *jaḡiny* 'stand-P.PF', Kungarakany *joḡony* 'stand-P.PF', Ngalakan *jany* 'stand-P.PF'. (Many examples of Kunwinjku and Mayali NOT undergoing initial apicalization will be given in section 3.)

(d) in Yir-Yoront (PN) there is apicalization in external sandhi: 'between words and between the members of compounds, a laminal consonant assimilates in point of articulation to a preceding apical stop, nasal or lateral' (Alpher 1973:129).

(e) a morphophonemic change from laminals (both palatals and interdentals) to apicals is attested in the Tangkic languages, *but is limited to morpheme-final position*. Some examples from Kayardild: 'snake, bird' has root *yarbudh-*, as in propriative *yarbudh-uru*, locative *yarbudh-iya*, privative *yarbuy-arri* (with lenition before glide-initial suffixes like *-warri*) and utilitive *yarbuny-marra* (with assimilation to the following nasal), but the nominative apicalizes to *yarbud-a*. The root for 'firewood' is *ḡij-*, as in propriative *ḡij-uru*, locative *ḡij-i(ya)*, privative *ḡiy-arri*, and utilitive *ḡiny-marra*, but the nominative is *ḡid-a* (Evans 1985). Similar changes occur in Lardil (Hale 1973) and Yukulta (Keen 1982).

Examples of *apicals becoming laminals* are:

(a) the Ngayarda languages (PN) (O'Grady 1966:74-5) have merged initial laminals and apicals in favour of laminals<sup>4</sup>. (This represents a second round of laminalization, the first at the level of PN, the second at the level of proto-Ngayarda. In between, initial apicals were recruited through the /d/ realization of ancestral /rld/.)

(b) in Yir-Yoront, 'a final apical nasal or lateral is replaced by a lamino-interdental consonant of the same manner when certain suffixes follow' (Alpher 1973:87).

(c) An example of a stylistic A>L substitution is found in Warlpiri baby-talk, one of whose phonological characteristics consists of substituting word- and syllable-initial lamino-palatals for apicals (Laughren 1984), e.g. adult *nama* 'ant', baby-talk *nyama*; adult *wita* 'small', baby-talk *wija*. The possibility of baby-talk forms influencing adult varieties is discussed in Heffernan (1986) for Western Desert and Amery (1985) for Yolngu.

Examples where the *direction is unclear* include:

(a) In Yolngu languages, there are two sets of suffix allomorphs whose first segment spans /nh/, /ny/ and /n/: nominalizer {-NHara} (Morphy 1983:77, on Djapu) and 'immediate marker' {-NHa} (Tchekhoff & Zorc 1983, on Djamparrpuynngu). For the immediate marker I have been unable to ascertain the conditioning factor, but with the nominalizer it is clear that the underlying form is laminal, with assimilatory apicalization following certain conjugation markers: the distribution is *-nya(r(a))* or *-nha(r(a))* after verbs in the *zero* or *ŋ* conjugations, but *-nha(r(a))* after verbs in the *l* or *n* conjugations.

(b) Ngalakan regularly has initial lamino-palatals corresponding to initial apicals in Kunwinjku and Mayali before front vowels. Cf Mayali *gun-di* 'liver', Ngalakan *jiwi*, Mayali *-dile-bu-* 'urinate', Ngalakan *jele* 'urine'. Because there has been sporadic initial apicalization in Kunwinjku and Mayali, this correspondence could represent either apicalization in Mayali from ancestral palatals, or lamino-palatalization in Ngalakan from ancestral apicals — larger sets of cognates, and reflexes in other, non-apicalizing languages would be needed before this could be decided.

Because of the existence of both A>L and L>A historical changes, arguments about both the direction of change and the languages it involves must proceed cautiously. A form like *gun-dad* 'thigh' in Mayali (NPN), for example, could be a reflex of a putative original laminal that has undergone sporadic apicalization in Mayali/Kunwinjku (as mentioned above), or an original apical. To decide, we need evidence from languages known not to have undergone initial apicalization — and here the evidence of such non-Pama-Nyungan forms as Kayardild *darr-a*, Lardil *derr-a* and Maranungku *darra* suggests an original apical. In what follows, proto non-Pama-Nyungan apicals are only reconstructed when the attestation extends beyond the 'sporadic apicalizing languages' Mayali and Rembarrnga.

With these complications taken into account, we can now consider evidence for my main argument in favour of the A>L hypothesis: that original initial apicals underwent laminalization in Pama-Nyungan and merged with initial laminals. The basis for this argument is as follows.

Alongside correspondences of PN /L/ to NPN /A/ are numerous correspondences of PN /L/ to NPN /L/, both for stops and nasals. However, there are no correspondences of PN /A/ to NPN /A/. Note that this pattern is



limited to initial segments: non-initially there are attestations of PN and NPN /n/ corresponding, as in DHina 'foot' (3.1.ii) and DHin 'vagina' (3.1.vi). The only putative exception involves the correspondence set l:rl:r:rd:d, whose proto-phoneme is more likely to have been something like a retroflex lateral flap than an apical stop; I shall represent it as /rld/.

Adopting the L>A hypothesis in the face of this data would mean setting up an irregular, exception-ridden sound change (since not all ancestral laminals would become apicals in NPN), whereas adopting the A>L hypothesis leads to the more favourable result of a regular, exceptionless sound change. Exemplification of these correspondence sets is in part 3.

The broad picture that will emerge, then, from the correspondence sets, is this:

proto 'Australian'	proto NPN	proto PN
* d	* d	* DH
* DH	* DH	* DH
* n	* n	* NH
* NH	* NH	* NH
* rld	*rld > r,l,rl,d,y	*rld > r,l,rl,d,y

This suggests that the merger of initial apicals and laminals is a PN innovation, while non-PN languages preserve the original contrasts.

### 3. THE DATA.

I now give examples of the various correspondences. Since falsification of the A>L hypothesis requires finding correspondences of PN and NPN apicals outside the l:rl:r:rd:d set, I checked for reflexes of all initial apicals in Capell's 'Common Australian', in Alpher's unpublished cognate file, and in Dixon (1980), without finding any A:A correspondences of the necessary type. Nonetheless, it should be borne in mind that negative evidence is always provisional and may be called into question by further comparative work. Following Dixon 1980, I use DH to represent a laminal stop and NH a laminal nasal, realized as a lamino-dental in some languages and a palatal in others. I also assume (after Dixon 1970) that a conditioned split into lamino-dental and lamino-palatal phonemes has occurred independently in various subgroups of both PN and NPN. D represents an apical stop and N an apical nasal; phonetically this may be retroflex in some languages and alveolar or dental in others but phonemically the contrast retroflex vs non-retroflex is neutralized word-initially. Meanings are only given for particular languages where they differ from the reconstructed meaning. A list of abbreviations for language names, and sources of forms, appears at the end of this article.

Note that I exemplify initial segments only. At this stage I remain non-committal about the 'accusative' suffix that is widespread in PN as *-NHa*, and in NPN as *-n(a)*, since it occurs outside the word-initial environment.

### 3.1 The correspondence DH:DH.

Examples are:

#### (i) \*DHalaNH- 'tongue'.

*PN reflexes*: e.g. WD *jaliny*, Yuwaal *dhalay*, Warrg *jalany*, Warlp *jalanyba*, PP *dharli*, WM *dhaa+ṅandh*, GY *ṅanhdhaar*, Yan *nda-ṅandhal*, Gur *jalany*, WW *jaliny*, MM *dhalinji*.

*NPN reflexes*: e.g. pT *\*jal-*, Kay *jalṅanhanga*, May *gun<sup>5</sup>-jen*, Ngank *detyeny*, Kurdanji *ṅanyjarla*, Jing *jalanya*, Goon *dhalanyi*, Nyig *jalany*.

#### (ii) \*DHina 'foot'.

*PN reflexes*: e.g. WD *jina*, Warrg *dhina*, GYal *jina*, PP *dhina*, Diy *dhina*, Warungu *jina*, Jaab *jina*.

*NPN reflexes*: e.g. Kung *gi<sup>5</sup>-jid*, Kay *jina* 'where', Wadj *jina* 'where' (Kay & Wadj meanings probably developed independently via 'whither track'), Goon *dHINGA*.

#### (iii) \*DHa- 'stand'.

*PN reflexes*: e.g. Diy *dharrga* 'stand up', Yid *jana-n*.

*NPN reflexes*: e.g. An *mura-jang-ina*, Kung *ja-*, Wadj *ja-*, Kay *dhaldi*.

[As noted in section 2, some Gunwingguan languages have recently-apicalized reflexes in *d*: Kunwinjku and Mayali *da(ṅi)-*, Rembarmga *da-*.]

#### (iv) \*DHu(u)- 'swear at, scold'.

*PN reflexes*: e.g. Djaru, Gur *ju-n*, Warlp *ji-n*.

*NPN reflexes*: e.g. Kay *dhuu-/ju-*, Bur *jo-*, Mang *ju-g*.

#### (v) \*DHamun 'forbidden, sacred'.

*Arabana-Wangkayune*  
*hamuna* 'secret-sacred'

*PN reflexes*: e.g. Yid *jamuy* 'sacred, forbidden', Yid *jama* 'anything dangerous', Banj *-jam* 'privative suffix'. The development from 'bad, wrong' to the privative suffix is widely attested in Australian languages — e.g. Warumungu *wangu* 'bad, wrong', Warlpiri *-wangu* 'privative suffix'. Note also GYal *jabul* 'women's sacred place', GYim *dhabul* 'taboo; brother-in-law language'.

*NPN reflexes*<sup>6</sup>: e.g. May *jamun* 'sacred, set apart', May *jama* 'negative particle'.

(vi) \*DHin 'vagina'.

*PN reflexes:* e.g. GYim jinal, Yid jingin; a possible semantic extension is Dhaaruk jin 'woman'.

*NPN reflexes:* e.g. May gun-jin, Bur jin- 'feminine noun class prefix'.

(vii) \*DHaa- 'eat'.

*PN reflexes:* e.g. WW ja-ga, Werg ja-ga, Ngiy dha-l, PP dha-ji, Diy dhapa, Yan dha-ndharra 'eat meat'.

*NPN reflexes:* e.g. Kung ja-, Wadj yeji-, Maran jam, Nung -dha:garda-, An -jena, Wun -jo:- 'drink', Al -ji.

(viii) \*DHagu 'left hand'.

*PN reflexes:* e.g. WM dhag, Ump dhagu, Yid jaguy, Diy dhalgu 'right hand', GYim dhalgumu 'hand', (?) WD jambu 'left'.

*NPN reflexes:* e.g. Kay dhagu 'left hand', May gun-jaku 'left hand', Ngai jaku 'left hand', Mang jakuyaku, Gunbarlang jaku.

(ix) \*DHurgul 'straight'.

*PN reflexes:* e.g. Ngarluma dhurgul, GYim dhurgul, Walm jirrgirl.

*NPN reflexes:* e.g. Nung an-dhurg, An a-dhirrbura, Kay jungu, Goon dhurgurli.

3.2 Correspondence D : DH.

(i) \*Daa- 'fuck', pPN \*DHaa-.

*PN reflexes in DH:* Ngiy dhaa-n, Djaru & Gur ja-n, Mayikulan dhalpa, Werg jiel 'lust'. *Kanibray thaarri* *Betjela nganji-*

*NPN reflexes in D:* Kay daa-ja, Lardil daa-, Nung da-, Lrk -da-/dijim-.

(ii) \*Darra 'thigh', pPN DHarra.

*PN reflexes in DH:* Diy dharra, Warrg jarra, Dyirb jarra, Yid yarra, Jaab jarra, Gamilaraay dharra.

*NPN reflexes in D:* Kay darra, Lardil derra, Maranungku darr, May gun-dad, Dal darra, Warray an-dedmu 'thighbone' [an-nu 'bone'].

Several non-Pama-Nyungan languages have what appear to be j-initial reflexes of this etymon: Malak-Malak *jad* and Tjeraity *tjer*, Kurdanji *jamankuma* and Nung *dhalbarr*. Possible explanations are independent processes of palatalization in these languages, or a confusion between the 'thigh' etymon and a widely attested form for 'foot' DHamal (e.g. pPam \*jamal). (Note also the 'foot'

etymon in ja-, reflected in Kayardild jara). Semantic association between 'foot', 'leg' and 'thigh' is widely attested (Wilkins 1981).

(iii) \*Dulg-, pPN \*DHulg- 'tree, wood, fire, place, earth, ground'.

This etymon has a wide semantic range in both PN and NPN. It seems likely that an original meaning of 'tree, wood' has shifted, via the 'fire, hearth, place, ground' nexus (cf \*RLDag in 3.5), to meanings like 'island' or 'totemic being associated with place'. The whole semantic range is very similar to that for \*RLDag, apart from the initial 'entry point' from 'tree, wood'. *M. L. L. jula*

*PN reflexes in DH:* YM djulka(') 'earth, ground, dirt, sand, world', Gumbaynggir julga 'island', Wargamay julginy 'scrub', julgara 'log', Warluwarra thulku 'sand'. If one includes as possible cognates words that appear to have simplified *lg* to *l* or *g* we could add Nyawaygi jula 'tree', Yidiny jugi 'tree, stick, wood', and possibly even Dyirbal yugu 'tree, stick'. *M. L. L. jula*

*NPN reflexes in D:* K dulg- 'ground, dirt, place, territory, country', May gundulk 'tree, stick', Ngan (gu-)dul? 'branches used as camouflage (in stalking emus)', Nung du:l 'ibid.', Ngaldul?ga (v.caus.) 'light something, bum (e.g. grass)', Waj dulga 'dreaming, associated with a particular country'. Note that for this set there is representation both by languages that have undergone apicalization (e.g. Mayali) and are therefore not a reliable source, and by languages that have not undergone initial apicalization (Ngandi, Ngalakan, Kayardild, Wajiginy) and where initial apicals can be assumed to reflect earlier apicals. *M. L. L. jula*

3.1. or 3.2. (uncertain).

(i) \*Diba or \*DHiba 'liver', pPN \*DHiba.

*PN reflexes in DH:* Yid jiba, GYim dhiba, YY dhiba, Angk yipa, KKY sib(a).

*NPN reflexes in D:* May gun-diwi; poss. Nyig diba 'erect penis' with semantic shift mediated by common shape or engorgement with blood. *M. L. L. jula*

*NPN reflexes in DH:* Ngalakan jiwi, Warray an-ji. *M. L. L. jula*

[As noted in 2, it is unclear whether Ngalakan has palatalized before front vowels here, or whether the Mayali form is a recent apicalization. The Warray cognate suggests the laminal form is original. In either case, no new correspondence set is needed.]

3.3 Correspondence NH:NH.

This tends to be a rare phoneme initially in NPN, and the only two correspondence sets I have found are:

## (i) \*NHuj- 'blow nose'.

PN reflexes in NH: Warlp nyuuly-pu-

NPN reflexes in NH: May nyujme-, Goon nyin-, Nyig nyuny-.

## (ii) \*NHan- '3sg.fem pronoun'

PN reflexes in NH: Diyari nhan-, Yandruwandha nhan-, Ngamini nhan-, Yarluyandi nhan-, Bandjalang nyaangan [-gan: regular feminine suffix].

A number of other languages have gender-neutral 3sg paradigms that appear to have collapsed the nhan- root and some other root: GY has 3sgNOM *nyulu* but other 3sg *nhaŋu-*; Djapu has 3sg NOM *ɟayi* and 3sg ACC *ɟanya* but *nhan-* for other 3sg roots. The Nyawaygi 3rd person pronoun paradigm has both forms with the *nya-* root, such as nominative *nyanga* and oblique stem *nyanggan-*, and with the *nyul-* root the ergative form *nyulanga*. The widespread existence of both 'merged' paradigms like this, and of systems contrasting 3sg.fem *NHan-* and 3sg masc *NHul-* suggests proto PN had a pronoun system with specialized 3rd person pronominal forms, not just deictics, and that this set contrasted a masculine and a feminine series with the roots *NHu(l)-* and *NHan-* respectively.

Non-PN reflexes in NH: Guwidj nyandu, Munumburu, Woljamidi & Waladjangari nya:n, Ngarinjin njandu. Note also the following 3rd feminine prefixes to nouns in North Kimberley languages: Worora, Windjar, Yawujibaya, Unggumi, Ngarinjin *ny-*, Munumburu and Woljamidi *nyaya*. Kitja has a suffix *-ny* indicating feminine gender on possessed nouns.

The coexistence of feminine *NHan-* roots with masculine *NHu-* roots in nonPN suggests that it, too, had a 3rd person pronoun gender contrast. However, the nonPN picture is complicated by the presence of a third widespread 3rd person root *ɟal-* with masculine meaning in some languages and feminine in others<sup>7</sup>.

## 3.4 Correspondence N : NH.

## (i) \*Na- 'see', PPN \*NHaa-.

PN reflexes in NH: e.g. Nyaw nyaa-, Goreng-Goreng nya-ŋ, Warlp nya-ŋ, Dhaaruk nhaa-ŋ, Diy nhayi, GYim nhaa-maa, Yuul nhaa-ma, WW & Werg nya-ga, MM nha-ga.

NPN reflexes in N: e.g. pG \*na-, May na-, Mara na-.

## (ii) \*Ni- 'sit', PPN \*NHii-.

PN reflexes in NH: e.g. Nyaw nyii-, Yid nyinga-n, GYim nhin-gal, Yan yibanda-yarra (initial *ny > y* attested independently), YY nhin, WW nyenga.

*Adel : nupa lapa na - sub nupa na 'spouse'*  
*Heine nupa etc.*  
 NPN reflexes in N: e.g. pG \*ni-, Kung ni-, Mang ni, Al wakarr-ni, NN -ni-, Lrk -ni-, Nyig -ni-.

(iii) \*Nuny 'spit (n.)', PPN \*NHuny

PN reflexes in NH: e.g. Warlp nyunyba/nyinyba, GYim nhumba.

NPN reflexes in N: e.g. May gun-nuny, Dal nuny.

(iv) \*Nu(ma) 'smell (tr.)', PPN \* NHuu(ma)

PN reflexes in NH: e.g. GYim nyuuma-l, Nyaw nyuu, nyuunya, PPaman \*nyuuja-, WW nyuma 'know (a person)'.

NPN reflexes in N: e.g. May nome-, Mang numa-, Dal nome-.

(v) \*Nu- '3sg(masc) pronoun root', PPN \* NHu-.

PN reflexes in NH: e.g. Ngawun 3sg.masc nhulu, PP 3sg.masc. nhu-, Wargamay 3sg nyu-, Bandjalang 3sg.masc nyule-, Margany 3sg.nhu-.

NPN reflexes in N: e.g. May 3sg.masc nunga, pT 3sg niya, Al 3masc.sg nurla, Mang na-.

(vi) \*Nu- '2nsg pronoun root', PPN \* NHu-.

Note that the apparent homophony with (v) is an analytic artefact since the 2nsg root would always be followed by a distinct suffix, as in PPN \*NHunpalV 'you two' & PPN \*NHurra 'you plural', and in NPN \*nurrV 'you non singular'.

PN reflexes in NH: e.g. Warlp 2pl. nyurra, Yalannga 2du nhumbala, PP 2plu nhurra, Djap 2nsg nhuma & 2nsgDAT nhurrawambal.

NPN reflexes in N: e.g. Mara 2du nurru-, Ngäl 2du nurr-, Kung 2aug nurr-/nirr-, Wadj 2plu nawarra-.

(vii) \*Na- 'burn (tr.), cook (tr.)'.

PN reflexes in NH: e.g. Dyir nyaju-l 'cook, burn, light'; Djap nhaara-ø 'burn, be burnt', WW nyanga.

NPN reflexes in N: e.g. Kay naa-ja 'burn (intr.)', karna-ja 'burn (tr.)'; Lard ne-tha 'burn (intr.)'; Nung na-, Kung ne-, Gunbarlang ne-, Ngäl. ne-, Mara na- 'burn (intr.)', Al naji 'burn (intr.)', Miriwung -nalin-.

*See Anderson for k.a. anal. reflexes*

### 3.5 Correspondence d:rd:l:rl:r:y.

The only cases I could find of PN apicals corresponding to NPN apicals participated in the correspondence set d : rd : l : rl : r : y. A wide and essentially parallel range of reflexes is found in both PN and NPN. Since the original sound is as likely to have been [l] or [l̥]<sup>8</sup> as [d] or [d̥] this series does not provide

evidence for a genuine d:d correspondence. I shall provisionally represent proto-forms with RLD.

Note that Alpher (1972:72) has argued that, in proto Paman, 'only one nonnasal apical consonant could begin a stem', i.e. either a stop or a lateral but not both. This would be a direct consequence of PN laminalization removing initial apical stops from the inventory, leaving only the RLD phoneme which would be realized in some languages as stop, in some as lateral, and in others as retroflex glide.

Examples of this correspondence are:

(i) \*RLDirra 'tooth'.

*PN reflexes:* Dyir & Yid dirra, Warlp lirra ‘mouth’, Mayi-Kutuna lirra ‘mouth’, WW liya, Djapu & Gumatj rliirra, Wangkajunga yirra.

*NPN reflexes*: Malak did, Maranungku dirr, Wadj dirra, Ngank rde-rdirr, Yurdirra 'snake', Ngarinman lirra, pG rliirra, Warray an-ledma, May gunyidme. Note also these Daly non-inflecting verbs for 'bite', most probably derived from body parts: Matyala ler, Yunggor yer, Pungu tar.

(ii) \*RLDu- 'cry, weep'.

*PN reflexes:* Banj du-ŋ, Dyir dungarra-y, Walmajarri & Gur lu-ŋ, Ngarlungarra, Kalkatungu luŋa, Mud lunga, Uradhi ruŋka, Yuwaal yu-ŋ.

*NPN reflexes:* Larakia lö, Rembarnga ru-ŋ, Ngäl ru-ŋ.

(iii) \*RLDuwa- 'hit with missile, strike'.

*PN reflexes:* WW dauwa ‘hit (with a weapon)’, PP rduwa-, Warlp rluwa-.

*NPN reflexes:* Dal do-, May, Kunwinjku rdo-.

(iv) \*RLDag- 'fire, hearth, camp, place'.

*PN reflexes:* Pint dagu 'trench' (prob. via 'cooking trench'), Warlp rdagu 'hole', Diy rdagu 'sandhill', YY larr, KKY lag 'place, island', Thay raag, poss. also Gippsland lag 'food' (via cooking fire). *Dagkman data 'earth'*

*NPN reflexes:* Kung -log, Jawoyn -lug & Waray -lig 'locative suffix', Kunwinjku gun-rag 'fire', Wadj reg 'camp, place', Umb ragij 'place', Ngank rak- 'prefix on estate names'.

(v) \*RLDa- 'throw spear'.

*PN reflexes:* GYim da-ma 'spear', Mudb langu 'spear, pierce', Uradhi ra-  
'throw'.

*NPN reflexes:* Kung & Warray la-m, Yuk rlaa-, Kay raa-, Ngan ram-dha.

#### 4. CONCLUSION.

The evidence assembled above strongly suggests that original stem-initial apical stops and nasals became laminals in Pama-Nyungan. This conclusion is based on the existence of both NPN laminal : PN laminal and NPN apical : PN laminal correspondence sets, and the absence of genuine PN apical : NPN apical correspondence sets, all of which is consistent with a merger to initial laminals in Pama-Nyungan. (An apparent set of exceptions that can be removed is those correspondence sets involving realizations of a proto-rld phoneme as apicals in some languages of both groups). The fact that all initial apicals in widely-distributed PN words are reflexes of the \*rld phoneme suggests that pPN had no initial apicals, these having all been removed by initial laminalization.

Initial laminalization thus appears to be a distinctive Pama-Nyungan innovation. The isogloss for this change includes precisely those languages identified by Blake as Pama-Nyungan on other grounds: it includes Yanyuwa but excludes the Tangkic languages.

If one further accepts the arguments made in part one that the ergative and locative case markers, the nominalizer -NHDHa-, and various pronominal forms (some subject to initial laminalization) are Pama-Nyungan innovations, the case for viewing the redefined Pama-Nyungan as a clear genetic subgroup becomes very strong. Promising lines for future investigation are verbal inflections, the lexicon, long vowels in monosyllabic verbs, and the question of whether non-monosyllabicity is a PN innovation or a retention. Non-Pama-Nyungan, on the other hand, clearly emerges as a disparate residue group whose common features are either retentions (as with initial apicals) or due to typological convergence (as with the general shift to head-marking morphology). For the lexemes considered in this article it is the forms of these non-Pama-Nyungan languages which more closely resemble 'proto Australian'.

Should Pama-Nyungan really be a clear genetic subgroup, which has expanded over most of the continent fairly recently, Australianists should begin to look for other 'non-Pama-Nyungan relics' in far-flung Pama-Nyungan languages, for example among the Victorian and Tasmanian languages. This can only be done after we have a much clearer picture of what is shared, in phonology, grammar and lexicon, by the non-Pama-Nyungan languages.

The implications of this reinterpretation for Australian prehistory are fundamental. Somehow we will have to explain an explosive, relatively recent expansion of Pama-Nyungan over seven-eighths of the continent. Since we know that the entire continent was populated long before then (e.g. Flood 1983), and since what we know of Aboriginal society suggests large-scale conquest was unlikely, some sort of pervasive cultural or technological change, accompanied by the spread of a new language, seems the most likely explanation. And the



linguistic evidence for these relatively recent changes in the southern seven eighths of the continent may be more than coincidentally related to recent findings by prehistorians that, between 3,500 and 6,000 years ago, a radically new toolkit suddenly appeared over all but the northernmost parts of the continent (Jones 1988).

# NOTES

- \* I am grateful to the following people for their comments on earlier drafts of this paper: Barry Alpher, Barry Blake, Bob Dixon, Mark Harvey, Harold Koch, Bill McGregor, Rhys Jones, Bronwyn Stokes and David Wilkins. Responsibility for any remaining errors of logic or scholarship is solely my own.
- 1. Two languages were spoken between Warray and Kungarakany to the west, and the remaining Gunwingguan languages to the east: Wulwulam and Uwinymil. Both are very scantily attested but Mark Harvey (p.c.) suggests that they were probably Gunwingguan, which would remove the latter discontinuity.
- 2. In Evans 1985 I suggested that various Tangkic verb suffixes, formed by adding a case-like suffix to a thematic -DH(a)-, were reflexes of nominalizer -NHDHa; this would furnish a non-Pama-Nyungan reflex. However, an alternative source for Tangkic thematic -DH(a)- is the past tense suffix -ja found in a wide range of languages, Pama-Nyungan and non-Pama-Nyungan, e.g. Warlpiri and Anindilyakwa; in Anindilyakwa -ja can host case inflections when used in a subordinate clause.
- 3. Some thoughts on the origins of these two case suffixes are in Evans in prep b.
- 4. I am grateful to Harold Koch for pointing this example out to me.
- 5. The *gun-* in Mayali and Kunwinjku words is a neuter noun class prefix; the *gi-* in Kungarakany words is a frozen prefix found mainly on body part nouns and adjectives; the *de-* in Ngankikurungkurr words is a noun class prefix found on body parts.
- 6. It has been suggested to me that the name of the Lardil secret language, *demiin*, is a counter example in which NPN /d/ matches PN and some NPN /DH/. However, this word has a clear etymology, unrelated to \*DHamun: it is a detransitivized nominalization of a verb (pT \*daami-) meaning 'to ask, enquire'; the nominalization gives the meaning 'means of asking, means of enquiry', a fitting name for the extraordinary semantic analysis it embodies (see Hale 1983).

7. I am grateful to Barry Blake for drawing my attention to the NHan- series.
8. Iwaidja has a retroflex tapped lateral as a distinct phoneme.

# LANGUAGE ABBREVIATIONS AND SOURCES

Al	Alawa	Menning & Nash 1981
An	Anindilyakwa	Leeding 1978
Angk	Angkamutli	Alpher card-file
Banj	Banjalang	Crowley 1978
Bur	Burarra	Glasgow 1984
Dal	Dalabon	Alpher MS
Diy	Diyari	Austin 1981
Dyir	Dyirbal	Dixon 1972
pG	proto Gunwinguan	Alpher, Evans & Harvey in prep.
Goon	Gooniyandi	McGregor 1985 & p.c.
Gur	Gurindji	Menning & Nash 1981
GYal	Gugu Yalanji	Dixon 1980
GYim	Guugu Yimidhirr	Haviland 1979
Jaab	Jaabugay	Dixon 1980
Jing	Jingili	Menning & Nash 1981
Kalk	Kalkatungu	Blake 1979b
Kay	Kayardild	Evans MS
KKY	Kala Kawaw Ya	Mitchell MS
Kung	Kungarakany	Evans in prep.
	Kurdanji	Menning & Nash 1981
Lrk	Larakia	Capell 1984
Lard	Lardil	Hale et al 1981
	Mara	Heath 1981
MM	Madhi-Madhi	Hercus 1986
Malak	Malak-malak	Tryon 1974
May	Mayali	Evans field notes
Mudb	Mudburra	Menning & Nash 1981
Ngal	Ngalakan	Merlan 1983
Ngan	Ngandi	Heath 1978b
Ngar	Ngarinman	Menning & Nash 1981
Ngank	Ngankikurungkurr	Reid field notes
Ngiy	Ngiyambaa	Donaldson 1980
NN	Nyul-nyul	McGregor field notes
Nung	Nunggubuyu	Heath 1982
Nyaw	Nyawaygi	Dixon 1983

Nyig	Nyigina	Stokes p.c.
pT	proto-Tangkic	Evans MS
PP	Pitta-Pitta	Blake 1979a
Pint	Pintupi	Hansen & Hansen 1974
Pungu	Pungu-Pungu	Tryon 1974
Thay	Thaayorre	Alpher file cards
Umb	Umbugarla	Evans field notes
Ump	Umpila	O'Grady 1976
	Uradhi	Crowley 1983
Wadj	Wadjiginy	Evans field notes
Warlp	Warlpiri	Hale 1974
	Warray	Harvey 1986
Warrg	Warrgamay	Dixon 1981
	Warungu	Dixon 1980
WD	Western Desert	Menning & Nash 1981
Werg	Wergaia	Hercus 1986
WM	Wik-Mungkan	Kilham et al 1986
Wun	Wunambal	Vaszolyi 1976
WW	Wemba-Wemba	Hercus 1986
Yan	Yanyuwa	Menning & Nash 1981
Yid	Yidiny	Dixon 1977
Yuk	Yukulta	Keen 1983
Yuul	Yuulngu	Zorc 1986
Yuwaal	Yuwaalaray	Williams 1980
YY	Yir-Yoront	Alpher in prep.

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