

PRELIMINARIES TO A PROTO NUCLEAR PAMA-NYUNGAN STEM LIST

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It was A. Capell who pioneered the diachronic study of the lexicons of Australian languages. Since the publication of his *A New Approach to Australian Linguistics* in 1956, much additional progress has been made in the study of the languages.

In 1967, with the generous support of the University of Hawaii, the National Science Foundation¹ and the Australian Institute of Aboriginal Studies, I initiated work on the reconstruction of Proto-Nyungic lexicon and affixes. The pressure of other duties forced a temporary curtailment of this work - in which Kenneth L. Hale, Terry J. Klokeid and Bruce and Elaine Sommer were associated - when it was already well advanced. Further substantial progress had to await a study leave from the University of Victoria in 1974-5, here gratefully acknowledged.

But by this time the focus had changed radically. Repeatedly it turned out that a form showing cognation among several Nyungic languages appeared in other far-flung Pama-Nyungan languages also (a good example is *kamj, with reflexes commonly meaning *mother's mother*). The time therefore seems ripe to zero in on Pama-Nyungan itself. I do this entirely on my own responsibility. At the same time, I deem it prudent to restrict the study to languages for which - given sufficiently large dictionaries - one could confidently expect to marshall cognates in the hundreds. For this reason, languages such as Lardil and Gunwinygu, though unquestionably members of the Pama-Nyungan Family, are excluded from the study at the present time. Since the number of cognates which they share with other Pama-Nyungan languages appears to run to some dozens only, and their grammatical evolution has diverged correspondingly, I take it that they split off from the main Pama-Nyungan stream quite early - conceivably 4,000 to

5,000 years ago. Thus for the present I find it a useful working arrangement to make a distinction between 'Proto Pama-Nyungan' and 'Proto Nuclear Pama-Nyungan' (hereafter PPN and PNP respectively). The present study has as its focus the reconstruction and attestation of PNP stem *shapes*. The quite separate task of reconstructing the *meanings* of stems in PNP promises to be truly monumental; I earnestly hope that this chapter may play a role in stimulating others to take up this challenging work. Ancestral stem meanings are thus only occasionally proposed here.

Given that the present chapter has as its focus the PNP lexicon, it will be evident that the target set falls very far short of a detailed reconstruction of Proto-Australian. This is a goal which I believe to be essentially unattainable.² If by 'Proto-Australian' we mean something more or less analogous to Proto Indo-European, then I believe that we are deluding ourselves utterly. If, on the other hand, by 'Proto-Australian' we mean an ancestral stage comparable in time depth to a putative and entirely ephemeral Altaic, Finno-Ugric, Semitic and Indo-European super-family or phylum, then well and good!

My reason for making the above claim is as follows: adequate reconstruction of a proto-language demands, among other things, the assembling of a large number of cognate sets - some hundreds, say. Only in this way can such details as the patterns of consonant clustering in the ancestor language be adequately worked out. This task has been essentially completed for Indo-European, and I am confident that it can be done for Pama-Nyungan also. But not *all* Australian languages are members of the Pama-Nyungan Family, just as not *all* the languages of Europe are Indo-European. I would like to put it to my fellow-Australianists that the position of Tiwi among the Australian languages might usefully be compared to the position of Hungarian among the European. If we were to make a serious attempt to demonstrate genetic relationship between Hungarian and English, we might bring together pieces of potential evidence such as the following:

Hungarian *m*, as in *látom I see* (definite object) : English *m*, as in *am*.

Hungarian *n*, as in the negative words *nem* and *ne* : English *n*, as in *not, no*.

Hungarian *t*, as in the second person singular familiar pronoun *te* : *ð* in archaic English *thou* (< PIE *tú).

Excluding presumed loans into Hungarian such as *hét seven* and *száz hundred*, we might be able to double or even treble the number of the above nebulous strands, given an exhaustive study of the grammars and

lexicons of both languages. But this would still fall far short of an adequate *demonstration* of genetic relationship. Notice, too, however, that such a study could not demonstrate that Hungarian and English are NOT genetically related - it could merely fail to produce the evidence necessary for demonstrating such a relationship.

Thanks largely to the publication of C.R. Osborne's *The Tiwi Language* in 1974, we are in a position to make a serious attempt to demonstrate genetic relationship between Tiwi and, say, Nyangumarda.³ Granted that the documentation of these two languages is not as exhaustive as that of Hungarian and English, we still cannot but be amazed at the near-total lack of even the most tentative kinds of potential evidence. We seek cognates for such Nyangumarda case markers as -lu ~ -ju⁴ 'ERGATIVE' and -ku 'DATIVE' - entirely without success; Tiwi, in fact, entirely lacks case marking! What we do find is as follows:

Tiwi	ngia I	:	Nyangumarda	ngaju I
Tiwi	ngintha you (sing.)	:	Nyangumarda	nyuntu you (sing.)
Tiwi	nua you (plur.)	:	Nyangumarda	nyurra you (plur.)
Tiwi	-ma ~ -mi do, go, say	:	Nyangumarda	ma-n- take, grab; -ma-r- verb formative

Tiwi ngagha and Nyangumarda nganyjurru *we* (plur. inclusive) and Tiwi ngawa, Nyangumarda nganarna *we* (plural exclusive) seem to point, along with the first person singular forms given, to an extremely ancient shared first person pronominal base *ŋa- - but the same kind of highly tentative claim could be made for the m in Hungarian *látom* and the m in English *am*!

In comparing the lexicon of Tiwi with those of Australian languages in general, we find a single item (additional to the above) which shows promise. This is Tiwi kukuni (with masculine noun class suffix -ni) *fresh water*. The root, kuku-, is matched by Gunwinygu *kuku water*, and this shape evidently appears in north-eastern New South Wales also - witness Yugambal (?) *kookoo* and 'Glen Innes' *goko*, both meaning *water*, cited in Curr (1887: III: 295-7). In Bayali we have *koongo water*, evidently /kunu/, (ibid: 115), supported by the Geytenbeeks' contemporary transcription of the Gidabal word for *water*: /gun/, i.e. kung in the system of transcription adopted here. Tiwi kuku- also compares well with Proto-Pamic *ŋuku, Mara *nguku*, Yagar-Yagar *nguuki* and Yaralde *nguke*, all meaning *water* - as well as with Pintupi *nguka-l-swallow*; Nyangumarda *nguka-y-steal, abduct* also comes to mind.

Assuming for a moment that Tiwi kuku- shows denasalization of the initial consonant of *ŋuku under the influence of the *k in the following syllable, we now need further cognates in order to firmly establish denasalization as a historical rule of the language. And this is exactly the essence of the problem of demonstrating genetic relationship between Tiwi and other Australian languages: there are no further putative cognates! Moreover - who knows? - the similarity in form and meaning between Tiwi kukuni and the other forms cited may be purely accidental - just as in the celebrated example of Modern Greek mati and Malay mata, both meaning *eye*, cited by Bloomfield (1933:297). Alternatively, Tiwi could have borrowed kuku- from a mainland language, especially in the period subsequent to Indonesian and/or European contact.

It seems inconceivable that Tiwi kuku- could be directly descended from a 'Proto-Australian' root *ŋuku, and not have been subject to far more drastic phonological change (and reanalysis?) after a presumed time span of ten to forty millenia.

I would like to take issue with Osborne (1974) in connection with his assertion (p. 3) that

"Lexical comparisons are quite useless for the purpose of establishing Tiwi's genetic relationships, as all that such comparisons ever reveal is that Tiwi has virtually no lexical cognates with any other Australian language."

It seems to me that he is putting the cart before the horse here; would it not be more reasonable to recognize Tiwi as a LANGUAGE ISOLATE - i.e., a language which, like Basque, constitutes a 'language family' all by itself? This is essentially what O'Grady, Voegelin and Voegelin did in their 1966 classification. Tiwi would then not be a demonstrated member of the large Pama-Nyungan family. For those who are fond of speculating about extremely remote linguistic relationships, Tiwi, along with all other Australian languages, could be assigned to a nebulous grouping called the 'Australian Phylum' pending further investigation. This phylum would also contain putatively, but presumably still very nebulously, interrelated languages such as Larakia, Gunavidji and Anindilyaugwa.

And this is, after all, the kind of situation which might be expected to obtain in Australia, given 30,000 years or more of continuous occupation by Homo sapiens. Bolinger (1975), citing Bender (1973), suggests that

"The rate of change observed in all living languages, if it operated in the past as it does today, would have wiped out traces of any language spoken 30,000 years ago."

I would like to reiterate that we come very close indeed to observing this effect when we place the Nyangumarda lexicon side-by-side with the Tiwi. The situation is very different indeed when we place the Nyangumarda lexicon side-by-side, say, with those of languages such as Pintupi, Wadjuk, Aranda, Wembawemba, Gidabal, Umpila, Yagar-Yagar and Gupapuyngu - even though these languages are spoken in widely separated parts of the continent. Generous numbers of cognates appear. We get very much of the feeling which Kenneth Hale once imagined Sapir would have had if he could have looked in on the Australian linguistic scene today: that Nyangumarda, Wembawemba and the other languages just named are ABSOLUTELY OBVIOUS members of a language family (in contradistinction to Tiwi, Larakia, Gunavidji, Anindilyaugwa and others), and that the time depth during which this family evolved must be of the order of 3,000 to 5,000 years only. I would remind the reader that the same Kenneth Hale, source of so many deep insights concerning Australian languages, named the family 'Pama-Nyungan' over a decade ago. There seems to me to be absolutely no reason why this name should not be used in perpetuity.

To return to Osborne's observation about the uselessness of lexical comparisons in attempting to establish the genetic relationships of Tiwi: even granted that the rate of lexical replacement in Australian languages appears to be rather high relative to languages spoken in other parts of the world, it seems to me that the following analogy is still valid: suppose, for a moment, that a linguist makes the claim that lexical comparison is useless for the purpose of establishing genetic relationship between Hungarian and English. Such a claim could be countered by pointing out that lexical comparisons had been of service in establishing genetic relationship between Hungarian and the other Finno-Ugric languages, as well as between English and the other Indo-European languages; *ergo*, the methodology is valuable, and if it does not produce positive results in the comparison of Hungarian with English, maybe there is something special about the *languages* - Hungarian and English. The 'something special' is, of course, that relatedness between Hungarian and English simply has not as yet been demonstrated, and these two languages have presumably enjoyed separate histories for 10,000 years or more. And if they *did* in fact evolve from a common ancestral language spoken, for argument's sake, 16,000 years ago, the once numerous shared features and elements have dwindled almost to zero, so that the most insightful and rigorous application of comparative method linguistics is of no avail.

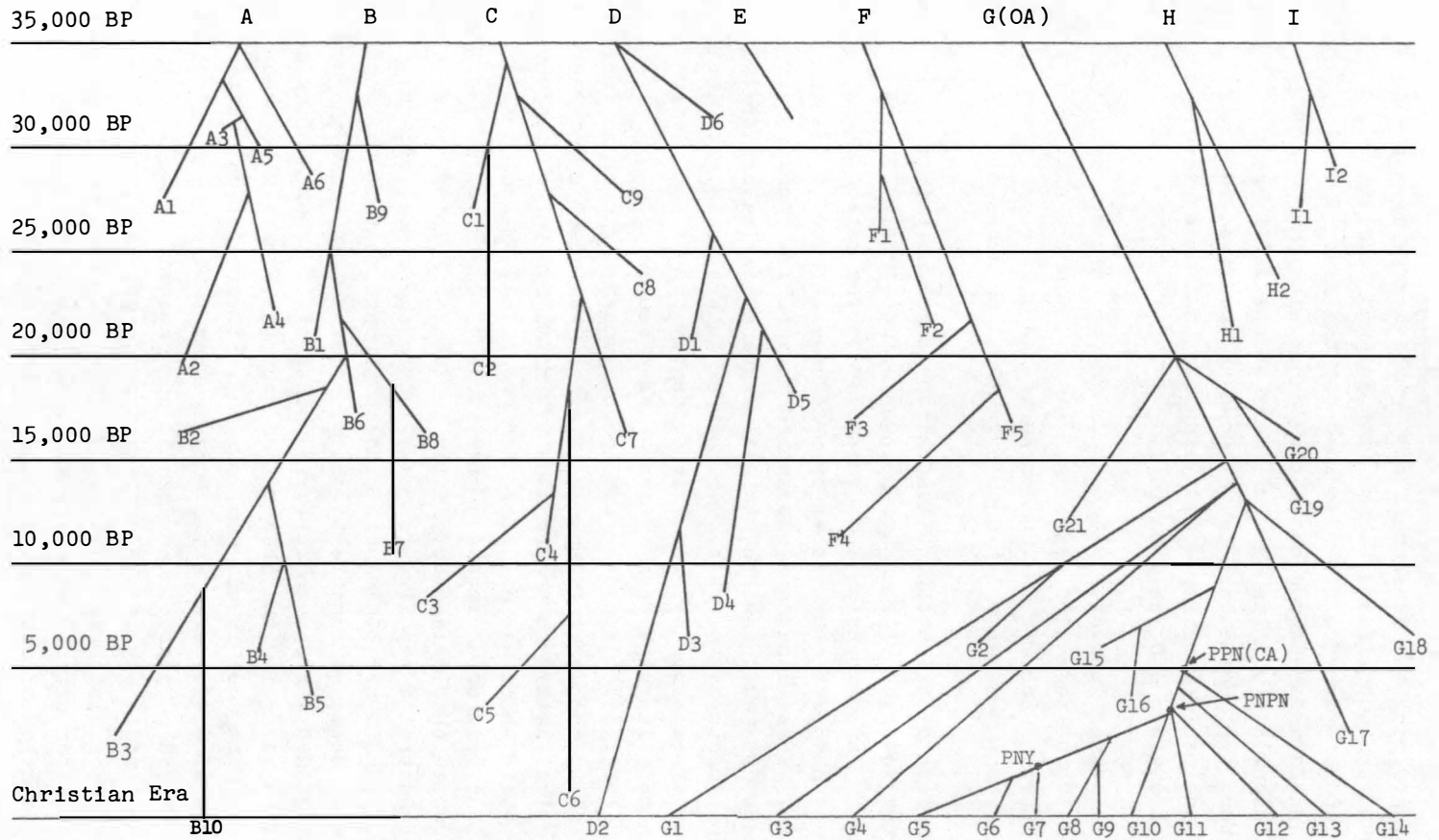
I would heartily recommend the reader to consider adopting a convention (if he or she has not already done so) used by C.F. and F.M. Voegelin over the years: that of using the term FAMILY in cases where a proto-language can be reconstructed in considerable *detail*, with cognate sets presumably numbering in the hundreds at least; the term PHYLUM is reserved for situations where a little tentative and spotty reconstruction is possible, but detail is essentially lacking; putative cognates might run to a score or so. Relationships among the members of a language family are amenable to the application of scientific rigour. Those among the members of a supposed phylum are not.

The linguistic situation in Australia 15,000 years ago can presumably in no way ever be recovered. Whether there were fifty languages spoken at that time or five hundred, none of us now living can ever know. I would like, however, to be permitted to give my imagination some rein in trying to conjure up what to me seems a fairly plausible scenario. This scenario is predicated on the assumption that from 95% to 99% of the languages spoken in Australia 15,000 years ago have long since become extinct. Before dying, however, some exerted powerful influences on their geographic neighbours at various levels - phonology, morphosyntax and lexicon. The resulting picture might have been something like that given below.

The format of the chart is based on Bolinger (1975:321). What it portrays is entirely my own responsibility, however. The assumption is that even in very ancient times - in 35,000 B.P., say - the number of languages spoken in Australia was quite large. At least one of these represented a continuation of Capell's OA (Original Australian).

One of the ancient tongues, C, survived in a single offshoot, C₆, long enough to end its days as a contemporary of Old English. Another, E, had become extinct thirty-two millenia ago. D was more fortunate: one of its daughter languages, D₂, not only survived but flourished right up into modern times, and is now the well-studied Anindilyaugwa of Groote Eylandt. G had a more spectacular history still: after at times barely surviving in a very small area of northern Australia for about 15,000 years, it began to gain in prestige and supplanted a number of neighbouring languages (A₂, D₅, F₃ and others). Around 15,000 B.P. a small band of speakers, G₁, migrated on to a peninsula

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which during the subsequent post-glacial rise in sea level was cut off and became Bathurst and Melville Islands. Powerful tides scoured out the newly formed channels and rendered contact by canoe with the mainland all but impossible. Many thousands of years later, the people came to be known as the Tiwi. G_2 became extinct nearly 6,000 years ago, but G_3 survived as Larakia and G_4 as Gunavidji.

Several other languages which according to this scenario 'had diverged 10,000 to 14,000 years ago' - e.g., Maung - are not represented in the chart. Capell's CA (Common Australian) is represented approximately by the node at which Gunwinygu (G_{14}) branches off 5,000 years ago.⁵

The modern distribution of Australian languages points to an almost explosive expansion of the Pama-Nyungan speech-area 4,000 to 5,000 years ago. This expansion led eventually to the establishment of Pama-Nyungan speech communities over seven-eighths of the area of Australia. These languages supplanted many earlier tongues, or in some cases donated loanwords; Anindilyaugwa *mungamina breast* (with which comparison can be made over most of Australia, e.g., Dieri, Nyangumarda *ngama breast, milk*) is evidently one of the rather rare loans in this language from a Pama-Nyungan source.

Wurm (1972:165), in noting the abrupt Pama-Nyungan expansion, draws a parallel to the dramatic manner in which the imparting of new technological skills to the Papuans by the Malayo-Polynesian voyagers changed their whole way of life. For one thing, the cultural innovations triggered extensive migrations by the Papuans. Wurm goes on to propose that Malayo-Polynesian influence reaching the northwest coast of Australia may likewise have led to the spread of a new technology and a new linguistic element through most of the continent.

While it seems reasonable to claim, as Wurm does, that the homeland of Pama-Nyungan was somewhere in the north of the continent, I see problems in according the area inland from the Eighty-Mile Beach this honour (as Wurm does in his map, p. 166). If present-day patterns of linguistic diversity *within* the Pama-Nyungan family are any indication, then the northern part of the Arandic speech-area, as well as the territory immediately to the northeast and east, seems more plausible as a centre of dispersal. Notice that the languages to the west of this area - for example Walbiri, Walmadjarri and Nyangumarda, show every indication of quite close genetic relationship, so that the area

in which they are spoken loses its attractiveness as a Pama-Nyungan homeland.

If, then, a more easterly locus for the centre of dispersal of Pama-Nyungan can be accepted, Aranda would be a language whose present special features have evolved *in situ*: universal loss of initial consonants, loss of distinctiveness in final vowels, development of two series of nasals (plain and pre-stopped), and complete levelling of the old Pama-Nyungan scheme of conjugations - to name a few innovations. Other Pama-Nyungan languages would have spread in all directions from this *Urheimat* - including northwards towards the northeast corner of Arnhem Land and northeastwards towards Cape York Peninsula and the Western Torres Strait Islands.

From the point of view of a modern Nyangumarda speaker, the scenario for the last 5,000 years might have unfolded in something like the following manner:

The ancestor of Lardil (G_{13}) diverged very soon after Gunwinygu. G_5 through G_{12} began to diverge from their common ancestor, Proto Nuclear Pama-Nyungan, a mere 4,000 years ago. Speakers of the language ancestral to Wembawemba (G_{10}) and its congeners began a southward migration at about the time when the early ancestors of the Murngin tribes (G_{12}) began to move northwards. Numerous languages were supplanted in the process. The common ancestor of the modern Pamic languages (G_8) and the Western Torres Strait language (G_9) branched off next - at around 1,000 B.C. Soon afterwards, with the original linguistic community now expanding to the west, southwest and southeast as well, the speech of the 'stay-at-homes' began its uniquely Arandic (G_{11}) line of evolution, with the language ancestral to Wadjuk (G_7) being transplanted by its carriers into the southwest corner of Australia soon after. The ancestral Wati-Marrngu speech community, by now located somewhat to the west of present-day Aranda country, held together until the fourth century of the present era. Little further movement was necessary to bring the Pintupis (G_6) into their ultimate homeland. The early Nyangumardas (G_5) emerged from the Great Sandy Desert on to the Eighty-Mile Beach while Marco Polo was at the court of Kublai Khan.

The above picture represents, of course, a very great simplification; an attempt has been made to depict a general outline by focussing on just a few representative languages. Notice that if finer lines had been drawn, the majority of modern Australian languages would turn out to belong among G_5 - G_{14} : the numbers could have been extended approximately to G_{160} had space been available in the chart. How much of the earlier scenario corresponds to fact and how much to fancy will presumably never be known. The state of the art of modern linguistics, together with what is now known of the G languages, lead us to have excellent expectations of being able to test thoroughly the scenario presented for the last 4,000 years (given time). As of now, I believe that the histories of the G languages might in point of fact be similar to that depicted.

Rising sea levels eventually formed Bass Strait, and a linguistically rather homogeneous population speaking B_3 in southeastern Australia was quite suddenly and irrevocably cut into two segments (once the sea made the initial sixty-metre breach - all in the space of one day - the drastically different tidal regimes on the two sides ensured that veritable torrents of water poured back and forth; after fourteen days, the gap was over a kilometre wide and eight metres deep). The 'Tasmanian' language spoken to the north of the breach survived for another five millenia; but as the speakers adopted the Pama-Nyungan languages spoken by the technologically more advanced newcomers from the north, the descendant B_3 speech forms were gradually reduced to substrate status. The people to the south of the new strait, lacking the technology needed to cross large bodies of stormy water, gave up further thought of visiting their kinsfolk across the channel after the severe winter of 6,057 B.C., when a series of westerly gales, pushing up phenomenally high tides over a wide stretch of still shallow sea, washed away the remaining low islands in the narrowest part of the channel. Their language, B_{10} , continued to evolve in total isolation for a further 79 centuries - until the unparalleled tragedy wrought on the people by the Europeans.

Authorities such as Mulvaney (1969) and Shutler and Shutler (1975) indicate that Tasmania has been an island for about 8,000 years. In

view of the truly immense gulf of time during which the people were isolated, I find it difficult to make out what Crowley means when he claims (1976:23) that Tasmanian is a 'phonologically absolutely normal Australian language'. First of all, one would like to know which languages on the mainland have 'absolutely normal Australian' phonologies: Arabana - in which all words end in vowels? Kunjen - in which all words begin with vowels? Ngarluma - in which words begin with consonants other than apicals? I think that the point could be made well enough that the mainland Australian languages exhibit considerable typological diversity in their phonological systems. If Tasmanian did have a phonology closely congruent with that of a mainland language (or languages), then this surely must be a typological similarity and not a similarity resulting from common descent! Notice that one could make a fairly strong claim that Modern Greek has a phonology which, if not exactly 'absolutely normal Spanish', still shares impressively many features with the latter. Genetically, though, the languages belong in different branches of Indo-European; and French, a language which is genetically close to Spanish, has a phonological system which is typologically very different from that of Spanish.

Unless the Tasmanian linguistic materials turn out to be data from a southern Australian mainland language which was unwittingly implanted in Tasmania by the early whalers (and which supplanted native Tasmanian), then my expectation that Tasmanian will turn out to be a Pama-Nyungan language is virtually zero. I am very curious indeed to see evidence for sound correspondences in the demonstration of genetic relationship between Tasmanian and 'Australian' to be offered by Crowley and Dixon.

Over the years, but especially in 1967-8 and 1974-5, I have been able to assemble 850 cognate sets from various mainland languages. About half of these can be brought to bear in the reconstruction of PNP. The remaining half yield sub-PNP ancestral forms such as Proto-Nyungic (PNY), Proto-Pamic (PP) and Proto-northern New South Wales (PNNSW) as reconstructed by Crowley. An example of a set which can be used to justify a PNP protoform is provided by Bayungu ngajaru (with non-etymological -ru suffix of as yet undetermined function and/or meaning) and Gupapuyngu ṅatha. Both of these forms mean *vegetable food*, so that the question of semantic change does not obtrude itself here. The short first vowel in the Gupapuyngu form leads us to posit a short first vowel in the protoform also. Hence PNP *ṅaca. It is clear that Nyangumarda ngaji *sugar* belongs here also; but the Bayungu and Gupapuyngu forms alone suffice for the reconstruction of PNP *ṅaca.

Notice that the attempt which I am making here to reconstruct as far back in time as possible at times seems to raise more questions than it answers. It might well be argued that the writer of this paper would be better advised to restrict himself to a tightly controllable body of data in very closely related languages (such as he did when writing up 'Proto-Ngayarda Phonology'). But regularities such as are exemplified in the following encourage him to continue:

PNPN	*caca	>	Nyangumarda	jaji	<i>person on restricted (non-fat) mourning diet</i>
PNPN	*paca-l-	>	Nyangumarda	paji-r-	<i>bite</i>
PNPN	*minja	>	Nyangumarda	minyi	<i>stench</i>
PNPN	*ŋAlja	>	Nyangumarda	ngalyi	<i>neck</i>
PNPN	*kuya	>	Nyangumarda	kuyi	<i>animal, meat</i>

The point being made here is that the rule whereby PNP **ŋaca* is reflected as *ngaji* in Nyangumarda is not invoked on an *ad hoc* basis, but in point of fact has wide applicability in the language.⁶

The remaining half of the cognate sets - those which yield shallower reconstructions - can be exemplified by Nyangumarda *walya.ka*⁷ *leaves, foliage*, Bandjima *walha.rn leaf*, Ngarluma *walha.rn lungs*, Yindjibarndi, Kurrama *watha.rn leaf, lungs*, Bayungu *walha.rri ~ walha.rti leaf* and Neo-Nyungar *walya.ly lungs, 'lights'*. Although an impressive array of languages is represented here, all are quite closely related, being members of the Nyungic Group, characterized by universal merger of the old PNP long and short vowels (only in the Yura languages of South Australia do the effects of the old vocalic length distinction show up in the development of double series of nasals and liquids). Granted that the semantic relationship between LEAVES and LUNGS is explainable on the basis of shape, we reconstruct PNY **walja*. Part of the task of future researchers will be to search for cognates of PNY **walja* in other branches of Pama-Nyungan such as Pamic. For unless **walja* simply 'materialized' (conceivably in song) at the PNY stage, then evidence of its prior existence must surely be traceable *outside* of the Nyungic speech-area. Then, too, we will have to face the question of whether the first vowel of this form was short or long in PNP. For the present, protoforms such as PNY **walja* must be taken to reflect what Capell called 'regional vocabularies'. Such are also strongly in evidence in Indo-European, where Proto-Germanic **hand- hand* and **drenk- drink* are generally held to be unique to Germanic (and perhaps reflect a pre-IE substrate).

The 850 cognate sets assembled so far include, then, only about 400 on which PNPn protoforms can be justified. But another parameter is involved here also: that of semantics. Again, approximately a half of the 850 sets require no explanation or justification of the semantics involved, but the other half have occasioned the writer much soul-searching over the last twenty years or so.

In the realm of sets which are entirely straightforward from a semantic point of view are Bayungu ngajaru, Gupapuyngu ḡatha, considered above. A further example is provided by Umpila maathuy and Kunjen adhor. Both of these forms mean *pelican* and can be taken to reflect Proto-Pamic (PP) *maacur (with *r representing the rhotic glide - see below). The further question of whether PP *maacur is in turn cognate with a Galbu form for *turtle* recorded by Capell as mädjur, with Thalandji and Bayungu majun and Southern Yinggarda majunpa *turtle*, and with Nyangumarda maju *children's 'tag' game* does not affect the validity of PP *maacur.

At a deeper level, taken to be PNPn, we have Nyangumarda winpal-pi-l-,⁸ Walbiri wirnpi.rli-y-, Gawurna winbi.rra *whistle, pipe, flute*, Gadhng winpa-l- (and possibly Gumbainggar wiṛeinbei-). All of these forms other than the Gawurna mean *whistle* (vb.) and are ascribable to PNPn *wirnpa- (none of the daughter languages involved here happen to be diagnostic for PNPn vowel length; hence the convention of indicating the present indeterminacy with the symbols *l, *A, *U). Once again, the problem of varying semantic reference does not intrude itself.

Among instances of evident semantic change, very many could well have been culled from a handbook on Indo-European. I think that the lesson to be learned from this is as follows: insofar as universal principles of semantic change can be validated, it is neither here nor there whether *Homo sapiens* has been isolated in Australia from the rest of his kind for 40,000 years or whatever. The point is that we are investigating natural human languages, and we can expect instances of semantic change in Russian, say, to be replicated in Nyangumarda or Dyirbal. This is not to say that we will not have to contend with types of semantic change which might turn out to be entirely unique to Australian languages. But more of these anon.

Mulurudji tawar *star*, Umpila taway *moon* and Yagar-Yagar dapar *sky* could well be taken as a classic example of meanings 'related as whole and part' - Bloomfield's synecdoche. The ancestral form had the shape *tapad (with rhotic flap/trill represented by *d). Still further back in time, it can be shown that the *-d was a suffix, supportable by evidence from Nyangumarda and elsewhere. Note, for example, Pintupi

taputapu ~ japujapu *ball, round object* (with incipient shift of initial laminals to apicals) and Thalandji, Bayungu *japu.rta*, Yindjibarndi *jawu.rta beard* (in each of which the shift is fully accomplished). The reader who may - with excellent reason - feel sceptical about a semantic association between SKY and BEARD is referred to Pintupi *ngarnka sky, blue sky, heavens* (with which compare, for example, Nyangumarda *ngarnka beard*) and to Pintupi *ngarnkurrpa beard, whiskers*; the latter form, too, reflects the *-d suffix as in Umpila *tawa.y* and Yagar-Yagar *dapa.r*.

A further example of synecdoche is provided by Umpila *walu cheek* and Walbiri *walu head*, both reflecting PNP *walu. Also of an Indo-European ring is the semantic difference between Ngarluma, Yindjibarndi, Bandjima *thurla*, Nyamarl *jurla eye* and Southern Aranda (Wychinga) *url forehead*. This set we take to exemplify metonymy, in which meanings are near each other in space or time. Consider, too, Walbiri *milpa eye*, Umpila *miil'a face* and Adnyamathanha *milpi.rrri forehead*, all of which reflect PNP *miilpa.

The traditionally recognized type of semantic change which is probably exemplified in Australian languages the most lavishly of all is metaphor. Thus PNP *miilpa, just cited in another context, descends in Nyangumarda as *milpi.ny fingernail, toenail*. The assumption here is that an earlier word for *nail* was tabooed or otherwise fell into disuse in the language, and *nail* was renamed as being the *eye* of the hand or foot. Metaphor is exemplified twice over in the following set: Ngarluma, Bandjima *yalhu.ru*, Yindjibarndi *yathu.u tongue*, Adnyamathanha *yalhu flame* (compare also Lardil *yalulu flame*), Nyangumarda *yilyu tear* (lachrymal) and *King George Sound yal-yu-ret wet*, cited by Moore. These forms go back to PNP *yaalju - the plain lateral in the Adnyamathanha form is taken as evidence for an original preceding *long* vowel.

The single most important principle in establishing the plausibility of a given instance of apparent semantic divergence is that of *independent documentation*. Thus, although TONGUE and FLAME are associated in many semantic systems outside of Australia, we are particularly concerned here to uncover supportive evidence *within* Australia. Such is provided, in fact, by Linngithigh *məlan flame*, which is a compound of *mə fire* (< PP *cuma) and *lan tongue* (< PNP *calanj), cited in Hale (1966).

Turning now to more uniquely Australian types of semantic correspondence, it is appropriate to cite Umpila *kani up: Nyangumarda kaniny down, below*, < PNP *kaninj. Taken alone, this pair could well be

ascribed to the operation of chance factors rather than to common descent. To inject plausibility into our claim of cognation for these two forms, we seek to build up a chain of *mutually supportive evidence*. Consider the following:

Thalandji, Bayungu kawari *west* : Umpila kaaway *east*
 (< PNP **kaawari*)
 Kariera yaju, Ngarla yiju *east* : Umpila iijul *west*
 (< PNP **yiicul*)

In this case, the chains of mutually supportive evidence have as their common theme a most dramatic and revealing principle of semantic change in Australian languages. This principle is aptly encapsulated in Kenneth Hale's recent term *unity of the opposites* (personal communication). Once this principle is accepted, the number of cognates which can be recognized among Pama-Nyungan languages undergoes a quantum leap. We can now confidently claim cognation for sets such as the following:

Ngarluma, Yindjibarndi thama *fire* : Wadjuk djam *water*
 (< PNY **cama*)

Walbiri jama *generous* : Nyangumarda jami-r-ni-kiti *stingy*
 (-r- conjugation marker, -ni-
 infinitive, -kiti habitative)
 (< PNY **cami*)

Bayungu, Thargari yinha *this* : Walbiri yinya *that beyond*
 (< PNP **yinja*)

Kariera, Bandjima ngaji-y-, Yindjibarndi ngayhi-y-, Yinggarda,
 Malgana ngathi-y-, Gupapuyngu ñäthi
cry (and Pintupi ngaji-l- *ask for*,
beg) : Umpila ngaaji-l- *laugh*
 (< PNP **ñaaci-*)

Pintupi ngara-y- *stand, wait, be* : Umpila nga'a-Ø- *enter*
 (< PNP **ngara-y-*)

Thalandji yuka.rry-y-, Wirangu uka- *stand* : Arabana,
 Wangkangurru yuka- *go* : Yagar-Yagar
 yuka- *lie down* (< PNP **yUka-*)

Nyangumarda -jarra-y-, Bayungu -tharri-y-, Walbiri -jarri-y-
 INCHOATIVE, *become*, Wembawemba
 jerri.ka, Dyirbal jarra-l (tr.),

Gupapuyngu dhärra *stand*,
 Yagar-Yagar thari- *run* :
 Adnyamathanha yarra- *fall*
 (< PNP *caada-y-)

Nyangumarda -kurlu PRIVATIVE : Walbiri -kurlu PROPRIETIVE
 (< PNY *-kurlu)

Walbiri -wangu PRIVATIVE : Duungidjawan -wangu COMITATIVE⁹
 (< PNP *-wAŋu)

Thalandji -nha PAST (in Y-Conjugation verbs) : Arabana -nha
 FUTURE (< PNP *-y-na)

But this is not all. Once the principle of the *unity of the opposites* is recognized, the floodgates are opened with respect to those aspects of antonymy - enigmatic to the non-native speaker - which are unique to *Australian* semantic systems. An absolute 'must' for the development of deeper insight into the nature of such systems is Kenneth Hale's *A Note on a Walbiri Tradition of Antonymy*. Needless to say, a person who is a native speaker of an Australian language and is deeply aware of his people's notions concerning antonymy AND is also trained in modern linguistics, anthropology and philosophy would be in the best possible position to enlighten the scientific world on this rich area of study.

And so we cross the threshold from the known to the previously unknown. Even so, it must be recognized that we are barely scratching the surface of this area of study. For if it should make sense to the outsider that the antonym of FIRE should be WATER, by the same token there is presumably no way in which he can deduce the antonym of EAR (to take one possible example). The following set of forms is suggestive, but by itself proves absolutely nothing:

Nyangumarda jungka, Yindjibarndi thungka, Bayungu thungka.ra
ground, earth : Wadjuk tonga,
 twonga, Neo-Nyungar twangk (twongk
 in southern dialect) *ear*

Even though the sound correspondences show excellent 'fit', there is no reason *a priori* why there should not have been homophonous forms in the proto-language, one meaning *ground* and the other *ear*. Notice that there has apparently been a replacement of initial dental stop with alveolar /t/ in Neo-Nyungar, conceivably through latter-day pressure from English sound patterns, so that there is no reason why *all* of the

forms cited should not be ascribed to Proto-Nyungic *cun̄ka. Nevertheless, the semantic void which a speaker of a European language such as English conceives of as existing between GROUND and EAR is so great that for a decade the writer of these lines could see no way out of this seeming conundrum. Eventually, a method of at least partially resolving it came to mind: to examine words for GROUND and EAR in a large number of Australian languages, and so hopefully gain further insights. If one takes the Gupapuyngu word for EAR as one's point of departure, the following comparisons come into focus:

Gupapuyngu buthu.ru *ear* (and, probably, Yagar-Yagar poewth
forehead) : Malgana puthu,
Nhanda uthu.lu, Wadjuk budjor
ground, Neo-Nyungar puju.rr
ground, earth, dust

Once again, the phonological correspondences work out. So long as the former suffixal status of -ru in the Gupapuyngu form, -lu in the Nhanda and the final rhotic consonant in the Wadjuk and Neo-Nyungar is recognized, the ancestral root can be identified as *pucu; and it is of PNP age. The short first vowel in the Gupapuyngu reflex, as well as the *retention* of the initial *p in Yagar-Yagar, *both* indicate that the first vowel in the protoform was short.

Alternatively, one can, albeit arbitrarily, choose the Gupapuyngu word for GROUND as a point of reference:

Gupapuyngu muna.tha *earth, ground, sand* : Yulbaridja muna.rta *ear*
Once again, if the non-etymological -tha and -rta are accounted for, we are left with a clear indication of a PNP root *muna.

And what of the Yulbaridja word for GROUND? Consider:

Yulbaridja, Pintupi, Wadjjarri parna *ground* : Thalandji, Burduna
parna *head*

In view of the fact that shifts in meaning between HEAD and EAR are well documented in Australian languages, the set of forms given can be taken as providing further corroboration of the correlation which is emerging; the implied ancestral form *parna goes back to Proto-Nyungic (PNY).

The most impressive documentation of all emerges when one considers Walbiri. Here is the clinching evidence:

Walbiri, Djaru langa *ear* : Warnman langa *ground*

My reason for making this claim is based on the quite unusual word

shape here: both initial lateral and intervocalic velar nasal occur with rather low frequency in Pama-Nyungan languages. O'Grady (1957) and Dixon (1972a) present statistical evidence for this. The chance that the Warnman word for GROUND shares an accidental resemblance with the Walbiri and Djaru words for EAR is thus exceedingly remote. Both go back to *laŋa, though at no great time depth (the three languages concerned are quite closely related). This root can be ascribed to Proto Northern Nyungic (PNNY).

Five ancestral forms can thus be reconstructed on the basis of the above interlocking evidence. As already indicated, I am delighted to leave to others the task of working out the original meaning of each. The five forms are, then:

PNPN	*muna	*pucu
PNY	*cuŋka	*parna
PNNY	*laŋa	

A further comment is in order concerning the approach used: comparison was made in the first instance between those languages whose grammars and lexicons show *ample* evidence of genetic relationship - in fact, between pairs of Pama-Nyungan languages. If, then, we are looking for a cognate of a root which appears in Nhanda, for example, we will look to Gupapuyngu far more than to Tiwi. If we *do* find a resemblant form in Tiwi, we will be strongly inclined to ascribe the similarity to the factor of chance (though one should not lose sight of the possibility of eventually demonstrating cognation).

The task of *rigorously* establishing phonological correspondences throughout a large network of Pama-Nyungan languages is a formidable one. In the first phase of the work, it was necessary to restrict the data to sets such as Bayungu ngajaru, Gupapuyngu ŋatha. As already indicated, these forms essentially agree in meaning (*vegetable food*). It should be further pointed out that this meaning can be argued for strongly as being in some sense 'basic'. One of Morris Swadesh's many valuable contributions to linguistics was his notion concerning the nature of the 'basic vocabulary' of a language. There is a very direct way, moreover, to demonstrate that the concept *vegetable food* is basic in Australian languages: to check whether there are any forms (other than reflexes of PNP **ŋaca*) with this meaning which have a wide distribution; and any reputable Australianist will observe, of course, that reflexes of PNP **mayi* 'foot the bill here'.

Once reasonably tight control of the sound correspondences is achieved on the above basis, the knowledge of the correspondences can

then be turned around and used as a handle in the task of uncovering examples of semantic change. Thus, because of a rule which operated in the history of Adnyamathanha such that PNP initial *c is reflected as y, we are not tempted to consider Adnyamathanha *yarra- fall* and Nyangumarda *ya-rra go!* (imperative singular) as cognates. Our conviction is strengthened by the knowledge that although the handful of PNP *monosyllabic* verb roots were indeed reanalyzed during the history of Adnyamathanha (or its immediate ancestor) in such a way as to make them agree in syllable count with the disyllabic majority, the extension was made via the old PNP *-ku- suffix. Hence, for example, Adnyamathanha *nga.l.ku- eat* (with which compare verb root *nga- eat* in Nyangumarda, with optative *nga-l.ku-*) and *nha.ku- see* (vs. *nya- see* in Yulbaridja, optative *nya.ku-ra*).

In the light of the above considerations, the Adnyamathanha verb root *yarra-* is thus considered as a cognate of Gupapuyngu *dhärra stand* and the other reflexes of PNP *caada-y- already presented herein.

The lesson which we learn from examples such as Nyangumarda *jungka ground* and Neo-Nyungar *twangk ear* is that no meanings can be considered *a priori* to be so far apart as to be unrelated. The evidence for the relatedness of the concepts GROUND and EAR in the languages so far examined appears to be overwhelming. It remains for the cultural context to be explained.

Procedures for establishing further such connections can usefully be illustrated through PP *minja *animal, meat* (reflected, for example, in Kuku-Thaypan *nhye*, Umpila *minya*, Wik Mungkan *minh* and Linngithigh *nya*, all of which descend with meaning unchanged). In any connections outside of Pamic which we will propose, we will not content ourselves with making off-the-cuff assertions, but will rather seek the most effective possible motivation for such assertions.

Some knowledge of the sound correspondences leads one to expect that a Wadjuk or Nyangumarda cognate of PP *minja will have an initial m, followed by l, which in turn will be followed by a laminal nasal; in Nyangumarda only, the vowel corresponding to the PP *a can in this environment (i.e. following a laminal in the second syllable) be expected to be i. The leads, then, are very specific indeed, and we expect that the cognate shapes in Wadjuk and Nyangumarda, if they do turn up in these languages, will be *minya* and *miny* respectively. The reader is urged to mark well the notion 'if they turn up'; one way in which language change manifests itself is in the total disappearance of a morph from a language (as in the loss of *quoth* from modern English). Nevertheless, 'Seek and ye shall find'! Moore (1884:54) contains the

entries *min-ya a smell* and *min-ya dew*; and in Nyangumarda *minyi stench* has already been cited. Bearing in mind the POTENTIAL:ACTUAL feature of Australian semantic systems discussed in O'Grady (1960) and Dixon (1972b), it seems reasonable to conclude that just as ANIMAL is the potential counterpart of (actual) MEAT, so also could MEAT be regarded as the potential counterpart of (actual) PUTREFACTION. And this supposition is borne out by the evidence from Kariera and Yulbaridja: in the former, *mantu* means *meat*, and in the latter we have *mantu rotten*.

If we now extend the search for cognates of PP **minja* to the whole of Australia (but with our main hopes for success centring on the Pama-Nyungan languages, naturally enough), we are immediately struck by the existence of a whole swathe of languages in which *minya* = *what?*. In the far north, Yagar-Yagar *miya.y what?* evidently belongs with this assemblage, along with Dyirbal *minya*, Wangkangurru and Arabana *minya*, Dieri *minha* and 'Narrinyeri' '*minye*' - to cite just a few examples - all of which mean *what?*. Languages in which the cognate form has undergone idiosyncratic truncation (as with a high-frequency item of English such as *because* > '*cause*) include Gidabal, in which *nya.ng* answers to *what?*; note also Antakirrinya and Pintupi *nyaa*, Mudbura *nya.mpa*, Walbiri *nyi.ya* (*nya.yi* in Eastern dialect) *what?* and Walbiri *nya.ngu.ria*, Nyangumarda *nya.nga when?*. An underlying *a* is indicated for the second syllable of the 'Narrinyeri' form by '*minyai*' *what number?* and '*minyandai*' *what times?, how often?*.

It is interesting to note that the Pama-Nyungan languages in which **minja* descends with the meaning ANIMAL/MEAT (or the clearly derived meaning SMELL-STENCH) and the languages in which the 'other' **minja* is reflected are more or less mutually exclusive (and jointly make up the major part of the roster of Pama-Nyungan languages). It is even tempting to suggest that one of the hallmarks of a Pama-Nyungan language is the presence of a reflex of **minja*. This might just turn out not to be taking things too far! Moreover, it is also tempting to speculate that the first major breakup of the original Proto Pama-Nyungan speech community can be traced through the root which is under discussion: if **minja* descends with meaning ANIMAL/MEAT or SMELL/STENCH in a given language, then the language is a member of Group A; and if the meaning of the reflex of **minja* is WHAT, then the language is a member of Group B. In other words, Pama-Nyungan languages might be thought of as having undergone a MEAT:WHAT split, just as Indo-European languages divide themselves (according to an important phonological criterion) into Centum-languages and Satem-languages.

But we are 'jumping the gun' here a little. Can substantive evidence be brought to bear to demonstrate that *all* of the *minya*-forms in Pama-Nyungan languages descended from a single root? My claim is that there is such evidence, and that it is to be found in the reflexes of a PNP root so far not discussed herein, namely **waara*. But more of **waara* anon.

After their daily forays for game in their small Urheimat in central northern Australia, members of the original Pama-Nyungan speech community must regularly have been greeted with a stock phrase, **ŋaana minja what meat?*. Over a period of time, a segment of the community came to accept successive truncations of this basic query: first **'na minja*, and finally just **minja*, which thus came to be interpreted by succeeding generations of speakers as an alternative non-human interrogative pronoun; **ŋaana*, the old word for *what?*, was gradually crowded out.

Returning now to the question of **waara*, we will find it appropriate to take the Pamic languages once again as a starting point. The human interrogative pronoun is reconstructed in PP by Hale as **waari(-na)*. Reflexes include Umpila *waa'i who?*, which in the ERGATIVE case takes the form *waa'in.ju-lu* (in which, historically, ergative has been marked twice over - cf. English *child.r-en*). I take this ergative form to be evidence for a pre-Umpila root shape, namely **waarin(a) < *waarinj(a)*. This in turn was made up of root **waara* plus suffixed **-nj(a)*, the latter reflecting PNP **-nja*, which appears in Pama-Nyungan languages commonly as an object marker on proper nouns, and in some cases marks proper nouns as such.

Other Pamic evidence for PP **waari(-na)* includes Wik Mungkan *wee'*, Uradhi *arri-*, Linngithigh *a'i- who?*. Far to the south, we have Dieri *wara.nha* and Wangkangurru, Arabana *wara who?*. The comparative evidence, for example Umpila *ma'a*, Wangkangurru and Arabana *mara hand < PNP *mara* allows us full confidence in assigning cognation here.

The question arises, what was the referent of PNP **waara*? The answer appears to be that it was *not who?*. The evidence for this claim comes especially from Gumbainggar *waan face, forehead* and Wirangu *waa face*. Notice that glide deletion occurs in a number of Australian languages, although it is by no means easy to determine the precise conditions under which it operates (borrowing no doubt contributes to obscuring the picture). Nonetheless, Wirangu *maa vegetable food < PNP *mayi* is instructive.

It is very plausible that in PNP times another stock question frequently heard was **ŋaana-nja waara what-HUMAN face?, i.e. who is it?*,

asked in situations where a visitor's identity was unknown. This likewise came to be truncated to *waara by some speakers, so that their descendants came to use *waara in the sense of *who?/somebody*. Meanwhile, the laminal nasal of the *-nja suffix exerted a fronting effect on the preceding *a in the form *ñaana-nja (as used by another segment of the original PNP speech community); *ñaana was subsequently reanalyzed as *ñaani by some speakers.

The original FACE referent of *waara showed semantic specialization in another direction also. Conceptually, FACE/FOREHEAD and VERTICAL are interrelated in Australian languages. Consider, for example, the following reflexes of PNP *ñAlja:

Nyangumarda	ngalyi	<i>neck</i>
Yulbaridja	ngalya	<i>face</i>
Pintupi, Walbiri	ngalya	<i>forehead</i>
Pittapitta	ngalya	<i>cheek</i>
Walbiri	ngalya.rr-pa	<i>sandhill</i> and, perhaps -
Walbiri	ngalya.lki	<i>flame, fire without smoke</i>
Warburton Ranges	yapu ngalya	<i>cliff (yapu stone)</i>

So also, then, in Walbiri wara.rra is *cliff, precipitous mountainside*. It is worth pointing out that English *face* is used in a very comparable way, as in *sheer face of rock*. Nyangumarda wara.rr (noun) *standing* and Gadhang wara- *stand (up), step* from opposite sides of the continent could be taken as evidence that the semantic development
FACE —> (BE) VERTICAL is quite ancient in Pama-Nyungan.

Still another line of semantic development led to Nyangumarda wara.ja *one* and wari.ny *other*, as well as to Yagar-Yagar wara *other*. Finally, Ngarluma wara *clothing* and Nyangumarda wara *rag* appear to be derived from the general notion THING, which is a very plausible antonym of FACE/PERSON. The intimate relationship between FACE and PERSON is generally evident in languages of the world, including English. More particularly, however, note PNY *ñadka > Ngarluma ngarrka *face*, Yulbaridja ngarrka *chest* and Walbiri ngarrka *fully initiated man*; also PNP *ñuumpa > Kariera, Nyangumarda ngumpa (and, with as yet unaccountable initial k, Yindjibarndi, Bandjima, Nyamarl kumpa) *face*, Pintupi ngumpa *shade or shade shelter*, Djaru ngumpin *man* and Umpila nguumpa *large black stingray*. The connection between FACE and STINGRAY should be acceptable to anyone who has contemplated the striking but spurious *face* on the underside of these creatures.

It may well be that future research will show some of the lines of semantic shift suggested in the previous pages to be unsupported. By and large, though, it does seem that correlations are beginning to

emerge which further work can be expected to make fully acceptable. To this writer at least, several of the more extensive interlocking networks of evidence presented here appear to be well-nigh unassailable. In any event, it is crucial that further research take fully into account the tangled web which Pama-Nyungan diachronic semantics - let alone Australian diachronic semantics! - promises to be.

The above hopefully constitutes an intelligible outline of some of the problems inherent in Nuclear Pama-Nyungan comparative reconstruction. The establishment of the principles stated above has resulted in an increase in the number of cognate sets to the point where their sheer volume has begun to pose real problems of manageability. What was indicated was a narrowing of the focus so that protoforms containing a given initial consonant could be researched *en bloc*. Thus, after assembling 850 cognate sets, I began to focus my attention exclusively on the 120 sets which descended from protoforms beginning with the laminal stop *c. Since 850 divided into 120 is 14% or approximately one-seventh, it follows that whatever percentage of increase in the number of the *c- sets was made possible by exclusively concentrating on this initial could be predicted to apply approximately to the entire body of sets. The *c- sets were in fact ultimately increased in number to 200 - i.e., an increase of two-thirds was effected. There is thus good reason to expect that the overall number of reconstructions will eventually 'bottom out' at around 1,400.

My choice, albeit arbitrary, of *c- as a starting point for preparing the material for possible publication forced a further decision - namely to follow up immediately with work leading to protoforms in *y- and *nj-, since residual problems centring on forms with initial *c might well turn out to be resolvable once careful attention is given to other laminal-initial forms. It is hoped that two years will be sufficient for the preparation of a fascicle for each initial consonant (or group of initials, in the case of the low-frequency apicals). Thus the first version of the work may be complete by 1994.

Brief illustration of some of the phonological pitfalls in PNP comparative reconstruction can be given here. If, for example, one's focus is PNP protoforms in *c-, then Nyangumarda japa.rtu *father* is not relevant (it reconstructs back to PNP *yapa). Nor is Ngarluma thaka-l- *take, grasp* (from ancestral *taka), Ngarluma japu.rta *beard* (< PNP *tapu) or Ngarluma thumpu *anus* (< PNY *lumpu).

On the other hand, Uradhi forms with initial /l/ are grist for our mill: lalan *tongue* goes back to PP *calan, and further, to PNP *calanj; lutpi *stomach* reflects PP *culpi; and lipa *liver* (which need not be taken as a loan from English!) reflects PNP *cipa perfectly

regularly. Then again, since one of the sources of Umpila initial /y/ is PP *c, we will be concerned to take account of such forms as *yuma fire* (< PP *cuma) and *yipa liver*, also < PNPN *cipa.

Then, too, Arabana, etc. *parrku.lu two* might not at first blush seem at all relevant to protoforms beginning with *c. Yet if considered in the light of Thalandji *jarrku.rti*, Yindjibarndi and Kurrama *jarrwu.rti*, Warriyangka *jarrku three*, then the *parrkulu* forms in Arabana, Wangkangurru and a number of neighbouring languages can be viewed as the result of reanalysis of the initial consonant in PNPN *cAdku; and the pressure leading to this reanalysis was exerted by a reflex of PNPN *pula *two*. In Indo-European, a comparable development can be seen in the effect which the word for *ten* exerted on the initial consonant of the word for *nine* in Proto-Slavic, so that modern Russian has alongside ДЕСЯТЬ *désať ten* ДЕВЯТЬ *dévať nine*, with initial *đ* in place of the expected Indo-European reflex, *n*.

Let us conclude this preliminary presentation of some aspects of Pama-Nyungan comparative linguistics with a short wordlist in five of the languages arranged on the basis of the referent range of each item, but with cognates identified by identical numbering.

Bayungu	Nyangumarda	Pintupi	Umpila	Yagar-Yagar	Gloss
-parnti	-ngurlu ^v -ngu 1	-nguru	-munu	-ngu 1	ELATIVE case suffix
nhupalu	nyumpala	nyupali	ng'u'ula	nipel	you two
ngali	ngali	ngali (E) 3	ngali	ngaba	we (DUAL INCL.)
nganhurru	nganarna	nganarna	ngana	ngoey ^v ngoel- 3	we (PLUR. EXCL.)
nyurni	kiwinyiwinyi	kiwinyi 5	kuuntu	iwi 5	mosquito
nguu 1	ngumpa	miparrpa, yurnpa, yiku	miil'a	paaru	face
wampa-parnti	marla	lakarrpa antbed	mungka	muugu 6	anthill
wirlarra	tartarta	kirnara, ... (kiji.rli at Warbur- ton Ras.) 7	tawa.y 8	kisa.y 7	moon
mirta.li	punyju	purlka	ma'ila	mapul 9	heavy

Bayungu	Nyangumarda	Pintup1	Umpila	Yagar-Yagar	Gloss
kamu 10	janparr	parljaji- rraja	uuli	yaraaga	hungry
jitarn	taki 11	nyanka	kupun	kothey	nape
japu.rta 8	ngarnka 12	ngarnkurrpa	puujan	yatha	beard
-	kawu	yarna.ngu	yalmpay	gaamu 10	body
karta.ra	ngalkungalku	murramurra	walu	daaka 11	cheek
mangku.rtu	pji.rri	milka.rli	kamu 10	kulu.ka	blood
jirnti	parlparr	ngarnka 12	-	dapa.r 8	sky

Note that Umpila ngu'ula shows the effect of reanalysis in the initial consonant, with earlier laminal nasal being replaced by ng under the pressure of first person forms such as ngali. Not given in the table is Umpila ngampu.la *we* (PLURAL INCLUSIVE), which reflects the first alternant of PP * η ampul(a) ~ η ampa; the second alternant is reflected, for example, in Wik Mungkan ngamp with identical meaning, and answers well to Yagar-Yagar ngaba.

Proto Nuclear Pama-Nyungan distinguished fourteen consonants and three vowels. In addition, the vowel in the first syllable of a root showed distinctive length. The stops were articulated at four positions: *p (bilabial), *t (apical), *c (laminal) and *k (velar). These were matched by nasals *m, *n, * η j and * η . There were two laterals - apical *l and laminal *lj; one rhotic with apical contact, herein symbolized as *d; and three glides - labiovelar *w, rhotic *r and laminal *y. The vowels were high front *i, high back *u, low back *a, and long counterparts *ii, *uu, *aa.

Most conspicuous in the phonetic realization of forms were:

1. All words were stressed on the first syllable.
2. All consonants had fortis allophones following a short stressed vowel, and lenis allophones elsewhere.

The PNP inventory of distinctive sound segments was, then:

*p	*t	*c	*k					
*m	*n	*nj	*ŋ		*i	*u	*ii	*uu
		*l	*lj					
		*d			*a			*aa
*w	*r	*y						

Adequate validation of this system will have to await the publication of full comparative data from representative Pama-Nyungan languages. In the meantime, it is hoped that this paper will serve two purposes. Firstly, it should provide the reader with some preliminary orientation concerning the writer's views on a number of aspects of phonological, analogic and semantic change in the languages under study; secondly, the assertions made will hopefully open this arena to further productive dialogue.

NOTES

1. The work was supported through Grant No. GS-1624, administered by the University of Hawaii. I would like especially to thank Dr George Grace, Dr Bob Hsu and Dean Howard McKaughan for their guidance, support and encouragement.

2. For this reason I am at a loss to understand what Dixon means by 'Proto-Australian'. The very title of his article, 'Proto-Australian Laminals', cries out for explanation, though the paper itself is an excellent contribution to the study of diachronic Pama-Nyungan phonology.

3. Methodologically, the appropriate procedure would be to compare Tiwi to the remotest possible reconstructible ancestor of Nyangumarda - Proto Pama-Nyungan. If this were done, however, the result would be the same: there would be virtually no potentially related material to work with.

4. Forms are presented in a spelling which adheres, for the most part, to the present-day Walbiri orthography. If allowance also be made for sounds not occurring in Walbiri, the scheme of symbols for consonants is as follows:

	Bilabial	Lamino-Dental	Apico-Alveolar	Apico-Domal	Lamino-Alveolar	Dorso-Velar
STOPS	p	th	t	rt	j	k
FRICATIVES			s, z			gh
NASALS	m	nh	n	rn	ny	ng
LATERALS		lh	l	rl	ly	
FLAP/TRILL			rr	rd		
GLIDES	w	yh	r	y		

In languages with two series of stops, the voiced (or lenis) series is symbolized b, dh, d, rd, dy, g; in languages with a rhotic trill contrasting with a flap (such as Adnyamathanha), the trill is written as rrr. No confusion arises from assigning rd double duty (apico-domal flap and voiced/lenis apico-domal stop), since no single language has been encountered in which both are distinctive. Notice that I consider rt, rn, rl to be clusters, as proposed in Hoard and O'Grady (1976). I have now abandoned the earlier claim that the rhotic flap/trill in languages such as Nyangumarda is to be analyzed as a cluster consisting of two r glides; the spelling convention rr is thus held to be merely a convenient way of symbolizing rhotic flap/trill /ʀ/. Vowels are written i, e, ae, a, o, u, and with digraph oe for schwa. Where length is contrastive, the symbols are doubled: ii, ee, etc., and with ooe for long schwa. Since Gupapuyngu has a well-established orthography and literature, I am adhering to the accepted usage, in which short vowels /i, a, u/ are written i, a, u, and the symbols for long vowels /i:, a:, u:/ are e, ä, o. The Gupapuyngu velar nasal is written as ŋ. In the case of pre-scientific materials, experience teaches that tampering with the spellings has all too often been counterproductive. I therefore choose to leave spellings used in Moore and other 19th century sources strictly alone; the reader is reminded of their status by the use of single quotation marks. If sensibilities are affected by these conventions, I gladly apologize in advance. To me their justification is that they immeasurably facilitate Australian comparative work.

5. As indicated elsewhere, I prefer to refer to the family dominated by this node as 'Pama-Nyungan', following Hale (1966).
6. See Hoard and O'Grady (1976) for a discussion of the synchronic aspect of the same rule.
7. O'Grady (1966) discusses frozen suffixes such as this ka in some detail. The convention used for identifying them continues to be dot.
8. Quite possibly a mistranscription of wirnpal-pi-l-.
9. The Duungidjawa example is from Wurm (1976:109) and was brought to my attention by Kenneth Hale.

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