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STUDIES IN COMPARATIVE PAMA-NYUNGAN

edited by

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...linguists...are not simply playing around with changes and imposing their own view on history. Rather, it is the history of the language and its development which imposes the solution on the linguist.

(page 42)

Strictly speaking, the term 'unrelated' is not very felicitous; the word 'unrelatable' would give a much more accurate description. For we can never prove that two given languages are not related.

(page 566)

Reconstructions which recover something like a thousand words plus, say, a fairly complex system of both inflectional and derivational morphology clearly are more impressive and make a better case for linguistic relationship than do reconstructions which manage to recover only a hundred lexical items plus a few morphological patterns.

(page 567)

— Hans Henrich Hock
*Principles of historical
linguistics, 1986*

PREFACE

This work has been carried forward, with many interruptions, since the late 1950s. It had its real origins in June 1949, when a group of Nyangumarta people and I were camped at the coast up from Chirrup Outcamp on Wallal Downs in Western Australia. Among these was the late Mr Tommy Dodd, my first Nyangumarta teacher, who answered my endless language-related questions with monumental patience. To him as well as to many others – especially to my Nyangumarta adoptive parents Jimmy and Binmarie and to Willie Davidson – I am eternally grateful. Monty Hale of Strelley became literate in Nyangumarta in three weeks in 1960 under my inexperienced tutelage, and in later years became the driving force behind the literacy programme there. The many Aboriginal people in other parts of Australia who shared their knowledge of their languages with me include the late Mr John Butcher of Lockhart River Mission in North Queensland, a fluent speaker of Umpila; Mr Leslie Moore of Ceduna in South Australia – a speaker of Wirangu and Miriminy; and Mr Mick Maclean (now deceased), a resident of Port Augusta whose native tongue was Wangkangurru. I sincerely thank them all.

Annabel Flower (née Lacy) was a small European child in 1952 who controlled Nyangumarta phonetics considerably better than I did. I am grateful to her for teaching me the correct way to pronounce partany *child* as well as a number of other forms.

I also appreciate very much the crucial help and guidance I received from Mr Wilf Douglas, Dr Helmut Petri and the then Dr Gisela Odermann, and Drs Arthur Capell, Ronald M. Berndt, Catherine H. Berndt, A.P. Elkin, Bill Geddes, T.G.H. Strehlow, Norman B. Tindale and Stephen A. Wurm through the 1950s. My meeting Kenneth L. Hale on the railway platform at Port Augusta in February 1960 marked the beginning of joint linguistic investigations which in many ways have continued ever since.

During the 1960s, I incurred a special debt of gratitude to Elsie Dosch, Carl F. and Florence M. Voegelin, Fred Householder Jr, Thomas Sebeok and George List at Indiana University, and to George Grace, Bob Hsu, Howard McKaughan and the late Gordon Fairbanks at the University of Hawaii. I am also indebted to Mr Fred McCarthy of the Australian Institute of Aboriginal Studies. I am grateful to Dr M. Harry Scargill of the University of Victoria in British Columbia for making it possible for me to take a year's leave of absence in 1967-68 for the Nyungic project in Australia and Hawaii. This included as co-workers Terry J. Klokeid, Bruce and Elaine Sommer and Ken Hale, and was funded by National Science Foundation Grant GS-1624.

Dr Gaberell Drachman kindly provided me with office space at the University of Salzburg during my 1974-5 study leave. I wish to thank Drs Darrell Tryon, Stephen A. Wurm and the late

Don Laycock of the Research School of Pacific Studies of the Australian National University in connection with the work I was enabled to do at ANU in 1980 and 1986. In the latter year, Evelyn Winburn went beyond the call of duty in instructing me in the operation of the computer. In addition, she has retyped the whole volume into the computer. I also have to thank Lois Carrington in connection with her work on the Bibliography and Index and for her uniformly meticulous editing. Credit is also due to Anne Rees for her general computer-age expertise, and to Xue Ping for his valuable assistance with proofreading.

In July 1987, Dr Philip Baldi enabled me to participate in the symposium at Stanford University on linguistic reconstruction methodology. I sincerely thank him.

Other persons who have assisted and encouraged me over the years, or who have read and criticised sections of this work, include William Alkire, Barry Alpher, Peter Austin, Arne Baartz, Barry Blake, Barry F. Carlson, Bob Dixon, Jan van Eijk, John Esling, Ken Hale, John Haviland, Luise Hercus, Thom Hess, Jim Hoard, Tom Hukari, Adam Kendon, Joseph Kess, Harold Koch, Robert Levine, Father Kevin McKelson, David Nash, Günter Schaarschmidt, Jane Simpson, Michael Walsh, Henry Warkentyne and David Wilkins.

Finally, I thank my wife, Alix, and our daughters Liane and Danielle for the many years during which they were inundated with questions of the type: 'Can you suggest how *moon* and *perspiration* could be semantically related?' (For my hypothesis concerning this, see at *panya herein.)

The responsibility for any contradictions, inconsistencies or other errors in this work is mine alone.

G.N. O'Grady
Victoria B.C.
July 1990.

Map 1: Australia

Map 2: The Pama-Nyungan family of languages

KEY TO ABBREVIATIONS FOR LANGUAGE NAMES

(see also Index to Language Names, pp.269-279)

ADN	Adnyamathanha	GRN	Gurindji
AE	Australian English	GRY	Gariyarra (Kariera)
ALW	Alawa	GUM	Gumbaynggir
ALY	Alyawarra	GUN	Gunwinygu
AN	Austronesian	GUP	Gupapuyngu
ANG	Anguthimri (see MPK)	GYA	Gugu-Yalanji
ARB	Arabana	IE	Indo-European
ARW	Western Arnernte (Aranda)	INY	Inland Yuwinj
BAA	Bāgandji (Baagandji)	IOR	Iora
BAK	Bakanha	JKY	Jaabugay (Tjapukay)
BAL	Balardong	KAB	Kabikabi (Kabi)
BAN	Bandjima	KAI	Kaytej (Kaiditj, Kaititj)
BAY	Bayungu	KAL	Kalarko (Malba)
BGU	Bidyara/Gungabula	KAN	Kanyara
BLG	Balygu	KAT	Gadhang (Kattang)
BNJ	Bandjalang	KAY	Kanyara-Yuulngic
BRD	Burduna	KBR	Koko-Bera (Kok Kaper)
BUG	Bugi	KGS	'King George Sound' (Minang)
CA	'Common Australian'	KIW	Kiwai
DAB	Dabu	KKN	Kuk-Narr (Kok Nar, Gog-Nar)
DAL	Dalabon (Ngalkbon)	KLK	Kalkatungu
DHI	Dhiin	KLY	Kala Lagaw Ya (Yagar-Yagar/Mabuiag)
DIY	Diyari (Dieri)	KNJ	Kaantju
DJA	Djadjala	KRR	Kurrtjar
DJN	Djinba	KUK, K	Kukatj
DJP	Djapu	KUN	Kunjen (Uw-Oykangand)
DJR	Djaru	KUR	Kurrama
DJU	Djurruru	KUT	Kuthant
DYI	Dyirbal	LIN	Linngithigh
DYID	Dyalnguy Dyirbal	LML	Lamalama
DYIG	Giramay dialect of Dyirbal	LRD, L	Leerdil (Lardil)
DYIM	Mamu dialect of Dyirbal	MAN	Mangarayi
DYIW	Guwal dialect of Dyirbal	MAR	Marrngu
GAN	Ganggalida	MAW	Mawng (Maung)
GAR	Garawa	MAY	Mayi
GAW	Gawurna	MBI	Mbiywom
GAY	Gayardild (Kayardilt)	MDB	Mudbura
GBA	Gugu-Badhun	MDI	Madhimadhi (Madimadi)
GID	Gidabal	MIN	Minkin
GIP	'Gippsland'	MIR	Miriam
GLB	Galpu (Galbu)	MIS	Misima
GNG	Gungabula	MKT	Mayi-Kutuna
GNL	Ganalpuynu (Ganalpingu)	MKU	Mayi-Kulan
GNP	'Gnowangerup'	MLG	Malgana
GNR	Gungarakany	MNN	Northern Mangarla
GNY	Gunya	MNT	Mantharda
GOA	Guwa (Goa)	MPA	Mpalitjanh (Mpalitjan-Luthigh)
GRD	Gardudjarra (Kardudjarra) dialect of WD	MPK	Mpakwithi dialect of Anguthimri
GRJ	Garadjari (Karadjeri)	MRA	Mara/n

MRD	Martathunira (Mardudunera)	PMN	Pama-Nyungan Family (earlier: PN, PMNY)
MRG	Margany (-Gunya)	PNK	Pankarla
MRN	Miminy	PTJ	Pitjantjatjarra dialect of WD
MUL	Mulurudji	RIT	Rithamngu
MUM	Wik Muminh	RMK	'Mt. Remarkable'
MUN	Murngin	SAI	Saibai
MUR	Muralag	SNO	'Snowy River'
MWT	Mawata	SUA-S	Southern Suau
MYP	Mayi-Yapi	TAN	Tangkic languages
NAN	Nhanda (Nanda, Nhanta)	TAS	Tasmanian languages
NAR	Narinari	TAT	'Tatiarra'
NE	Modern English	TAY	Thaayorre (Kuuk-Thaayorre)
NF	Modern French	THL	Thalandji (Dhalandji)
NGA	Ngandi	THR	Thargari (D-dialect)
NGB	Nguburindi	THY	Kuku Thaypan (Aghu-Laya)
NGI	Ngiyambaa (Ngeumba)	TIW	Tiwi
NGK	Ngkoth	TNM	Thiin(ma) (Tenma)
NGL	Ngarla	TRK	Thargari (L-dialect)
NGR	Ngarinyin	UMB	Umbindhamu
NGT	Wik-Ngathana	UMP	Umpila
NGW	Ngawun	UNG	Ungarinyin
NGY	Ngayarda	URA	Uradhi
NKA	Ngarrka	VAS	'Vasse' dialect of Nyungar (see WAD)
NMA	Ngarluma	VIC	Victorian languages
NPM	Norman Paman	WAA	Waalubal
NPMN	Nuclear Pama-Nyungan	WAD	Wardandi
NRA	Narangga	WAG	Wagaman
NRN	Narrinyeric	WAR	Warungu
NSW	New South Wales languages	WAT	Wati subgroup of WD
NUG	Nuguna (Nukuna)	WAY	Wayilwan
NUN	Nunggubuyu	WD	'Western Desert' language
NUW	Nuwala (Noala)	WEM	Wembawemba
NYA	Nyangumarta	WGK	Wangkangurru
NYA A	Anna Plains dialect of NYA	WIR	Wirangu
NYA L	La Grange dialect of NYA	WJI	Watjarri (Wadjeri)
NYA S	Strelley dialect of NYA	WJK	Wadjuk
NYA W	Wallal dialect of NYA (of the 1950s)	WLB	Warlpiri (Walbiri)
NYC	Nyungic group	WLM	Walmatjarri
NYG	Nyangga	WLW	Warluwarra
NYL	Nyamarl	WMK	Wik-Mungkan
NYU	Nyungar	WNG	Wik-Ngathana
NYU S	Southern dialect of NYU	WNK	Wangkumara (Galali)
NYW	Nyawaygi	WNY	Waanyi
OE	Old English	WOR	Wororan phylic family
OFR	Old French	WRA	'Warburton Ranges' dialect of WD
OGN	Ogo-Nyjan	WRG	Warrgamay
OOL	'Ooldean' (Ngalea) dialect of WD	WRJ	Wiradhuri (Wiradjuri)
PAM	Pamic languages	WRL	Warlmanpa
PAR	Parb	WRN	Warnman
PIN	Pintupi dialect of WD	WRR	Waray (Warray)
PIT	Pitta-Pitta		
PMK	Peremka		

WRU	Warumungu	YIM	Guugu-Yimidhirr (Guugu Yimidhirr)
WRY	Warriyangka (Warienga)	YIM C	Coastal dialect of YIM
YAL	Yalandjic group	YIM T	Tablelands dialect of YIM
YAN	'Yangarella'	YIN	Yindjibarndi
YAR	Yaraldi (Yaralti)	YNJ	Yindjilandji
YAU	Kuuku-Ya'u	YNW	Yinwum
YAY	Yaygir	YNY	Yanyuwa (Yanyurla)
YDN	Yidiny (Yidin, Yitiinytji)	YOD	Yodayoda (Yotayota)
YDN C	Coastal dialect of Yidiny	YUK, Y	Yukulta
YDN T	Tablelands dialect of Yidiny	YUL	Yurlbaridja dialect of WD
YGK	Yangkaal	YUR	Yura subgroup of NYC
YGN	Northern Yinggarda	YUU	Yuulngu (Yolngu)/Murngic
YGS	Southern Yinggarda	YUW	Yuwaalaraay
YII	'Yiilima'	YY	Yir-Yoront (Koko-Mindjena)

KEY TO NAMES OF ANCESTOR LANGUAGES POSTULATED

PA	Proto-Australian	PNPN	Proto-Nuclear Pama-Nyungan (superseded). Now effectively = PPN, if Leerdil be reclassified as a non-PMN language. See Blake (1988).
PAN	Proto-Austronesian		
PBJ	Proto-Bandjalangic		
PCP	Proto-Central Papuan		
PDN	Proto-Desert Nyungic		
PEO	Proto-Eastern Oceanic	PNY	Proto-Nyungic
PEPN	Proto-Eastern Pama-Nyungan	PNYY	Proto-Nyungo-Yuulngic
PG	Proto-Gunwinygu	POC	Proto-Oceanic
PGmc	Proto-Germanic	POCGR	Proto-Oceanic (Grace)
PIE	Proto-Indo-European	PP	Proto-Pamic (often wrongly referred to as 'Proto-Paman')
PKA	Proto-Kanyara		
PKM	Proto-Kanyara/Mantharta	PPLN	Proto-Polynesian
PKY	Proto-Kanyara-Yuulngu	PPM	Proto-Pama-Maric
PMA	Proto-Mantharta	PPN	Proto-Pama-Nyungan
PMP	Proto-Middle Paman	PT	Proto-Tangkic
PMR	Proto-Marrngu	PUN	Proto-Ungarinyic
PN	See PMN	PWA	Proto-Wati
PNG	Proto-Ngayarda	PWO	Proto-Wororan
PNNSW	Proto-northern New South Wales	PWPN	Proto-Western Pama-Nyungan
PNP	Proto-Norman Pama	PYU	Proto-Yuulngic
		PYW	Proto-Yidiny-Wadjuk

ABBREVIATIONS

ABS	Absolute Case	ant	antonym
ACC	Accusative Case	anticip	anticipatory
ACT	Actual (vs Potential)	appar	apparently
Adj	Adjective	assim	assimilation
Adv	Adverb	Aus	Austin, P.
AGT	Agent	bk	back
AHD	American Heritage Dictionary	BP	Before Present
ALLAT	Allative Case	cf	compare
anim	animate	CL	Clause

COD	Concise Oxford Dictionary
cons	consonant
cor	coronal
cpd	compound
CRS	Close Relationship Speech
DAT	Dative Case
Dav	Davidson, D.S.
Deic	Deictic
del	deletion
dh	Dhuwa moiety
dissim	dissimilation
do	ditto
DU	Dual
DUBIT	Dubitative
ELAT	Elative Case
EMPH	emphatic
ERG	Ergative Case
esp	especially
EXCL	Exclusive
fig	figurative
fr	from
FUT	Future Tense
hi	high
ID	Initial-dropping
IMMED	Immediate
IMP	Imperative
IMPF	Imperfect Tense
INCL	Inclusive
init	initial
instr	instrument
INSTR	Instrumental
Interj	Interjection
INTERR	Interrogative
IS	Initial-softening
lab	labial
lg/lgs	language/languages
lo	low
LOC	Locative Case
metaph	metaphorical
N	Noun
nas gradn	nasal gradation
NOM	Nominative Case
OBL	Oblique
O'G	O'Grady, G.N.
orig	originally

P	Past Tense
pala	Dyirbal Noun Class IV
palam	Dyirbal Noun Class III
palan	Dyirbal Noun Class II
Part	Particle
payi	Dyirbal Noun Class I
PERF	Perfect Tense
perh	perhaps
periph	peripheral
PERT	Pertaining to (a NYA nominal suffix)
PL	Plural
POSS	Possessive Case
POT	Potential (vs Actual)
PP	Past Participle
PRIV	Privative
prob	probably
PROG	Progressive
PROP	Propriative
PURP	Purposive
Quant	Quantifier
R Conj	R-Conjugation
RECIP	Reciprocal
REFL	Reflexive
rel	related
s	Substantive
S	Intransitive Subject
sem	semantic
SG	Singular
sp	species
SR	Surface Representation
suff	suffix
syl	syllable
ult	ultimately
UR	Underlying Representation
V	Verb
Vintr	Intransitive verb
Vrefl	Reflexive verb
vs	versus
Vtr	Transitive verb
Vtri	Transitive verb (attested in both transitive and intransitive constructions)
y	Yirritja moiety
3SG	third person singular

INTRODUCTION

Geoffrey N. O'Grady

At the time of the European incursion into Australia two hundred years ago, seven-eighths of the continent was occupied by speakers of the Pama-Nyungan languages. The Pama-Nyungan family extended from Saibai Island in Torres Strait 3,700km south-west to Cape Leeuwin, and from Roebuck Bay 3,200km south-east to Cape Howe – with an enclave in north-eastern Arnhem Land to boot. The original human inhabitants of Australia had occupied the continent for two hundred years *two hundred times over*. There exists ample evidence, however, that the Pama-Nyungan language family, seen in the context of this awesome span of time, must be counted as having arisen in the quite recent past. The period of its spread and diversification almost certainly began not more than one-tenth as far back in time.

Abundant grammatical material has already been published which corroborates Ken Hale's claim of 1964 that Pama-Nyungan is the largest coherent linguistic genetic construct in Australia (Capell 1956, Wurm 1972, Blake 1977, 1981 and 1988, Klokeid 1978, Dixon 1980 and Hale 1982b). Our purpose now is to add to this evidence by providing further lexical (and, in the case of Alpher's paper, morphological) corroboration of Hale's thesis. The relevant materials are drawn from varying numbers of witness languages – from as few as two to as many as thirty or so.

In the case of the long-shot two-language study reported on herein, our *modus operandi* is based on Anttila (1972:338-340), who carries out a direct comparison of modern German and Russian lexical data in a successful effort to demonstrate that these two languages 'are plausibly relatable on the basis of contemporary evidence' only. In the Pama-Nyungan test case, we choose to compare Umpila, a Pamic language spoken in the far north-east of Australia, directly with Wadjuk, a member of the Nyungic subfamily of Pama-Nyungan formerly spoken in the south-west corner of the continent, and attested mainly in Moore (1884). As well as (a) wide geographical separation, we base our choice of this particular pair of Pama-Nyungan languages on (b) the fact that Wadjuk was transcribed in the 'pre-scientific' notation of the 19th century, and (c) the sparseness of the available Umpila lexicon, which consists of no more than one thousand entries. In addition, (d) we scrupulously avoid consulting data from close relatives of either Umpila or Wadjuk, in the spirit of the Anttila experiment. The comparative method is thus placed at a fourfold disadvantage. Yet even when severely handicapped in this way, it is certainly not hamstrung. In fact, we are still able to pinpoint several dozen highly plausible cognate pairs of

elements, including nominal case-marking suffixes, pronouns, names of body parts and terms for basic life functions.

In the paper on the semantic interrelatedness of *brain*, *egg* and *water*, we are focussing on an aspect of Pama-Nyungan comparative semantics which turns out to be all-pervasive. In fact, quite a large percentage of Pama-Nyungan started forms turn out to have reflexes whose referents have diversified to a point unimaginable to an Indo-Europeanist. Consider, for example, Nyangumarta (of Wallal) mija *newly-laid flies' eggs* alongside Nyungar mijal (with -l extension) *rain*, Wadjuk METJO *seed-vessel*, Nyamarl miji *blood*, Gupapuyngu metjuru [mi:juru] (with -ru extension) *newly-hatched fly* and Dyirbal miju *brain*. Without a doubt, a majority of comparativists from other fields than Australian would judge a colleague proposing such a cognate set as insane – or worse!

Nevertheless, we do not hesitate a moment to accept these forms as true cognates stemming from a Pama-Nyungan root *mijju. Our justification for this extravagant-sounding claim is that over half a dozen other roots *independently recapitulate* most of the above semantic associations: Proto-Australian (sic!) *nguku has reflexes whose meanings range between *water*, *egg*, *testes* and *brain*; the reflexes of *kaping have meanings ranging from *water* to *vomit*, *egg*, *brain* and *kidney*; and so on for half a dozen other roots. We hope that the faltering steps that we are taking here towards a fuller understanding of Pama-Nyungan and, eventually, Australian comparative semantics will spur younger linguists to carry on this study.

In Tim Hendrie's work, his object was to carry out comparisons among nine Pama-Nyungan languages from diverse parts of the continent, focussing just on initial apical consonants. The languages involved are Nyangumarta, Warlpiri, Pintupi, Gawurna, Bayungu, Gupapuyngu, Umpila, Guugu-Yimidhirr and Gidabal. His study demonstrates conclusively that word initially in Proto-Pama-Nyungan, *t, *n, *l and *r participated in a four-way opposition. As attestation, he presents 96 cognate sets under the rubric of Proto-Pama-Nyungan. A further 61 sets allow reconstruction back to various lower-level nodes representing, for example, Proto-Nyungo-Yuulngic, Proto-Nyungic and Proto-Desert Nyungic. Hendrie's work complements that of O'Grady, who has focussed much attention on initial labials during the past decade.

The section concerning Proto-Pama-Nyungan initial *m is based on a study by O'Grady involving just seven languages – Gawurna, Pintupi, Bayungu, Nyangumarta, Gupapuyngu, Umpila (and Proto-Pamic) and Gidabal. Over one hundred reconstructions are presented as a kind of skeletal outline which others may care to follow up. Thus the reconstructions in *m- require confirmation through more work involving a much larger number of Pama-Nyungan languages – the original seven plus two dozen, say.

In the case of the thirty-language study directed towards *j- and *k- we are attempting to emulate Ken Hale's approach to Pama-Nyungan comparative work, which calls for in-depth attestation for a modest number of carefully selected high-profile items. One such is Proto-Pama-Nyungan *jurrung *snake*, whose reflexes appear in literally dozens of languages ranging from the west to the east coast of the continent and from north-east Arnhem Land to Gippsland.

In O'Grady and Tryon's study of possible early Austronesian loans in ancestral Pama-Nyungan, a strong case is made for the presence, deep in the interior of Australia as well as in

languages like Wadjuk, Bayungu, Gupapuyngu, Guugu-Yimidhirr and Gidabal, of the best part of a dozen such loans. These would have appeared several thousand years ago in the north-east of the continent via contacts made by Austronesian voyagers crossing over from the relatively nearby shores of south-eastern New Guinea. This could conceivably have happened at a time when the ancestral Pama-Nyungan tongue was confined to a fairly small area in the north-east. In the subsequent spread of Pama-Nyungan to the south, south-west and west, the Austronesian loans would have been carried as part and parcel of the overall Pama-Nyungan lexicon.

A particularly compelling example is that provided by Proto-Pama-Nyungan *payung *shelter, protection*, which O'Grady had reconstructed at a time when he was in total ignorance of a possible resemblant form in Austronesian. In the subsequent O'Grady-Tryon collaborative effort, he was amazed when Tryon pointed out the Proto-Austronesian form *payung *shelter, protection, shade, cover*, whose reflexes include payung *umbrella* in Bahasa Indonesia. With this form compare, for example, Gidabal payuung *sling for carrying a child*.

An almost equally dramatic example appears in Proto-Pama-Nyungan *mAya *language*, which descends in Wadjuk as MYA (apparently /maya/) *voice*, Mirminy maya *language*, Gupapuyngu mayali *meaning* and Mayi-Kulan maya *talk*. With these forms compare Proto-Austronesian *maya *tongue* (Capell 1943).

In 'The Nuclear Pama-Nyungan universal quantifier *parntung', O'Grady is following Anttila's (1972) lead in attempting to exhaust *all* possible avenues in cognate search before desisting. In the case of modern Russian and English, a newcomer to Indo-European study might (correctly) judge Russian нoгá *leg, foot* and English foot as not being cognate, and desist from further search. In point of fact, the search will have only just begun. Eventually, German Nagel and English nail will come to light as cognates of Russian нoгá. Meanwhile, the root common to Russian пеший péshij *pedestrian, unmounted* and пешком peshkóm *on foot* turns out to be cognate with German Fuss, English foot. Thus is the Anttila approach vindicated.

The same methodology is followed in the case of Yidiny pantu *all together in a mob* and Wadjuk BANDANG *all*. If these two forms are cognate, which seems extremely likely, then they form the basis for extended cognate search throughout Pama-Nyungan (and non-Pama-Nyungan, for that matter). The presence of a form in languages so far apart geographically almost guarantees its appearance in at least some other languages of the Family.

This is exactly how matters turn out. Gawurna PARNA *they*, Umpila paantiku *all*, Waalubal pantang *other* and still more cognates attest to the correctness of the original decision to set up the Yidiny and Wadjuk forms as a likely base line from which to launch into further exploration for related forms. Search is even conducted in three non-Pama-Nyungan languages – Ngandi, Mawng and Ngarinyin, in all fairness to Dixon's (1980) 'proto-Australian'¹ construct. No conceivably cognate form is found in the first two of these languages, but Ngarinyin pantu *they* looms up to titillate the comparativist. Even though the p- turns out to be a plural prefix in this language, the possibility remains that p+antu is very anciently related to Proto-Pama-Nyungan *parntung.

¹Dixon's 'proto-Australian' will be referred to as Proto-Australian in this volume for consistency's sake.

Alpher's paper provides comparative evidence for certain inflected verb forms in Proto-Pama-Nyungan. In terms of methodology, there is a comparison of entire verb stems in construction with inflectional endings in modern Pama-Nyungan languages. These endings mark tense, aspect, and mood, or a combination of these. The reconstructions resulting provide further support for the claim that Pama-Nyungan is indeed a true genetic family.

Evans' paper concerns the Minkin language which was spoken near present-day Burketown. It is a language which died out in the nineteenth century. In this paper Evans pieces together what can be gleaned from historical sources in an attempt to elucidate the genetic position of Minkin among other Australian languages.

In 'Pama-Nyungan: the tip of the lexical iceberg', the last paper in the volume, we are combing the lexicons – large and small – of thirty Pama-Nyungan languages with a view to reconstructing as many as possible of the Proto-Pama-Nyungan and sub-Proto-Pama-Nyungan elements which begin with, or consist of, the shape **pa*. In so doing, we are forcing ourselves to confront homophonous and near-homophonous etyma such as **parlu river*, **pArlu₁ winding ...* (quite possibly related to the previous form), **pArlu₂ full, sated* and **pArlu₃ louse*. In this way, we bring together 170 putatively ancestral roots, particles and suffixes which conform to the **pa(-)* specification.

If we assume for a moment that 50% of these reconstructions are ultimately deemed non-viable by a consensus of linguists, we will still be left with 85 or so ancestral elements in **pa(-)*. It would be naive to imagine that these represent more than about a half of the overall number of starred forms in **pa(-)* which could ultimately be reconstructed for (sub)-Proto-Pama-Nyungan, given massive funding and all-out computerisation. Years or decades hence, the number of such starred forms could therefore conceivably peak out at around 170.

Experience over the years shows that in initial-preserving Pama-Nyungan languages, around 17% of forms begin with /p/. Of these, approximately 40% have /a/ following that /p/. It follows, then, that 40% of 17% = 7% of all lexical entries in such a language will begin with **pa*. This provides us with a metric – albeit a rough-and-ready one – for estimating the number of ultimately reconstructible (sub)-Proto-Pama-Nyungan roots and suffixes: 7% of 100% is approximately one-fourteenth, so that eventually it may be possible to reconstruct $170 \times 14 = 2,380$ ancestral elements. Thus it is perhaps arrogant of us to claim that in this last paper in the volume we are uncovering *as much as* the tip of the Pama-Nyungan lexical iceberg. Time will tell.

It is important to bear in mind that on the whole, a root or affix rarely, if ever, enjoys attestation in all thirty languages. This is part and parcel of the patterns of lexical retention and loss in languages of the world. The reflexes of many Indo-European roots survive in less than a half of the ten separate branches of the Family, and the same holds true for Pama-Nyungan. This is in part due to the sparse documentation of the lexicons of many languages of the latter family. The lexical databases available for Gawurna and Wadjuk, for example, appear copious by Australian standards, but are decidedly scanty when laid alongside those for Icelandic or Latvian. Moreover, not all thirty languages have been under comparative study for thirty (or even ten) years. In the case of languages such as Bāgandji, for example, the modern, accurately transcribed work of Hercus (1982) has perforce come into our hands only in the present decade. Thus only a thin

scattering of Bāgandji forms appears in the present work. A full-fledged computerisation and comparative study of the available Bāgandji lexicon must await the future.

The disadvantage of incomplete lexicons in Pama-Nyungan is largely offset by the almost certainly shallower time depth within this family vis-à-vis Indo-European. This is manifested in part in the extreme phonological conservatism of many of its daughter languages. In many cases, Proto-Pama-Nyungan and sub-Proto-Pama-Nyungan starred forms can be mapped on to modern reflexes with two, one or even no mediating phonological rules. In the case of ancestral Nuclear Pama-Nyungan, not a single rule is required to derive the modern Bayungu or Umpila reflexes of *ngali *we two* – in both languages (and many others!) this pronoun descends as ngali. Yet these two languages share as cognates only 10% of the hundred items of a lexicostatistic test list.

With this conservatism in mind, we have felt no compunction about selecting, in some cases, just a single language as witness for a given putative subgroup. Thus Nyangumarta alone stands in for the Marrngu subgroup of Nyungic; Garadjjarri and Mangarla are in general not drawn on, and direct comparison is carried out with forms in Warlpiri, Umpila (and Proto-Pamic) and the other twenty-seven languages selected. Other factors being equal, we have chosen as witness language for a given subgroup or group that tongue with the most conservative phonological system and, if possible, the largest lexical database. In the case of the Kanyara subgroup of Nyungic, for example, this has entailed the selection of Bayungu together with Austin's (1981b) Proto-Kanyara reconstructions rather than, say, Burduna. For Pamic, we have used Umpila data in preference to Anguthimri – but Umpila data mediated through Proto-Pamic whenever a starred form is available to us for the ancestral tongue.

Other criteria governing the choice of witness languages include the availability of databases when this research was begun thirty years ago; the fact that in the 1960s the scope of reconstruction was limited to Nyungic; the need, on the other hand, for a continent-wide geographical scatter of languages (thus reducing, though not eliminating, problems arising from borrowing); the necessity for the greatest possible even-handedness in selecting the subgroups and groups from which to choose representative witness languages; and the requirement for languages to be included in the study which are diagnostic for such features as ancestral Pama-Nyungan vowel length, four-way initial apical contrast, medial alveolar-retroflex opposition and word-final liquids and nasals. In addition, the choice of witness languages has been motivated, in the case of comparisons involving less than half of the thirty languages, by the fact that the Tangkic languages of the north, including Lardil and Yukulta, as well as some languages in the south-eastern part of the continent, appear to be relatively remote outliers of Pama-Nyungan. Barry Blake (1988), in fact, on the basis of comparisons of pronominal systems, and Evans (1988) on the basis of apical laminal correspondences, conclude that the Tangkic languages are not members of the Pama-Nyungan family. Moreover, Evans' contribution to this volume finds that the reconstructed conjugation markers of Proto-Tangkic-Minkin are closer to those of PG than to PPN. They may well be correct. Data from Lardil (Leerdil) and representative languages of the south-east have thus been included only in the thirty-language comparisons. The construct 'Nuclear Pama-Nyungan' was formulated (O'Grady 1979b) in recognition of the closer genetic ties linking languages such as Wadjuk, Gupapuyngu and Gugu-Yalanji, notwithstanding their

wide geographic separation. If Tangkic be excluded from Pama-Nyungan, it becomes less probable that a Pama-Nyungan/Nuclear Pama-Nyungan distinction is necessary.

It might be argued, as Ken Hale has done (p.c.), that the Arandic languages should have been included in such a comparative study as the present one. Although these languages clearly mesh intimately into the rest of Pama-Nyungan, we have omitted them on the present pass through the data because of the reduced chances of correctly identifying cognates shared by Arandic with other Pama-Nyungan languages. This is due to the virtually universal loss of initial consonants, as well as to the neutralisation of word-final vocalic contrasts, in Arandic languages. In the case of a highly marked starred form such as *nurrku *egg, brain* (with rare initial apical nasal), it is quite literally a hundredfold more difficult to pinpoint an Arandic reflex than in the case of a language which preserves the *n-. When the number of reconstructions comes to exceed the critical mass necessary for demonstrating Pama-Nyungan's status as a language family in the strictest sense, comparative work on Arandic should not be delayed.

As well as Arandic, Narrinyeric should certainly be included in any future Pama-Nyungan comparative study. Then, too, the lexicons of non-Pama-Nyungan languages such as Alawa, Mawng and Ngarinyin, as well as of their immediate common ancestors, should be subjected to a full-scale comparative effort in order to establish more definitively the nature of the extremely distant, phylum-level relationship which they evidently bear to Pama-Nyungan as well as to one another. Hale has argued for almost thirty years that the putative Gunwinyguan Family's relationship to Pama-Nyungan is not as remote as that of most of the northern 'prefixing' families. This hypothesis should also be tested by way of full-scale comparative work.

One crucial question posed by the present study and, we hope, at least partially answered therein, is the following: can sound correspondences be established within Pama-Nyungan? The answer is that they can, but that they should be arrived at in *two stages*: (a) matchings, i.e. tentative correspondences, are set up first, yielding, for example, d- : d- for French *dentiste* : English *dentist*, but also d- : t- for French *dent* : English *tooth*; and (b) true correspondences, in the sense intended by Anttila (1972:335). This approach allows the comparativist 'freedom for analytic operations without commitment to any ultimate historical explanation. This is necessary, because the final explanation is rarely (or never) apparent at the beginning'. In the case of comparisons between Mirminy and other Pama-Nyungan languages, we are thus legitimately able to establish a matching (not a correspondence!) a : a for the V₁ position, as in MRN *mara* : Western Desert *mara hand*, or in MRN *maya language* : Gupapuyngu *mayali meaning* : Mayi-Kulan *maya talk, say, speak, mayi speech, language*. We are also legitimately able to posit a matching u : a for V₁, as in MRN *mu+rra*, NYA, YUL *ma+rra take it!*; MRN *mumarlu*, Western Desert *mama*, Gidabal *maamang*, Wembawemba *mam father*; MRN *mupa*, Wirangu *maparla ashes*, Ngarla /*mapar/ maparl sun*, Umpila *mapa+L+ to illuminate*; and MRN *purntangu* (with -ngu extension), Wirangu, Galpu *parnta stone*.

Had we set our target in the above as the immediate establishment of ironclad sound correspondences, we would have had to arbitrarily sweep either the a : a or the u : a sets 'under the carpet'. This would have been a totally unacceptable procedure, given the fact that Pama-Nyungan comparative work is still in its infancy. Nor would it be reasonable in the Pama-Nyungan context

to reconstruct *o to account for the *u : *a sets. These could yet turn out to be explainable in terms of phonological conditioning.

So long as it is borne in mind that the lexicons of most languages of the world are typically stratified as a result of borrowing over long periods of time, the stage is set for a realistic appraisal of such situations as that found in Mirniny. The apparent inconstancy in the descent of ancestral *a in the V₁ position following a bilabial in this language is no more to be taken as counterevidence to the Junggrammatikers' claim concerning the *Ausnahmslosigkeit der Lautgesetze* than are English incantation/chant/shanty/hen to be taken as evidence for 'irregular' descent of the *k of PIE *kan+ *to sing*.

Our aim in the present work, therefore, is to identify and isolate *related forms* in the first instance. Whether a form is a direct reflex from an earlier stage of the same language (as English tooth) or is a loan (as English dentist) is not taken as being diagnostic for the inclusion or exclusion of that form as evidence of relationship. This may be counted as heresy by traditional comparativists. Nevertheless, we refuse, along with Martinet, to sweep 'recalcitrant' forms under any carpet. In fact, we bring maximum possible focus to bear on *all* plausible (and some not-so-plausible!) reflexes of a given starred form. Thus we insist on including in our Pamic/Nyungic comparisons *both* members of the Umpila doublet yipa/thi'a *liver* (< Proto-Pamic *jipa) in comparisons with Djurruru and Dhiin yipa *liver* in Western Australia. This strategy serves to delineate important tasks for the future, which include the tracking down of the routes, if possible, by which the two *liver* forms came to be present in modern Umpila. Only on such a basis can a realistic attempt be made eventually to identify different strata in the lexicons of Pama-Nyungan languages such as Umpila.

The same applies to analogically reshaped elements as, for example, Bāgandji ngupa *you two* and Umpila ngu'ula *you (non-singular)*, in both of which the original *ny- of Proto-Pama-Nyungan *nyupalu *you two* has been replaced, through *perestroika*, by *ng- under the paradigm pressure exerted by first person forms.

Likewise, blends such as English sm.og need to be identified. Pintupi nyunnga *soft* and mannga *stubborn* (< 'hard') appear to have come about as the result of mutual accommodation between reflexes of ancestral Pama-Nyungan *puulngu *soft* and *mankarr *hard, hardwood*, with the *p- of *puulngu undergoing Initial-softening and Nasalisation.

In addition, the Pama-Nyunganist needs to be on the lookout for instances of sound symbolism. This appears to be present, for example, in the Pintupi doublet kurri *spouse, mate .../lurri mate (only of animals)*, from ancestral *kUrri. A further example is provided by Pintupi kantily+pa/lantily+pa *meat cut from rib area*.

Taboo-Deformation, too, is in evidence from time to time. In the case of Guugu-Yimidhirr miilu *shade*, we are at a loss to account for the *ii in any other conceivable manner, in view of the persistent a...u vocalism elsewhere. Compare, for example, Wadjuk MALLO and Nhanda, Ngarluma malu *shade* in the west, Gidabal malung *shadow, shade* and Yidiny maluway *spirit, shadow* in the east, and Gupapuyngu mali' *shadow, photo* in north-east Arnhem Land. The immediate source of these forms is Proto-Pama-Nyungan *malung (whose ultimate source may

quite well be Proto-Eastern Oceanic *malu, elaborated on elsewhere in this volume by O'Grady and Tryon).

It remains as a task for the future, requiring probably 300 person-years of effort, to determine as far as possible the etymology of each and every stem, root and affix documented in each of the 160 Pama-Nyungan languages. Indeed, the scope of the work should be extended so as to embrace *all* Australian languages as well as likely external sources of loans such as (sub-)Proto-Austronesian and (sub-)Proto-Kiwaian.

Despite the awesome dimensions of the task facing us, it is nevertheless our hope that the work embodied in this volume will at least count as a substantive contribution towards uncovering the tip of the Australian lexical iceberg.

By way of illustrating our methodology, we now make a foray into comparative Pama-Nyungan and exemplify the procedure of establishing a plausible cognate set. We wish each such set to be as well-motivated as possible, and accordingly select from the Lowe-Lawton lexicon of Gupapuyngu *dur'yu+n to push, bump* as a promising point of departure. We know that the -yu+n portion of the form recurs in many verbs and reflects ancestral Pama-Nyungan *ju+N *to put* (Dixon 1980), so that our task is basically to establish cognates of GUP *dur'*. We expect to achieve rather decisive conclusions with respect to possible cognates in sister languages, since GUP *dur'* is the sole element in the lexicon which embodies the particular segmental combination d-u-r, with or without succeeding glottal stop. The only other d-u-r entry is *dur'yu+n+mirri to throw oneself around as in mourning*, which clearly contains the same root. Any cognate in a sister language should therefore stand out in bold relief.

In turning to Pintupi as being a likely source for a cognate form (in view of the large size of the Hansen and Hansen dictionary), we carry out two operations: (a) we seek out PIN forms with the referent *push, bump* (and antonymic *pull*), failing which, (b) we scan the PIN lexicon for a cognate of GUP *dur'*. Previous experience indicates clearly that GUP and PIN are quite closely related languages, and that it is quite likely that a PIN cognate of GUP *dur'* will have the configuration turV (given the d-/t- difference in orthography).

In carrying out task (a), we note seven PIN *push* forms (e.g., *yurntu+L+*), not one of which has a shape which would lead one to judge it as being cognate with GUP *dur'*. Nor do any of the equally copious PIN *pull* forms allow one to propose cognation. And PIN *turrngurl+pa noise of large stones bumping together* involves the wrong rhotic (as well as semantic problems) for cognation to be established.

Embarking on task (b), we recognise immediately the advantage of starting with a highly-marked GUP form in the first place: the Pintupi dictionary turns out to contain just *two* turV-forms! The first of these, *turayina train* is immediately recognisable as an English loan. The second, *turuny+pa squashed* fairly leaps out of the page as the form which we are seeking (the laminal nasal is taken to be a contentless suffixal extension of the type discussed in O'Grady 1966 and Wordick 1982). *Push* and *squash*, moreover, share much semantic content.

This judgment is vindicated upon a scanning of the Gawurna evidence: GAW TURRO+ is *to push; to saw*. Even if Teichelmann and Schürmann were unaware of the two-way rhotic contrast found in most Pama-Nyungan languages, it seems overwhelmingly probable that GAW TURRO+ is

a further member of the cognate set being established. The near-perfect semantic agreement between the GUP and GAW forms virtually guarantees *push* as the referent of the ancestral root, since on the overall evidence, GUP and GAW are clearly not as closely related as GAW is to PIN. Whatever semantic innovation took place, took place in PIN.

Turning now to eastern Pama-Nyungan languages, we note that in Wargamay *tuura* is *pull* (Dixon 1981:114). As often happens in Pama-Nyungan comparative work, we are face to face here with forms which are plausibly relatable phonologically, but which stand in antonymic semantic relationship. This phenomenon is all-pervasive in Pama-Nyungan, and it comes as no great surprise when yet another example appears.

All in all, then, we have a Pama-Nyungan cognate set involving forms from four languages from radically different parts of the continent. This wide geographical scatter seems to guarantee that borrowing cannot be the mechanism by which the formal similarities came about. We accordingly reconstruct a verbal root **tuura+*, in which Wargamay is diagnostic for both ancestral V_1 length and final **a*. In the immediate common ancestor of Pintupi and Gawurna, i.e. Proto-Desert Nyungic, long and short V_1 would have long since merged, and V_2 would have assimilated to V_1 . GAW TURRO+ is here taken to represent /*thuru+*/, reflecting the merger of ancestral initial non-nasal apicals with **j-/th-* (see Hendrie herein).

Arriving at the referent of **tuura+* might seem straightforward. With three languages showing *push/squash* and only one with *pull*, the former might seem obvious as the ancestral meaning. The matter is not quite so straightforward, however. In point of fact, the scales are evenly balanced as to whether *push/squash* or *pull* was the referent of the proto-form, since all the indicators point to closer genetic relationship between GUP and PIN/GAW than between GUP and eastern Pama-Nyungan languages, including WRG. In other words, the etymon under discussion could have undergone antonymic semantic shift in the immediate common ancestor of GUP, PIN and GAW, namely Proto-Nyungo-Yuulngic. The only evidence which would decisively tip the scales one way or the other would be further cognates in less closely related Pama-Nyungan languages such as those of south-eastern Australia. Good candidates for cognation are, in fact, Kabi YU'RI *pull*, Gumbaynggir DURI: *current* and Bāgandji *thurra+ to squash, squeeze*, though the unexpected *-rr-* for **-r-* in BAA does require explanation. It is ironic that currents exert a *pushing* effect as much as a *pulling*, while the semantics of the BAA form suggest *pushing*, as against *pull* in KAB. Thus we remain deadlocked on the question of the ancestral referent, though overall the feeling grows that it was *push*. Perhaps evidence from genetically ultra-remote non-Pama-Nyungan languages of the North will eventually decide the issue.

Proto-Pama-Nyungan sound system

Contra O'Grady (1979b), we posit *five* distinctive positions of articulation for ancestral Pama-Nyungan: bilabial, alveolar, retroflex, alveopalatal and velar. The stops were thus **p, *t, *rt, *j* and **k*. Nasals were **m, *n, *rn, *ny* and **ng*, and laterals **l, *rl* and **ly*. There was an alveolar flap/trill **rr* as well as three semivowels – retroflex **r*, palatal **y* and labiovelar **w*. Vowels were short **i, *a, *u* and long **ii, *aa, *uu*. In regard to morpheme structure constraints, there were two coexisting subsystems. In the first of these, involving onomatopoeitic interjections

(Donaldson 1980:65), stops as well as other [+cons] segments occurred word finally, as in Proto-Pama-Nyungan *jirrij *squitter!* (*diarrhoea*), whose reflexes descend unchanged in modern Nyangumarta, Gupapuyngu and Ngiyambaa (aside, that is, from orthographic differences).

In the case of ordinary, non-onomatopoetic forms, permissible finals were the nasals, laterals and rhotics (*rr and *r) only. All words began with a consonant. Word initially, the alveolar/retroflex contrast was neutralised: *rr (and *ly) did not appear in this context. All consonants occurred intervocalically.

WADJUK AND UMPILA: A LONG-SHOT APPROACH TO PAMA-NYUNGAN

Geoffrey N. O'Grady

Anttila (1972:338-340) experiments with a direct comparison of modern German and Russian with a view to determining whether they can be shown to be genetically related when normal comparative procedures are thus bypassed. He compares such forms as German *möglich* with Russian *можно mózhno possible* and German *liegen* with Russian *лежать lezhát' to lie, recline*. In this way he establishes 'matchings' such as g:zh, m:m and l:l, defined by him as 'tentative correspondences' (in this sense, p:p in loans such as German *Politik*, Russian *политика polítika* counts as a matching also). He concludes that 'German and Russian are plausibly relatable on the basis of contemporary evidence', even though actual reconstruction is not readily possible.

While such an approach can never supplant rigorous use of the comparative method, it can still serve as a useful preliminary pointer as to directions in which the comparativist's efforts might best be directed.

In the Australian field, for example, a comparable experiment might be to carry out a direct comparison of the Wadjuk language of the south-west of the continent (as documented in Moore 1884) with Umpila in Cape York Peninsula. If Wadjuk and Umpila were indeed to turn out to be as plausibly relatable as German and Russian – and with vastly smaller data bases at that! – then surely this would count as an incentive to add to the comparative scales selected additional languages distributed throughout the intervening linguistic and geographical space. Needless to say, every last lexical entry and grammatical marker of Wadjuk and Umpila should be included in the comparison.

If the Pama-Nyungan language family, foreshadowed in O'Grady (1959) and explicitly delineated in Hale (1964), is indeed a 'coherent linguistic genetic construct', then this should become ever more apparent later in this work as we raise the number of languages being compared first from two to nine and later to thirty.

In theory, any attempt to set up sound correspondences between Australian languages is faced with an awesome logistic nightmare. The languages of the Australian Phylum are for the most part in contact with numerous neighbours, and diffusional forces are ever at work. Even when languages separated by immense distances such as Wadjuk and Umpila are compared, we are still not to know *a priori* which roots and affixes are inherited and which are loans. It is not that direct borrowing between Wadjuk and Umpila is a serious possibility, but rather that certain Wadjuk

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lexical entries could be loans from, say, the direction of the Western Desert or from peoples further up the Western Australian coast, while a given entry in the modest available Umpila lexicon could have been borrowed, for example, from the direction of Wik Mungkan, Uradhi or Miriam.

Even more daunting are the potential problems which could arise were we to be able to narrow the focus of our study from macrolects such as Wadjuk and Umpila down to the level of the *microlect*, the speech of the individual local group. Haviland (in Shopen, ed. 1979:168-169) details thirty-two named locales in the traditional territory of the Guugu-Yimidhirr-speaking people, 'each with a dominant family group'. Throughout this territory, six different dialects of Guugu-Yimidhirr are recognised.

Assuming for a moment a comparable degree of dialect variation within Wadjuk and Umpila, internal borrowing from microlect to microlect could theoretically complicate the comparativist's task still further. It is factors such as these which are at least in part responsible for the occurrence of doublets such as Umpila *yipa/thi'a liver*, or for the limited applicability of rules such as Pintupi or Umpila prenasalisation, dealt with in Baldi, ed. (1990).

Our purpose herein is to identify sets of forms which represent, in part at least, the sharing of a linguistic tradition. In this direct comparison of Wadjuk with Umpila, we will be aiming at the outset to set up matchings, as defined above, rather than outright correspondences. Matchings 'allow the linguist freedom for analytic operations without commitment to any ultimate historical explanation' (Anttila 1972:336). The term 'correspondences' will be reserved for situations where its use appears to be warranted.

When it comes to the practical use of the comparative method within Pama-Nyungan, many of the conceivable problems recede into the background. Even between pairs of Pama-Nyungan languages chosen for being at geographical extremes of the continent, such as Wadjuk and Umpila, many of the matchings, e.g. G:k, U:u, M:m, B:p and again U:u in WJK GUMBU, UMP kumpu, below, will be seen to be totally transparent. It is in this sense that Capell (1956) claimed quite correctly that cognate identification is for the most part much more straightforward in Australian comparative work than in Indo-European. This must reflect either extreme conservatism in at least some aspects of the phonologies of both languages, or a relatively recent separation of the two languages from a common ancestor, or both. To envision an enormous time depth – 15,000 years, say – for the common ancestor of Wadjuk and Umpila would appear to be preposterous in the extreme.

The symbols used in Moore's transcription system are charted below. Different symbols or symbol combinations which we take to represent single phonemes are grouped together.

Vowel symbols used by Moore are I E A O U. The four spaces marked with dashes in Figure 1 represent distinctions probably missed by Moore, involving nh rn lh rl respectively. The assignment of graphemes to phonemes is by no means entirely conjectural. Phonological studies carried out by Douglas, O'Grady, Hale and others in Balardong, inland from Perth, during the past quarter century strongly suggest a Ngarluma-type sound system for Wadjuk, with six distinctive positions of articulation for consonants. While Balardong, on the surface at least, has a five-vowel system i e a o u, Wadjuk at its demise probably had just i a u. Moore's I E appear typically to represent i; adjacent to w, his O stands for a; U O otherwise are usually u.

P	TD	T	RT	TJ/T-Y	K	KW
B	DT	D	RD	DJ/D-Y	G	GW
PP		TT	RTD	D-J	KK	
BB		DD			GG	
B-B						
M	—	N	—	N-Y	NG	NGW
MM		NN				
	—	L	—	L-Y		
		LL				
		R				
		RR				
			RH-R	Y		W

Figure 1: Moore's appreciation of Wadjuk consonantism

The Umpila consonant system is charted below. Note that ' represents glottal stop. Although the alveolar trill is the sole rhotic in this language, we write this sound as rr for the sake of phonetic realism (compare Osborne's 1974 treatment of Tiwi vocalism).

p	th	t	j	k	'
m	nh	n	ny	ng	
		l			
		rr			
			y	w	

Figure 2: Umpila consonants

Umpila vocalic segments are i a u ii aa uu.

Below are displayed putative Wadjuk:Umpila cognate sets arranged in terms of position of articulation of consonant initials and ranked from most plausible to least.

Bilabial initials¹

B- : p- sets:

1. WJK BANDANG : UMP paantiku *all*.
2. WJK BEBAL : UMP pii'al *kneecap*.
3. WJK BULA *numeral (dual)*. *Two brothers, sisters*. . . : UMP pula *they (du, pl)*.
4. WJK BI *a fish* : UMP piyitha *stonefish*.

¹Note also WJK BATTA *sun's rays*: UMP paaaja+ *to dawn, break - of day*.

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5. WJK BIDJAR *sleep*. . . : UMP pijii+TH+ *to dream*.
6. WJK BUDJAN *to pluck feathers*. . . : UMP puuja+ *to fly*.
7. WJK BIBI *female breast* and BIB-BYL (appar pipaly) *mother mourning for her child* : UMP piipi (PP *piipa) *father*.
8. WJK BINDI *stick, skewer* : UMP +pinta *PROPRIETIVE*.

W- : p- sets:

9. WJK WARH-RANG *three* : UMP pa'amu *two*.
10. WJK doublet WU-YUN *soul*, BU-YU *smoke* : UMP puuya *soul, heart*.

M- : m- sets:

11. WJK MARH-RA : UMP ma'a *hand*.
12. WJK MAR *cloud; wind* : UMP maarri *whirlwind*.
13. WJK MEL *eye* : UMP miil'a *face*.
14. WJK MADTO (appar mathu) *green-backed crane* : UMP maathuy *pelican*.
15. WJK MABO *skin*. . . *bark* : UMP mapurra *grease, fat, juice*.

N- : m- set:

16. WJK NABBA+ *to rub on, anoint*¹ (with idiosyncratic – or misprinted? – N-) : UMP mapa+L+ *to illuminate*.

M- : ø set:

17. WJK MUL-YA : KNJ² uujal *nose*.

Apical initials³

D- T- : th- sets:

18. VAS DAKARUNG, WJK TAKKAN *to break* : UMP thangkii+TH+ Vintr *to break, disintegrate*.
19. WJK DARBA+ *to dive; to pass through or under*. . . : UMP tharr'imu *long sea-grass ('where crabs, etc. take refuge')*.⁴

T- : th- set:

20. KGS TI-ENDI *stars* : UMP thiyithi *star, starfish*.

¹The probable semantic relatedness of *fat* and *anoint* invites further study.

²Closely related neighbour of UMP.

³i.e., where Moore writes D- or T- or where t- appears in UMP.

⁴cf Ngarluma tharrpurl *crab*.

D- : ø set:

21. WJK DOWIR *always; continually* : UMP doublet awu *devil, spirit; machine/awi bald* (with semantic linkage via '*spiritual/eternal/ethereal/immateral/nonexistent*').
22. WJK metathesised form GURDU *the heart* : UMP prenasalised form tungkupa+TH+ *to beat – of the heart*.

Laminal initials

There are no known instances in WJK:UMP putative cognate sets in which an unambiguous surface j (symbolised by Moore as DJ or J), or th (written by him usually as DT) corresponds in word-initial position to UMP j or th.

N-Y- : nh- set:

23. WJK N-YINNA+ *to sit, remain*. . . : UMP nhiina+ø- *to sit*.

N-Y- : ng- set:

24. WJK N-YUNDU(L) *will you?*. . . : UMP nganu ~ ngunu *you* (SG).

N- : ng- set:

25. WJK NUBAL *ye two* : UMP ngu'ula *you* (non SG).

Y- : y- set:

26. WJK YUGA+ *to be, stand, exist* : UMP yuku *tree* (cf English *stand of trees*).

y- : ø sets:

27. WJK YABBAL *bark*. . . of *banksia or hakea* : UMP aapa+ Vitr *to peel off, shed* (skin).
28. WJK YULAP *hungry; empty* : UMP uuli *hungry*.

Velar initials**G- : k- sets:**

29. WJK GUMBU *to make water* : UMP kumpu *urine, bladder*.
30. WJK GIDJI *a spear* : UMP kajin *digging stick*.

GW- : w- set:

31. WJK GWABBA *good*. . . ; *proper*. . . : UMP wa'a *all right*.

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K- : k- sets:

32. WJK KONANG *to void the excrement* : UMP kuna *excrement*.
33. WJK KALGA *stick with crook at each end* : UMP kalka *spear*.
34. WJK KANNING *the south* : UMP kani *up; ashore*.
35. WJK KOPIN *secretly*, KOPIN IJA+ *to hide* (IJA+ *to put*) : UMP kumi+L+ Vtr *to lose*.
36. WJK KARA : UMP kaatha *spider*.
37. WJK KANDANG *to vomit* : UMP ka'antanga+L+ *to belch*.

NG- : ng- sets:

38. WJK NGALLI *we two; brother and sister*. . . : UMP ngali *we* (DU INCL).
39. WJK NGANNIL *we; us*, NGANNAMA *we two; brothers-in-law* : UMP ngana *we* (EXCL).
40. WJK NGAD-JO I : UMP ngatha+ *me* (OBL).
41. WJK NGAN-YA : UMP +nyi *me* (optional alternative to ngatha+n).
42. WJK NGANNI *who* : UMP ngaani *what*.
43. WJK NGO-LANG-A *after; behind* : UMP ngula *by-and-by, later*.

NG- : w- sets:

44. WJK NGAL-YA : UMP waatha *armpit*.
45. WJK NOPYN *the young of animals* : UMP wupuy *young one* (if Moore's spelling is in error for ngupany).

NGW- : w- set:

46. WJK NGWUNDA+ *to lie down* : UMP wuna+ø *to lie, sleep*.

W- : ng- set:

47. WJK WELLE *a dream* : KNJ ngiili *name*.

Ø- : ng- sets:

48. WJK IJA+ *to place; to put; to produce – young, fruit, eggs* : UMP ngiija+Y+ *to put, lay (egg), give birth to*.
49. WJK I-I : UMP ngii *yes*.

In the above two sets, it is conceivable that Moore missed an initial velar nasal.

W- : w- sets:

50. VAS WONNANG *to throw, cast* : UMP wana+L+ Vtr *to leave*.

51. WJK WARRANGAN *to tell, relate. . . , to desire* : UMP waanta *story*, waana+L+ *to tell, test* (PNPN *waarra+ *to tell*).
52. WJK WINJALLA : UMP wantuna *where* clearly count as a further cognate set, but the internal consonantism of the UMP form calls for further study.

Ø- : ø sets:

53. WJK INJAR *dry* : UMP iji+L+ *to bask, get dry* (PNPN *lija+).
54. WJK ULOYT *calf of the leg* : UMP uulu *bone* – as in tali uulu *shin* (PNPN *wulu).

One notes, in passing, grammatical evidence for the genetic relatedness of Wadjuk and Umpila in the following case markers:

WJK +AK *POSSESSION* (sic) : UMP +ku *DATIVE*.

WJK +AL : UMP +lu ~ *ERGATIVE*.

WJK +IN *ACCUSATIVE* : UMP +n *ACCUSATIVE* (of pronouns).

We extract from the above the following matchings for initial consonants:

Wadjuk	Umpila	Examples	Wadjuk	Umpila	Examples
B	p	1-8, 10	G	k	29-30
W	p	9, 10	GW	w	31
M	m	11-15	K	k	32-37
N	m	16	NG	ng	38-40, 42-43
M	ø	17	NG	ø	41
D, T	th	18-20	NG	w	44
D	ø	21	N	w	45
RD	t	22	NGW	w	46
N-Y	nh	23	W	ng	47
N-Y	ng	24	Ø	ng	48-49
N	ng	25	W	w	50-52
Y	y	26	Ø	ø	53-54
Y	ø	27-28			

If we ignore voicing in Wadjuk and treat laminals and apicals as constituting single classes, then we have isomorphic matchings (K:k, etc.) of initial consonants in 35 out of 54 sets. In the case of W:p, D/T:th, Y:ø, Ø:ng and Ø:ø, we have a minimum of two instances of each matching, which makes them 'systematic or nonrandom' (Anttila 1972:335).

Matchings for C₂ are as follows:

Wadjuk	Umpila	Examples	Wadjuk	Umpila	Examples
P B B B B-B	p	7, 15, 16, 27, 45	P	m	35
B B B	,	2, 19, 25, 31	MB	mp	29

Wadjuk	Umpila	Examples
N NN	n	23, 32, 34, 39, 42...
ND	nt	1, 8, 37
ND	n	24, 46
L LL	l	3, 13, 28, 38, 43...
R	rr	12, 19
R	th	36
RH-R	'	9, 11
RR	nt	51
RR	n	51
RD	t	22

Wadjuk	Umpila	Examples
JDJD-JDT	th j	5, 6, 14, 30, 40...
N-Y	ny	41
NJ	j	53
NJ	nt	52
L-Y	th j	17, 44
Y	y	10
Ø	y	4, 20
G	k	26
KKKG	ngk	18, 22
W	w	21

Heterorganic clusters appear in Wadjuk LG:Umpila lk (#33) and in L:l' (#13). In the C₂ position there are 34 isomorphic matchings. In a further ten sets we find at least *pairs* of matchings of non-identical sound types. These are B BB:' (four matchings); RH-R:' (two); ND:n (two); and L-Y:th j (two).

In the V₁ position, matchings are:

Wadjuk	Umpila	Examples
l	i	4, 5, 8, 20, 53
l	ii	7, 23, 48
l-l	ii	49
E	ii	2, 13, 47
A	a	9, 11, 15, 16, 28...
A	aa	1, 12, 14, 37, 36...
l	a	30, 52

Wadjuk	Umpila	Examples
A	ø	41
O	a	21, 50
O	u	32, 35, 43, 45
U	a ~ u	24
U	u	3, 22, 25, 26, 29...
U	uu	6, 10, 17, 28, 54

Leaving aside Umpila vowel length for the moment, V₁ show isomorphic matching in 42 out of 54 instances. Of the remainder, E:ii (three matchings) and O:u (four) probably reflect Moore's perception of i u as having rather lax and open realisations. The two l:a matchings are found preceding a laminal, and the O:a pair involve an adjacent w. In #41, UMP cliticised +nyi matches the -N-YA portion of WJK NGAN-YA.

Matchings for V₂ are the following:

Wadjuk	Umpila	Examples
l	i	7, 21, 30, 34, 35...
E	i	20, 47
l	a	8, 39
l	u	21
Ø	i	4, 12
A	i	1, 19, 28, 41, 53

Wadjuk	Umpila	Examples
A	ii	5, 18
A	a	2, 3, 6, 9, 11... (21 examples)
A	u	25, 26, 52
Y	u	45
Ø	a	13

Wadjuk	Umpila	Examples
o	a	40
o	u	14, 15
OY	u	54

Wadjuk	Umpila	Examples
u	a	10
u	u	22, 24, 29

Reduced second-syllable stress probably accounts in part for non-isomorphic matchings such as A:i and A:u in the above.

Matchings for C₃ are in most cases of a different order altogether from those of C₁ and C₂:

Wadjuk	Umpila	Examples
P	ø-	28
Ø	p	22
M	ø	39
Ø	m	19
N	ø	6, 10, 18, 35
Ø	n	30
ND	nt	37
L	l	2, 25
LL	n	52
L	ø	27, 39
Ø	l	17

Wadjuk	Umpila	Examples
R	ø	5, 18, 21, 53
Ø	rr	15
N	y	45
ND	th	20
Ø	th	4
Ø	y	14
YT	ø	54
YL	ø	7
NG	k	1
NG	m	9
NG	ø	32, 34, 43, 50 (and see 51)

The majority of Wadjuk-Umpila C₁, V₁ and C₂ matchings are, as noted above, isomorphic. All the indicators point to a pair of genetically related languages. With C₃, the situation is dramatically reversed: only two out of twenty-two matchings (involving ND:nt and L:l) are isomorphic. Much of the remaining C₃ evidence so much gives the impression of randomness that we could conclude from it that we are dealing with a pair of languages of quite different genetic affiliations.

The problems resulting from the attempt to set up plausible correspondences for C₃ in Ngayarda and other Pama-Nyungan languages were earlier highlighted by us (O'Grady 1966). In fact, what we found we were dealing with in the great majority of cases was not a matter of phonology at all, but one of *morphology*. Part of the purpose of this volume is to provide further evidence that the vast majority of Pama-Nyungan roots are disyllabic. Wadjuk NGO-LANG-A (plausibly ngulanga) and Umpila ngula (#43) will be seen to reconstruct just to *ngula, and in like vein the two rightmost segments in Umpila tharr'imu will be shown to have nothing in common with Wadjuk DARBA+, the ancestral form in question being *jarrpa+Y *to enter, go under*. Similarly, Umpila tungkupa+TH+ (#22) will be etymologically decomposed to *tuku *heart* + *+pa+ *PERFORMATIVE* (see at P7 herein).

With regard to the Wadjuk:Umpila C₁ and C₂ matchings, we note for example that we have nine matchings of Wadjuk initial B, i.e. p, with Umpila initial p, but only two sets with W:-p-matching. Highly favoured matchings such as B:-p-, above, will henceforth count for us as

examples of *Major Matchings* (MJMs); and statistically infrequent matchings of the type W-:p- will be referred to as *Minor Matchings* (MNM).

It would appear reasonable to assume that in the absence of evidence for split, merger, assimilation, reanalysis or the like, the difference between MJM and MNM patterns will correlate at least in part with the differing degrees of antiquity of various layerings in the lexicon. Compare, for example, the four different reflexes of *k- in PIE *kan+ *to sing* in the following Modern English examples:

in	sh	anty (sailors' song) – from Modern French
	ch	ant – from Old French
	c	antation – learned Latin loan
	h	en – old Germanic inherited form

If, as seems indeed likely, Dixon (1980) is correct in proposing that each speaker of a given natural language – Australian or otherwise – makes use of a lexicon of about ten thousand entries, then the modest available Umpila vocabulary of about one thousand items lacks fully 90% of what a full-blown dictionary of the language would contain. Similarly, Moore's Wadjuk dictionary of about 2,000 entries falls 80% short of exhaustiveness. A given lexicographer, moreover, might zealously pursue bird names, for example, while his colleague elsewhere largely ignores this part of the semantic realm as being 'unimportant'.

It is clear, then, that a Wadjuk-Umpila comparative study utilising full-fledged dictionaries of each language would turn up far more cognate sets – perhaps something of the order of 300 or 400. It should be pointed out also that instead of comparing Wadjuk and Umpila, we could have compared, let's say, Wadjuk and Guugu Yimidhirr, Nyangumarta and Guugu Yimidhirr, Gawurna and Gupapuyngu or Warlpiri and Gidabal, and assembled a fairly comparable amount of lexical evidence for genetic relationship. All that would happen would be that in different pairings of languages, the members of cognate sets would involve only *some* of the roots which figured in some other pairing. Thus a root *lumpu *cavity, recess*, not to date known to have a reflex in Umpila, survives in the nearby Guugu Yimidhirr and in Wadjuk – as well as, e.g., in Nyangumarta and Ngarluma (O'Grady 1966, 1981c). Were we to move away from the so-called Nuclear Pama-Nyungan constellation of languages and bring, e.g., Lardil or Gippsland languages into the picture, we would find the number of plausible cognates shrinking appreciably. Comparison of Wadjuk with, say, non-Pama-Nyungan languages such as Alawa, Maung or Ungarinyin – which we have indeed attempted – would yield, in turn, a still more drastically attenuated scattering of what we might dare to put forward as conceivably related forms.

All in all, the feeling grows that the ultimate common ancestor from which Wadjuk and Umpila eventually sprang was spoken perhaps only 3,500 to 4,000 years ago. Certainly the results obtained by Anttila in his Ge man-Russian comparison give us good reason to hypothesise that the time depth for Nuclear Pama-Nyungan is appreciably less than that for Indo-European.

We move on now to the comparison of successively larger numbers of Pama-Nyungan languages, thus coming closer to following the classical procedures of Comparative Method linguistics. The results of our long-shot comparison of Wadjuk with Umpila certainly suggest that proper adherence to the tried and proven traditional methodology in the Pama-Nyungan field should yield a greatly increased body of evidence for genetic relationship.

PAMA-NYUNGAN SEMANTICS: *BRAIN, EGG AND WATER*

Geoffrey N. O'Grady

Hercus (1969:347) recognised a *brain : egg* semantic association in south-eastern Pama-Nyungan languages. It is the purpose of this paper to demonstrate a further connection with *water*, and to bring into focus the implications which this observation has for Pama-Nyungan comparative studies. If this can be successfully achieved, a further minuscule advance will have been made in the gargantuan task of elaborating a more or less complete set of strategies for the realistic identification of cognate elements in Pama-Nyungan languages. Only on this basis can one hope for an eventual first approximation to the correct establishment of the one to two thousand etyma upon which comparative Pama-Nyungan will, without a doubt, be securely founded in the end.

It cannot be emphasised too strongly that the sound correspondences between, say, Proto-Ngayarda and Proto-Pamic are extremely transparent. In fact, the sound shifts from Proto-Nuclear Pama-Nyungan to Proto-Ngayarda or Proto-Pamic are conspicuously fewer than subsequent changes leading to the more innovative of the modern daughter languages. A case in point is provided by Kurrama *nhuurtka* *ankle* and Anguthimri *kwe* *foot*, which are just as surely cognate as English *in* and Russian *в* (< PIE *en).

If we assume ancestral Nuclear Pama-Nyungan *nyukal *ankle* (using *all* available evidence), the KUR and ANG reflexes given can be plausibly derived by way of the following two series of rules (O'Grady 1966 and Crowley 1981, with modification and elaboration).

PNPN *nyukal [nhukal] *ankle*

Vowel Assim	nhukul	nhukal	Sem encroachment on
Retroflexion	nhukurl (PNY)		*jina <i>foot</i>
Stem Accretion	nhukurlka (PNG)	(PP) nhukal ~ nukal	Fluctuation in initial
Intervocalic Voicing	nhugurlka	ukal	Initial-dropping
Spirantisation	nhughurlka	kual	Metathesis
Lenition	nhuwurlka	kwal	Desyllabification
Syncope	nhuurlka	kwaly	Palatalisation
Vowel Coalescence	nhu:rlka	kway	Delateralisation
Rhotacisation	nhu:rka	kwey	Raising
Fortition	nhu:rtka	kwe	Apocope
Practical Orthography	nhuurtka		
	<i>ankle</i> (KUR)	<i>kwe</i> <i>foot</i> (ANG)	

Other reflexes include PIN nyiku(.ny+pa), WJK NOGYT (appar nhuka.j) and GRY nyuku.ru *elbow*, in which the ny, j and ru extensions are probably contentless suffixes (O'Grady 1966, Wordick 1982) – cf BLG nhuku *ankle-bone, talus*. In YIM nukal *ankle*, the apparent rule whereby *ny- > n- is confirmed in PP *nyipi(.ma) *one* (Hale 1976b:24) > nupuu.n, and less directly, but at least in an areal sense, in PNPN *jaya+L *to send* (q.v.) > GYA taya ~ *to give*.

It is clear, then, that while the number of rules for the derivation of KUR nhuurtka or ANG kwe rivals that needed in Indo-European for cases such as Panjabi jīb and French langue (< *dngwha: *tongue*), in the majority of Pama-Nyungan languages the phonological changes are relatively few. If instead of KUR and ANG we had chosen another Ngayarda language – Ngarluma, and another Pamic language – Uradhi, say, we would have provided the basis for a greatly simplified picture: PNPN *nyukal descends by way of just three stages to Proto-Ngayarda *nhukurlka and on to Ngarluma nhukurlka, while *ten* rules are need in the derivation of KUR nhuurtka! And *nyukal descends in Uradhi n(h)ukaw *foot* by way of two semantic and two phonological changes only, while ANG kwe requires six further phonological rules.

The conclusion to be drawn on the basis of this and massive comparable evidence is inescapable: Ngarluma and Uradhi (and, by implication, Kurrama and Anguthimri) are languages showing absolutely clear-cut indications of genetic connection. Relatedness of this order of closeness can in no way be demonstrated for such suffixing/prefixing' pairs of languages as Ngarluma and Mawng.

Capell (1956) must now be considered as fully vindicated, *contra* the assertions of Crowley (1976), when he claims that

... *usually* in the Australian field words are either fairly obviously cognate as between languages, or equally obviously not cognate. There has not appeared the same necessity of establishing sound laws to prove connections (O'Grady's emphasis on *usually*).

Brain, egg and water

On this note, let us now build on the observations of Hercus (1969) by focussing on the comparative implications of her work. We take as our starting point Gupapuyngu (Yuulngu) nurrku *brains*. Given the task of assembling further cognate sets in (Nuclear) Pama-Nyungan, and given the obvious genetic relatedness of most of these languages, we conclude that there is a distinct possibility of finding a cognate of GUP nurrku in, say, Wadjuk in the south-west of the continent. The WJK form which counts as the phonologically most plausible candidate for cognation is, in fact, NURGO (appar n(h)urrku *egg; seeds*) (Moore 1884:63). The work of Hercus shows conclusively that there is not the slightest cause for hesitation, from the semantic point of view, in counting the two forms as cognate. For the ultra-sceptical, however, we note that in an inland (Kellerberrin) metathesising variety of Nyungar (of which WJK is a dialect), kat+nuruk *brain* is a compound of kat *head* and nuruk *egg*. There remains the question as to whether GUP nurrku and WJK NURGO, despite their formal near-identity, could in fact be counted as cognates from a phonological point of view (just as Proto-Germanic *mu:s and Proto-Italic *mu:s *mouse* bespeak common inheritance, not borrowing). There are, in fact, two factors which in combination must count as ironclad evidence that this is so.

Firstly, the correspondence between GUP -rrk- and WJK < -RG- > is attested also in GUP garrku.rlu.k, WJK KARGY.L-YA (appar karrka.lya) *clean*, GUP garrkany *chicken hawk* and WJK KARGYN (prob. karrkany). . . *hawk*, and GUP darrk.thu+N *to bite*, WJK DARGA.NGA.N *to strike*. . .

Similarly, -u-u- vocalism in the one language can be shown to appear in replica in the other. There is a shortage, however, of direct evidence for an N-:n- correspondence, for the simple reason that non-peripheral nasals – and especially the apical nasal – occur only rarely as initials in phonologically conservative Pama-Nyungan languages.

The second factor, then, is the highly marked nature of the morpheme shape which we are dealing with. The initial apical nasal, even in those Pama-Nyungan languages which retain it as such, typically occurs in not more than one in a hundred forms; and the cluster rrk, while well favoured, is still only one of many possible internal consonant sequences, and is found to appear in approximately one of every thirty forms. Assuming that n- and -rrk- count as independent variables, and ignoring the fact that -u-u- vocalism is in competition with a number of other patterns, we conclude that there is something of the order of one chance in 3,000 that a morpheme of the shape nVrrkV will occur in one of these languages. We are thus put in the position of a person who is searching for a length of iron railing in a haystack rather than for a needle.

Gawurna NIRKINYA (appar nirrki.nya) [*eggs of lice; nits*] thus fairly leaps out of the pages of Teichelmann and Schürmann (1840). One feels 99% confident that this form is cognate with GUP nurrku and WJK NURGO. Assuming ancestral *nurrku, we posit the addition of a semantically contentless -nya syllable (Wordick 1982), yielding *nurrku.nya > *nurrki.nya > nirrki.nya by successive rules of anticipatory assimilation. That this is entirely plausible is seen in the closely related Pankarla, where NULKÜ.NYU is likewise *eggs of lice; nits*. German native speaker Schürmann (1844:40) confirmed the full-blown fronting and unrounding of the two ancestral *u's in the GAW form by no doubt correctly recognising the phonetically high front rounded vowel in the PNK form. The appearance of < L > rather than < R > in the spelling of the PNK form cannot as yet be explained. We surmise that it could be a matter of mistranscription or else of native speaker hyper-correction in the face of an *lk > rrk shift in closely related nearby Yura languages – witness *nga+tku+ *will eat* > GAW NGAR.KO+ (appar nga.rr.ku+) *to eat; drink; enjoy* – a case of drift paralleled in YIN nga.rr.ku+ *to eat*. As for the difference in the referent of WJK NURGO vs PNK NULKÜ.NYU and GAW NIRKI.NYA, this seems reasonably assignable as a case of semantic narrowing or specialisation in the latter two forms (cf Bynon 1977:62-63).

Further perspective on GAW NIRKI.NYA comes from Bāgandji, in which Hercus (1982:282) lists a root thirrkinya *nits*. . . This form matches GAW NIRKI.NYA segment for segment except for the initial th. Borrowing from the direction of South Australia, documented by Hercus for a number of other forms, may well be the explanation for BAA thirrkinya as well. The nasal:stop matching is conceivably to be explained in terms of the interface between adult and child language (McConvell, p.c.), and is exemplified in detail elsewhere in this volume.

Additional direct synchronic evidence for a *brain* : *egg* semantic association comes from Pitta Pitta pampu *brain, egg* (Blake 1979b:230). Consider also MDI mik+puwu *brains*, in which mik+ is a truncated form of miki *egg*.

Examination of the lexicons of a still wider range of Pama-Nyungan languages reveals a further semantic relationship – namely, that between *egg* and *water*. The following display of cognate

sets provides a mere preliminary glimpse of the massive network of evidence which goes to back up this claim.

*kaping *water*. PIN kapi, NYU kep, WJK GABBI ~ KYPBI, GUP gapu, DJN gapi, BNJ kapiing *water*; GAW KAPPE+ *to vomit*; WJI kapu.rtu, DIY KUPPIE kapi, DJR kampi.n *egg*; BAY kapu.rtu.rtu.ny *kidney* (PKM *kapu.rti.ny; see NYA W mukurtukurtu, below).

*miiju *egg, seed*. NYU mija.l *rain*; NYL miji *blood*; NYA W mija *newly-laid flies' eggs*; PIN miji.la. . .lice; WJK MINJI.NING *eggs of lice* and METJO *seed-vessel*. . .; GUP medju.ru *newly hatched fly*; DYI miju *brain*.

*muka *egg*. NYA W muku.rtu.ku.rtu *kidney* (cf BAY kapurturtuny); GAW MUKA, ARW kwa.rt *egg*; GAW MUKA.MUKA *brain*.

*ngApu *water*. NYA, DIY ngapa *water*, DYI DM ngapa+L *to immerse in water, soak*, GIP panga *rain*; PIN ngampu *egg, testes*, ngampu.ly.ka *lump which develops from infection*. . ., WLB ngipi.ri *egg*; THL ngapu.ru *brains*.

*nguku *water*. KLY NGUKI ~ MUKI/nguki/nguuki, GID kung, BAA nguku, ARW kwa.j yar *nguke water*; OOL nguku.rn+pa *egg*; PIN nguku.rta *testes*, WLB nguku.ny.pa *brain*.

*nurrku *egg/brain*. Note NYA W nurrku.l *red ochre*, and see above.

*pApu *egg/brain*. NMA, YGN, YGS papa *water*; ARB papu *egg*; PIT pampu *brain, egg*; GUP bambu.ru.ng.bu.ru.ng *brain*; YIM pampu *pus* (cf GUP boya.ra, below).

*pipi *water/egg/brain*. PP *pipi *water* (> UMP pi'i); PNK BEBI pipi *egg; any jelly like* (sic) *substance, as the brain, marrow, etc.*), KAKKA BEBI, kaka pipi *brain* (KAKKA head); NYA W extended nasal-grade form mimi.mi *brain*.

*pUyang *egg*. WJK BOYE.R *certain stones of a smooth ovate shape*. . ., KGS BWYE, 'Uduc' BOYA, GIP puyong, 'Snowy River' BOOYANG (Bulmer in Curr 1887:III:560) *egg*; GUP boya.ra ~ buya.ra *brain, pus* (cf YIM pampu, above).

Conclusion

It should by now be abundantly clear that future researchers in comparative Pama-Nyungan will be fully justified in unhesitatingly assigning as cognates forms with such seemingly disparate senses as *water, kidney, testes, egg, brain* and *pus*. A pair of forms such as Nhandawarla *egg* and Yoda-Yoda wala *water* (Hercus 1969) must needs merit more than a cursory glance. It will behove the comparativist to scan the lexical data bases of additional representative Pama-Nyungan languages and consider, e.g., PIN warli.ly.warli.lya *large hailstones about the size of a golf ball* for possible assignment to still another cognate set bearing witness to a root *wArla. (In the real world, such hailstones are, after all, both [+ovate] and [+aqueous]!)

It goes without saying that an important part of the comparative Pama-Nyunganist's task is to extend the study of semantic associations such as the above through the entire lexicon of each language. Once a further association such as *snake : meat* is suspected, it behoves the researcher to seek independent parallel evidence for the association in other Pama-Nyungan languages. Only on this basis can Pama-Nyungan cognate search move forward in a realistic manner.

INITIAL APICALS IN NUCLEAR PAMA-NYUNGAN

Timothy R. Hendrie

Introduction

Two questions in Australian comparative linguistics are at issue herein: a. What is the genetic status of the Pama-Nyungan grouping of languages? b. Which apical phonemes contrasted in initial position in Proto-Pama-Nyungan? While there is wide acceptance of the term 'Pama-Nyungan languages', and much evidence has been amassed in its support, the necessary proof comprising the systematic demonstration of phonological and morphological correspondences, as well as an outline of the structural features of the proto-language, is far from complete. Yet a considerable amount of reconstruction has been done involving sub-groupings within PMN, comparison of case systems, reconstruction of conjugational markers, and so on. On the one hand, O'Grady (1979b) has asserted that it is obvious that the PMN languages constitute a genetic grouping and that the reconstruction of a proto-language including perhaps 1400 starred forms, analogous to those postulated for Proto-Indo-European, is an attainable goal. On the other hand, Dixon (1980:226) has said that "it should not be inferred that PMN is in any sense a genetic unity". Clearly, the status of Pama-Nyungan will not be settled until a cohesive body of material, including reconstructed lexical forms, has been amassed, and the reconstructions shown, generally speaking, not to offer possibilities of mapping on to forms in Hale's (1964) other twenty-eight Australian language families.

The term 'Pama-Nyungan' – derived from recurrent forms for '(aboriginal) person' in languages of the north-east and south-west of Australia, respectively – refers to the large related group of about 160 languages that covers all of the continent except for the Kimberleys and Arnhem Land in the north. In view of the greater difficulty involved in reconstructing the proto-language which would represent every PMN language, a few of which appear to be only distantly related to the rest, the slightly more restrictive term 'Proto-Nuclear Pama-Nyungan' (PNPN) is used. This was proposed by O'Grady (1979b) and is adopted in this study, which is based on just nine PMN languages. PNPN, dating perhaps from 3,500 BP, excludes Lardil and other Tangkic languages and languages of the south-east (including Gippsland) which, while also considered as related languages, appear to have split off from the mainstream of the PMN family perhaps 1,000 years earlier, and are sufficiently divergent to justify exclusion from the present work.

The question as to which apical consonants contrasted in initial position in PNPN has not been thoroughly addressed. As can be seen in Table IV, the number of words in a typical modern language that begin with an apical is quite small, and indeed in many languages initial apicals are proscribed. Hale's reconstruction of Proto-Pamic (PP) – his 'Proto-Paman' – reveals a single

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non-nasal apical initial, *T. Among the 475 roots reconstructed for Proto-Kanyara and Proto-Mantharda (Austin 1981b) no initial apicals occur, and a similar situation holds for Proto-Ngayarda. For Proto-Australian (PA), Dixon (1980:174) states that there were probably just a few syllable-initial occurrences of *t and *r and possibly some of *n. He goes on to suggest that *t and *l might have been allophones of a single phoneme, with the stop occurring initially and after a consonant, and the lateral word finally and after a vowel. As evidence to support his claim, he points to the free variation between [t] and [l] initially in Yaygir, the PA ergative case inflection *-tu ~ *-lu, and the common root *to cry, weep*, cited by him as /lu-/ in western languages but /tu-/ in the east. As it appears that PNP *l- and *r- have merged with *t- and other consonants in many eastern languages, the value of this last example is uncertain.

Because many Cape York languages allow only one of t, l and r word initially, it has been possible, as indicated above, to reconstruct only initial *T for PP. If, as Alpher has suggested (1976b:91), Warlpiri (WLB) rraku *hole in the earth* is cognate with PP *Taakurr *ground*, and lirra *mouth* with PP *Tirra *tooth*, for example, then the opposition of PNP stem-initial non-nasal apicals would appear to have neutralised to *T in PP. Thus a demonstration of the apical contrasts which occurred in PNP will contribute to the sub-grouping of Pama-Nyungan languages.

In the present work, an attempt is made to add new material in the drive to establish the genetic relationships among Australian languages. More particularly, my research adds weight to the argument that Pama-Nyungan languages do constitute a genetic grouping distinct, at least in terms of the length of the period of separate development, from the other putative language families of Australia. This work is incomplete in that no systematic attempt is made to find putative cognates between PMN and other Australian languages (though preliminary study suggests that such cognates are few in number); the presentation of all accumulated material should, however, facilitate more comprehensive comparative study.

History of ideas concerning the relationships among Australian languages

Since the first recording of the Australian word kangaroo at the Endeavour River in 1770 (Cook 1770:578, in Evans 1969), a variety of theories have been put forth concerning the provenance of Australian languages. At their first interaction with the natives of Botany Bay, members of Cook's crew (ibid., p. 493) were naively surprised that they could not understand a single word of what was being said.

Languages being of great importance "to the learned. . . in their researches into the origin of the various nations. . ." (ibid., p. 645), Cook found it desirable to gather a specimen of the speech of the natives on the Endeavour River, when a grounding on a coral head forced him to beach his ship for repairs there. The specimen consisted of native equivalents for about four dozen or so common vocabulary items, mostly common nouns, elicited in citation. Cook was interested enough to compare his vocabulary with that of a language spoken near New Britain, and concluded that the languages were not the same. He reasoned that if the languages of New Britain and Australia were the same, that would indicate a common origin of the peoples of both places.

In this particular case, the linguistic information indicated that the Australian language was apparently unrelated to the New Britain language, despite their relative geographic proximity. There are errors, to be sure, in Cook's word list – mistakes resulting from lack of experience in

discerning sounds foreign to English, and mistakes involving the referents of words – but on the whole the list is surprisingly correct (Haviland 1974). This is of interest since, for all the deficiencies in the pre-scientific vocabulary lists, the comments on language relationships made by the early investigators cannot be wholly dismissed because of unacceptable data. The language of Cook's Endeavour River word list was identified by investigators nearly two centuries later as Guugu Yimidhirr.

In 1821 the explorer Captain Phillip King landed at King George the Third's Sound in the south-west corner of Australia, encountered the natives there, and collected a vocabulary of 59 items in which he immediately noticed a word similar to one in a vocabulary collected earlier near Sydney on the east coast (King 1827:144). King compiled a comparative table containing basic vocabulary items in languages from eight places around Australia and Tasmania. His intention was to show the great differences that existed among the languages of Australia: he points out that of the thirty-three names of objects in his comparative list there is similarity among the terms for only one, *eye*. The terms for *eye* show similarity in all of the languages except Tasmanian. This is indeed impressive, but he overlooks other similarities existing between only two or three languages; for instance, there is a clear similarity in terms for *teeth* in three languages and for *foot* in two languages.

It seems that while seeking a relationship among *all* the languages he overlooked the possibilities of genetic sub-groupings of Australian languages, and of the random survival of an old root in a subset of the languages examined. Nevertheless, despite the great dissimilarity among the languages that was apparent from the comparative word list, he was astute enough to conclude, even in the face of contemporary 'expert' opinion to the effect that the Australians derived their origin from New Guinea, that the source (and hence the genealogy) of the Australian languages could not be established until much more data had been collected (King 1827:637). Even though he overlooked some cognates in the word lists, King deserves credit for conceding that the relationships of the languages must be proved "by a general resemblance of the words, and not merely by a few examples of coincidence, which can only be considered accidental" (*ibid.*, p. 636). The comparative philology of the period took vocabulary as its subject matter and did not deal with other aspects of language – hence the complete lack of any mention of grammar as a criterion in the classification of languages.

The expansion of colonisation in Australia in the nineteenth century led to the collection of many small vocabulary lists in aboriginal languages (as well as a few longer lexicons), particularly by missionaries. The major contribution of George Grey, explorer and later Governor of South Australia, was to counter the general opinion of the time that the Australian languages were "radically distinct" and consequently that the aboriginal peoples "originated from several separate races" (Grey 1841:207).

As proof that all the Australian 'dialects' have a common root, Grey offers three observations about them: first, there is a similarity of sounds and word structures in different parts of Australia; second, words recur which are similar in sound and meaning; third, certain personal names appear in localities far apart. A comparative table containing native equivalents for 28 common vocabulary items like *water*, *smoke*, *hand*, *eye*, *to see* and *to go* clearly shows cognates in four languages near Perth, Adelaide and Sydney. Grey also claims that cognates from languages at Shark's Bay and Victoria may be added to his evidence. That the languages mentioned by Grey are genetically related is now undisputed (Wurm 1972), but his evidence is stretched beyond

reason when he concludes, "Having thus traced the entire [length] of the coastline of the continent of Australia, it appears that a language the same in root is spoken throughout this vast extent of country" (Grey 1841:216). While it is true that the languages he cites cover a huge geographical area, large regions of the continent are not represented in his sample, and in particular, no language from the north is included.

On the positive side again, Grey offers some perceptive comments on the nature of language spread: if the continent was populated by immigrations from one area, then populations reaching new ecological regions would likely have coined new words for the unknown flora, fauna, etc. that they encountered there. Consequently, he reasoned, there would be many words for which there were no cognates in other parts of the country. On the other hand, the migrating tribes would not have had the same reason to coin new words for basic vocabulary (body parts, common actions, etc.) since those things would have always existed in their minds and languages. This is a very plausible explanation for the large proportion of cognates in Grey's comparative table. Grey's language samples were very small, however, and consisted almost exclusively of basic vocabulary, so it cannot be ruled out that there are cognates existing for less basic items. In point of fact, many such cognates have been unearthed; for example, Umpila aami *at rest* is probably cognate with Dyirbal yama *gently, slowly, too slowly/gently, softly* (O'Grady 1981b:273,275), and yet such a pair is hardly likely to appear in lists of only a few dozen words.

Besides the explorer George Grey, a nineteenth-century adventurer named Carl Lumholtz made some interesting observations about Australian languages, although most of it is based on others' research or on his own scanty evidence (Lumholtz 1889). In citing Curr (1886), Lumholtz adopts what seems to have been a typical concern of many would-be comparative philologists of the period by straining to find a connection with languages from outside of Australia. The latter claims, "... while the Papuan and Australian languages are almost totally different, still many words used by the Australian blacks are almost identical with those employed by the negroes of Africa" (Lumholtz, p. 308). Up to the present there has been no clear demonstration of genetic relatedness between Australian and any other languages, and it is generally held that any evidence of such a connection would have been effaced through time.

Non-linguistic evidence of the prehistory of Australian languages

Given the inconsistencies in the linguistic evidence on which to draw a genealogical tree of the languages of Australia, it would be helpful to turn to other areas of research which might shed light on the history of the Australian people. It comes as no surprise to anyone engaged in the study of one or another aspect of man that the evidence that anthropology has to offer on the linguistic situation is also inconclusive. On the positive side, physical anthropological evidence does suggest some limits to the dating of events concerning language and to the nature of migrations.

Tindale (1974:89) discusses the distribution of racial types in Australasia. According to the evidence available to him, the first humans to reach the Australian continent were of a negrito type of small stature, with a distinctive kind of hair, named Barrinean (as they occur in Australia). To varying degrees, the features of the Barrinean type still survive in some parts of Australia: namely, in Tasmania, Melville Island (off the north-western coast of Arnhem Land), the rain forest of coastal Queensland, the south-east of New South Wales and Victoria, and in the south-western corner of Western Australia. This marginal distribution is taken to indicate that this population had

spread widely over the continent before the coming of another racial type named the Murrayian, which the earliest physical evidence dates from 25,500 BP. The Murrayians are the most common type in south-eastern Australia and in the coastal regions of southern and western Australia. A mixed racial type, characterised by blond hair, is found in the tribes of the Western Desert. Tindale (*ibid.*, p. 93) adds that, according to the observations of J.B. Birdsell, the centre of distribution of the blond hair characteristic is the Warburton Ranges near the common boundary of Western Australia, South Australia and the Northern Territory – at the heart of the area in which the Western Desert linguistic subgroup (Wati) is represented. The northernmost limit of the blond hair characteristic is marked by the territory of Mangarla speakers, which lies east of Broome and, coincidentally, also represents the extreme northern limits of Pama-Nyungan in that part of the continent.

The Carpentarian racial type represented the third wave of migration into Australia. These people are thought to have entered from the north before the raising of the sea level at the end of the last glaciation, which greatly increased the sea distance from Indonesia more than ten thousand years ago. This type spread throughout the Northern Territory, westwards from there to the Kimberleys and eastwards to the western part of Queensland.

All this is relevant to the linguist insofar as it suggests a mixed history. Since even the Murrayians were established in Australia twenty-five thousand years ago, any relatively recent migrations within the continent, say five or ten thousand years ago, would have intruded upon people already established in an area. If the newcomers had annihilated the earlier inhabitants, all trace of their language could have disappeared with them. Yet the distribution of racial types indicates that at least some of the indigenes of an area remained, and so it is reasonable to assume that there was some language contact. Whether it was Proto-Australian or Proto-Pama-Nyungan that spread over the continent, it is plain that the carriers of the new language would have encountered speakers of many different languages in the various regions, and if the latter exerted any influence at all – a likely eventuality – then the results would be different depending on the circumstances of the contacts between populations and on the nature of the earlier language. That the nature of the languages in contact affects the language that results is shown, for example, by the difference between Melanesian Pidgin and the Creole English of the West Indies, both of which have English as a base. (The intention here is not to suggest that the contact situations between Australian languages were in any way similar to that of these examples, but rather merely to point out the extent of the differences that can result.)

While the Carpentarian type is not exactly coextensive with the 'prefixing' languages of northern Australia, it is tempting to speculate about the immigration of the Carpentarians and the recurrence of certain features among the languages of the area which they occupied. The occurrence of the Western Desert racial type over the territory of the speakers of the Western Desert language and Warnman (*i.e.*, the Wati subgroup) simply suggests that generally the speakers of those languages are from a common stock. Further, it makes it appear unlikely that earlier members of the stock who spoke the language ancestral to Western Desert and Warnman, thought to be the most conservative of Pama-Nyungan languages, were the bearers of a spreading Proto-Pama-Nyungan; otherwise one would expect the features of this racial type to be more widespread. It is also interesting to note that the speakers of Tiwi on Melville Island, a short distance off the north-western coast of Arnhem Land, are racially of the earliest Barrinean type, and that their language cannot be shown to be genetically related to any other Australian language.

Archaeology reveals another milestone that may be pertinent to the unravelling of the genealogy of Australian languages. Tindale (1974:118) asserts that there is no archaeological evidence of the dingo, the wild dog of Australia, from before 6750 BP, while there is evidence of man throughout Australia from 30,000 years ago. It is thought that the dingo would have spread throughout the continent in about a hundred years, a rate much faster than the movements of the tribes who already populated its new range. This being the case, the tribes would have had to find a word for the dingo as it appeared in their territory without always being able to borrow a word from a neighbouring tribe. It could be primarily because of the speed of its spread that there appear to be no common words for the dingo appearing in geographically separated regions of the country. Yet there are recurring forms for animals as well as for inanimate objects whose existence on the continent, one could reasonably assume, has not been so brief. (For example, on the east coast Umpila has *jarra seagull*, and on the west coast Nyangumarta has *tarra seagull*, reflecting ancestral *tarra.) The absence of common forms for *dingo*, and the widespread recurrence of other word roots among the Pama-Nyungan languages, strongly indicate that the spread of those languages predates the introduction of the dingo to the Australian continent. Dixon (1980:19) surmises that the invaders who introduced the dingo could have been speakers of a Proto-Australian language, but if this were so one would expect more widespread words for the animal.

The modern period of research

Work on the classification of Australian languages in the present century began with Schmidt (1919), who divided the languages into 'southern' and 'northern' groups. This was followed much later by Capell's *A new approach to Australian linguistics* (1956), in which he proposed 'common Australian' grammatical markers and pronouns, as well as 48 lexical roots. The latter, while drawn largely from the cognates found in Pama-Nyungan languages, do seem to provide some justification for postulating a common ancestor for almost all languages of the continent. In particular, Capell's monosyllabic verbal elements, with modifications and additions, continue as the main evidence that virtually all Australian languages are ultimately related (Dixon 1980:428).

Capell's division of Australian languages into prefixing and non-prefixing types, coinciding approximately as it does with the later non-PMN/PMN genetic grouping, remains a significant and useful categorisation. This typological classification, as Capell showed, is not absolute. The 'prefixing' label refers to the system of cross-referencing noun phrases by means of prefixes to the verb, yet there is considerable diversity of systems within the class (Blake 1977). On the other hand, there is no homogeneity of cross-referencing systems within the PMN, non-prefixing, group either: Blake (*ibid.*, p.6) notes six different systems, in fact.

The next major step in the genetic classification of Australian languages was the demonstration by Hale (1964) that the Pamic languages of Cape York Peninsula were related rather closely to one another. He further claimed that "the area as a whole articulates intimately with the mesh of close relationships extending over the southern bulk of Australia" (p.250), despite the unusual appearance of those Pamic languages which had lost initial consonants and undergone a number of other drastic but recent innovations.

From the other side of the continent, O'Grady (1966) reconstructed roots and phonology for Proto-Ngayarda and also proposed correspondences that indicated that the Ngayarda languages constitute a subgroup within the Nyungic group of Pama-Nyungan. O'Grady, Voegelin and

Voegelin (1966) published work based on lexicostatistics and grammatical features in which the genetic classification of the Pama-Nyungan family, encompassing most of the continent, was proposed. Despite various criticisms of this classification it remains widely accepted, although detailed reconstruction of the phonology, structure and roots of Proto-Pama-Nyungan has yet to come. A number of other works dealing with the reconstruction of proto-languages for various groups within the PMN family have appeared in recent years, e.g., Proto-Pamic (Sutton 1976), Proto-Northern New South Wales (Crowley 1976), Proto-Norman Pama (Black 1980) and Proto-Kanyara and Proto-Mantharta (Austin 1981b). Only Dixon (1980) has attempted to relate all the languages of Australia under the rubric of Proto-Australian.

Evidence for the genetic unity of Pama-Nyungan languages

If there were not ample evidence aside from common vocabulary that the Pama-Nyungan languages are genetically related, then the status of reconstructed roots would indeed be questionable. Perceived similarities in form and meaning might be attributable to borrowing, or possibly to chance. But the grammatical evidence in support of the hypothesis of common descent is overwhelming. Leaving aside for the moment the question of whether or not PMN constitutes a family separate from other Australian languages, one can point to earlier research which shows that many grammatical features are shared over large areas of the continent.

Capell listed case suffixes found in most parts of Australia (1956:53), a verbal suffix (*ibid.*, p. 55) and several other recurrent morphemes. Blake (1977) compared case markers in still greater detail. Dixon (1980:402 ff.) proposed a set of PA verb conjugations with, very significantly, common class markers. As it happens, not only do these items of evidence support the notion that PMN languages are genetically related, but since the reconstructions and paradigms are based essentially on PMN languages alone, they argue for PMN as a family distinct from the Proto-Australian or Common Australian groupings intended by Dixon and Capell. Even so, the question of the status of Proto-Pama-Nyungan as opposed to PA has not been finally resolved. What is certain is that PMN languages are genetically related; consequently, any items of vocabulary held in common – especially those shared by languages geographically remote from one another – may be considered as true cognates and not, on the whole, borrowings.

There is further evidence that PMN languages do indeed constitute a family. Blake (1977) reveals that not only do almost all PMN languages use an ergative system of marking syntactic relations in contrast to non-PMN languages, but also that a preponderant number of those PMN languages share the shape /+lu/ as one of the allomorphs of ergative. In addition, Blake (1981) and O'Grady (1981a) have demonstrated that in most PMN languages the first person dual inclusive pronoun is a reflex of PNPN *ngali, which has no obvious reflexes among the non-PMN languages. With such ample evidence of a family relationship to hand, the task of reconstructing the PNPN lexicon may proceed on a sound footing.

Phonological change

The array of phonological changes that can be traced in the development of Australian languages is far-reaching. Most such innovations are common to many language types around the world, and only a few will be touched on here, as they have been thoroughly discussed in the literature.

Vowel harmony, most prevalent in the morphophonemics of suffixation, is seen to have occurred in roots also. Dixon, in his discussion of this process (1980:179), offers several instances of the phenomenon, e.g. *juki > Wagaman juku *tree, stick*. A less direct way of inferring vowel harmony in the history of a particular language is noted for YIM (Haviland 1979a:39). Table I shows the percentage frequency of occurrence of the vowels in each syllable of a YIM root.

**Table I. Frequency of vowel occurrence
by syllable in YIM**

A.	First Syllable	Second Syllable
/a/	45	49
/u/	37	29
/i/	18	22
B.	In both First and Second Syllables:	
/a/	56	
/u/	41	
/i/	29	

The frequencies indicated constitute statistical evidence for vowel harmony having operated. Otherwise, one would expect percentages in part B similar to those in the second syllable column in part A, i.e., if there were no 'vowel harmony' correlation. When /u/ occurs in the first syllable, /u/ should occur in the second in only 29% of items, not 41% as shown in part B of the table.

Assimilation of consonants to vowels (and vice versa) is also widespread. Dixon (1980:344) claims that the second person singular pronoun *ngin at one stage became *nyin through assimilation of the initial velar nasal, a [+ peripheral] segment, to the [-bk] vowel /i/. There seem to be numerous instances, particularly in western languages, where the adding of ancestral suffixes to the root has led to assimilation of certain phonological features. In a number of cases, however, it is not possible to invoke assimilation as a process: NYA piyurpiyurr *galah* descends from *piya+ *to grind*, the original [-hi] segment *a having raised to /u/ despite the [+lo] feature specification of the /+rr/ (O'Grady p.c.).

One phenomenon that obtrudes only slightly in the present work is that of initial-dropping. This is evident particularly among languages of Cape York and has been well documented (e.g., in Sutton, ed., 1976). It occurs occasionally in UMP (Alpher 1976b, O'Grady 1976), and sporadically in some western languages (O'Grady 1981a:155). Apparently, PIN is beginning to lose initial consonants (especially *p and *k), which during the transition period when the phonotactic rules continue to prohibit vowel-initial words, are replaced by /y/ or /l/; hence PIN yiku *face area* < *pikuny.

A more problematic phenomenon of phonological change is metathesis. Here, the order of some segments is exchanged, e.g., *puka₂ > GID kupani+ *to do first* (O'Grady 1981b:275fn.). The difficulty is that it does not occur regularly, so that unless the supporting evidence is very strong, the cognation of a putative metathesised form is suspect. Even though metathesis occurs throughout languages of the world, it is difficult to invoke it as an explanation for a sound

correspondence unless it is known to be a well-attested process in the history of the language in question.

Semantic change

Comparative reconstruction in Australian languages entails recognition of the usual array of types of semantic change seen throughout the various language families of the world. For each of Bloomfield's nine categories of semantic shift – narrowing, widening, metaphor, metonymy, synecdoche, hyperbole, litotes, degeneration and elevation – it is not difficult to find instances among Australian languages. Leaving aside, for the sake of illustration, the often difficult question of the direction of an apparent shift, typical examples are: wakuny Warrgamay *sea, salt water*, Nyawaygi *mangrove* (metonymy) (Dixon 1980:119); walu UMP *cheek*, WLB *head* (synecdoche); Ngarluma yalhuru *tongue*, Adnyamathanha yalhu *flame* (metaphor) (O'Grady 1979b:120). At the same time, it is not unusual for the semantic relationship between cognates to elude categorisation or even a satisfying attempt at rationalisation. Consider, for example, UMP taway *moon*, Yindjibarndi jawurta *beard*, which are almost certainly cognate (based on independent phonological and semantic evidence) but which at first view defy explanation of the divergence of meaning (O'Grady, *idem*).

Although the labelling of different types of semantic shift is of interest – revealing, as it does, that there is some 'logic' in the displacement of meanings and that Australian Aboriginal people's use of language and view of the world is every bit as imaginative and sophisticated as any other humans' – it is of little use in comparative work. If the relationship between the meanings of two tentative cognates falls into a category, then confidence in the cognation of the forms is strengthened, but there is no predictive power in these categorisations. While there may be tendencies, such as the common shift of meaning from a body part to some plant part or geographical feature (Dixon 1980:116), it is impossible to say with any consistency what will be the semantic relationship existing between two cognate words in different languages.

In addition to the traditional types of semantic change, two others seem to be unique to Australian languages. O'Grady (1960, 1979b) discusses the POTENTIAL:ACTUAL semantic relationship illustrated by the cognate pair UMP minya *animal, meat*, NYA minyi *stench*, wherein the MEAT might be regarded as the potential source of the actual STENCH. The same relationship, which appears often among Australian cognates, is seen in the two meanings of Yindjibarndi thama – *firewood, fire*.

A most remarkable type of semantic change in Australian languages is that of antonymy. It is not clear by what process a form will come to have a meaning opposite to that of related forms, nor is it universally predictable what the 'opposite' will be, but the answer may lie in the use of a particular ceremonial 'upside-down' language. In 'A note on a Walbiri tradition of antonymy', Hale explains the principles by which each item in an utterance is replaced by its opposite. In Warlpiri Tjiliwiri speech the intention *Give me water* is expressed as *I withhold fire from him*; ngurru *good* as *maju bad*; wawirri *kangaroo* as *kanyala euro*, and so on (1971:474-475). The insight gained by an understanding of the notion of antonymy as it functions in Tjiliwiri has led to the discovery of numerous cognates with opposite meanings; thus: Ngarluma thama *fire*; Wadjuk DJAM *water*; BAY kawari *west*; UMP kaaway *east*; BAY yinha *this*; WLB yinya *that beyond*, etc., (O'Grady 1979b:121). O'Grady (*ibid.*, p.122) demonstrates cognation between

NYA *jungka ground, earth* and Wadjuk TONGA *ear*, and suggests that one of the meanings has been derived by a process such as antonymy. In view of such apparent vagaries, the researcher must evidently be prepared to pursue virtually every semantic trail in Pama-Nyungan which is suggested by the isolating of sets of forms with phonologically congruent shapes.

Procedure for assembling cognates and reconstructing ancestral roots

While exhaustiveness was not the aim of the study, the procedure for assembling the cognates was made as thorough and as systematic as possible. In the search for reflexes of forms with initial *t, *n, *l or *r, it was simplest to start with a language in which there has been the least change in the way of splits and mergers of initial consonants. Thus the first word in the /t-/ section of the Hansens' Pintupi dictionary was taken as a point of departure and a search made in the dictionaries of the other eight languages for any forms, no matter what their meaning, that could conceivably bear a phonological correspondence to the Pintupi form. Depending on the language, these forms might have an initial apical or laminal stop, a glide, or Ø, etc. Of course, use was made of correspondences established by other scholars, but for the sake of thoroughness the search was extended to areas of the dictionary not always predicted by already attested correspondence patterns. Often, no plausibly cognate forms could be found in a particular language; often, on the other hand, there were several such forms. For example, one preliminary list was as follows: NYA *taki nape of neck*, WLB *rraku hole in the ground*. . . , PIN *taku a trench*, GAW TAKANNA *wide, broad; grown-up girl*, YAKKI *depth, valley*, YAPPA *hole*, GUP *dagardagayun make fire*, YIM *tuukal bury; enter*, GID *jakun ground, country, territory*, with no plausible cognates appearing in BAY or UMP.

Only after the initial search and the preliminary lists were completed did the detailed investigation for cognates begin. Evidence is needed to substantiate both the phonological and semantic correspondences before the cognation of any two forms can be asserted. On the phonological side, the work of other Australianists, general principles of sound change, or non-Australian historical linguistic insights may furnish the necessary supporting evidence. However, the most important support for the initial hypothesis of cognation is provided by the plurality of cognates witnessing the same correspondence(s).

The investigator resorts to similar sources for corroboration of the semantic correspondence between the putative cognates, though here less reliance is placed on rules. More attention is paid to similar semantic correspondences evidenced in cognate sets found, ideally, in closely related languages. Such languages are usually matched in similarity by the respective cultures of the speakers, and in these circumstances one can be more sure of a shared *Weltanschauung*, as it pertains to semantic shift, than where vastly different cultures are involved. To illustrate, one might reject as cognate GUP *buku forehead*. . . and Yidiny *pikuny fingernail*. . . (O'Grady 1981a:156-157) if the only supporting evidence of such an unlikely-looking semantic association came from, say, English; but when that same association is found in another Pama-Nyungan language (viz., NYA), one is forced to accept this as corroboration. Nevertheless, the abundance of cases where semantic associations in Australian languages are paralleled elsewhere in the world is indicative of shared perspectives or experiences; thus, if *jaw* and *shark* are associated in English, then this fact may be taken as corroborating evidence for claiming cognation between GID *nukal jaw* and BAY *nhuka shark*. This shared experience of people of different cultures is seen

in an example provided by Dixon (1980:118): the form *walngka* in Nyawaygi means *thirsty*, and in Warungu *eager, fond, wanting*, thus paralleling the extension of meaning observed in the English sentence *he is thirsty for knowledge*.

As each form in the preliminary list was examined for possible cognation with any others, it was either rejected or accepted as cognate, depending on the strength of the overall available evidence. In this way, the list cited above was reduced to that found at T2 in the cognate sets.

Once a set of cognates attributed to a single etymon has been compiled, the task is to reconstruct the form of that ancestral root. The specific argumentation which results in the offering of a given proto-form is to be found along with its reflexes in the attestation section. As far as possible, each proposal of a particular phonological development is supported by pertinent documentation. While every attempt was made to find corroborating evidence for the semantic correspondences, in view of the lesser regularity and vagaries of meaning change, it was necessary to claim plausibility as evidence. This was considered sufficient only when the phonological evidence for cognation was strong.

The reconstructed root must conform to the phonological and phonotactic patterns of the proto-language, although clearly the definition of those patterns is affected by the evidence of cognates in the daughter languages. With regard to the consonant system of the proto-language, there is general agreement that it comprised fourteen distinctive segments. The inventories proposed for PNPN (O'Grady 1979b:132) and for Proto-Australian (Dixon 1980:158) coincide, leaving aside Dixon's uncertainty about **ly* and O'Grady's suggestion (p.c.) that retroflex [**t, *n, *l*], herein interpreted as rhotic glide-apical clusters **rt, *rn, *rl*, may ultimately need to be posited for PNPN as well.

There is similar agreement on the vowel system of the proto-language: just three vowels contrasted, with the addition of distinctive length in the first syllable of a root. As in modern languages, there was probably considerable allophonic variation to be heard, depending on the phonetic context. The PNPN inventory of distinctive sound segments is set out in Table II.

Table II. The phoneme inventory of PNPN

Consonants

	apical	laminal	dorsal	labial
stop	t	j	k	p
nasal	n	ny	ng	m
lateral	l	ly		
flap	rr			
glide	r	y		w

Vowels

	front	back
high	i, ii	u, uu
low		a, aa

With the exception of a few monosyllables, the canonical shape of roots in PNPN was almost exclusively disyllabic, involving a single initial consonant, one to three medial consonants and an optional final, i.e., *CV(:)C(C(C))V(C). Among modern languages, there are those whose words must end in a vowel, and those where a final consonant is permitted. Of the first type is PIN, which adds /+pa/ (variously called a 'juncture syllable', a 'phonological stem augment', etc.) in certain contexts, specifically where an underlying consonant-final stem stands uninflected (Hansen and Hansen 1969:160).

Capell's (1956) reconstructed roots included several with final *ng. Those roots, representing his 'Common Australian', are in accord with Dixon's (1980:244) observation that historically words could end in /ng/ or /m/ in most, if not all, Australian languages, but that that phenomenon has now disappeared over most of the continent. Of the nine languages compared in this work, GID alone maintains ancestral final peripheral nasals, and is thus diagnostic for the attributing of *-ng or *-m to the proto-form. Therefore, when a cognate set lacks a form from GID there is no evidence for the presence or absence of that final nasal in the proto-language, and the specification 'PNPN root (not in GID)' signifies that uncertainty. Similarly, UMP, YIM and GID are alone among the nine languages in retaining ancestral long vowels of the first syllable with some consistency; V₁ of a reconstruction based on a cognate set lacking a form from one of these three languages cannot, therefore, properly be assigned a length value.

There exists a number of cognate sets where some Nyungic (i.e., western) languages have an apico-postalveolar (retroflex) segment [ɽ ɳ ʀ] /rt rn rl/ corresponding to a plain apico-alveolar /t, n, l/ in eastern PMN languages, e.g., NYA W tarl.pa+ *to make a sudden loud noise*. . ., GID talal.pa+ *to clatter, rattle*; NYA, PIN, BAY parnti+ *to smell, sniff*, GID panti+ *to sniff*. Dixon has argued (1980:155ff), largely via the claim that the preponderance of retroflex reflexes of the apicals follow /u/, that the ancestor of the languages in question had a single series of apical consonants and that /rt/, /rn/, /rl/ are the results of phonological split arising out of allophonic variation.

O'Grady, on the other hand, has evidence such as the above (p.c.) that the absence of retroflex apicals in eastern languages is the result of merging of those articulations with the plain apico-alveolars. He takes their presence in the west to be ancestral – at least insofar as PNPN is concerned.

In the face of these conflicting claims, this writer has reconstructed whichever of the plain apico-alveolar or retroflex consonants seemed most justified by the evidence of the cognates present. As the question of contrast arises only in medial position, the value of the proto-forms presented here as evidence for the existence of apicals in initial position is not affected.

Notes on the nine languages

The phoneme inventory of each language is to be found in Table III, where the consonants are presented in the order apico-alveolar, apico-postalveolar (retroflex), lamino-interdental, lamino-palatal, velar, labial/labio-velar and glottal. In the interests of greater clarity, the diverse orthographies have to a large extent been standardised. In particular, the representation of oral stops in languages having only one distinctive series of these sounds has been changed from marked /d rd dh dy/dj g b/ to unmarked /t rt th j k p/ respectively. Perhaps the standardised transcription of a given phoneme is not as accurately representative of the actual sound in the

language as is the original transcription, but this should not materially affect this comparative study.

Unless stated otherwise below, the dictionaries are assumed to be accurate and transcribed according to modern linguistic practice. Unfortunately, however, most of the dictionaries are of limited size, containing only a fraction of the vocabulary of a particular language. Since it has been estimated that the working vocabulary of the average citizen around the world comprises about ten thousand lexemes, and since there is every reason to believe that an Aboriginal Australian has a similarly large store of words at his disposal (Dixon 1980:2), it can only be assumed that many more cognates would be unearthed if more complete dictionaries were available. Were the dictionaries to be as extensive as, say, a dictionary of English, with its store of archaic, poetic, specialist and slang items, then the chance of finding cognate forms would undoubtedly be far greater. Consider, for example, the English word *holt wood, copse*, cognate with German *Holz wood*, which though archaic still lingers in some English dialects and which would definitely not appear in a small dictionary of a few thousand words. Thus it can be inferred that the cognate sets offered here constitute only a fraction of what access to larger vocabularies would produce.

A few remarks are in order concerning recurring conventions or assumptions adopted in the exposition of the cognate sets. Generally no mention is made of the reflex patterns for initials of the proto-language in the attestation section, as they are all presented in Table V.

Forms from Nyangumarta (Marrngu subgroup, Nyungic group of Pama-Nyungan) are either from the Strelley dialect (NYA S) or the Wallal dialect (NYA W). Though alveolars and postalveolars do not contrast in initial position in this language, all four apical consonants other than /rr/ may occur word initially. Similar comments apply to the distribution of apicals in Pintupi (PIN), a member of the Wati subgroup of Nyungic. Warlpiri (WLB, Ngarrka subgroup of Nyungic) also permits /t, n, l, r/ as initials, yet it must be noted that *l- and *r- have merged to /l/- in this language, and that those forms in initial /r/ have heretofore been considered as loans from neighbouring languages. Warlpiri <rr> is the usual representation of the alveolar flap in medial position, but initially stands for a retroflex flap; the latter sound appears medially as <rd>.

Dating from the mid-nineteenth century, the source of the data for Gawurna (GAW, Yura subgroup of Nyungic) is 'pre-scientific'. Consequently the fidelity of the transcriptions is less reliable; hence the retention, in capitalisation, of the original symbols whose correlation with modern phonemic representations is in some cases uncertain. In particular, it seems that <E> and <O> may not represent independent phonemes, but rather allophones of /i/ and /u/ respectively. Permissible apical initials are suggested by T- and N-, though there are indications in modern Yura data that these symbols do not always represent – and indeed may *never* represent – an apical articulation.

One Bayungu (BAY, Kanyara subgroup of Nyungic) form from a different source (Davidson 1928-32) is written in capital letters to indicate the uncertainty of the phonemes represented. Apical consonants do not occur in initial position in this language.

Occurrent initial apicals in Gupapuyngu (GUP, Yuulngu/Murngic group) are /t, n, l, rr, r/. This language is alone among the nine in systematically contrasting fortis (voiceless) with lenis (voiced) stops word medially.

Table III. The phoneme inventories of the nine languages of the comparative study

	PLOSIVES	NASALS	LATERALS	RHOTICS	SEMIVOWELS	VOWELS
Nyangumarta	t rt j k p	n rn ny ng m	l rl ly	rr r	y w	i ii a aa u uu
Warlpiri	t rt j k p	n rn ny ng m	l rl ly	-rr- rr -rd- r	y w	i ii a aa u uu
Pintupi	t rt j k p	n rn ny ng m	l rl ly	rr r	y w	i ii a aa u uu
Gawurna	T RT T TY K P TT TT KK PP D G B	N RN N NY NG M NN NN MM DN	L RL L LY LL LL DL	R RR R RR	Y W I U	I E A O U
Bayungu	t rt th j k p	n rn nh ny ng m	l rl lh ly	rr r	y w	i ii a aa u uu
Gupapuyngu	t rt th tj k p d rd dh dj g b	n rn nh ny ng m	l rl	rr r	y w	i ii a aa u uu
Umpila	t th j k p	n nh ny ng m	l	rr r	y w	i ii a aa u uu
Guugu-Yimidhirr	t th j k p	n nh ny ng m	l	rr r	y w	i ii a aa u uu
Gidabal	t j k p	n ny ng m	l	rr	y w	i ii e ee a aa u uu

Umpila (UMP, Middle Pama subgroup of Pamic) has words beginning in the apicals /t, n, l/, although the latter two are very rare as initials. The process of initial-dropping has obscured some reflexes, but reconstruction is aided by other comparative work on Pamic languages – especially on those discussed in *Languages of Cape York* (Sutton, ed. 1976).

Both Guugu Yimidhirr (YIM, Yalandjic group) and Gidabal (GID, Bandjalangic group) permit only the apicals /t, n/ in initial position. Table IV, after Haviland (1979a:38) is offered to give a general idea of the frequency of roots with initial apical consonants. The YIM dictionary size of about 1000 roots is also typical of the smaller lexicons in the sample of nine languages; those of NYA, WLB, PIN, GAW and GUP are somewhat larger.

Table IV. Percentage of words by initials in YIM

Initial	Percent	Initial	Percent
k	17.0	t	7.5
p	17.0	y	7.0
m	12.0	j	5.0
w	12.0	nh	2.5
th	9.0	n	1.5
ng	9.0	ny	0.5

Reflexes of initial apicals

Reflexes of *t-, *n-, *l- and *r- in the nine languages under study are detailed in Table V. It should be noted that the status of the reconstructed root is not always PNPN; see Appendix.

Attestation

T1 *takan PNPN root:

WLB rraka 1. *hand, fingers* 2. *forefoot*; GAW TAKANNA *wide; broad; open (plain)*; BAY TAGULU *short*; UMP yaka+ma+ *to crawl*; GID tangkan *hand*.

The semantic association of the WLB form meaning *hand* and the GAW *wide, broad* is attested in the Indo-European language family by English *palm*, which among its meanings expresses *the inner surface of the hand, a unit of length equal to the width. . . of the hand* (AHD), wherein the salient feature of a hand – its flatness and breadth – is evident. It is the notion of *MEASUREMENT* or *EXTENT* that perhaps links the BAY form to the first two. Despite the unaccountable prenasalisation of the *k, the GID form agrees well in meaning and sound. The likelihood that the UMP form *to crawl* is a true reflex of *takan is enhanced by the semantic evidence from PIN mara *hand, finger* vs. reduplicated maramara *crawling child* and mara+ *to crawl*, all of which reflect PNPN *marang *hand*.

Table V. Reflexes of initial apicals in nine languages

a. Reflexes of *t-

NYA	WLB	PIN	GAW	BAY	GUP	UMP	YIM	GID
t- 2, 3, 4 6, 7, 9 10, 11 13, 15 16, 17 18, 21 22, 25 32, 33 34, 35 36, 37 41, 42 45, 51 53, 58 59, 60 61, 62 63, 64 65	rr- 1, 2 12, 20 32, 35 38, 39 48, 50 54, 65 t- 7, 15 16, 17 22, 32 36, 37 38, 60	t- 2, 3, 6 7, 9 11, 15 16, 17 18, 19 20, 21 22, 23 24, 25 26, 27 28, 31 32, 33 34, 35 38, 39 40, 41 42, 43 44, 45 46, 47 48, 51 52, 53 55, 56 57, 59 60 l- 49	T- 1, 2, 5 12, 15 19, 21 22, 23 24, 31 32, 36 41, 43 Y- 2, 6 17, 18 19, 62	j- 13, 17 27, 32 36, 48 64 th- 7, 21 57, 61 y- 57 T- 1	d- 2, 4, 6 7, 16 17, 21 24, 25 27, 29 30, 33 35, 36 40, 41 44, 49 50, 52 56, 58 63, 65 dj- 17, 18 27 dh- 3, 13, 17 r- 54	th- 8, 9 15, 17 26, 36 46 t- 15, 29 49, 50 64 Ø- 11, 36 38, 49 55 y- 1, 2 10, 43 j- 6, 18 48	t- 8, 11 17, 19 27, 36 39, 47 49, 54 th- 17, 21 j- 6, 30	t- 1, 5 15, 16 20, 28 32, 35 36, 38 49, 54 62, 64 j- 2

b. Reflexes of *n-

NYA	WLB	PIN	GAW	BAY	GUP	UMP	YIM	GID
n- 9, 14 15	n- 4, 6	n- 4, 5 6, 7, 8, 11 12	N- 1, 12 13, 14 15	ny- 1, 3, 4 10 nh- 12, 13	n- 3, 5 8, 10 11, 15 l- 13	nh- 13 l- 13 Ø- 1	n- 2, 7, 8	n- 1, 2, 5 7, 8, 9 11, 12 13

c. Reflexes of *l-

NYA	WLB	PIN	GAW	BAY	GUP	UMP	YIM	GID
l- 1, 2 6, 8 9, 10 14, 16 19, 20 21, 23 24, 25 26, 27 29, 32 33, 34 35, 36 37, 38 40	l- 1, 2 7, 9 22, 23 27, 29 30, 32 35, 40	l- 1, 4 9, 10 11, 12 13, 16 17, 19 21, 23 24, 25 26, 28 29, 31 35, 36	T- 8, 9 13, 24 28, 37 Ø- 24	y- 13, 28 35 j- 29	l- 3, 5 7, 8 9, 10 12, 14 15, 16 17, 23 25, 29 30, 31 33, 38 39	Ø- 15, 33 36 l- 4 th- 29	t- 1, 8 24, 34 y- 11, 14 22, 30 th- 6, 37	t- 1, 2, 7 17, 28 j- 5, 25 31, 39 y- 3, 12 20 w- 10

d. Reflexes of *r-

NYA	WLB	PIN	GAW	BAY	GUP	UMP	YIM	GID
r- 2, 3 4, 5 6, 8 9, 10 13, 15 18, 20 21, 26 27, 28 29, 31 33, 34 36, 37 l- 26 y- 27	l- 6, 10 20, 21 27, 28 34, 36 r- 2, 6 7, 13 33	r- 1, 2 4, 5 7, 11 13, 14 15, 17 18, 20 22, 24 25, 33 35, 36 37 y- 27	T- 2, 8 12, 20 24, 27 28 Y- 13, 18 W- 32, 35	th- 7, 10 17, 20 26 y- 26, 27 28, 35 j- 30	r- 3, 7 10, 12 16, 18 19, 20 23, 25 30, 32 33, 37 d- 2, 7 13, 17 22, 28 l- 1, 27 36	Ø- 12, 20 27, 31 th- 9, 21 29 t- 22, 24 w- 13, 23 -l- 37	t- 2, 4 19, 20 24 th- 9, 30 y- 20 -rr- 7	t- 2, 4 11, 14 16, 20 27, 31 33, 36 y- 4, 20 26, 27 28, 31 33

There is good evidence that PIN *kati+* *to bring, take, carry* and GAW *KATTE+* *to carry, fetch* are to be included among these cognates, viz., there is a Ngarluma form *thaka+* *to grab*. . . cited in O'Grady (1966:116) as a cognate of WLB *rraka*, above, which largely agrees in referent range with the forms in question; metathesis, moreover, is a well-attested process in a number of Pama-Nyungan languages.

T2 *taakun PNP root:

NYA *taki nape*; WLB *rraku* 1. *hole in the ground* 2. *deep* 3. *flesh wound resembling a hole*; PIN *taku trench*; GAW doublet TAU *evening; dusk; hole*, YAKKI *deep, low; depth; valley*; GUP *dagardaga+yu+n ~ dawardawa+yu+n to make fire*; UMP *yaakamu phosphorescence*; GID *jakun ground, country, territory*.

PIN *taku a trench* and the verbal form *taku+* *to make a long trench or groove; to scoop out a cooking hole* reveal the semantic relation with GUP *dagardaga+yu+n make fire*, a suffixed reduplicated form. Because much cooking was done in a hole in the ground, the close association of the latter with making a fire for cooking could well have led to the metonymic shift *MAKE A TRENCH > MAKE A FIRE*. The final *u is reflected as /a/ as in T6. WLB *rraku hole in the ground; deep; flesh wound* has initial /rr/ reflecting ancestral *t. NYA *taki nape of neck* may be related, since the nape may appear as a shallow trench. The gloss of Dyirbal *rutu top of vertical depression at nape of neck...* seems to support this claim with its mention of *depression*. Ancestral *t is apparently reflected as /y/ in GAW YAKKI *depth, valley*; the *u:i relation is not attested elsewhere. Because of phonological difficulties and the tenuous semantic relationship, the inclusion of this GAW word in this set is less certain.

The absence of /-k-/ in the first GAW form may be the result of *k > *w > ∅, the plausibility of which is attested in PNP *puka *rotten* > GAW PUA. As UMP generally retains Proto-Paman long vowels (O'Grady 1976:61), *yaakamu* indicates such for the reconstruction. If the meaning of the proto-form were *fire*, then the development to *fire trench*, etc., on the one hand, and *phosphorescence* on the other, seems plausible. The PP root *Taakurr *ground*, noted by Alpher (1976b:91) (and in slightly different forms by Hale (1976c:58) and Rigsby (1976:73)), may have already constituted a doublet with the ancestor of the UMP form. The final nasal of the root is reconstructed on the strength of the GID form, in which language ancestral final nasals are retained (Dixon 1980:244).

T3 *tala₁ PNYY root:

NYA W *tala* in (jawa) *tala (mouth) with some teeth missing*; PIN *tarlarla a crack in a rock*; GUP *dhala vagina*.

The PIN gloss, *a crack in a rock*, is semantically close to NYA *(mouth) with some teeth missing*, since such a mouth would appear to have gaps or cracks in it. The GUP form is to be considered cognate, as the semantic correspondence is attested elsewhere (see at L34), and GUP *dh-* as a reflex of *t- appears also in T13 and T17.

T4 *tala₂ PNYY root:

NYA S tarlakarra *hard, solid, firm*, W talakarra *hard, rigid, strong; tight – of string; clouded over – of sky*; GUP daal *strong, hard, steady, firm*.

The NYA forms show a clear semantic and phonological correspondence with the GUP form. The long vowel in the latter is not taken to be ancestral, and the deletion of the final vowel is attested elsewhere (e.g., T16, T25, T33).

T5 *Tana PNPN root:

GAW TINNINYA *rib*; GID tanarr *rib, side*.

The GID form has the final /rr/, possibly an old root extension (cf O'Grady 1966:95ff.) that occurs frequently in that language, as well as in others. The GAW form shows a +NYA augment which induced assimilation of the root vowels to the [+hi, -bk] feature specification of the alveo-palatal nasal (cf N5, N15).

T6 *tanku+ PNPN root (not in GID):

NYA W tanku+karri+ *to hang – as fruit on tree*; PIN tinki+ *to attach, connect, couple, join*; GAW YERNKA+ *to hang down, on; to join, impart; infect; depend*; GUP dan-gapa *sp. fruit juice used for medicine*; UMP jinka *flying squirrel (flying phalanger)*; YIM jinkal *single root or vine*.

The GAW form, apparently /yarnka+/, shows the occasionally attested development *t- > y-. Whether -RN- descends from the proto-language as the result of innovatory split of the apical *-n- or is a mistranscription of /n/ remains in debate (Dixon 1980:155 ff.). If the /i/ vowels of the UMP and YIM forms are the result of assimilation to the initial laminal consonants (which are the major reflexes of PNPN *t-), then all of the forms in this set agree very closely in sound, excepting only the unaccountable vowels of the PIN form (but cf. PIN jiki+ *drink* < PNPN *juka+). Clearly, the sense *HANG* is potentially present in all the glosses, including UMP *flying squirrel* which hangs from its prehensile tail.¹ The GUP form *sp. fruit juice* . . . can only be plausibly included as a cognate if the associations *HANG* > *HANGING FRUIT* > *FRUIT JUICE* can be substantiated. UMP *thanka tree sp. pandanus*, "characterised by stilt-like aerial roots. . ." (Funk & Wagnall's Standard dictionary), conceivably forms a doublet with jinka.

T7 *tantu PNYY root:

1. NYA W tarntarn *tight, taut; faultless (enunciation)*; BAY tharntarn *firm (-breasted)*; GUP dana+tju+n *be stiff, taut, tight*.

2. *tuntu PDN root. NYA W turntururru *firm (of breasts)*; WLB turnturnpa *incipient breasts*; PIN tunturn+pa *breast nipple of a girl at the yukarra stage*.

The latter three forms are clearly reflexes of a relatively recent outcome showing anticipatory vocalic assimilation; they could owe their present distribution at least in part to borrowing.

¹Barrett (1950:41) gives *flying squirrel* as a *phalanger* and explains that the latter have "... prehensile tails ... by which they hang".

Whether or not the PDN reconstruction or the PNY Y one preceding should have a retroflex /-rn-/ is problematic, as discussed earlier. The GUP form shows good phonological agreement, given regular simplification of a homorganic nasal + stop cluster to a simple nasal (correspondence noted by Heath, 1981:336), and given that root-final /a/ is known to reflect *u (as, for example, in R13). Hale has noted (1976c:58) PP *jarran > Thaayorre tharrn *hard*, etc., which is probably related.

T8 *Tangka PEPN root (not in GID):

UMP thungku *dark – of night; black*; YIM tangkay *night-time, at night*.

An apical initial is reconstructed, since YIM maintains a productive distinction between initial apicals and laminals. UMP shows a changed vocalism, possibly due to assimilation to the [+hi, +bk] features of the consonant cluster. Hale (1976c:59) reconstructed PP *jungku *black*.

T9 *tangka+ PNPN root (not in GID):

NYA S tungkurr+pi+ *pull off*; PIN tangka+pu+ *to break sprouts off the main shaft of a tree...*; UMP thangka+ *pull it (person's ear); tweak*.

The PIN form, showing a verb formative suffix on the root, corresponds perfectly with the UMP form which has the normal laminal reflex of the initial apical of the proto-form. The NYA S form includes an old suffix /-rr/ which (possibly together with assimilation to the features of /-ngk-/), may be the cause of the raising of V₂ from /a/ to /u/ by *tangkarr > *tangkurr > tungkurr. Alternatively, the verbalising suffix may have triggered the change, as in *nyarra *mouth* > pre-NYA *nyarra+pu+ *to laugh* > *nyarru+pu+ > NYA nyarru+pi+ *to laugh* (O'Grady, p.c.).

T10 *tangku PNPN root (not in GID):

NYA W tangku *chin, jaw*; UMP yangku+ *to eat*.

Apical *t- > UMP /y-/ is not part of a major correspondence pattern (but see T1, T2 and T43); the semantic connection is supported by the existence of the association *CHEW: JAW* in other languages of the world (Wilkins 1981:85).

T11 *taapa+ PNPN root (not in GID):

NYA S tapa+ *move quickly*; PIN tapu+ju+ *to run, escape, depart quickly*; UMP apaa ~ apa+ *creep up, sneak up*; YIM taapa+l *wade about, move in water*.

The /u/ of the PIN root is probably the product of assimilation to the vowel of the verb formative +ju+. UMP manifests occasional initial-dropping; compare UMP uungku *long* with PP *Cuungku and PIN tungku *short* < PNPN *tuungku *long*. All forms are verbs of motion: creeping up on an animal would be closely associated with the final lunge during hunting, in water as well as on land.

T12 *tapu₁ PNY root:

WLB rrapu *solid, not hollow*; GAW TABUTTIBUTTI *full*.

GAW has an extended derivative form (compare PARNATTI *autumn* with PARNA *a star*), whose meaning is related to the WLB form by the fact that *FULL* entails *NOT HOLLOW*.

T13 *tapu₂ PNYY root:

NYA W tapurriji *moustache*; BAY japurta *beard*; GUP dhawarrak *beard, facial hair*. See *taparr in O'Grady and Tryon, *infra*.

The NYA form has a /-rr/ extension that may be related to that often seen in PIN. Lacking apical consonants in initial position, BAY shows a laminal /j/ reflex of *t. *t- > GUP /dh-/ constitutes a minor pattern of reflection, while the intervocalic /w/ may well have developed from *p, as this alternation is attested synchronically in GUP, e.g. daba'+yu+n ~ dawa'+yu+n *look over one's shoulder*.

T14 *TapV PNPN root (not in GID):

GAW TAPPO *fly* n.; YIM thapaka *fly* n.

Because some GAW words in initial T are from proto-forms with a laminal initial, and it is possible that some YIM forms with an interdental initial are from an apical, the question of whether the proto-form began with a laminal or apical stop, or liquid (*l- or *r-), remains open.

T15 *taru PNPN root. (See T21):

NYA S tari *heel*; WLB tari *ankle*; PIN tari *inside ankle bone*; GAW TAINGA *muscle, sinew; footstep, track*; UMP doublet tali *lower leg*, tha'u *foot; track, footprint*; GID tarrikan *bone*.

The latter UMP form reflects PP *jaru *foot*; /'/ is the regular UMP reflex of intervocalic *r. For another instance of lenition of an intervocalic rhotic in GAW, see R27. The cognation of tali, with /l/ for *r, is less sure. The NYA, WLB and PIN forms are obviously cognate, the NYA meaning *heel* being related by straightforward metonymy to *ankle*. The same semantic argument applies to the UMP *lower leg* and GAW *muscle*... forms (in addition to the clear similarity of the latter to the UMP *foot; track, footprint* form), while the *BONE:LEG* semantic association that links the GID form is also found in T19.

T16 *tarl PNPN root:

NYA W tarl *bang!*; NYA tarl+pa+ S *to burst, blast*, W *to make a sudden loud noise, erupt suddenly; to go off – of a gun; to pop out – of eyes*; WLB taarl+ma+ *to cluck, make a loud clicking noise; the palatal click*; PIN taa+ *to burst, explode, pop*; GUP dal *interjection with wut+thu+n [to hit]*; GID talal+pa+ *to clatter, rattle*, talal+pa+y ~ tulul+pa+y *clatter, rattle, echoes from a rifle shot*.

The assignment of retroflex /rl/, as opposed to /l/, to the reconstruction is problematic, as has been discussed earlier.

T17 *tarlku ~ *taku PNP root (not in GID):

NYA tarlku W *spear with hook to fit spear-thrower*, S *hook on thrower*, S tarlkutarlku *clavicle*; WLB tarlkutarlku *crooked*; PIN takurl+ju+ *to insert. . . to hook up a spear-thrower with the back of the spear*, tawu *the type of spear which is thrown with a spear-thrower. . .*;

GAW YOKUNNA *crooked; curled; bad*; BAY jalku (sic) *hook of spear-thrower*, jarlku *fishing hook*; GUP sestuplet djaarlki *snake*, dharwa *hip bone*, daaku *bent*, daak *hip*, *hipbone*, dakarr *spear-thrower*, dakul *axe*; UMP thaku *left hand*; YIM taku *thing, tool*, thaku *left hand* (cf PP *jaku).

Whether the two reconstructions can be regarded as two separate roots, or whether one is a variant of the other, cannot be shown on the evidence available. The great similarity and overlap of the meanings, however, clearly suggest that the forms with /-(r)l-/ occurred as variants within the proto-language.

The initials of all the forms above are major or minor reflexes of *t-, and there is remarkable consistency in the vowels, save V₁ of the GAW form, though here it must be borne in mind that there is uncertainty both about the sounds intended by the orthography and about the accuracy of the transcription. Thus the cognation of this GAW form is less certain. The absence of a reflex of V₂ in GUP daak is not unusual (cf T4, T16).

One explanation of the semantic divergence is as follows: if the main meaning of the proto-form were *bent*, then a shift to *crooked* and *hook* would be very plausible. One has only to consider the English word *crooked*, which is derived from *crook something bent or curved*, a *hook* from Old Norse *krōkr a hook*, from PIE *ger+ *curving, crooked*, from which descends also French *crochet a hook* (AHD), to see that similar change of meaning has occurred elsewhere in the world. If one doubts the universal nature of semantic associations that allows reference to non-Australian languages to substantiate proposed cognates among Australian languages, consider the parallel extension of GAW *crooked* to *bad* and English *crooked* to *bad* in the sense of *dishonest* as in GAW YOKUNNA WARRA *untrue or false statement*. Because the reduplicated NYA form meaning *clavicle* is so clearly related to the NYA *hook* form, it seems almost superfluous to point out the parallel development of English *clavicle* from PIE *klēu+ *hook, peg* via Latin *clavicula* (AHD). A suggestion of the semantic association of the GUP *hip bone* form lies in the Pintupi dictionary entry *lankuru+jarra mature emu: literally, 'one with a woomera (=spear-thrower)'*. Spear-throwers are devices which hook onto a spear to assist in propelling it. The dialectal forms of NYA tarlku meaning *spear. . . or hook. . .* illustrate the process by which the referent of a word may shift from one tool to another related item: this is perhaps the explanation that admits GUP *axe* as a cognate. The semantic evidence of the apparently cognate set NYA *jurru snake* and GID *jurrung leech*, *jurruy bend in a creek or gully* (*jurrung), with their association of *BEND* and *SNAKE*, supports the inclusion of the GUP *snake* form.

From the proposed ancestral *bent* the step is made to *left hand* in the eastern language UMP and YIM via perhaps *BAD* or *AWKWARD*. Such a semantic association is supported by PP *warra *bad* vs. Gumbaynggir *warrawiny left hand* and PIN *panyja bad. . .* vs. Kala Lagau Ya *boedhay left hand*. Note also the changes in meaning involved in English *sinister* < Latin *left*, and in French *gauche left* < Old French *walk clumsily*. The YIM form *tool* perhaps comes through the idea of a tool being an extension of the hands, or through the *HOOK* < *SPEAR*-

THROWER shift seen among the western languages. Conceivably, BAY *tharlura winding* is related to the other forms, but no explanation for the absence of a reflex of *-k- is apparent.

The above forms may be related to those of T52.

T18 *tarra PNPN root (not in GID):

NYA W *tarra seagull*; PIN *tarrarra youthful speed. Used of dashing speed associated only with young animals or children*; GAW YARRO *whirlwind*; GUP *djarra large white seagull*; UMP *jarra seagull*.

NYA and PIN reflect the proto-form conservatively. Since the PIN word is used primarily of animals, assuming that the seagulls were seen as fast, the meaning could well have undergone the innovation *SEAGULL* > *SPEED* in the Western Desert territory of the Pintupi. The same element of *SPEED* is evident in GAW *whirlwind*, in which form the initial Y < *t reflects a minor correspondence pattern. The GUP form, with an apparent /-k/ accretion¹, has /dj-/ occurring as an occasional reflex of *t-. Barring mere coincidence of form and meaning, it is clearly cognate with the other forms in this set.

T19 *taarra PNPN root (not in GID):

PIN *tarrka bone*; GAW doublet TARKA *eggshell*, YERKO *leg*; YIM *taarra thin*.

Because of the shared feature of *CALCAREOUS*, the PIN *bone* and GAW *eggshell* forms are taken as cognate. Possibly also cognate is the second GAW form, since Y < *t reflects a minor correspondence pattern, and Wilkins (1981:79) states that the semantic change *BONE* > *LEG*, attested in the Indo-European language family, is a natural one. YIM *thin* is semantically related to the other forms in the same way that English *thin* and *bony* are related.

T20 *tarrum PNPN root:

WLB *rrarrunka insect gall on mulga*; PIN *tarrulka mulga berry*; GID *tarruum wild orange*.

The PIN ending /-lka/ occurs on a small number of words – suggesting that either it is simply a part of the root, or, since *CV(:)C(C(C))V(C) is the preferred root shape in the proto-language, that it may be a suffix or other extension (perhaps that noted by O'Grady (1966:98)). If we accept the latter, the form appears cognate with the other two forms, the final /m/ of GID being ancestral. It is proposed that the spherical galls denoted by the WLB gloss would be associated with the fruit referred to by the other two forms.

T21 *tarta PNPN root (not in GID):

NYA S *tarta heel*; PIN *tarta surface of foot at the heel*; GAW TATTO+ *to kick*; BAY *thartara+ to trip somebody*; GUP *dardakarr'yu+n ~ durdukurr'yu+n make a noise by scraping, moving feet, etc.*; YIM *thataa+ to walk, go*.

¹See O'Grady (1966:93-98), especially +ka on pp. 95 and 98.

All forms make reference to *FOOT*, although the case for the inclusion of the GUP form as cognate is weaker since that may not be the primary aspect of its meaning. The phonological and semantic similarities suggest that these forms may be historically related to those listed as reflexes of T15 *taru.

T22 *tartu PNY root:

NYA S tartatarta, W tartarta *moon*; WLB tartu *spherical, bald*; PIN tartu *a small developing pod found on the trees kurrkapi and tjuta*; GAW TUTTURTO *circle; compass; wheel..*

Wilkins (1981:151) claims that "it is a natural tendency for something perceived as largish, roundish and hollow to take on the meaning *HEAD*"; and similarly for *SKULL*. Thus there is a chain of semantic associations linking the PIN form with the WLB, viz. *ROUND POD:SKULL:BALD* or, more directly, *ROUND POD:SPHERICAL*. The semantic feature of *ROUNDNESS* leads to the inclusion of the GAW form for which *circle* is certainly the primary gloss. The final -RTO of the GAW reflex represents a suffix, and assimilation of V₁ *a to V₂ /u/ is attested in T17 also. The apparently reduplicated NYA form is included on the strength of the semantic parallel attested in the cognate pair represented by PIN taputapu ~ japujapu *a ball or round object*, UMP taway *moon*.

T23 *tati+ PDN root:

PIN tati+ *to climb, mount a horse, get into a vehicle*; GAW TATTE+ *to climb*.

The E in the GAW form is taken as a front vowel, probably /i/. PIN agrees well in form and meaning, and the reconstruction is simple.

T24 *tawa PNYY root:

PIN tawarra *tall, long*; GAW TOWINNA *long*, TAUATA *many, much*, TAUARA *large; great; much; very*; GUP dawardatj *unequal size or length*.

The GUP form is semantically related to the other *long* forms in that one might, for example, refer to one of two trees of unequal size, as *the tall one*. GAW TAUATA and TAUARA, which share the semantic feature of *LARGE SIZE* with the preceding forms, presumably have <u> for /w/. The last GAW form and the PIN have a similar third syllable which possibly reflects ancestral *-rra, but the uncertainty as to which sounds are represented by the GAW transcriptions discourages reconstruction of such.

T25 *tiji PNYY root:

NYA W tijirtiji *quick rattling together of two boomerangs or sticks in corroboree/song at end*; PIN tiji *a fast tapping noise; the sound made by tapping two boomerangs together...;* GUP detj *grasshopper*.

All three forms have to do with the *PRODUCTION OF STACCATO SOUND SEQUENCE*, assuming that the chirping of the grasshopper is the relevant aspect of the meaning of the GUP form, and that the type(s) of grasshopper in question produce the typical rapid chirping sound.

T26 *tika PNPN root (not in GID):

PIN tingka *small thin bone in lower leg muscle*; UMP thika *piece*.

UMP /th-/ is a high-frequency reflex of ancestral *t-. The appearance of /-ng-/ in the PIN form is the result of prenasalisation of the velar stop. Such prenasalisation occurs sporadically in PIN, e.g., NYA paparr *haste*, PIN pamparr+ *hurrying*; UMP maji+ *grab, hold*, PIN manji+ *get*.

T27 *tiika+ PNPN root (not in GID):

PIN tikal+paka+ *to climb or to ascend*; BAY jikajikara *yellow canary*; GUP doublet dikarr *flying fish, aeroplane*, djikay col[lective] term [for] *small birds*; YIM tiika+ *to send*.

It is the notion of *ASCENDING* which links all these forms except the last. The second element of the compound form in PIN is paka+ *arise*. The first GUP form, with its /-rr/ that is suggestive of an ancestral agent marker, the *yellow canary* form of BAY, and the other *bird* form refer to creatures that rise up, while the YIM form shares the element of *MOTION*.

T28 *tiki₁ PNPN root:

PIN tikiripa *dry: used of clothes and wool*; GID tikirr *bitter*.

The /-(r)/ extension of PIN is seen elsewhere (e.g., T20), as is the /-rr/ of GID which may be related to the similar /-rr/ extension occasionally seen in GUP (e.g., T17, T27). A parallel for the semantic association *DRY:BITTER* is found in English *dry wine*, and in the American Heritage Dictionary's *dry*. . . *not sweet*. . . .

T29 *tiki₂ PNPN root (not in GID):

GUP dikardika *curly*; UMP tiki *fire drill*.

The high vowel at V₂ is lowered to the unmarked /a/ in the reduplicated GUP reflex (cf T2, T6, T17). These cognates share the notion of *TWISTING* in their referents.

T30 *tiku PNPN root (not in GID):

GUP diku *unripe, raw*; YIM jika *new, fresh, young, unripe*.

The YIM initial reflects a minor pattern of sound change, motivated perhaps by the following [+hi, +front] vowel (cf T6).

T31 *tilti PDN root:

PIN tiltirr+pa n. *tremble, shiver – caused by fear or cold*; GAW TILTYALAE+ *to shake; disengage one's self by force*. . . .

The PIN form manifests the common /-rr/ extension plus the phonologically conditioned augment /+pa/. The development of the GAW form would have been *tilti+ LAE+ (a verbalising suffix) with an excrescent /a/ between root and suffix, and palatalisation of *t to TY before the [+hi, + front] vowel. The semantic association of the first meanings is clear; the secondary meanings are developments from the first. These forms are possibly related to those of T42.

T32 *tilting PNPN root:

NYA tili *S flame*, W *firelight*; WLB rrili *flame*; PIN tili *light, flame*; GAW TILTI *cherry*; GID tilingkirr *sparks*.

Nyungic variant *tiri in WLB tiri+tiri *red*; PIN tii *spark*; BAY jirtirti *spark*.

All of the forms in this set, save that of GAW, have the element of *FIRE* in their meanings and so present no semantic problems. The cognation of the GAW *cherry* form, based on the suggestion that a cherry might be seen as similar to red embers, is less sure.

Cluster simplification reduced *-lt- to /-l-/ in the GID form (such a cluster is permissible but rare), where the medial /-ng-/ is ancestral (cf GID tirrang < *rirrang), and /-kirr/ is a suffix (cf GID jarrang *leg*, jarrangkirr. . .one *unsteady on legs*). PIN tii is the result of lenition of the rhotic of the Nyungic variant of the proto-form – Proto-Ngayarda intervocalic *r > /y/ is well attested (O'Grady 1966:89), and *tiyi > tii would be simply one more step in the process of lenition (cf GAW TIA from *rirrang *tooth* via, presumably, *riya > *tiya). Although the ancestral form is reconstructed with *-lt- on the GAW evidence, the fact that the majority of reflexes contain just /-l-/ suggests an alternative reconstruction *tiling, with the GAW form showing an intrusive /-t-/. WLB tiri+tiri *red* reflects the Nyungic variant *tiri, while the reduplication is paralleled in WLB yalyu *blood*, yalyu+yalyu *red*. The reflection of *t- as /j/ is manifest in BAY jirtirti, which is possibly derived from the proto-form via an extended form *tiri+rti in which fortition of the intervocalic /r/ to /rt/ occurred, through the pressure of assimilation.

Since /r/ and /l/ are very similar in terms of distinctive and articulatory features (e.g., Dixon 1980:189, Hyman 1975) and matching between the two is well attested (e.g., NYA marlu *many*, Yindjibarndi maru *many*), the question remains as to whether the forms reflecting *-r- harken back to an alternation in the earliest proto-form, or are later innovations.

T33 *tilyi PNY Y root:

NYA W tily *ideophone of gentle snapping of twigs*; PIN tilyi+pu+ *to slap a goanna against a tree to break its neck*; GUP diy [apparently interjection with wut+thu+ *to hit*].

Both NYA and GUP have CVC ideophones related to CVCV verbs, e.g., NYA W jup (said when an engine stops) against jupi+ *to abate; to stop (as engine)*, and see also T16. O'Grady (p.c.) has collected several instances of ancestral *-lyV reflected in GUP as /-y/, e.g., *jAlya *saliva....* > djoy' *sap....* Although the GUP gloss is not specific, it appears that the shared semantic feature is the *SNAPPING NOISE*.

T34 *timpil PDN root:

NYA W timpilytimpily *time beating (to music) with slow single beats*, S timpirl+pi+ *to make music*; PIN timpil+pa *clicking noise made by tapping two boomerangs together*.

The relationship between laminal /ly/ and apical /l/ and /rl/ is examined at T38. Because of the likelihood of this cultural feature of time beating having been borrowed, this cognate set is of less etymological value.

T35 *tipa PNPN root:

NYA tipiny *rib*; WLB rripa *face; person, people*, rripi+ *to meet him; to come up together -- people, clouds*; PIN tipiny+pa *skewer*; GUP dap *meeting together (e.g., people)*; GID tipa+ *to sew*, tipaal *team, group*.

The /-ny/ extension of the NYA and PIN forms possibly appears as -NYA in GAW in T5, and is likely the cause of the raising of *-a to /-i/. The reason for the altered vocalism in GUP may be as follows: (1) *tipa > *tapa (by anticipatory assimilation); (2) *tapa > dap (by final vowel deletion: see at T33).

As the second GID form *team* is listed as a sub-entry of the verb *to sew*, the implication is that a team is a connected group of people who are *sewn* or *knitted* together; hence the semantic connection with WLB *to meet him; to come together (people, clouds)* and GUP *meeting together* is clear. Since the small, sharpened ribs of animals were sometimes used for sewing and skewering, the PIN and NYA forms are associated with the others by the chain *RIB:SKEWER:SEW:GROUP*. The other WLB cognate meaning *face; person, people* clinches the validity of the suggested semantic associations: on the one hand the link *FACE:CHEST/RIB* is substantiated in NMA ngarrka *face*, PIN ngarrka *chest* together with the association in Dravidian languages (Wilkins 1981:83) of *RIBS and CHEST*. On the other hand, the link *FACE:PEOPLE* (as in a *group of people*) is substantiated in MNN ngarrungu *person*, PNK NGARRI *sight, face* (which are conceivably cognate with the previous set); and the triangle is closed by the evidence of the semantic association *CHEST/RIB:PERSON* in NYA marrngu *person*, MNN marrngamarrnga *chest*.

T36 *tiril PNPN root:

NYA S tiwirltiwirl *peewee, mudlark, magpie*; WLB tiyi+tiyi *mudlark, magpie lark*; GAW TIRITPA *a species of lark*, TIWU *black cockatoo*; BAY jilipiri *mudlark*; GUP delili *peewee, mudlark*; UMP ilinyu *galah (bird species)*, ilinyumu *red-cheeked parrot*, thiikuthiiku *redbill, a seabird*; YIM tiwaan *wild turkey*; GID tiin tin *magpie lark (Grallina cyanoleuca)*, tiyung *grey shrike thrush (Colluricincla harmonica)*.

Without the knowledge of an ornithologist or an understanding of the Aborigines' perception and classification of birds, some of the semantic associations made here, and consequently the cognation of the words involved, must remain tentative. At the same time it is surely significant that many of the words in this set have *lark* in their gloss. As an illustration of how the referent of a *bird* term changes without regard for a scientist's taxonomy, consider the fact that in North America the bird designated by the name *robin*, one of the genus *Turdus*, differs greatly from the

European *robin*, genus *Erithacus*. The only resemblance of the New World *robin* to the European lies in some similarity in the colour of the breast.

Lenition of *r to /y/ (> ø) is known to occur and explains the forms with /-y-/ in WLB and GID, and those with a long vowel (sometimes shortened) in BAY, GUP, UMP and GID. The proposal that *-r- > /-w-/ in the NYA, GAW and YIM forms is supported by the similar change in *rapu > UMP wapu *light*, and by the evidently natural deformation of the initial of English *rabbit* to /w/ in child language. The claim that the UMP forms, with consonant initials /th/ and ø, come from a single proto-form is substantiated by the development PP *jipa > UMP yipa, thi'a *liver* and by examples of initial /y/ alternating with ø in some UMP forms. GAW has a rule whereby *l > T before *p (cf *ngalpa+ *to enter* > NYA ngalpi+, GAW NGATPA+) so that the T at C₃ of the GAW form TIRITPA may reflect the *l of the proto-form, as do the laterals of the NYA, BAY, GUP and the first two UMP forms. YIM has a final (paragogic?) /n/ (or perhaps it is a variation of the common word-closing /ng/ that is known to appear as /n/ in Inland Yuwinj (Capell 1979c:592), and may reflect the same ancestral word-final nasal as those in the GID forms.

Despite their obvious similarities with the other members of this set, it must be pointed out that the case for cognation of the second GAW form, all three UMP forms and the YIM form is weakened by the absence of information which relates the birds referred to with those whose designation includes the specification *lark*.

T37 *tirl₁ PNPN root (not in GID):

NYA S tirlpatirlpa *top of nose between the eyes*, tirltirl *new born or very small*; WLB tirl+pardl+ *to open – as of eye*; PP *jili *eye* (Sutton 1976).

Although no reflex of PP *jili has been identified in UMP, a Pamic language, this reconstructed form is included in order to document the PNPN status of the Nyungic forms. The first NYA form results from the addition of the stem augment +pa to the root, followed by reduplication. The second NYA form is a reduplication of the bare root. While the first NYA form focuses on the *EYES* themselves, the second is seen to be connected by the close association of the opening of eyes with new-born babies. WLB milpa *eye* and ADN milpirri *forehead* attest to the association made in Australian languages between the referent of the first NYA form and the other *EYE* forms. See T38.

T38 *tirl₂ PNPN root:

WLB tirl+pi+ *to chip or flake it by percussion – as in making stone implements*, rrilyki *broken; a broken piece, fragment*; PIN til+pa *stone knife; a sliver of sharp rock*, tirl+pu+ *to break off pieces: especially to break off a stone sliver. . . then used as a knife: used of a chicken breaking its way out of an egg*; UMP iilngi+ *get free, get loose*; GID tilany *outside*.

The synchronic variation of WLB turlka+ with tulyka+ *to pinch him* illustrates the plausibility of the claim that the second WLB form (with /-ly-/) is phonologically related to the forms with an apical lateral. The /-ki/ of WLB is an inorganic extension, while /+pa/ of the PIN form is the empty stem augment. Since the expected reflex of *t- is /rr-/ in WLB, the first form, with /t-/ , may be a borrowing. UMP does not commonly reflect PP *t- with ø, but if the PP reflex of the PNPN root had *j-, then lenition may have reduced the stop as follows: *t > *j > *y > ø, with

compensatory vowel lengthening. If the central feature of the meaning is *BREAK*, then the chain of association *BREAK OUT > GET FREE > OUTSIDE* suggests the GID form as a true cognate, and further, that the etymon represented here may be ultimately one and the same as T37 *tirl₁, which refers to new-born creatures that *break into the world* as in the second PIN form above.

T39 *tirnka PNPN root (not in GID):

WLB rringki *gap in mountain range*; PIN tinyki *thin; a low saddle in a sandhill or mountain range*, tirnkatirnka *a skinny person*; YIM tingka *hungry*.

The instability of the nasal is illustrated in the putatively related PIN pair. This alternation between apical and laminal nasals is matched by a similar alternation of laterals in T34 and T38, while /-ng-/ in Cape York corresponding to /-rn-/ in a western language is seen in the cognate pair UMP mangku *three/four*, PIN marnkurr+pa *a few, three,...*. The meaning *GAP IN MOUNTAIN RANGE* is shared by the first PIN form and the WLB, whereas YIM *hungry* is semantically related by the association *HUNGRY:THIN*, where the two meanings are in a *POTENTIAL:ACTUAL* relationship in that *HUNGRY* is potentially *THIN*. It is possible that the forms of this set are related to those of T26.

T40 *tirr PNYY root:

PIN tiirr+pa *the trill noise made by a spear flying through the air*, tiirr+wangka+ *to make a trill noise*; GUP dirr'+yu+n *pass air with noise*.

Since PIN does not retain ancestral vowel length, the long vowels in these cognates may be attributable to lingering sound symbolism or to innovation. GUP /'/ at the end of the root occurs often and is apparently epenthetic, reflecting the intense contact situation (Heath 1978a) in the eastern Arnhem Land *Sprachbund*.

T41 *titi PNYY root:

NYA W tirtirti+ruwi+ *to twist*; PIN titirr+pa *tight, secure*; GAW TITTA *anything joining one thing to another – string, knot. ...*, TITTA+PPE+ *to bind, fasten, tie, fetter, hang*; GUP dirdi'+marama *tie up, bandage*.

The second *t of the root descends conservatively in the extended PIN form and in GAW. The final /rti/ of the NYA form is an increment probably related to the one of the same shape noted in the Ngayarda subgroup (O'Grady 1966:98) and in a BAY form in T32. Again, the /-rt-/ or /-rd-/ seen here in the NYA and GUP forms may reflect an ancestral retroflex consonant, but the (apparently) plain apico-alveolar stops of PIN and GAW make reconstruction of this segment uncertain. The common semantic feature connecting all these forms is *TIE TIGHTLY* (indeed, English tie and taut are descended from the same etymon (AHD)), and the NYA form is associated by the tightness which results from twisting, as in the making of native rope.

NYA S tira *tightly* may conceivably be related to the forms in this set, but is dubious on account of the rhotic glide's not being known to correspond with /t/ (i.e., /rr/ has more features in common with /t/ than does /r/).

T42 *tititi PDN root:

NYA W tititi+pi+ *to tremble, shake*; PIN tititi+ *to shake with cold*.

Quite possibly these forms are related to those of T31 *tilti because their meanings have to do with *SHAKE*, and because there is evidence that NYA /-rt-/ may correspond to PIN/GAW /-rlt-/, viz. NYA jarti *bat*, Narangga (a direct neighbour of GAW) tharlti *ear*. If this is the case, then PDN *tilti had an extended form *tiltiti > *tititi, resulting in a NYA/PIN/GAW cognate set with a doublet in PIN.

T43 *tiwan PNPN root (not in GID):

PIN tiwirr+pa *honey ant*; GAW TIWA *native honey*; UMP yiwan *kidney fat*.

The root extension /-rr/ seen in this PIN form seems often to raise vowels, in this case to /i/ (*tiwarr+pa > tiwirr+pa). Various stages of lenition of *t- are represented in UMP, and *t > /y-/ is occasionally seen. The semantic relationship between the PIN and GAW forms may be seen as the *POTENTIAL:ACTUAL* one recurrent in Australian languages (e.g., O'Grady 1981a:159, Dixon 1980:103), as, for example, in UMP juuju (< *tuuju) which may mean either *breast* or *milk*. Honey, a delicacy, was collected from bee nests or from ants, depending on availability, and it is the fact that kidney fat is considered a delicacy that justifies inclusion of the UMP form here.

T44 *tiwirr PNY Y root:

PIN tiwirr+pa *a crack in an egg or thin object*; GUP diwirrk+thu+n *break (used with plural)*.

The /-k-/ of GUP is obscure but clearly not part of the root. The two forms are semantically related by the similarity of *CRACK* and *BREAK*. In view of the closeness in form and meaning of these cognates with those of T45, they may well be related; whether or not this is the case, the PNY Y antiquity of the /-rr/ extension seems to be established.

T45 *tiwu PDN root:

NYA W tiyu *ideophone of snapping or breaking – as of a branch*; PIN tiwulypa *crackling noise; cracking or breaking noise of trees creaking in the wind*.

The similarity of meanings would seem to confirm cognation despite the unusual reflex of *w as /y/ in NYA. There are, however, other instances of a /y/ : /w/ correspondence among Australian languages (e.g., Warnman wimi, WLB yimi *language*) and even of *w > /y/ (O'Grady 1966:105, #350). As PIN does not maintain ancestral long vowels, /ii/ here must be considered an innovation. These forms are possibly related to those of T44.

T46 *tiyi PNPN root (not in GID):

PIN tiitiirr+pa *overheating of the body from sickness or from being near the fire, or from the sun*; UMP thiyinka *sweat*.

The stem of the pre-PIN form, without /-rr/, would have been a reduplicated *tiyitiyi, in which the intervocalic /y/'s were dropped through lenition (possibly even before reduplication occurred)

-- leaving the long vowels (cf UMP iingka+ *call out*, which alternates with iyingka+).¹ Sweat, of course, is closely associated with overheating of the body, so the semantic connection is clear.

T47 *tuu PNPN root (not in GID):

PIN *tuu* *fire coals*; YIM *tuuliir* *hot coals*.

T48 *tuuju PNPN root (not in GID):

WLB *rruju* *woman*; PIN *tuju* *woman – one married with one or more children*; BAY *juju* ~ *julyu* *breast*; UMP *juuju* *breast, milk*.

All the phonetic correspondences seen here are common and require no comment, except for the retention of the long vowel in UMP and its typical reduction in the western languages. The semantic association *BREAST:MOTHER* is attested in NYA pipi *mother*, GYA pipi *breast* (< *piipa), and elsewhere in the east (Dixon 1980:117). Since *MOTHER* and *WOMAN* are intimately related, as implied in the PIN gloss above, all members of this set are semantically close. Wilkins (1981:132) gives Proto-Austronesian *t'ut'u *female breast* which is possibly the source for this cognate set (if indeed there were PAN loans in Proto-Pama-Nyungan).

T49 *tuku₁ PNPN root:

PIN *lukurr+pa* *head*; GUP *dogu* ~ *dowu* *waves (of sea)*; UMP *tukulu* *turtle, tortoise*, *ukulmpuy* *brain*; YIM *tukul* *fresh water turtle*; GID *tukul* *wasp*, *tukun* *mountain*.

The sound correspondences having clear precedents, with the exception of PIN, it is the semantic relationships which must be supported in order to establish cognation of the forms in this set. The aberrant /l-/ for *t- in PIN is not without parallel (see N13), yet if it were not for the initial /d/ in GUP, which commonly reflects *l- conservatively, *luku would be suggested. The interactive association between PIN *head* and UMP *brain* is supported by the changes noted in Bantu, Tibeto-Burman and Indo-European (Wilkins 1981:86) of *HEAD* > *SKULL* and *SKULL* > *BRAIN*, while the same source's (p.127) discussion of association through meaning changes in several language families of *HEAD*, *TOP* and *SUMMIT* draws together PIN *head* with GID *mountain*. The two UMP forms meaning *turtle* and *brain* lend force to the claim that the head emerging from the shell would be a prominent feature of a turtle, although the same argument applies less convincingly to a wasp (GID). However, the claimed association *WASP:HEAD* is buttressed by the Indo-European evidence (AHD), where NE hornet, a type of wasp, is descended from PIE *ker+ *horn, head*, which, incidentally, is also the source of Greek kranion *skull* and Latin cerebrum *brain*. As for GUP *waves*, if the focal point of a wave is its crest or top, then the semantic relation with PIN *head* and GID *mountain* is clearly seen.

T50 *tuku₂ PNPN root (not in GID):

WLB *rruku+rruku* *chest*; GUP *duktuk* *desirous*, *duktuk+thu+n* *palpitate*; UMP *tungku+pa+* *beat – of heart*.

¹Bakanha (south-west of UMP) confirms the plausibility of *-y- > ∅ with thinka *sweat*.

The phenomenon of irregular prenasalisation of stops, as in this UMP form, is known elsewhere among Australian languages, for example, as a common phonetic process in Tiwi (Osborne 1974:24), and in R2, T26. If the ancestral meaning is taken as *heart*, then the semantic shifts are easily recognised. The shift *HEART* > *CHEST* is attested in the Dravidian language family (Wilkins 1981:83), and it is proposed here that the shift *HEART* > *BEAT* is plausible. Other Australian languages provide evidence that the inclusion of the GUP forms is justified: NYU kurt *heart, the human heart, spouse, sweetheart, marriageable girl* (Douglas 1968:72); WJK GURDU *the heart*. . ., GURDU+BAKKA+N+YUGO+ *to want* (BAKKA+ *bite, ache, pain*, YUGA+ ~ YUGO+ *to be; to stand; to exist* – Moore 1884:33). The meanings of NYU kurt, and the presence of WJK GURDU *the heart* in a compound meaning *to want*, establish the credibility of the *HEART:DESIROUS* association.

T51 *tukul PDN root:

NYA W tuku *care, tungkul+ka+ to carry, e.g., a bag of small objects in such a way that nothing will fall out*; PIN tukul+tu kati+ *to carry carefully*.

Other examples of sporadic prenasalisation, as seen in the second NYA form, may be found at T50. The PIN form may derive from an earlier *ERGATIVE/INSTRUMENTAL* form *tukul+tu, while the process by which the first NYA form lost final *l may be that which accounts for *kangkul > UMP kangkul *elbow*, NYL (a neighbour of NYA) kangku *knee*, namely total assimilation of the lateral to the phonologically similar /u/. These forms may be related to those of T50, since in carrying an object carefully one often holds it against the chest.

T52 *tulki PNY root:

PIN turlkiturki *crooked: used of crooked branches, tracks or spears*; GUP dulki *bad (of food)*.

That *BAD* and *CROOKED* are closely associated notions is attested by the GAW word YOKUNNA *crooked, curled, bad*, and it may be reasonably assumed that a crooked spear would be a bad one. Similarity of form and meaning suggests the relatedness of these forms with those of T17.

T53 *tulyku PDN root:

NYA tulyku *soft, loose sand*; PIN tulyku *dampness, wet*.

As damp sand is known to be soft, these forms are obviously cognate. It is just conceivable that the phonologically divergent YIM thuukar *sand* is cognate with the western words, though O'Grady (p.c.) has attempted to relate it to PNY *jungka *earth, ground*.

T54 *tumuny PNPN root:

WLB rrumunpa *high ground near a creek, rrumurumu+karri+ heart beats, rrupulparri prominent hillock in otherwise level or nearly level country*; GUP rom *law, custom, habit, way of life*; YIM tumu *chest*; GID tumuny *blunt*.

The doublet in PNK comprising MUNNO *blunt*, MUNNA *chest* supports the validity of the semantic association between YIM *tumu chest* and GID *tumuny blunt*. Loss of the final vowel (cf T33) results in the GUP form. Although *t- > /d/ is expected in GUP, an apparent alternation between /d-/ and /r-/ in GUP *durr+yu+n get up (pl)* and *rur'+yu+n get up, rise* corroborates *t- > /r/ here. O'Grady (p.c.) reports that there is a word in NYA S (viz., *yunpa*) meaning *a person's style* which has cognates meaning *chest* and *face*. As a *person's style* is to some extent synonymous with his *way of life*, the semantic connection between the YIM and GUP forms is demonstrated. Moreover, one might speak of the *face* or *front* or appearance of a society or individual as a reflection of its customs, etc. Once again, it is necessary to look outside of Australian to the Dravidian language family (Wilkins 1981:83), where the semantic association *HEART:CHEST* is attested, for corroboration of the relationship of the YIM form with the second, reduplicated, WLB form *heart beats*. (That *HEART* > *HEARTBEAT* is a believable shift is shown by GRD (co-dialect with PIN) *kurturtu heart, heartbeat*.) Although the possibility of relating the WLB *HILL* forms to *CHEST*, etc., may seem unlikely, it is instructive to consider the semantic association noted by Wilkins (p.83) *PROTUBERANCE:BREAST* and how, in an otherwise level landscape, a hill is a protuberance.

Bearing in mind O'Grady's examples (1979b:128) of NMA and YUL *ngarrka face* and *chest* respectively, and of YUL *ngalya face* and WLB *ngalyarrpa sandhill*, the inclusion of the two WLB words in question in this cognate set next to the eastern word for *chest* appears justified. Though strictly speaking not from the set of communalects being compared here, YUL (a co-dialect with PIN) *tumu blunt point* is undoubtedly to be included as a further cognate.

T55 *tuungku PNPN root (not in GID):

PIN *tungku short*; UMP *uungku long* (< PP *Cuungku *long*).

As PIN /t-/ is typically a reflex of *t-, an initial *t- is reconstructed. The process by which *LONG* > *SHORT* (or vice versa) may be similar to that discussed at T24, or more probably in this case is simple antonymy.

T56 *tungu PNY root:

PIN *tunguntungun+pa one who resists, rebellious, pigheaded, and continually disobeys*; GUP *dungdung lazy*.

As in T50, the root-final vowel of the GUP reflex is lost before reduplication. As for the semantics, one who *continually disobeys* directives to perform some task is commonly considered *lazy* among the peoples of the world, and it is presumed here that such would have been the case in Aboriginal society.

T57 *tupa PNY root:

PIN *tupitupirr+pa one who has just had his feet burnt by hot ground*; BAY *thupayu hot*, *yuparnu hot*.

Since there is evidence that the extension of a pre-PIN root by the addition of /-rr/ can result in vowel raising, the development of the PIN form is plausibly *tupa > *tupa+rr > *tupi+rr(tupi+rr)

> tupitupirr+pa. Predictable laminal initials reflecting *t are seen in the BAY forms, both of which share the semantic feature *HOT* with PIN.

T58 *tuptup PNY root:

NYA W tuptup *loud flapping of wings, sound of wings hitting the ground*; GUP duptup *emu*.

Since both NYA and GUP are known to drop final vowels on words with sound symbolic value (see at T33), a proto-form *tupV is suggested as the ancestor of the immediately obvious reconstruction above. Though the emu is normally a silent bird, the claim that these forms have a common origin is shown to be justified by Barrett's (1950:99) explanation that during the breeding season, the male produces a loud booming sound.¹

T59 *turlparra PDN root:

NYA turlparra *season after rain*; PIN tuulparra *springtime when the goanna comes out of hibernation*.

Since the final syllables of the forms appear to be accretions (especially in light of the sub-entry under PIN mulya tuulkarra), the proto-form as reconstructed here cannot be considered very old.

T60 *turla PDN root:

NYA S tulu+pi+ *break the joint of animals*; WLB turluny+(y)irra+ *to bend it double (as tongue)*; PIN tuurla+ *to tear: used of rotten clothes or weak paper*.

For evidence that /-ny/ (as in WLB) is an extension rather than part of the root, see at T35. The actions of *TEAR*, *BEND* and *BREAK* are united by the force of tension involved in all three.

T61 *turna PNY root:

NYA W turniri *ornamentally carved shield*; BAY thurna *fighting stick, waddy*.

The root-final vowel of NYA has assimilated to that of the /-ri/, which is probably related to the stem increment of the same shape in Ngayarda languages (O'Grady 1966:97). The referents of the two forms here, both in the domain of weapons, may have diverged by gradual expansion and change of meaning, or at once through antonymy.

T62 *turrkang PNPN root:

NYA tirrka S *desert animal, bandicoot*, W *small wallaby species – makes a 'hide' in spinifex*; GAW YERKI *a small animal burrowing in the earth*; GID turrang *barred bandicoot*.

These proposed cognates are very close in meaning (a bandicoot burrows in the earth), yet difficulties obtrude in the phonological explanation. Y is an uncommon reflex in GAW of *t (but see T6, T17), yet since both NYA and GID maintain the distinction between apical /t/ and /y/ in word-initial position, the presence of /t/ in the forms from both these languages seems to guarantee

¹The sound is produced "by the violent expulsion of air from an inflatable sac just beneath the skin where the windpipe is pierced by a narrow slit".

*t as the first segment of the proto-form. E is presented as if it were an independent phoneme in the grammar of GAW (p.3), but is then shown to be an allophone of /i/, as in PURLAITYE, PURLAITYI+DLA. If the E in YERKI does represent /i/, then the GAW form is phonologically similar to the NYA, particularly since final l in GAW against final /a/ in other Nyungic languages is attested (e.g., GAW WODLI *hut; house*, PIN *waarla house*, and see R24, where GAW -KI < *-ka). While the absence of /-k-/ in the GID form suggests an alternative reconstruction without the velar stop, the final /-ng/ must be related to the very old segment discussed by Dixon (1980:211). Conceivably, the /-u-/ of the proposed proto-form could have shifted to the /i/ of GAW and NYA by fronting of the high back vowel before /-rr/ (see T57), but this is speculation.

T63 *turru₁ PNYY root:

NYA W turrurru+karri+ *to arise and start off in one mob – as sheep*; GUP durr+yu+n *get up (pl)*.

The /+yu+n/ of GUP is a verb formative, and since that language occasionally drops a root-final vowel (e.g., T4, T35, T54), the reconstruction is straightforward.

T64 *turru₂ PNPN root:

NYA turru S *singing honeyeater*, W *yellow oriole*; BAY jarrurru *kookaburra*, jurrapi *varied honeyeater*; PNG *jaru. *kookaburra*; UMP tuutuntuy *kingfisher*; GID turriyang *channelbill cuckoo*.

The form is presented here in both dialects of NYA in order to demonstrate how easily the meaning of a word may change even among closely related speech communities. Similarly, BAY offers what appears to be a doublet from the same etymon. In the geographically close Ngayarda subgroup, several languages have reflexes of PNG *jaru with a stem augment /rru/ or /rtu/ (O'Grady 1966:99), which may be related (along with the root) to the third syllable of the first BAY form. Since BAY merged initial apical consonants with laminals (as did Proto-Ngayarda), there is no problem in asserting that an ancestral *t- descends as /j-/ in that language. The /a/ of BAY jarrurru, rather than an /u/, may be attributable to an influence from neighbouring Ngayarda languages. In the GID form the suffixal material is unexplained but the root answers very well to the reconstructed proto-form. In the light of the attested reflex of /t/ from PNPN *rr (O'Grady 1981a:157), the UMP form tuutuntuy is clearly cognate in spite of the obscure extensions on the root. Without the knowledge of an ornithologist, it is difficult to comment specifically on the semantic closeness of the birds designated by the Aboriginal words, except to point out that a kookaburra is a type of kingfisher, and that there is some overlap of the bird types named in the languages here. Although not from one of the languages of the set, YUL turru *bird* should be noted in passing.

T65 *tuwa ~ tuya PNYY root:

NYA W tuwi ~ tui *smoke (seen near at hand)*; WLB rruyu+karri+ *to rise – of dust, smoke*; GUP duwarr *steam, smoke*.

As seen elsewhere (e.g., T17, T27, T44), the final /rr/ of GUP is an extension to the root. Though not a commonly attested fluctuation in Australian languages, /y/ ~ /w/ is certainly indicated,

either as a variation in the proto-language, or as a development within the daughter languages (cf T45). The natural tendency to fluctuate between the semi-vowels, and the difficulty of perception of their differences, are particularly evident in a word such as NYA *tuyi*. Independent evidence of vowel harmony in WLB supports the proposed *-a > -u shift, while other instances of final vowel raising in NYA corroborate *-a > /-i/ here. These vowel correspondences are paralleled in the cognate set represented by NYA *kuyi* *meat*, WLB *kuyu* *meat* and GUP *guya* *fish*.

N1 *nam(p)a PNPN root:

GAW NAMMA+ *to carry*; BAY *nyama* *knee*, *nyampayi* *coolamon*; UMP *aampa* *lap*, *aampi*+ *take it out*; GID *nama*+ *to hold, touch, grab*.

The forms above provide a case for positing a nominal and a transitive verb root. The forms in UMP are considered cognate despite the troubling absence of an initial nasal. Initial apical /n/ is marginal in UMP, but since there are a few dozen forms with an initial laminal nasal, perhaps the development is *nampa > PP *nyampa > pre-UMP *yampa > UMP *aampa*.¹

Since a *coolamon* is a container for carrying water or food, the similarity among the meanings of the cognates is plain except for those glossed as *knee* and *lap*. Wilkins (1981:121) asserts that "it is a natural tendency for the term for a verbal action involving the use of a person part to come to cover that person part". Such a tendency elucidates the semantic shift *CARRY* > *LAP* > *KNEE*, since the lap is a common place for *carrying* or *holding* a child. For the step *LAP* > *KNEE*, compare the synonymy in English of the two body part terms in *she sat on his kneelap*.

It is conceivable that *nam(p)a is a metathesised variant of *maa(+n) *take*, also of PNPN age, and itself a reflex of Capell's (1956) CA *ma+, Dixon's (1980) *maa+n, which the latter counts as evidence for an Australian family.

N2 *nampul PEPN root:

YIM *nampal* *stone, money*; GID *nampuul* *Bora Ring*.

Progressive assimilation is likely the explanation for the /a/ at V₂ of the YIM form. The common reference is in the stones which outline the Bora Ring.²

N3 *namu PNYY root:

BAY *nyamarra* *pearlshell*; GUP *namura* *oyster species*.

While both languages distinguish two rhotics, the difference in the form of the third syllables does not necessarily affect judgement of cognation, since they may each represent stem accretions of different origins. The /a/ of V₂ of BAY is taken to be the result of influence of *a of the flanking syllables.

¹A further cognate is Tjapukay *nampi*+ *to hold*. Note also that Black (1980) has demonstrated the rationale for alternation of homorganic nasal + stop sequences with nasal (e.g., /mp/ ~ /m/, /nt/ ~ /n/).

²A sacred piece of ground where certain initiation ceremonies are performed by the Aboriginal people.

N4 *napa PNY root:

WLB nama *ant*; PIN nama *ant (generic)*; BAY nyaparra *black ant*.

The possibility of borrowing between PIN and WLB clouds the picture – these two languages superficially appear to share a rule where a stop in C₂ assimilates to a nasal in C₁. *n- > BAY ny- is regular – cf N1 and N3.

N5 *napu PNP root:

PIN napiny+pa *navel*; GUP napungga *between, middle*; GID napurr *narrow*.

The dummy syllable /pa/ serves to end any PIN word that would otherwise end in a consonant. Historically, /ny/ is also an accretion (cf PIN ratanyju *one who is stubborn*, rata *one who resists either good or wrong*), whose [-bk] specification accounts for the fronting of the preceding vowel, i.e., *napu+ny+ > napiny+. As there seems to be only one other reconstructible root of the shape *napV in PNP, namely N4, these three forms are taken as cognate despite the apparently large differences in meaning. Moreover, since the semantic association *NAVEL:BELLY* is attested in the Dravidian language family (Wilkins 1981:82), and the *waist* – associated with the *belly* – is partly defined as *the middle section or part of an object, especially when narrower than the rest* (AHD), a plausible semantic connection can be seen among *navel*, *between, middle*, and *narrow*.

N6 *narngu PDN root:

WLB narngu *hook, barb – on woomera, spear*¹; PIN narngu *barb: the hook of a spear thrower*.

These forms may represent a nasalised counterpart of *tarlku, as the phenomenon of nasalisation is well attested – e.g., BAY jakulya+rri+, THR nyaku+rri+ *to play*.

N7 *narra PNP root:

PIN narrunarru *the feeling of hunger*; YIM narra *gristle, hard meat to chew*; GID naarr *sinew*.

Because GID has very few nouns that end in a vowel it is reasonable to reconstruct a disyllabic root and assume deletion of the second vowel in the development of naarr. In turn, the deletion of V₂ may have caused compensatory lengthening of V₁. The /u/ < *a in the reduplicated PIN form cannot be explained by any obvious phonetic environment but is not without parallel (e.g., T11). While it may be that the semantic connection between the PIN and the eastern forms may be the tenuous one of the common domain of *EATING* by the hunter, it may have to do with the condition of the hunted animal. If the condition of a kangaroo has worsened in time of severe drought, the animal would be at one and the same time *sinewy* and *hungry*. NYA W wiji *sinew*, wijiny *narrow* seem to support this proposal, but the semantic relationship between the latter forms is not fully understood.

¹The spelling narngu in Hale's dictionary is taken as a typographical error for narngu.

N8 *nawa PNPN root:

PIN *nawulu deep sleep*; GUP *nawulga blanket, sheet*; YIM *nampuurr blanket, bed*; GID *nawa+ to lie upon, to collapse upon, nawalii+kupii pillow*.

This root shape is highly marked twice over, in that not only does the initial /n/ account for a very small part of the lexicon of a Pama-Nyungan language (often one percent or less), but intervocalic /w/ is also uncommon. For example, initial /n/ accounts for about one fortieth of the GID dictionary, while among the two dozen entries with this initial only one has /w/ as the second consonant. All of this means that chance is an unlikely explanation for the forms in this cognate set having similar meanings. The /u/ following /w/ in both the PIN and GUP forms may be attributable to assimilation of /a/ to the [+hi] specification of the /w/ (cf BLG *ngawarn.pa* corresponding to NYA *ngawu heedless* (O'Grady 1966:115)). O'Grady (1966:93) discusses stem augmentation in languages of the Ngayarda subgroup, showing that suffixes, whose meanings are no longer transparent, were commonly fixed by reanalysis onto the original root. Such augments may be involved here in the PIN and GUP forms.

In YIM *nampuurr*, prenasalisation and fortition of the [+lab] semi-vowel /w/ to /p/ are in evidence in *nawa > *nawu > *namwu > *nampu(u(rr)). Corroboration of such a phonetic correspondence comes in PNPN *ruwa+ > PIN *rungka+*, where */w/ descends as a velar nasal plus stop; in PP *jipa+ > UMP *impa+*; in the alternation *nyupalu ~ nyumpalu* in Ngayarda languages (O'Grady 1966:113); and in alternations such as in GUP *daba'+yun ~ dawa'+yu+n look over one's shoulder*.

Parallels to the semantic associations existing among the above cognates are found in English *bed*. . . *any place or surface upon which one may rest*, to *bed*. . . *to put to bed*. . . , and *bedding bedclothes* (AHD).

N9 *ning PNPN root:

NYA W *niny motionless*; GID *ning silent*.

Since it is probable that these two languages have developed independently for several millennia, the meanings of the two forms remain remarkably similar. Final *ng has assimilated in NYA W to the [-bk] feature specification of the preceding vowel. Dixon (1980:179) gives an example, *ngin > *nyin you sg*, showing a different environment but the same process, and gives ample illustration of similar developments.

N10 *ninya PNYY root:

BAY *nyinyarn chin*; GUP *ninydjak ~ nanydjak nose, face, nanydja pelican*.

It is the alternation of vocalism seen in the first GUP form that makes it clear that the second, meaning *pelican* – a bird with a very prominent *beak* or *nose* – is related. The /-dj-/ of the GUP forms may reflect a process whereby a homorganic stop is inserted after a nasal, in the same way as in the putative cognate set NYA *wangal*, GUP *wanggalkal wind* (< *wangal), and in English *peasant* vs. French *paysan*. The BAY form also shows an unexplained accretion, but is related semantically by simple metonymy. Wilkins (1981:84) compiles many examples of such metonymic shifts in Dravidian, Austronesian and other language families.

N11 *nirrim Possible PNPN root:

PIN nirrinirri *beetle type*; GUP nirriwan *species of small sharp oyster*; GID nirrim *scab, any scaly patch on skin*.

All three glosses have in common the notion *HARD COVERING*. The COD includes, in its definition of beetle, the specification that the insect has hard wing cases. The AHD definition of scab begins *the crustlike exudate...* while, according to the same work, oyster comes from PIE *osth- *bone*, of which an important characteristic is its hardness. Thus the items in English share a semantic feature and suggest, if the same is true in the Australian Aboriginal view, that the forms are cognate.

N12 *nuu+ PNPN root:

PIN ninti *understanding, first-hand knowledge*; GAW NŌ+ *to point with the hand; to show, etc.*, NUMMA *right; correct; skillful; well*; BAY nhukura *knowledgable, clever*; GID nuu+ma *to know, understand*.

Ancestral vowel length, which has been lost in most Pama-Nyungan languages, survives in the GID reflex, which shares a /+ma+/ element with the second GAW form. Though GAW is not normally thought to retain vowel length, the long Ō (interpreted as /uu/) and the -MM- raise the suspicion that these two reflexes manifest an exception to the rule. The laminal reflex of *n in BAY is predictable, while the material following the first syllable consists of verbal suffixes. Dixon's discussion (1980:415) of how early monosyllabic roots were extended by reanalysis facilitates understanding of /+ma+/, above, and of the /-ku-/ of BAY nhukura, which may be related to the -KKO+ of GAW NAKKO+ *to see, etc.* from *nhaa+ng *to see* (O'Grady 1966:113, Dixon 1980:400). PIN /+nti+/ is known to be a verb stem formative, and the /i/ at V₁ of ninti is probably the result of assimilation to its vocalism. See T6.

N13 *nuka+ PNPN root:

GAW NAKUDLA *shark*, NOKUNNA *assassin*; BAY nhuka+ *shark*, nhuka+ *spear, poke (as in the eye)*; GUP luka *eat, drink, take*; UMP nhukuy *penis*, luku *fish species, possibly shark*; GID nukal *jaw*.

This root appears to have occurred in two forms: 1. *nuka+L vb., and 2. *nukal n. The *+L suffix of the verb is the conjugation marker explained by Dixon (1980:403) and is repeated in a frozen form as the final segment of the nominal. Waalubal, a neighbouring sister dialect of GID, shows nukal *cheek, face*, an example of simple metonymic shift, and nukal+talaan *turtle with white jaw* (talaan *white*). This compound form suggests one possible path for the *JAW* > *SHARK* change evident in this cognate set, wherein the creature is first named for an obvious feature of its anatomy and later the primary meaning becomes obsolete.

As occurs commonly in GAW, NAKUDLA shows an obligatory final vowel and a prestopped liquid (cf GAW TADLANYA vs. BAY thalany *tongue*). The vocalism of this form may be explained by metathesis, whereby *C₁V₁C₂V₂ > C₁V₂C₂V₁. GAW -NNA is seen as fairly common but unanalysable suffixial material; the O of NOKUNNA *assassin* is thought to represent an allophone of /u/; thus this word may be taken as a reflex of *nuka+ if the meaning can be explained adequately. If a shark were seen as a killer, the form might well take on the meaning *assassin*.

Corroboration for the association *EAT:PENIS*, which allows inclusion of the UMP form meaning *penis*, is found in WLB nga+ 1. *to eat*, 2. *to copulate with*, YIM muliir *tooth: euphemism for female sexual organs*, and YIM murrangkal *bullet, spear; . . penis*, all of which clearly show a connection between *eat, tooth, cutting instrument* and *sexual functions*. UMP luku has a surprising initial, yet such a reflex is not without a parallel: Lithuanian has *lizdas*, from PIE *nizdos *nest* (Lockwood 1977:180). The GUP form must be included in the set since the semantic connection is clear.¹ That the initial /l/ is a reflex of *n is corroborated not only by the UMP example but also by GUP luku *foot*, related to YIM nukal *ankle*, PNG *nhuku *ankle*, PNP *nyukal *foot*, which constitute strong evidence for the lateral reflex of the nasal initial.

N14 *nurlu PNY root:

NYA W nurlu *shelter on, e.g., ledge of rock, or under car*; GAW NURLO *curvature, corner*.

There is good evidence (Dixon 1980:157) that the higher-level proto-language (Dixon's Proto-Australian) had a single apical lateral and that its split into an apico-alveolar /l/ and a retroflex /r/ occurred in western languages predominantly after /u/. However, since retroflex consonants are found throughout the languages of the Nyungic group, there is no reason to reconstruct a plain *-l- for PNY. The semantic connection is tenuous: a corner of rock, perhaps an overhang, might provide some shelter from the elements. The two meanings are also seen to be connected by the feature of *NARROWNESS* which they have in common and share with the putative Wadjuk cognate NULU *narrow* (as a *ledge of rock* is almost by definition narrow) and English corner < Latin cornū *extremity...*, which is suggestive of narrowness.

N15 *nurrku PNYY root:

NYA W nurrkul *red ochre*; GAW NIRKINYA *eggs of lice: nits*; GUP nurrku *brains*.

Since the -NYA of the GAW form is taken to be a suffix (cf GAW WORNE+ *to fall*. . ., WORN+WORN+NYA *falling*), the vocalism of the stem is explained as a result of anticipatory assimilation to the [-bk] feature specification of the palatal nasal NY, as seen also in T5 and N5. The semantic relationship between the GUP and GAW forms is corroborated by GAW MUKA *egg* and its reduplicated form MUKA+MUKA *brain*, and also by the *BOILED RICE:BRAIN*, *MARROW:BRAIN* and *CURDS:BRAIN* associations tabulated by Wilkins (1981:86) for six language families (assuming, of course, that there is an obvious similarity between eggs of lice and curds). In light of the evidence of PNPN *miiju with reflexes meaning *blood, egg, maggots, nits* and *brains*, the NYA *red ochre* form is seen to be included here, since *RED* is known to be associated with *BLOOD* (see T32), and as in the example of *miiju, *BLOOD* is associated with the meanings of the GUP and GAW forms here.

L1 *lakang PNPN root:

NYA S laka *corroboree*, lakan+pi+ *to peel*; WLB lakarnpari *flaked, peeling, as of bark, dried mud*; PIN lakarllakarr+pa *very hard ground*; YIM taka+l *sit down, stay, get down*; GID katang *tough, hard*.

¹Consider also Gugu Yalanji nuka+l *eat, drink*.

Though the members of this putative cognate set have divergent meanings, with the exception of GID they reflect the sounds of the proto-form in a straightforward way. The PIN reflex is simply a reduplicated form of the root plus the augment /-rr/, and the usual /+pa/. The initial /t/ of the YIM form is the major reflex of *l-, while /+l/, the conjugation marker, makes it a verbal form. With evidence of metathesis having occurred in GID (O'Grady, p.c.) katang is a strong candidate as a member of this set¹, and its final peripheral nasal, absent in the other cognates, is taken to be ancestral (see T62). /t-/ is the common GID reflex of *l-.

Because hardness of the ground and the peeling of dried mud are often caused by the drying up of surface water, the WLB form is seen to be related to the PIN, as well as to NYA S *to peel*. The other NYA S form meaning *corroboree* is included in light of the meanings of the words in a Pama-Nyungan *corroboree/to clear the ground (for a camp)* cognate set (O'Grady 1981a:158). The notion of HARD recurs in the GID cognate. The semantic association of the YIM form with the others lies in the idea of people *congregating/staying* at the *cleared* site of a *corroboree*.

L2 *lalka₁ PNPN root:

NYA W *lalka dry, dead, withered – of plant, tree*; WLB *lalka dry, desiccated – of vegetation*; GID *talkay dry*.

Ancestral non-nasal apical initials are reflected as /t/ in GID, so *l > /t/ is expected here. The final /y/ is apparently a contentless suffix – it appears in other GID nouns and adjectives (e.g., *wakaay spirit of a living person*, apparently related to *wakal flavour, taste; person's accent or distinctive quality of voice*). A further cognate is attested in Ngarluma (NMA) *yalka+ma+ to dry, let dry – as clothes* (Hale 1982a:24).

L3 *lalka₂ PNPN root:

GUP *lalkal greedy*; GID *yalka+ to swarm around (e.g., flies to a light)*.

The semantic association seen here is corroborated in YIM *thingkan* (noun) *green ants* and *thingkan* (adj.) *greedy*. . ., since it is probably the same image of insects swarming to food, etc., that leads to association with *greedy*.

It is just conceivable that NYA *lirrjal greedy* is a reflex of *lalka. The initial /l/ agrees; C₂ /rr/ is a liquid, and lateral: rhotic correspondences are found elsewhere (e.g., T32); V₂ agrees; an instance of /k:/j/ is found in the apparent cognate set comprising NYA W *marrja energetically, con brio*, GUP *maarr spiritual power, strength*, UMP *marrkuntha strong*. Further research is needed before the cognation of NYA *lirrjal* can be established.

L4 *lama PNPN root (not in GID):

PIN *lamaly+pa small pieces of rock only*; UMP *lama dry sand*.

The PIN form bears the augment /+pa/ and a suffix /-ly/ of indeterminate semantic value (cf T45, R11). Since the UMP dictionary contains only two entries with initial /l/, the possibility of chance accounting for the similarity of form and meaning of these words is remote.

¹O'Grady has numerous examples of the reflection of *tVkV as kVtV in Pama-Nyungan languages, and has noted a comparable development in verbs of tickling in Germanic (p.c.).

L5 *lampa PNPN root:

GUP lambirri *long, tall*; BNJ jampa *long*.

The GUP form reflects the ancestral stem plus what appears to be a contentless suffix /-rri/ (cf GUP lungarri, lunggu *harpoon thrower*), with assimilation of V₂ to the vowel of the suffix. The reflection of *l- as /j-/ in GID/BNJ is attested also in L25, L31 and L39.

L6 *lanta PNPN root (not in GID):

NYA S lanta *dirty (utensils, nose, eyes)*; YIM thantha *droppings, excrement*.

Since YIM clearly has a number of words with an initial apical stop descended from apical *t (e.g., T17, T47), one would expect an apical stop as a reflex of *l since this language, while not permitting /l/ as an initial, does have apical /t/, as well as /th/, as initials. There are, however, other examples of /th/ corresponding with /l/, viz. L18, L37. An explanation is still needed for the lamino-dental articulation of the YIM nasal-plus-stop cluster. That progressive assimilation to the lamino-dental initial is a likely process appears to be supported by the putative cognate pair YIM thinhthi *flat stone used for grinding*, GID jintiin *end, point*, where the absence of a laminal articulation of the cluster in GID indicates that such an articulation is an innovation in the YIM form.

L7 *lapa PNPN root:

WLB lapaji *Port Lincoln parrot*; GUP laparr *pigeon*; GID tapetapeerr *spur-winged plover*.

WLB has what appears to be a suffix, /-ji/, of which the meaning here and in other instances is obscure. GUP likewise has a suffix, /-rr/, (cf T65, R7), and so does GID (cf N5, T5, T32; and see comments at R2). No explanation is apparent for the discrepant V₂ of the GID form. While the three birds designated by the members of the proposed cognate set are clearly distinct species, there may be some common factor unknown to the writer which would link these referents. Some discussion concerning bird names is offered at T36.

L8 *laapV PNPN root (not in GID):

NYA W lapilapi *cut [p.p.] into narrow strips for quick cooking – of meat*; GAW TABARE+ *to become open, as a sore or ulcer*; GUP laplap *open*; YIM taapalin *in the open, in the clear, in public*.

As ancestral long vowels are retained in YIM (Dixon 1980:406), a long vowel is indicated for the reconstruction. The reduplicated GUP form has dropped the root-final vowel (see T33; cf T16, T50, T56) and this, along with the variation of final vowels in the other forms, makes it impracticable to assign a particular vowel to the reconstruction. Since neither GAW nor YIM permits /l/ in initial position, these languages answer to *l- with the stops T-, /t-/ respectively. The common semantic thread is that of *OPEN UP*, while, interestingly, NYA and GAW specify *OPEN FLESH*.

L9 *larra PNYY root:

NYA larr *crack*; WLB larra *crack, split*; PIN larra+pu+ *to split wood along the grain with an axe*; GAW TARALYE *chip; splinter; board; timber*; GUP larraymin *stone axe*.

While the suffix on the root in the PIN form is identified as a verbal formative, those of GAW and GUP are of uncertain origin. The common semantic feature is obviously *SPLIT*, which in the GUP word is the function of the instrument *axe*, and in GAW it is the action which produces the manufactured *board*, etc. These cognates and those of L39 give some indication of being related.

L10 *larrjam PNPN root:

NYA S larrja *snake (species with black head, yellow body, poisonous)*; PIN larrja *edible snake type*; GUP latjin *mangrove worm*; GID warrtam 1. *eel*, 2. *the spirit being that dwells in water (rivers or swamps)*.

Not only does WAA warrjam *serpent in the sea*, from a dialect closely related to GID, establish a stronger semantic relationship between the GID form and the others in the set, it also serves to illustrate that *t and *j are neutralised in medial position in GID. This is evident from the dictionary and is also noted by Dixon (1980:185). The final nasal of the GID form is taken to be ancestral and so is included in the reconstruction. Though there is no apparent reason why *rr should not be overtly reflected in the GUP form, GUP larrtha *mangroves* (apparently related to the foregoing) indicates a pre-GUP *larrjin. GID/WAA's /w-/ is an unusual reflex of *l- but does have a parallel in R13, where UMP has /w-/ answering to the liquid *r-. The common semantic feature appears to be *SNAKE*, and the reference to *swamps* in GID strengthens the comparison with *mangrove worm*.

L11 *larrka PNPN root (not in GID):

PIN larrkarlarrka *plain country*; YIM yarkurr *plain, flatlands, low country*.

Though the reflex in YIM of /-r-/ < *-rr- is uncommon, these two forms are clearly similar in meaning and in form since *l- > /y-/ is attested elsewhere, as is the ending /-rr/ (cf R2 and other examples in the dictionary, e.g., thipaarr *south*, thipaalu *to the south*). Possibly the changes in YIM, though not necessarily in this order, were *larrka > *yarrka > *yarrkarr > *yarrkurr (raising of /a/ to /u/ under the influence of following /rr/) > yarkurr (dissimilation of the first rhotic from the second).

L12 *laarrum PNPN root:

PIN larrpa (CRS) *camp*; GUP larrpan *falling star, name of boat*; GID yaarrum *meteor*.

Ancestral final nasals and long vowels are preserved in GID and *l- > /y-/ is attested in other cognates. The proposal that the /p/ of the PIN and GUP forms is an infix is supported by the following evidence: PNPN *malung *shade*, which putatively has reflection in PIN malpu *spirit*. . .; PIN ngarri+, Wirangu ngarrpi+ *to lie, be supine*. The relationship in meaning between *camp* and *star* is seen to lie in cosmology, as many stars are believed to be campfires of ancestral culture heroes or beings.

L13 *lawu PNY root:

PIN lawu *a hollow*; GAW TAU *evening; dusk; hole*; BAY yawarnu *windbreak*.

BAY initial /y/ from *l is attested elsewhere, and since a hollow in the ground could serve as a windbreak, there is a semantic connection with the PIN form. Many examples of final /rnu/ in the BAY dictionary suggest that it was a suffix historically. The third meaning of the GAW form agrees well with that of the PIN word, while the diphthong AU could plausibly have developed from /-awu/ (or it could be a mistranscription of the same).

Possibly also to be included as a cognate is the unlikely looking GID jarrpuuny *windbreak*. Not only is there some evidence that /-rr-/ is an infix (see L28), but it is also clear that /p/ may alternate with /w/, as in GID jiparram ~ jiiwarrwarr *squirrel glider*, and GUP daba'+yu+n ~ dawa'+yu+n *look over one's shoulder*.

L14 *lawu+ PNPN root (not in GID):

NYA W lawurr *venomous black snake with yellow underside*; GUP laawu+ma ~ lawu+ma *bite*; YIM yawu *small shark species*.

The cognates in set N13 exemplify a relationship among the notions *SHARK*, *EAT*, *TOOTH* etc., which reappears here. The /+rr/ suffix of NYA is explained at R2.

L15 *lija+ PNPN root (not in GID):

GUP litha+n *get dry, get warm*; UMP iji+ *get dry, bask*.

As the proto-language apparently had a single laminal stop (Dixon 1970), a *j is written in the reconstruction despite the indeterminacy of the exact quality of that segment when based on these two forms. The different quality of the second vowel in the UMP form may be due to assimilation to the [+hi, -bk] feature specification of either or both of the preceding segments. Obviously, one cannot be certain of the original initial of the UMP word – especially without comparative evidence from within Pamic itself – yet other examples of putative cognates having dropped ancestral *l- are found in L33, L36. So it is not entirely on the basis of shared meanings that these two words are proposed as cognates.

L16 *likarra PNYY root:

NYA S likarra *piece of bark*; WLB lika *gum, sap, resin*; PIN likarra *bark*; GUP likarri *paint, tar, oil, fat, petrol, small amount of any liquid*.

If these forms descend from a PPN root, then in conformity with the normal two-syllable root pattern its shape would be *lika. As for the resolution of the differences of meaning, the connection between *bark* and *tar* etc., is revealed by the fact that resin, for which there were many uses, is found in the bark of trees, some varieties of which are extraordinarily rich in this commodity.

L17 *lili PNPN root:

PIN lilili+ *to rustle (of leaves rustling in the wind)*; GUP lirligirr'+yu+n *make a rattling noise*; GID tilil pa+ *to make a scratching noise*.

These cognates are very similar in form and in the types of sounds they refer to. T16 includes a similar GID form, also referring to a sound, which may be related to this cognate set.

L18 *Lili PNPN root (not in GID):

WLB lirli+nya+ *to look after him, care for him*; YIM thiliin *in return, paying back, reciprocating*.

Since initial /l/ in WLB may come from *l or *r, and YIM /th/ may be from *l, *r, *t (or *j), it cannot be determined from these two putative cognates alone whether the initial of the proto-form is a lateral or a rhotic.

L19 *lilyirr PDN root:

NYA W lilyirr *clattering, clanking*; PIN lilyirr+pa *sound of a spear or bullet hitting the knee bone of a kangaroo or some hard object*.

Both forms refer to similar sounds which, along with a similarity of form, suggests that they may be related to those of L17. The /-rr/ is a root extension in both forms (O'Grady 1966).

L20 *lingka PNPN root:

NYA W lingka 1. *tail of dog raised in anger* 2. *tail of scorpion*; GID yingkan *cross, angry*.

The descent of GID /y/ from *-l- is attested in other cognate sets, as is the suffix /-n/ (cf T49, and other examples in the dictionary). The meanings are related in that they both contain the idea of *ANGER*.

L21 *linmarr PDN root:

NYA S linmarr *grey snake*; PIN linmara *snake type (edible)*.

Since /rr/ is historically a root extension (as noted at R2), if these forms are of PPN provenance the root would probably be *linma.

L22 *Linpa PNPN root (not in GID):

WLB linpa+jurrku+wangu *good to the taste*; YIM (Coastal) yinpa *sour, bitter, makes mouth itch*; larrikin, *mischievous, woman hungry*.

At least three other instances of YIM /y/ reflecting initial *l obviate the need for further phonological discussion of the roots involved here. The meaning of WLB linpa+, at least in an earlier stage of the language, was evidently comparable to that of YIM yinpa: jurrku in WLB is *same, same place, place* and +wangu is the *PRIVATIVE, not having* nominal suffix.

L23 *lirr+₁ PNY root:

NYA W lirr *low tide*; WLB lirrjiri *dry treeless country*; PIN lirrnya *a dry soakage*; GUP lerr'+yu+n *sweep, uncover, push lily roots aside*.

Absence of other occurrences of /-nya/ in PIN makes difficult its establishment as a suffix separate from the root in the proposed cognate here. While the territory of the Nyangumarta is near the western coast, that of the Pintupi is well inland in the desert, so that the people would have had more need for a word referring to receding water levels in a well rather than to the tides. The WLB form refers to country where water is clearly absent, while the meaning of the GUP form is connected directly to the NYA and PIN by the shared reference to the notion *UNCOVER*.

L24 *lirr+₂ PNPN root (not in GID):

NYA S lirrpalirrpa+pi+ *stun*; PIN lirrpalirrpa *one who is very upset to the point of fighting*; GAW IRA *fight, battle*, TIRRA+MANGKO+ *to interfere at a fight, which is done by throwing the arms around the waist. . .*; YIM tirrpaa+ *abduct, run off with, take away*.

While the /-pa/ of the NYA and PIN forms may be the final consonant masking element seen elsewhere, it is more difficult to explain for the YIM form. Its occurrence, however, in a number of verb forms indicates that historically it may have been a separate morpheme. What differences, if any, are reflected by R and RR in the GAW forms is unclear, and though /ø/ reflex of initial *-l- is not as yet attested in other GAW cognates, it is quite plausible for that language. In the NYA and PIN forms the common semantic element is a strong emotional effect, which may also be a factor of causality in the meaning of the YIM form, while in both GAW forms the emotional aspect is present in *FIGHT*, also seen in PIN.

L25 *lirri PNPN root:

NYA W lurr+pa+ *put meat in hot sand for cooking*; PIN lurrngu *hot coals (the stage when cooking is done)*; GUP lirrma'+yu+n *cook in ashes*; GID jirri *fine dust, powder*.

GID has the most conservative form, reflecting *-l- with /j/ as attested elsewhere, and the suffixed GUP form also retains the ancestral vowel *i. The /u/ of NYA and PIN (i.e., PDN *u) would conceivably result from the [+bk] feature specification of the *rr, while the /-ngu/ of the PIN form is a root extension (as in PNG *maya *right hand* > Gariyarra mayangu (O'Grady 1966:106)). The similarity in the meaning of the NYA, PIN and GUP forms is clear, and the presence in the GUP dictionary of two other suffixed forms that suggest that the meaning of the root was *ashes* clarifies the connection of GID's *fine dust, powder* with the meanings in the three other languages.

L26 *lirru PDN root:

NYA S lirru *snake (poisonous species)*; PIN lirru *snake type*.

Diffusion may be the reason for the identity in form here. This set may be related to that of R27, *tooth*, or it may count as evidence for a separate PPN etymon *lirrV which is distinct from and accounts for some of the *snake* forms attributed to *rirrang.

L27 *liwu PDN root:

NYA lurn S *laughing kookaburra*, W bush *kingfisher*, NYA W liwurn *kookaburra*; WLB lurnpa (also luurnpa) *kingfisher*.

Although of lesser etymological value, this is a very interesting set in that it seems to provide solid proof of some historical processes whose application in other etymologies may be more tentative. The /-pa/ of WLB, of similar provenance to the common stem augment of PIN, is now frozen as part of the root, while the long vowel of the alternate form is likely a remnant of the former two-syllable *-iwu-. The contention that lurn is a reflex of *liwu is borne out by NYA W liwurn, which has the same referent. Perhaps the historical sound changes were *liwu > *luwu (by assimilation of V₁ to the following segments) > *luu > *lu-. It is unclear at which point /-rn/, presumably a root extension¹, was added, though obviously it precedes WLB's accretion of /-pa/. As a kookaburra is a kingfisher, it is quite certain that all of these forms are from a single etymon.

L28 *luka PNPN root:

PIN luka *watery mud*; BAY yukarta *ashes for painting, white paint*; GAW TOKA *mud, dirt, mortar*; GID turrkal *dirty*.

Since ashes, mud and clay are used for painting in many aboriginal cultures, the meanings of the forms in this set show a strong relationship. BAY's /y-/ from *-l- is attested elsewhere, as is the root extension /-rta/ (cf T13), and the final /l/ of the GID form is seen as a historical suffix (cf T35, T49, N13). Although the cognation of the last form remains open to question because of the /-rr-/, it is bolstered by the presence of the same apparent infix, /-rr-/, in GID jarrpuuny (see L13), and by a pair of GID roots that are seemingly related: wapa+ *to peer, to peep, to spy on*, and waarrpa+ *to pry into others' affairs*.

L29 *luku PNPN root (not in GID):

NYA luku S *ankle*, W *metatarsus*; WLB luku *heel*; PIN luku *outside ankle bone*; BAY jukarra *foot*; GUP luku *foot, footprint, wheel*; UMP thuki+ *track him*.

Though essentially reflecting striking conservatism in view of the probable time depth involved, the fascinating variety of meanings here illustrates quite clearly how a word's meaning may alter over time. While *-l- > UMP /th-/ is not directly attested in other cognate sets, there are several examples of *-r- > UMP /th-/; the development which is posited therefore appears quite plausible. Moreover, this reflex is seen in the western language Ngarluma in thumpu *anus* < *lumpu (see L34), and in the eastern language YIM (cf L6). BAY /j-/ from *-l- is unusual too, yet /j/ is phonetically similar to the more common reflex /y/, and *-l- > /j/ is attested in GID. Despite these phonetic difficulties, these forms clearly all reflect *luku.

L30 *lulu PNPN root (not in GID):

WLB lurlurl+pu+ *to shake it out – as flour from bag; to shake it – as tree to remove seeds*; GUP lurlup+thu+n *peel, shed, scale off*; GID yulany *skin*.

¹/-rn/ may be related to PNG *-rna, a root extension found on other forms referring to birds (O'Grady 1966:98).

The final syllables of both the WLB and GUP forms are verb-deriving suffixes, while the /-p/ of the latter is a root extension, as is the /-ny/ of GID (cf T35). As noted earlier, there is some debate over the historical status of the retroflex consonants, yet *-l- is proposed here rather than *-rl-. Since the skin of reptiles and the bark of trees are both shed, there is a clear semantic connection between the GUP and GID forms. Though less obvious, the connection with the WLB form lies perhaps in the shared notion *REMOVE*, particularly where it concerns trees.

L31 *luL+ PNPN root:

PIN lulypi+ *to scoop up water from a soakage with a container*; GUP lurlnyin' *depression in ground, deep hole*; GID julung n. *drink*.

A number of phonetic problems render reconstruction of this root difficult. In other circumstances the GID form would be taken as very conservative with its V₂ and final peripheral nasal /ng/ being considered ancestral. Yet while it is known that both PIN and GUP occasionally lack a reflex of ancestral V₂, there is no trace of it here except in the GID form. As for the lateral at C₂, Dixon (1980:158) suggests two possibilities: that his Proto-Australian did have the phoneme /ly/ which merged with /l/ in eastern languages, here GID; or that there was a single lateral, and that /ly/ was a later development in the west, here PIN. It is not clear why GUP should have /rl/ as the second consonant, though the variation in WLB of turlka+ ~ tulyka+ *to pinch him* further suggests a general variability among the laterals. The semantic thread linking the forms is perhaps something like *SOAKAGE HOLE: SCOOP WATER: DRINK*, though, again, it is not clear whether the proto-form was a verb or a nominal.

L32 *luma₁ PDN root:

NYA S luma, WLB luma *blue-tongued lizard*.

L33 *luma₂ PNPN root (not in GID):

NYA S lumamu+ji+ *wash, pan*; GUP lumurr'+yu+n *splash*; UMP umuthi *oyster, big – grows on rocks*.

Though UMP does retain a few initial /l/'s (two in the available data base), this set provides one of at least three fairly sure *-l- forms whose initial merges with phonological zero. The /-thi/ of UMP is apparently a root extension, as is the /-rr/ of GUP. The /u/ at V₂ of GUP and UMP reflect an *a modified by the rounding influence of the *m, further triggered by being in the [-stress] position of V₂. Despite the seemingly unrelated meanings, there is evidence that *splash* and *oyster* are connected: NYA W janga means 1. *saliva; foam* and 2. *oyster; barnacle*, perhaps because of the trait of some molluscs to squirt water. The meaning of the NYA word of this set is relatable in that splashing and washing are similar, or possibly because of the fact that large shells were used as water containers, even far inland.

L34 *lumpu PNPN root (not in GID):

NYA W lumpu *cavity, recess*; YIM tumpu *vagina*.

This etymon is represented as PNG *thumpu (O'Grady 1966:108), where its reflexes are glossed as *anus*; note also the Wadjuk doublet DUMBU *womb*, DUMBUN *cave*. If the semantic connection appears speculative, consider English vagina from the Latin meaning *sheath*, a type of cavity.

L35 *lungka PNY root:

NYA lungkurta *blue-tongued lizard*; WLB lungkarta *blue-tongued lizard*; PIN lungkarta *lizard type – blue tongue*; BAY yungkurrji *racehorse (yellow) goanna*.

L36 *lunta PNPN root (not in GID):

NYA W luntuluntu *dense pall of smoke – as from bushfire*; PIN lunta *blackened country after fire*; UMP unta+ *to burn*.

The meanings of these forms share the notion *FIRE*. Considering the great time depth of separation of UMP and PIN, their /a/ at V₂ is taken as original and the /u/ of NYA is attributed to assimilation of vowel quality, a common process in the history of that language. O'Grady (p.c.) has recognised a *wunta root as the source of NYA W wunta *country recently burnt* and counted PIN lunta as an aberrant but basically cognate form. Thus it is evident that further research is needed to achieve certainty on the initial of this root.

L37 *lupu PNPN root (not in GID):

NYA W lupu *thick*; GAW TOPA *all; the whole, so that nothing is left*; YIM thupu *narrow*.

GAW -A < *-u is probably the result of lowering to the unmarked vowel in the [-stress] position, as in R13, for example. Certainly there are differences among the meanings, yet all forms do share the notion *SIZE*. The apparently opposite meaning of the YIM form *narrow* could be attributable to the different perceptions of the giver and the receiver of the size of, say, a piece of meat. Or, thupu could be simply showing the phenomenon of antonymy.

L38 *lurr PNY root:

NYA S lurr+karra *running blood*; GUP lurr+yu+n *flow, run (of liquids)*.

In NYA, /+karra/ is a productive suffix forming an adverbial-type structure from which verbs are typically derived by the further suffix /+ma+/ (see also +kurru in L40). The GUP form also bears a verb formative, suggesting that the essential meaning of the root is *LIQUID*.

L39 *luurra PNPN root:

GUP lurr+thu+n *split, cave in*; BNJ juurr+a Vtr *split, crack open*.

Bandjalang (BNJ), a sister dialect to GID, is similar enough in phonology to allow inclusion of a form from this dialect when a reflex cannot be found in the GID dictionary. Since GID (BNJ) is taken as being diagnostic for PNPN vowel length, a long vowel is reconstructed here. The initials of both these forms are well attested reflexes of *l. The expected root shape is CVCV, hence a

final *-a, despite the obscurity of its reflexes. Cross reference is here made with L9 *larra, as the meanings are connected and, with the exception of the vocalism, the forms are similar.

L40 *lutu PDN root:

NYA W lurturu+kurru+mu+ *to jump, start – as from bite by ant, or unexpected poke in the ribs*; WLB lutu 1. *tick* 2. *weevil*.

Since the verb formative (i.e., +mu+, underlying /+ma+/) of NYA is one that commonly expresses performance or motion, it seems that its root is likely to have to do with the cause of the motion, viz. the biting insect.

R1 *raju PNY root:

PIN raajal+ka+ *to speedily dry up: used of rain clouds speedily disappearing*; GUP latjuwarr'+yu+n *scatter, disperse*.

Although GUP /r-/ normally corresponds to PIN /r-/, there are other instances of the above correspondence (cf R27) and of other peculiar correspondences (e.g., N13). Most likely *-u has gone to /-a/ in PIN through assimilation to V₁, especially if it were word final in a non-suffixed form.

R2 *raka ~ *rangka PNPN root:

NYA S rangkarr *blurry*; WLB rangkarr+ka+ *to pre-dawn*; PIN rakarra *moonlight, pre-dawn, post-sunset light*; GAW TANGKUINYA *dream*; GUP dangga *calm, fine* (cf GUP dhangga below); YIM takarr *grow, swell, grow up*. . .; GID tangkaal+pu *dawn, before sunrise, takam fog*.

Quite possibly these two root shapes represent different etyma; yet because of the cohesiveness of the meanings of the words in this set and because the alternation of a nasal or a stop versus a nasal plus homorganic stop is quite common, it is most likely that a single etymon is involved here.

Prenasalisation of stops is fairly common among Australian languages: there is optional prenasalisation of stops in Tiwi, e.g., yərrəkəpai > yərrəngkəpai *crocodile* (Osborne 1974:24); O'Grady reports (p.c.) that there is a diachronic rule in GUP whereby ancestral clusters of nasal plus homorganic stop reduce to a simple nasal, e.g., GUP lunggu ~ lungarri *harpoon thrower*; see also at T26 for further comment and examples.

WLB has the same /-rr/ suffix as in NYA, both of which probably reflect the *-d (i.e., *-rr in the orthography used here) suffix discussed by O'Grady (1979b:119). Since WLB regularly reflects *r- with /l-/, borrowing is suspected here. Though GAW's -ul- at V₂ seems to be an aberrant reflex of *-a, it is probably a manifestation of the phonetic on-glide to the [-bk, +hi] articulation of the NY of the following suffix (cf N15) of /tangku+nya/. The /-l/ of the first GID form is a suffix (cf T35, T49), while the /-m/ of the second may be ancestral, suggesting PNPN *rakam, rather.

It is the gloss *dawn* that shows the semantic relationship between the first GID form and those in WLB and PIN. The related GID form *tangkaal+ma+ to reveal, make plain* clarifies the relationship of GUP *dangga calm, fine*, as it is the clearing of the clouds and revealing of the sun that precedes the fine weather. (A GUP variant, *dhangga the rain having stopped*, supports this contention). As the idea of *GROWING LIGHT* is apparently present in NYA W *kaka+rni raa first light, dawn* (*kaka+rni from the east, raa expanding*), the semantic relationship of the YIM form *grow* with those referring to *DAWN* is made plain. Evidently it is the poorness of light entailed in *DAWN* that connects the meaning of the NYA S *blurry* form and the related *rangka+lu ma+ninyi [there is a] mirage, [one can] hardly see*, which is included here to strengthen the claim that the GID *fog* form is semantically related to all the others. Finally, the impaired perception associated with *fog* or a *mirage* links the meaning of the GAW *dream* form with the other cognates, since some details of a dream are often thought of as unclear.

R3 *ralpa PNY Y root:

NYA W *ralpur itchiness*; GUP *ralpa ~ ralpatja active, energetic, frisky*.

The semantic association between these two forms is also attested in English by one of the meanings of *itch* - *a restless desire or craving for something* (AHD). This set is interesting in that it provides yet another example of a > u/ __rr# (be it diachronic or synchronic), as seen also in T9 and in NYA *piya+ to grind*, *piyu+rr+piyu+rr* (< **piya+*) *galah* (a bird which grinds its food in its bill).

R4 *rallyang PNPN root:

NYA S *rallya light, not heavy; a bit sad*; PIN *rallya without care, unconcerned*; YIM (Coastal) *talil light weight*; GID *talngang calm, peaceful, motionless, yalal light, fragile, yalapung free, without any commitments*.

Next to the remarkable conservatism in the descent of such an abstract meaning, the most noteworthy semantic detail is the *a bit sad* part of the gloss of the NYA form, which suggests the first step in a gradual process of antonymy. It has been suggested by Dixon that 1. the proto-language had **l* and **ly*, merging to /*l*/ in eastern languages, or 2. a single lateral **l* split into /*l*/ and /*ly*/ in some western languages. Either hypothesis would account for the reflection of the laterals in this cognate set. However, because Dixon (1980:157) postulates ancestral **l* and **ly* (partly on considerations of symmetry in the phoneme inventory) and further because a putative split in western languages would most probably have occurred in the environment of other [+hi, -bk] segments (the /a/ 's of *rallya* are [-hi, +bk]), **ly-* is reconstructed here. All the initials of these cognates are well attested reflexes of **r-*, and there is good evidence that the final /*l*/ 's of the YIM and GID forms are old suffixes. The /*i*/ at V₂ of the YIM form may result from assimilation to **ly* (though see R19), and the medial /ng/ of the first GID form conceivably evolved through stages in which PNPN **rallyang* > **ralang* (**ly* > **l*) > **talang* (**r* > **t*) > **talkang* (**k*-infix) > GID *talngang* (assimilation of **k* to the velar nasal). This cognate set may be related to R5.

R5 *ralyu PDN root:

NYA S ralyu *lungs*; PIN ralyuralyu *a small internal organ*.

Although the resemblance of meanings may seem rather vague, there is justification for asserting cognation on the basis of identical sound correspondence and in view of the well-attested fact that words designating internal body parts undergo many changes in meaning in numerous languages of the world (Wilkins 1981:86-88). Certainly this is true for Australia; note, e.g., Ngkoth pya *stomach*, Mbiywom pe *liver*, reflecting PP *jipa (Hale 1976b:27). In light of the following evidence, it may well be that this set should be subsumed under R4 *ralyang: the semantic association *LIGHT:LUNGS* is seen in Indo-European (Wilkins 1981:88) and in the cognates Wadjuk BARGAR *light; thin; as a covering*, NYA etc. parrka *leaf* in conjunction with the *LEAF:LUNGS* association noted by O'Grady for PNG *walharn (1966:108, 1979b:118).

R6 *rama PDN root:

NYA raminy *rib*; WLB lama *thin, emaciated*, ramarra 1. *rib* 2. *edge*.

For evidence that the final nasal of NYA is a suffix, see T35. The preceding /i/ answering to *a is taken to be the result of assimilation to the palatal nasal. Because /r/ is thought to have merged with /l/ in initial position in WLB, ramarra is probably to be counted as a loan, while lama is a direct reflex of the proto-form. The semantic association lies in the prominence of the ribs of an emaciated person.

R7 *ramang PNPN root:

WLB rama *blurred vision, partial vision; partial hearing*; PIN rama *one who is angry or emotionally upset; used of disobedient children*; BAY thamany *tired*; GUP raman *down (of birds), cotton*, damarrdamarr+dharr *flare up in anger, tell someone off, stand up and answer back*; GID marraang *tired, enervated*.

Interestingly, the forms in this cognate set seem to reflect a set of semantic developments similar to those from a particular Proto-Indo-European root. PIE *d^heu+₁ is thought to have meant, among other things, *defective perception or wits*. By various paths this root and derivations have come into English as dizzy, deaf, dusk, dumb, down (AHD). In light of the knowledge that such diverse meanings can have a common semantic element, the relationships among the Australian words above become clearer.

Again, because of the initial /r/ rather than the expected /l/, WLB rama is to be seen as a loan, unless the prospect of homonymity with WLB lama (< *rama) inhibited the lateralisation of *r in *ramang. Metathesis, known to have occurred in GID as well as in other languages (see T1), appears to be the explanation for the divergent GID reflex.

R8 *rangki PNY root:

NYA W rangkirangki *toadstool species*; GAW TANGKAIIRA *species of fungus*.

Because there are other instances of final A in GAW reflecting *-i (e.g., R28, T41) there is some justification for specifying root-final *-i, although there are also indications that NYA occasionally reflects *-a with /-i/.

R9 *rangkv PNPN root (not in GID):

NYA W rangkurr+karra *noise of surf*; UMP thangki+ Vintr *break, disintegrate; break (of wave)*; YIM thangkaarr *half, in half; waist, midriff*.

The *breaking of waves* implicit in *noise of surf* makes the semantic connection between the NYA and UMP forms. The YIM gloss *half* is semantically related to the UMP *break* form in the same way that English *half* is believed to descend from PIE *skel+₁ *to cut* (AHD) by the route CUT:DIVIDED:HALF. This instance of /-rr/ may well bespeak reflection of the PNPN *+rr AGENT suffix, cf NYA lawurr *snake*, GUP lawu+ *bite* (L14); UMP nhukuy *penis* < *nuka+ (where /-y/ is known to reflect *-rr (O'Grady 1976)) is quite probably < "the one that eats/copulates". If NYA's /-rr/ is this suffix, then rangkurr(+karra) would be literally *a break-er* (+ ADV.).

R10 *ranyja PNY Y root:

NYA W ranyji *old man or woman*; WLB linji *dry, desiccated – of plant*; BAY thantha *bark (of tree), chip of wood*; GUP ranhdhak *dry*.

Both vowels of the WLB form and the second vowel of the NYA form owe their quality to assimilation to the [+hi, -bk] articulatory features of the homorganic cluster *nyj. The final /k/ of the GUP form is paragogic as elsewhere (cf R20, R37, T18, etc.). It is proposed here that the NYA word evokes the wizened, i.e., dried-out quality of the skin of the old – the plain resemblance between the WLB and GUP meanings seems to guarantee the referent *dry* as ancestral. The BAY form is semantically associated with DRY because the materials used as tinder, i.e., bark and wood chips, are necessarily dry.

R11 *rapang PNPN root:

PIN rapuly+pa *thud: a sound caused by a spear hitting the stomach of a kangaroo*; GID tapaang *sharp sound*.

The /ly/ segment of the PIN form is of undetermined value, though it is worth noting that in two cases where it occurs as an accretion to a stem in PIN and NYA (T34, T45), it is in words which denote sounds. The final /ng/ of GID is taken to be ancestral (see T62).

R12 *rapu PNPN root (not in GID):

GAW TAPURRO *the skin of an opossum stuffed, and used at play as a drum*; GUP rupu *possum*; UMP ampuyu *possum species*.

The similarity of the meanings of these cognates requires no comment. In UMP there are many words ending in /uyu/ which in some cases alternates with /uy/, e.g., wupuyu ~ wupuy *child*; a large proportion of them refer to fauna and flora. As UMP has many words which have lost the ancestral initial, and it also has a tendency to prenasalise intervocalic stops (cf T50), the UMP form is included as being cognate.

R13 *rapu ~ *rampu PNPN root (not in GID):

NYA W rapa *light, not heavy*, rapurapu *swollen, inflated*; WLB rampaku *light in weight; weak, faint – as from hunger*; PIN rampaku *empty; thin, fragile*; GAW YAPPA *hole*; GUP damba *light in weight*; UMP wapu *light*.

If something is *swollen* or hollow (and likely *light, thin* and *fragile*) it may be seen to have a *hole* in it. Thus the GAW form is here considered to be semantically associated with the others, though the weight of the evidence for cognation of that form remains largely in the phonological resemblance. Prenasalisation of intervocalic stops, such as O'Grady reports for PIN (p.c.), may account for the two shapes of the reconstruction. UMP wapu has an unusual reflex of *r in /w/ which may have, as one possible explanation, its origins in child language, as in English where children often pronounce rabbit with an initial /w/. The WLB form, with initial /r/ in place of the expected /l/, is evidently a loan from PIN.

R14 *raapV+ PNPN root:

PIN rapi+ *to make room*; GID taapa+ *to stretch one's muscles*.

GID is diagnostic for vowel length. The forms are semantically related in that *making room* and *stretching one's muscles* would be associated activities around a camp fire, for example.

R15 *rara PDN root:

NYA W raa *expanding* (as in kaka+rni raa *first light, dawn* where the first word is *east+ELAT*); PIN rara *swollen*, rarr+pa *moonlight; pre-dawn, post-sunset light*.

The proposed development of the second PIN form is *rara > *rara+rr (stem accretion) > *raa+rr (r-deletion) > ra(a)rr+pa (stem augment triggered by final consonant). Another instance of r-deletion, as seen also in the NYA form raa, is found in T32.

R16 *rarram PNPN root:

GUP rarranhdharr *late in dry season when it is hot*; GID tarram *dry*.

The dryness associated with the season denoted by the GUP form provides the semantic evidence that these words represent the same etymon. GID maintains ancestral final peripheral nasals (see T62).

R17 *rarrV₁ PNYY root:

PIN rarru *an offended person; angry*; BAY tharralkati+ *flare up (flame)*; GUP daarr+yu+n *be or become angry*.

In Australian Aboriginal cultures *HEAT* and *ANGER* are seen as related, as well as *COOL* and *CALM/COLLECTED*. English flame. . . *a violent or intense passion*. . . (AHD) also attests to the association of *FLAME* with *ANGER*.

R18 *rarrV₂ PNYY root:

NYA W raarr *roar – as of surf*, raarr+raarr *rustling sound – as of snake*; PIN rarr+pa *a tearing noise: used when tearing off strips of canvas*; GAW YARRURE+ *to break; tear; separate violently*; possibly GUP rar'rar+yu+n *sound of leaves rattling in the jungle*.

The absence of a reflex of the second vowel in all but the GAW form is attributed to the same process that results in CVC forms for ideophones in NYA (see T33). The glottal stop in the reduplicated GUP form is epenthetic and may be a factor in the development of the rhotic glide /-r-/ from the flap *-rr-. The common semantic link is in the type of sound involved.

R19 *raarrV PNPN root (not in GID):

GUP raarradha *crab species*; YIM taarriil *food with crust or shell*.

The meanings agree in that a crab is *food with a shell*, while the initials correspond in that YIM /t-/ < *r- is well attested.

R20 *rawa₁ PNPN root:

NYA W rawarri *dead*, rawin *calm, windless*; WLB lawa *negative; absent*; PIN rawa *continually, still*; GAW TOWILLA *soul, spirit, ghost*, TAWO *breath*; BAY thawarlu *shade*; GUP raawak *dry, dried up, burnt, stale, overcooked*, ruwuk *old, stale (eggs, footprints)*; UMP awi *bald*; YIM tawaayku *some years ago*, yawuu *still, immobile*; GID tawarrkan *ghost of a dead Aboriginal woman*, yawun *afternoon, evening*.

This cognate set is largely a duplication of that presented by O'Grady (1979a). Though the semantic connections may appear tortuous, the sound correspondences are straightforward. The first NYA form, though a loan from Garadjarrri, is included as it helps complete the semantic picture. GAW TOWILLA, with a derivational suffix (Teichelmann and Schürmann 1840:4), shows phonetic rounding of the first vowel to the [+rnd] articulatory feature of the W, while in TAWO it is the second vowel that has undergone assimilation. GUP ruwuk is possibly a variant of raawak (but see R37); the /-k/ is paragogic. The UMP form has lost the initial, as is frequently the case in that language. YIM yawuu appears to be related, though no other instances of /y-/ < *r- in that language have been discovered so far.

Without delineating all of the possible connections among the meanings of the forms here, it may be observed that the notion of *ABSENCE*, be it of movement, life, daylight, can be found in the referents of most of the cognates. Persuasive support for the plausibility of the semantic correspondences in the above is found again in the Indo-European language family. Among others, the following words are developments from PIE *d^heu+₁: Russian дых dukh *breath, spirit*; Greek thu+os *burnt sacrifice, incense*; English dust, dusk, doldrums and dull. Further support is found in the semantic evolution of other Nuclear Pama-Nyungan roots – *not, devil, spirit* from *yakam, and *nothing, bald* from *purun.

R21 *rawa₂ PNPN root (not in GID):

NYA rawal *goanna species*; WLB liwirringki *lizard species*; UMP thawa *frilled lizard*. Though not specific, the glosses of these forms are sufficiently similar as to require no comment.

WLB has the same /i/ < *a reflex as is found in R10. Further evidence that this is a possible correspondence lies in GAW KARKANYA *hawk species*, PIN kirrkin+pa *a hawk*.

R22 *rawa₃ PNPN root (not in GID):

PIN raa+ya+ *to fine up: used to describe departing rain*; GUP daawalayirri *get better*; UMP taw'a *fine weather*.

The PIN form has a long vowel resulting from the loss of the intervocalic sonorant (cf T32, T46, R15); GUP's long vowel is non-etymological. That the glottal stop of UMP is epenthetic is supported by UMP aalkanji *high tide*, al'aka+ *come in, rise – of tide*.

R23 *rika₁ PNPN root (not in GID):

GUP riwarrtja *person who doesn't tell the truth*; UMP wika+ma+ *to lie, deceive*.

GUP /w/ is known to have *k as one of its sources, while /-rr/ is well attested as both a contentless root augment and as an *AGENTIVE* suffix (cf R9). Though /w/ is an unusual reflex of initial *r in UMP, it is attested in another cognate (R13). The /+ma+/ is a well attested verb formative; the root /wika+/ evidently refers to *UNTRUTH*, clearly shared by the GUP form.

R24 *rika₂ PNPN root (not in GID):

PIN rikirr+pa *sound of spear hitting rib area of kangaroo*; GAW TIKI *the region of the ribs; side*; UMP tika *side – as of river*; YIM tikarra *defender; man who in early days would deflect spears thrown at a condemned man*.

From the root meaning of *RIB* or *SIDE*, the meaning of the UMP form has developed in a way parallel to that of English coast from Latin costa *rib, side*. The *defender* of the YIM gloss is one who would stand at the *side* of the condemned man and *take sides* with him.

R25 *rilypa PNY Y root:

PIN rilypa *seepage water in a creek bed or stony ground*; GUP raypiny *fresh water*.

Here the /-pa/ of the PIN form is actually part of the root, as it is in GUP where its vowel has, however, assimilated to the [+hi, -bk] feature specification of the following palatal nasal. O'Grady (p.c.) has offered the following evidence in support of the correspondence /ly/ : /y/ : 1. *jAlya *saliva, foam, sap*. . . > GUP djoy' *sap*. . .; 2. *pAlya *fat, good* > GUP boy *yellow fatty part of crab*; 3. *ngaalya *forehead*. . . > GUP ngoy. . . *innermost feeling*; 4. *malyan *dirt* > GUP moy' *dirt*.

R26 *rirra PNPN root:

NYA S rirrapirtan *palm cockatoo*, W lirrapirtan *red-tailed black cockatoo*; BAY thirranti *red-crested cockatoo*, yirraparlu *white cockatoo*; GID yirrirriiny *bird (generic)*.

These forms may well belong in the following cognate set (R27), where perhaps the *TOOTH* meaning extends to include *beak*. In the NYA compound forms +pirtan means *limestone*, and BAY +parlu is etymologically *stone*; thus a beak is conceivably viewed as a (*lime*)*stone tooth*.

R27 *rirrang PNPN root:

NYA W rirra ~ yirra 1. *tooth* 2. *edge – as of axe* 3. *point of spear*; WLB lirra *mouth*; PIN yirra *tooth*; GAW TIA *tooth, edge*; BAY yirra *tooth*; GUP lirra *tooth*; UMP irra *snake (generic)*; GID tirrang *tooth, yirran green tree snake*.

This etymon has been noted by Capell (1956) as Common Australian *lirang (our *lirrang) *tooth*, and by O'Grady (1966) as Proto-Ngayarda *yirra *tooth*. Though the initial of the GUP form is /l/, *r- is reconstructed largely on the NYA evidence of a (presumably) retained /r-/. The /y-/ variant of NYA W is thought to be a recent innovation, as in the PIN form. The *SNAKE:TOOTH* relationship probably stems from the fangs being a salient feature of some snakes (cf L26). Otherwise the retention of the same meaning and form throughout the continent is remarkable¹, though matched in stability to a considerable degree in PIE *dent+.

R28 *rirri PNPN root:

NYA rirrirri *S side of hill, river, rock, W glans penis, W rirri+pi+ to heap up sandbars – as river flow does*; WLB lirri+ *to swell*; GAW TIRRA *obstacle, hindrance*; BAY yirrapirti *river bank*; GUP dirirtirri *thorns*; GID yirraa *opposite direction*.

The phonological correspondences in these forms are all quite clear, though it might equally well be argued that V₂ of the reconstruction should be *-a. The apparently deviant /-j-/ in NYA W rirri+pi+ is probably the result of infixation, since other related forms in both dialects strongly point to its being from the root *rirri. The meaning of WLB *to swell* is seen to be directly related to the NYA *penis* form, and less directly to the NYA form for *to heap up...*, i.e., there may exist a *SWELL:HEAP UP* association, or the relationship may lie in the topological similarity of a steep river bank and an erect penis. The association of GUP *thorns* with the other cognates is attested in YIM thumuul *stick, twig, thorn, splinter; penis* and in other languages of the world by the changes *THORN > PENIS, SWELLING > PENIS* (Wilkins 1981:88). As for the meanings of the GAW and GID forms, it may be that they are related to the others in that the *opposite* or wrong direction (GID) is one that leads to *obstacles* (GAW) of river banks and steep slopes.

R29 *rirrpirirri PNPN root (not in GID):

NYA W rirrpirirri *having parallel ridges*; UMP thirr'ithirr'i *wrinkle*.

Since /th/ is an attested reflex of *r in UMP, and /'/ is known to reflect *p, in the respective phonetic contexts, the UMP form shows expectable correspondence vis-à-vis the NYA form. *Wrinkles* often take the form of *parallel ridges*, and aerial photographs of parallel sand ridges in Western Australia give the impression of a *wrinkled* landscape.

¹Dyirbal tirra *tooth, name* is surely cognate too.

R30 *rirru PNPN root (not in GID):

BAY jirrijirri *bitter*; GUP rirri'rirri *hard, harsh, harshly, sternly*; YIM thirru *bitter, sour, strong tasting*.

These cognates possibly all belong with *rirrang tooth (R27) because of the phonetic similarities and the semantic association *TOOTH:BITING:BITTER* which is also attested in English. The GUP form is a reduplication with epenthetic /'/ (cf R1, R18, R33). Despite the absence of other instances of *r- > /j/ in BAY, since *r- has reflexes in the laminals /th-/ and /y-/ , it is very plausible that /j/, also a laminal, may be another reflex. Final *u is reconstructed because the western languages and GUP show plenty of evidence of one vowel of a disyllabic root assimilating to the other.

R31 *runga+ ~ *runka+ PNPN root:

NYA W runga+ji+ *to howl, whine – of dog or dingo*; UMP ungka+ *cry, meow*; GID tunga+ *to cry, yung bark (of dog, dingo)*.

Both GID reflexes of *r- are well attested, as is the initial dropping in UMP. The UMP form is noted by Hale (1976c:58), who proposes Proto-Middle Paman *Rungka+.

R32 *rurra PNY root:

GAW WORRA sand; GUP rurrurr sandy or earthy area.

Parallel developments in other cognate sets (e.g., R3, R9, N8) suggest that *-a raised to /u/ under the influence of the following rhotic in the extended GUP form. GAW's reflex of *r- in W is unusual though not without precedent (cf R13, R23, R35).

R33 *rurri+ PNPN root:

NYA W rurru+rurri+ *to move slightly*; WLB rurruny+pardi+ *to fall off, come loose and fall off*; PIN rurruly+pa *the sound made by a snake – rustling in the grass, wind through leaves, paper, etc.*; PIN rurriny+pu+ *to remove – used of taking off a headband, shirt*; GUP rurr'rurr+yu+n *to shake, rur'+yu+n to get up, rise*; GID yuuti+ *to move (oneself)*, yurruwa+ *to go away, turra+ to shiver*.

The loss of the root-final vowel in GUP is not unusual. The GID reflexes /y-/ and /t-/ , from initial *r, are both well attested, as are the r-'s of the GUP doublet. As *r- is thought to be regularly reflected as /l-/ in WLB, the possibility of diffusion arises here. Once again, the /-ly+/ of PIN is associated with the name of a sound (cf R11). Despite the unexpected form of GUP rur'+yu+n (with medial /r/), it must be included on the weight of the semantic similarity. The semantic element of *MOVEMENT* is present in the glosses of all the proposed cognates. Compare R34.

R34 *rurru+ PDN root:

NYA S rurru+rurru+pi+ *dodge; avoid; shape to hit someone but don't (sic)*; WLB lurru wanti+ *to duck down – to conceal oneself*.

With its major reflex of *r- in /l-/, the WLB and the reduplicated NYA form are perfectly congruent. It is the notion of *AVOID* which unites these two forms and separates them from R33.

R35 *rurrV PNY root:

PIN ruru+pu+ *to rub the point of a wooden instrument on a flat stone surface to grind it sharp*; GAW WORRI *the extreme point of anything*; BAY yurra+ *to scratch*.

Some doubt is cast upon cognation by the /r/ glide, rather than the flap /rr/, as C₂ of the PIN form. As in R32, the O of the GAW form is taken to represent an allophone of /u/. Though the semantic correspondences are not perfect, there is an underlying shared notion of *SHARP*.

R36 *ruwa+ ~ *runka+ PNPN root:

NYA S ruwa+, W ruwi+ *hit (with missile)*; WLB luwa+ *to strike it with a missile thrown*; PIN runka+ *to throw, grind seed, saw, rub*; GUP lunggu, lungarri *harpoon thrower*; GID tuwa+ *to dig*.

It is significant that in the *throw* forms, a missile, probably a spear, is involved. The spear element is present in the GUP forms meaning *harpoon thrower*, and the connection of the GID form may be explained by the fact that in some cultures some spears, i.e., tools for hitting, are used for digging. The two GUP forms evidence the reduction of the stop of nasal-plus-stop clusters as described by Heath (1981). A similar variation in the medial consonantism of the proto-form is seen in R2 and R13.

R37 *ruwV PNPN root (not in GID):

NYA W ruwinyjiruwinyji+ji+ *to wash away, scour out, erode*; PIN ruwa *partly obliterated – of footprints*; GUP ruwuk *old, stale (eggs, footprints)*; UMP wu'u+nga+ *smooth it out, erase – as marks in sand*.

Cognates posited on the presumed operation of metathesis as a phonological process are sometimes uncertain. Because of the close similarity of its meaning to that of the other cognates, however, the UMP form must surely be a reflex of *ruwV. Since /'/ is commonly a reflex of intervocalic *r in this language (O'Grady 1976:61), the development of the UMP form was probably *ruwV > *ruwu > *wuru (metathesis) > wu'u. NYA W ruwi+ (R36) appears in an apparently metathesised variant yuri+, lending added strength to the claim that the UMP form is to be derived via metathesis from *ruwu. While the V₂, i, of the NYA *wash away* . . . form is probably derived by assimilation of a back vowel to the following palatal consonants, there is not enough evidence in these cognates to be sure of the quality of V₂, though *-u is likely. The final /k/ of GUP is paragodic (cf T18, R10, R20).

Results and conclusions

Ancestral initial apicals are contrasted in the sets provided in Table VI.

Ideally the forms in the minimal sets of Table VI would differ by one segment only – the initial – yet even so the evidence that PNPN made use of four contrasting apical consonants in initial

position is strong. The case for PNP initial *n is virtually unassailable. On the other hand the patterns of reflexes of the other apicals in the eastern languages produce no really clear explanation of the historical development. Why YIM does not consistently reflect *t- with /t-/, for example, remains a valid question. Of course, if PP collapsed PNP *t, *l, *r under a single phoneme *T (Alpher 1976b:91), then the subsequent development of such initials would not have been constrained by earlier phonetic values. Moreover, there is no discernible pattern of an underlying complementarity which would suggest that the various initials in any given language result from conditioned allophonic variation of a single ancestral non-nasal apical.

**Table VI. Minimal sets contrasting ancestral apicals
in initial position**

T24 N8 L14 R20	*tawa *nawa *lawu+ *rawa ₁	PNYY root PNPN root PNPN root PNPN root
T20 N7 L12 R16	*tarrum *narra *laarrum *rarram	PNPN root PNPN root PNPN root PNPN root
T26 N13 L16 R24	*tika *nuka+ *lika(rra) *rika ₂	PNPN root PNPN root PNYY root PNPN root
T49 N13 L28 R36	*tuku ₁ *nuka+ *luka *ruwa+ ~ runka+	PNPN root PNPN root PNPN root PNPN root

Despite his good supporting material and argument, Dixon's surmise (1980:175) that t and l might have been allophones of a single phoneme is not borne out in the material presented here. (While it must not be forgotten that Dixon is talking of PA, not PNP, the contention here is that when PA reconstructions are based primarily on material in putative PMN languages, as is the case here, then PA and PNP are equivalent.) No conditioning environment for *t versus *l is apparent. For instance, there is no significant correlation between *t or *l and the following vowel: the frequency in the reconstructions of each vowel following *t is: *a 37%, *i 34%, *u 29%; and following *l: *a 35%, *i 32.5%, *u 32.5%. Nor does the second consonant of the root seem to be a factor.

Notwithstanding the inconsistencies mentioned above, it is observable in the data that *t tends to be reflected in a stop, and that *r and *l tend to be reflected in a continuant consonant among the three eastern languages, while the reflex patterns in the other languages indicate, on the whole, quite clearly that *t, *l, *r occurred word initially in the ancestral language. In sum, irrespective of the situation in PA which presumably predated PNPN, the most probable interpretation of the material gathered here is that PNPN distinguished the apicals *t, *n, *l, *r in initial position.

Insofar as the proposed reconstructions are derived from true cognates, they do in fact constitute evidence for the genetic unity of Pama-Nyungan languages. Although not yet fully analysed, the repetition of reflexes that occurs in a given language in itself constitutes evidence of cognation. If observational similarities in form and meaning were due to chance, no particular correspondences would be favoured, and there would be no patterns. Moreover, the low frequency of initial apicals in those languages where they do occur markedly reduces the likelihood of similarities arising through mere chance.

On the whole, the reconstructions here bear out the claim that PNPN ancestral roots were mostly disyllabic, with only one or two consonants medially. Further work may require adjustment of some segments of these reconstructions, particularly of the second vowel in a given root, since this was unstressed and seems to have been particularly prone to the pressures of assimilation. As presented here, these reconstructions, which may be refuted or validated as further information comes to light, are the largest assemblage of PNPN roots to appear to date. Non-PMN languages were not systematically included in this study, but occasional searches in their dictionaries revealed no plausible cognates. For PNPN to be adequately differentiated from PA, many more Australian languages must be integrated into the comparative search which as yet, however, has found very little to justify the hypothesis of an Australian family. As long as almost no true cognates from non-PMN languages can be found, the ninety-six roots attributed to PNPN here do indeed constitute proof of the existence of a Pama-Nyungan language family.

Appendix

Reconstructed proto-forms:

T1	*takan	PNPN	T16	*tarl	PNPN
T2	*taakun	PNPN	T17	*tarlku ~ *taku	PNPN (not in GID)
T3	*tala ₁	PNYY	T18	*tarra	PNPN (not in GID)
T4	*tala ₂	PNYY	T19	*taarrka	PNPN (not in GID)
T5	*Tana	PNPN	T20	*tarrum	PNPN
T6	*tanku+	PNPN (not in GID)	T21	*tarta	PNPN (not in GID)
T7	*tantu	PNYY	T22	*tartu	PNY
T8	*Tangka	PEPN (not in GID)	T23	*tati+	PDN
T9	*tangka+	PNPN (not in GID)	T24	*tawa	PNYY
T10	*tangku	PNPN (not in GID)	T25	*tiji	PNYY
T11	*taapa+	PNPN (not in GID)	T26	*tika	PNPN (not in GID)
T12	*tapu ₁	PNY	T27	*tiika+	PNPN (not in GID)
T13	*tapu ₂	PNYY	T28	*tiki ₁	PNPN
T14	*TapV	PNPN (not in GID)	T29	*tiki ₂	PNPN (not in GID)
T15	*taru	PNPN	T30	*tiku	PNPN (not in GID)

T31	*tilti	PDN	N11	*nirrim	possible PNP
T32	*tilting	PNPN	N12	*nuu+	PNPN
T33	*tilyi	PNYY	N13	*nuka+	PNPN
T34	*timpil	PDN	N14	*nurlu	PNY
T35	*tipa	PNPN	N15	*nurru	PNYY
T36	*tiril	PNPN			
T37	*tirli ₁	PNPN (not in GID)	L1	*lakang	PNPN
T38	*tirli ₂	PNPN	L2	*laka ₁	PNPN
T39	*tirnka	PNPN (not in GID)	L3	*laka ₂	PNPN
T40	*tirr	PNYY	L4	*lama	PNPN (not in GID)
T41	*titi	PNYY	L5	*lampa	PNPN
T42	*tititi	PDN	L6	*lanta	PNPN (not in GID)
T43	*tiwan	PNPN (not in GID)	L7	*lapa	PNPN
T44	*tiwirr	PNYY	L8	*laapV	PNPN (not in GID)
T45	*tiwu	PDN	L9	*larra	PNYY
T46	*tiyi	PNPN (not in GID)	L10	*larrjam	PNPN
T47	*tuu	PNPN (not in GID)	L11	*larrka	PNPN (not in GID)
T48	*tuuju	PNPN (not in GID)	L12	*laarrum	PNPN
T49	*tuku ₁	PNPN	L13	*lawu	PNY
T50	*tuku ₂	PNPN (not in GID)	L14	*lawu+	PNPN (not in GID)
T51	*tukul	PDN	L15	*lija+	PNPN (not in GID)
T52	*tulki	PNYY	L16	*likarra	PNYY
T53	*tulyku	PDN	L17	*lili	PNPN
T54	*tumuny	PNPN	L18	*Lili	PNPN (not in GID)
T55	*tuungku	PNPN (not in GID)	L19	*lilyirr	PDN
T56	*tungu	PNYY	L20	*lingka	PNPN
T57	*tupa	PNY	L21	*linmarr	PDN
T58	*tuptup	PNYY	L22	*Linpa	PNPN (not in GID)
T59	*turlparra	PDN	L23	*lirr+ ₁	PNYY
T60	*turla	PDN	L24	*lirr+ ₂	PNPN (not in GID)
T61	*turna	PNY	L25	*lirri	PNPN
T62	*turrkang	PNPN	L26	*lirru	PDN
T63	*turru ₁	PNYY	L27	*liwu	PDN
T64	*turru ₂	PNPN	L28	*luka	PNPN
T65	*tuwa ~ *tuya	PNYY	L29	*luku	PNPN (not in GID)
			L30	*lulu	PNPN (not in GID)
N1	*nam(p)a	PNPN	L31	*luL+	PNPN
N2	*nampul	PEPN	L32	*luma ₁	PDN
N3	*namu	PNYY	L33	*luma ₂	PNPN (not in GID)
N4	*napa	PNY	L34	*lumpu	PNPN (not in GID)
N5	*napu	PNPN	L35	*lungka	PNY
N6	*narnngu	PDN	L36	*lunta	PNPN (not in GID)
N7	*narra	PNPN	L37	*lupu	PNPN (not in GID)
N8	*nawa	PNPN	L38	*lurr	PNYY
N9	*ning	PNPN	L39	*luurra	PNPN
N10	*ninya	PNYY	L40	*lutu	PDN

R1	*raju	PNYY	R20	*rawa ₁	PNPN
R2	*raka ~ *rangka	PNPN	R21	*rawa ₂	PNPN (not in GID)
R3	*ralpa	PNYY	R22	*rawa ₃	PNPN (not in GID)
R4	*ralyang	PNPN	R23	*rika ₁	PNPN (not in GID)
R5	*ralyu	PDN	R24	*rika ₂	PNPN (not in GID)
R6	*rama	PDN	R25	*rilypa	PNYY
R7	*ramang	PNPN	R26	*rirra	PNPN
R8	*rangki	PNY	R27	*rirrang	PNPN
R9	*rangkV	PNPN (not in GID)	R28	*rirri	PNPN
R10	*ranyja	PNYY	R29	*rirrpirirpi	PNPN (not in GID)
R11	*rapang	PNPN	R30	*rirru	PNPN (not in GID)
R12	*rapu	PNPN (not in GID)	R31	*runga+ ~ *runka+	PNPN
R13	*rapu ~ *rampu	PNPN (not in GID)	R32	*urra	PNYY
R14	*raapV+	PNPN	R33	*urri+	PNPN
R15	*rara	PDN	R34	*urru+	PDN
R16	*rarram	PNPN	R35	*urrV	PNY
R17	*rarrV ₁	PNYY	R36	*ruwa+ ~ *runka+	PNPN
R18	*rarrV ₂	PNYY	R37	*ruwV	PNPN (not in GID)
R19	*raarrV	PNPN (not in GID)			

PAMA-NYUNGAN *m- *j- AND *k-

Geoffrey N. O'Grady

Differing reconstruction strategies are used in this section. On the one hand, a modest number of putatively secure, high-profile forms in *j- and *k- is reconstructed on the basis of thirty language comparisons. On the other, a much larger number of less secure starred forms in *m- is offered, with the comparative data being drawn from just ten languages – NYA, WLB, PIN, GAW, WJK, BAY, GUP, UMP (and Proto-Pamic, where available) YIM and GID. We hope that the *j- and *k- forms will count as further solid evidence that Pama-Nyungan is indeed the "largest coherent genetic construct" in Australia (Hale 1964). In the case of the forms in *m-, our aim has been to set up a skeletal framework which might spur other linguists towards bringing more languages into the *m- picture. Ideally, these should include the remainder of the thirty languages compared in the *j-, *k- [and *pa(-)] studies. In this way, it should become relatively clear as to which of the putative cognate sets in *m- presented herein are, in fact, viable.

Numerous further examples of the descent – by whatever mechanism – of m- from *p- are to be found under *pa-, including seven out of nine reconstructible monosyllabic *pa-forms – *pa₁... *pa₆ and *pa+.

The descent of ancestral *m- is exemplified in the following cognate sets, representing but a part of the total roster of forms reconstructible with *m-. In all ten languages, the characteristic reflex of *m- is m.

*maa+N *to grasp, hold in the hand* (Capell 1956, Dixon 1980). PNPN (and PA) root. NYA ma+N+ *to take, grasp*; WLB ma+N+ *to take it; to get it; to affect*; PIN ma+N+ *to get*; GAW MA.N.KO+ *to touch; take; lay hold on*; BAY ma.na+Y+, GUP mā.rra.ma *to take, get, fetch*; YIM variant forms maa.n.aa *to pick up, buy, get, learn, catch* and maa.n.tii *to take*; GID metathesised form na.ma+ *to hold, touch, grab*.

*maja *fleshy part*. PNYY root. NYA W maja.ngu *fleshy part – e.g. gums*; GUP matha *tongue, language, flame of fire*; RIT matha *patrilineal social group, thought to have its own DIALECT* (our stressed italics).

*maji+L *to take, grasp*. PNPN root, probably ultimately related to *maa+N, q.v. PIN prenasalised form manji+L+ *to get*; GAW METTE+ *to take away; steal*; UMP maji+L+ *to take hold of, grab, hold*; YIM mathi+L *to hug, embrace*; GID mati+ *to stick together, stay together*.

*maju (a large marine life form). PNPN root (not in GID). WJK MADJI.T *sp. shark*; BAY maju.n *turtle* (< PKA *maju.n – see Austin 1981b); Galbu MÄDJU.R *turtle* (Capell, p.c.); UMP

mathu *whale*. WJK MADTO, appar /mathu/, *green-backed crane* and PP *maaju.rr *pelican* (> UMP maathu.y, Kunjen adho.r (Sommer, p.c.)) may well be ultimately related with the foregoing, but are here assigned as a separate *maaju etymon having reference to large, long-billed marine birds.

*maka₁ *dry*. PNYY root. PIN maka.rr.kaka.rr+pa *dry throat (from lack of water)*; GUP maki.ny *lean, dry*.

*maka₂ *leg, thigh*. PNPN root. NYA maka.nu *long*; GAW MAKKA+ *to shake; quiver with the LEGS as in dancing* (our stressed italics); GUP maka.rr *upper leg, thigh, root, back legs of animals*; UMP maka.y *back of knee, maaki+ to step on, tread on*; possibly YIM makii.l *branch, fork (tree, river)*; GID maka.nta+ *to catch up ('to leg it')*. These semantic associations are corroborated, in part, in PNY *wipu > PIN wipu *tail, penis*, but BAY wipi.ri *long* (note the highly marked wipV shape) and in PNY *wana > NYA W wana.l *root*, but YIN wana.rra *long*.

*makul (referent unclear). PNPN root. GUP maku *maybe, perhaps*; GID makuul *imagination, hallucination*.

*mama *part of egg*. PNYY root. WJK MAMMA.N.GO *white of an egg*; GUP mama *yolk of egg*.

*maamang *father*. PNPN root. NYA W mama.ji ~ *mama older brother*; NYA S mama *father, mama.ji older brother*; PIN mama *father*; NYU mam *father, man, male, mama.ny father, one's own father, God*, WJK MAMMÄ.N *father*, MAMMÄ.L *son*; BAY mama *father, mama.rtu.ra toe (actually big toe?)*; GID maamang *father*.

*mamu (referent unclear). PNYY root. NYA mamu W *pothole, crabhole (in loam country)*, S *devil*; PIN mamu *evil spirit*. . .; GUP mamu.djark ~ mamu.djirrk *water*.

*manal (referent unclear). PNPN root. GUP mana *unripe, uncooked*; GID manal *ripe, cooked*.

*mangka₁ *fur, hair*. PNY root. PIN mangka *head hair – of man and animals*; GAW MANGA *thread made of the fur of opossum or other animal*. . .; WJK MÄN-GÄRA *hair* . . .

*mangka₂ *nest*. PNY root, conceivably related to *mangk₁. NYA W mangka *hunter's blind (circle of bushes made for concealment in hunting turkeys)* (cf English *sniper's NEST*); WJK MAN-GA (and YIN mangka) *nest*.

*mangka.lya *age-mate, companion*. PNY root. NYA mangka.lyi W *age-mate*, S *not allowed to talk to someone (i.e. person who initiated you)*; BAY mangka.lya *good company (?)*.

*mangu *blood*. PNYY root. BAY mangu.rtu *blood*; GUP mangu *blood, sap of tree*.

*mangu *eye; seed; point of light*. PNPN root. BAY mangu *cheek*; GUP mangu.tji *eye, seed, well, hole, torch globe, bullet, fishhook, sweetheart*; GID mangu.rr *lamp, candle or similar light*. Note also Pankarla MANGU *face*. PIN mangi.rr *type of lightning* is a further possible reflex.

*mankarr *hard, hardwood*. PNPN root. NYA W mankarr *ugly – as face*; PIN mannga *stubborn* (in relationship of mutual reshaping with nyunnga *soft* < *puulngu, whose reflexes include GUP bu_lngu *soft (ground fruit)* and UMP puulngu *soft, gentle – of wind*); possibly WJK MAN-GA.R *barb of a spear made of a piece of scraped wood*. . .; RIT man'ga *hard ground; white clay*; GID mankarr *red gum*. Note also PNG *mankarr *hard* (> YIN, BAN mankarr).

*manta+L *to join, link, entwine*. PNYY root. NYA W manta+R+ *to stick on, glue on*, S manta.l.ji *stuck*; possibly WJK MĀNDA *amongst; between*. . .; BAY manta+L+ *to coil round – as a snake*; GUP mana.pa+N *to join, together, at the same time* and RIT mana.pa+N *to join, link; to mix together, combine*.

*manya(.rr) *hand*. PNPN root. BAY manya.rr.ka (and Wangkangurru manya.rr.pa) *hand*; GID manyaa.y *feeling*. Note also Nyamarl manya+L+ *to give ('to hand over')*, as well as 'Lake Hindmarsh' MUNYA and 'Tatiarra' MANYA.R+EK *hand* (Curr 1887).

*maanya *water, rain*. PNYY root. GAW MANYA *cold; rainy*; GUP mänha *watery*.

*manya.rr (form having to do with the mouth and its functions). PDN root. NYA W manya.rr.manya.rr.pi+L+ *to stammer*; PIN manyi.rr.ka *mouth*; RIT many+ *taste*.

*maanyung *soft, slack, lazy*. PNPN root (not in GID). NYA /manyu.rla/ *tired* (actualised in W as manyu.rla ~ manyu.rlu); WLB manya *soft*. Gumbaynggir maanyung *soft (wind)* validates the PNPN ancestry of this root.

*mapang *old man* (< 'one who rubs, anoints'? – see at *mapa+L). PNPN root. NYA mapa.rn W *doctor, S magic, medicine (tribal)*; PIN mapa.rn+pa *doctor man's spirit*; possibly GUP mäbu.ga ~ mäbu.wa ~ mäwu.wa *dream*; metathesised reflex in PP *pama *person* (> UMP pama, LIN ma); GID mapaang *old man*. Note also KLY MABAEG mabayg *man*.

*mapa+L *to rub ochre into the body, anoint; to adorn, illuminate* (conceivably the source of deverbal *mapang, q.v.). PNPN root. PIN mapa+L+ *to spread jam; to rub ochre into the body*; BAY mapa.ra+L+ *to give, put down, STICK ON*; GUP mäwa.ya *praise ('to rub' – cf English 'to rub up the right/wrong way')*; RIT mapa+ *to put inside*; UMP mapa+L+ *to illuminate*; metathesised reflex in GID pama+ *to massage*. Note also Ngarla mapa.rl *sun ('the Illuminator')*.

*mapu₁ (a fauna term). PNY root. GAW MABO *native cat*; BAY mapa.nu *dingo*.

*mapu₂ *fat; good to the taste*. PNPN root (not in GID). Garadjjarri mapu *good*; NYU mop *skin*, WJK MABO. . .SKIN...bark. . . ('tasty part'); UMP mapu.rra *juice of meat; fat, grease*.

*maapV *egg*. PNPN root (not in GID). GUP mapu *egg*; possibly YIM mapi.l, in mayi mapi.l *edible BULB found in swamp*. . . Note also GUM maapa.r *egg* (Smythe 1948, Eades 1979).

*maara *lacking, without*. Pama-Nyungan root. PNYY reflex *mara.L in NYA mara.ly.ka W *going WITHOUT meat because of disinclination, S nothing, no*; possibly NYA W mara *accidentally* (< 'without intention'); WLB marla.jarra *empty-handed – of returning hunter*; PIN mara.l+pa *WITHOUT, having nothing*; GAW MARRA.KKA *being WITHOUT; destitute*; WJK MARRA.LLA.K *unlucky in the chase*; GUP mara.l.mara.l *girls and young women WITHOUT children, +miri.w PRIVATIVE suffix*. YIM infixed form maar.k.aa.n.ku *naked, empty-handed*; GID marraang *enervated* (cf Bandjalang marraang *tired, weary ('LACKING energy')*). Note also Lardil mara *HYPOTHETICAL* and Wirangu particle mara.nyji *IRREALIS*. PNY cliticised reflex *+mara in NYA /+ma+/, PIN +mara *IRREALIS*; GAW +MA *CONDITIONAL or POTENTIAL mood*.

*marang *hand*. Pama-Nyungan root, probably related to *maa+N *to grasp* (Capell 1956, Dixon 1980). NYA mara W *fire saw, S stick that is held still while making fire through friction*; NYA S mara. wilyka+Y+ *to fumble* (where .wilyka+Y+ is a reflex of PNY *walyku *bad*); possibly

WLB marda+L+ (with unexplained -rd- for *r) 1. *to hold it*; 2. *to have, possess it; keep it*; PIN mara *hand, finger; front paw; front tyre of car*, mara+L+ *to crawl on all fours*; GAW MARRA *finger, hand*, MARRA+ *to pour out; to spill*; TO CRAWL; NYU mara ~ mar *hand*, WJK MARH-RA *the hand...*; BAY mara+L+ *to take, grasp, hold*, mara.kurti kuja *upper millstone (kuja stone)*; GUP mar'.yu+N *to be poised to throw*; PP *mara *hand* (> UMP ma'a); (note also UMP mala *front flipper of turtle*); YIM marta (i.e., mar-ta, not [máda]) *wrist, forearm*; conceivably, but as yet not demonstrably by ironclad rules, Bandjalang DJAMBÄI *hand, lower arm* and Waalubal jampay *hand, finger* (i.e. *marang > *mara > *rama > *jama > *jampa > jampa.y). Note also Lardil /mar/ marlda *hand; claw of crab* and mari.ya *to catch OBJ. in the hand* (Hale, Farmer, Nash and Simpson 1981:160).

*marnku *three, a few, PAUCAL*. PNPN root. WLB marnku.rr.pa *several, a few (the paucal number, lesser plural. . .)*; PIN marnku.rr+pa *a few, three or more*, marnku.rta *many times, three or more times*; GAW MARNKU.TYE (appar /marnku.ji/) *three*; BAY marnku.rr *three*; probably UMP mangku *four* (the implied rule *rn > ng/____k requires validation); possibly metathesised reflex in GID kampu.ning *very big, exceptionally big*.

*marnma *sore, pain*. PNYY root. Possibly NYA W manma.ly *misshapen – as squashed damper*; possibly antonymic development and reshaping in WLB mannga *relieved – as when sore or pain stops hurting*; PIN marnma.rl+pa *sick, sore; pain. . .*; GUP manma.rr.k *scab*. GUP manman *toadstool* and RIT manman *no room* appear to defy any attempt to identify possible semantic linkages.

*marnti *male*. PNY root. NYA W /marnti.yarra/ *father-and-son*, S marnti.yirri.jirri *Milangka and Panaka side*, and NYA manta.rni.rra *two men, one father and his boy*; PIN marnti *male baby or young boy; male animal. . .* Note also Nyamarl marnti *father*.

*marnu *cavity*. PNPN root (not in GID). NYA W marna *bottom – as of bucket*, S marna(.jarta) *buttocks*; PIN marna *bottom; a person's seat or the base of an object*; BAY marna *cave*; GUP mani *neck, creek* (cf *malung *shade, shadow* > GUP mali' *shadow, photo, image*); PP *manu *throat* (> UMP manu, WMK man); YIM manu *neck, throat*. Note also WGK marna *mouth*. GAW MANNU.WORTA *back part of the head; occiput* (WORTA. . . *behind*) may also contain a reflex of *marnu.

*marra₁ *fine weather sky*. PNPN root. NYA W marra *dissipating clouds (after rain clears)*; NYU marr *cloud*, WJK MAR *a cloud; wind*, MAR-MYART-MYART *cloudy sky; overcast* (MYART *darkness*); GID marraa.rr *fine sky. . .* This root is quite possibly related to *marra₂.

*marra₂ *wing*. PNPN root. WLB marra.lya.lya.pardi+Y+ *to spread WINGS, to strut – of bird* (pardi+Y+ *to arise. . .*); GUP marra *leaf, hair*, RIT marra *head hair; hairs of yams*; YIM marra (and Bandjima marra) *wing*; Bandjalang, Waalubal marraa.n *bird*. Note also GUM maarra *hair*.

*marrka (referent unclear). PNY root. NYA marrka ~ marrka.rtu *younger sibling*; PIN marrka.ri *sister* (reference term, speaking to brother-in-law. . .); possibly WJK MARGA *the lower arm. . . bough. . .*; possibly GUP marrka.p (denotes affection); possibly metathesised reflex in GID karriima+ *to take care of, to care for*.

*marrku *hard, vigorously, strongly*. PNPN root (not in GID). Possibly ult rel to *mankarr *hard, hardwood* (q.v.). NYA marrja (with obscurely motivated j for *k) W *hard, energetically*,

fast, loudly, S with a lot of strength; NYA marrja.nyu *right hand, righthand side*; PIN marrka *hard – of tightly stretched canvas*; *hot – of tea or meat*; *confident – of a baby sitting*; GUP mǎrr *spiritual power, strength*, RIT murrka.y *vigorously, hard*; UMP marrku.ntha *strong*; possibly YIM marrki.n *gun, rifle* (or from English musket?)

*marrngu (referent unclear). PNY root. NYA W marrngu, S marrngu ~ manngu *Aboriginal person*; GUP marrngu *female possum*, RIT marrngu' *female brush-tailed possum*. The highly marked -rrng- cluster seems to assure cognation, semantic difficulties notwithstanding.

*mArun *black, dark in colour*. PNPN root (not in GID). NYA W maru.maru *mirage (?)*; WLB maru *black, dark in colour*; PIN maru *black*; BAY maru.maru *dark, maru.purra tomorrow, morning* (for the semantics, cf *punga), MARU.DA *charcoal*. Yidiny marun *cloud* attests to the PNPN age of this root.

*mata₁ *mud, clay*. PNPN root (not in GID). NYA W mata *mud*; UMP mata.n *clay, paint*. Note also Yidiny mata *soft*.

*mata₂ *knee*. PNY root. WLB mata 1. *tired* 2. *lazy* 3. *lame*; PIN mata *tiredness in the legs*, mata.rn+pa *kneecap*; GAW MATTA *knee*.

*mawung *call, cry (of an animal)*. PNPN root of onomatopoeitic origin. Thalandji mawu.n.ka+Y+ *to miaow* (not attested for BAY); GID mawung.pa+ *to howl (dingo, dog)*.

*mayu *key person (in a given social context)*. PNY root. NYA S mayu.ri *preacher, main speaker, compère*; PIN mayu.ju *boss (father-in-law. . .)*; GAW MEYU (appar /mayu/) *man*; antonymic development in BAY mayu ~ mayu.ngu *baby, child*.

*miju (one of several roots having to do with *water/blood/egg/brain*). PNPN root. NYA W mija *newly-laid flies' eggs*, NYA piji.rrī *blood* and piji.rrī.piji.rrī *red* (with unexplained p for *m; compare, however, *ngula > PIN, UMP ngula *by-and-by*, but NYA kula! *later! hang on!*); WLB miji.ly.pa 1. *sap from gum tree* 2. *axle grease* (for the semantics, see the GUP reflex of *mangku *blood*); PIN miji.la. . . *lice*, miji.ly+pa/miji.rti.rti *head band. . . frequently RED. . .* and mija.rr.ka *mark, scar*; NYU mija.l *rain, rainwater*, WJK METJO *the seed-vessel of the. . . red gum, the seed-cone of the banksia* (probably related through egg) and prenasalised reflex MINJI.NING *the eggs of lice*; GUP medju.ru *newly hatched fly (from pupa)* dh; GID metathesised reflex timi.n *nit* (cf Waalubal tima.n *ashes, nits*). Note also Nyamarl miji *blood* and miji+miji *red* (the latter appearing in NYA as the loan miji.miji *gold*). Dyirbal and Warrgamay are represented in miju *brain*. Confirmation of most of the semantic linkages involved is provided by reflexes of *kapi, *muka, *nurrku and *nguku as well as a number of additional roots.

*milka (referent unclear). PNY root. NYA W milka *a glowing coal*; PIN milka.rli *blood*; GAW MIRKA *penis. . .*; GUP milki.ya.rr *embryo*, milka.rrī *tears*. For the relationship between *blood* and *tears*, note *yalyu > NYA yilyu ~ yilyu.ngu (and Warnman yilyu.rn) *a tear (lachryma)*; WLB yalyu *blood*, yalyu+yalyu *red*; PNG *yalhu.ru *tongue* (> NMA yalhu.ru, YIN yathu.u); LRD /yalu.lu/yalu.l *flame; light*.

*milma *eyebrow*. PNPN root (not in GID), probably ult rel to *miilpa *eye*, q.v. PIN minmi *dyke*; BAY minmi.l *forehead*; GUP milma *within sight, in front of*; UMP milmuy *eyebrow*.

*miilpa ~ *mila *eye*. PNPN root. NYA W mila.l *spotted stingray ('covered with eyes')*, mila.rrī *thundercloud* (related to eye via *face, front*), /milpa+Y+/ milpi+Y+ *to arrive, come ('to*

face in towards') and milpi.ny *nail, claw* (cf *plrri *nail, claw* > NYA pirri.rn *forehead*); WLB milpa 1. *eye* 2. *entrance to sugarbag* 3. *raindrop*, milpi.ri.m.pi.ri *eyebrow, browridge*, milpi.rri *cloud*; PIN mili+L+ *to look and stare continually ('to eye')*; GAW MENA (with *l assimilated to *m) and MĒ (compounding form) *eye*; NYU miyal~ miyel, WJK MEL *eye*, WJK MELKA.N.BA *eyelash* (appar by dissimilation from pre-WJK *milpa.n.pa – see the UMP reflex of *pulpul); Nhanda milu *eye*; GUP mel *eye, seed, well*, milpa.rra.mpa.rr *eyelashes*, milpu.ṇ.milpu.ṇ *firefly*, milwa.r'.milwa.r.yu+N *to blink one's eyes*, mil'ṇu *spy*; UMP miil'a 1. *face* 2. *like, similar to*, mil'u *tears*, mil'a.l *hot coals*; YIM miil *eye, kernel (nut)*, miil.ku *awake* (cf GID milaa.ny, below), milpa.l *tears, weeping*, miilpu *tree sp. whose smoke causes blindness*; GID miyi *eye*, miyi+pulaangki+ *to meet face-to-face* (but see at *milya₁, below), milaa.ny *awake*; GID metathesised reflex tima.n *charcoal* (*mila > *lima > *tima > tima.n).

*milya₁ *nose; end*. PNYY root. NYA milya *nose; end; promontory, cape*, NYA W milya.ngkurl *newly arrived visitor (not yet introduced)*, S milya.nga *shallow water, on the EDGE of something*, milya+nga+jarri+Y+ *to do in front of someone*; WLB mulyu 1. *nose, beak, snout* 2. *front end*, milya.pu+NG+ *to recognise it, know it/him by sight*; PIN mulya *nose. . . one who steals (fig.)*; GAW MUDLA *nose*, MUDLE+ *to smell*, MUDLA.ĭ.KO *the extreme point of anything*; NYU muly ~ moly, WJK MUL-YA *nose*; BAY milha.milha *level – as ground*, milha.milha+rrri+Y+ *to be flat – as the nose* (BAY has nyingku.rlu for *nose*, cognate with Guwa (Goa) NINGOO *nose*, and reflecting ancestral *Ningku); GUP miya.rr.ka *temple; edge* (cf NYA S milya.nga, above); GID miyi *eye*, assigned as a reflex of *mila, conceivably descends from *milya₁ instead. More study is needed. Note also Wangkangurru mitlha *nose*.

*milya₂ *wrist*. PNPN root (not in GID), conceivably ult rel to *milya₁ ('projecting part?'). NYA W milya.milya *wrist* (Helmut Petri, p.c.); UMP mija *wrist, lower arm*.

*milyju *point, end*. PNPN root. NYA S milji.rr *grey bush with small POINTY leaves*; WLB milja.rn.pa *fingernail* (note also the synonym yilji.rli, not necessarily to be counted as an Arandic loan); PIN milyji *toe- or fingernail; animal claw*; YIM mithi+, in mithi+thirr *pointed*; GID metathesised reflex in jim *end*. Note also PNG *milyju *fingernail* (> Nyamarl milyju *fingernail*, YIN mitju (sic) *talon*) (Wordick 1982:311); Western Aranda /ilj/ ilja *hand*.

*miima *movement*. PNPN root. GUP mima.rr *current*; GID miim *movement*.

*mimi (a part of the head). PDN root. NYA W mimi.mi *brain*; WLB mimi 1. *forehead* 2. *tip of boomerang*; possibly WJK MIMBA.T *the eyebrows*.

*miimi (a kin term). PNPN root (not in GID). BAY mimi *mother's brother*; UMP miimi *mother's mother*.

*minga.ri *mountain devil (a lizard) (Moloch horridus)*. PDN root, probably related to *pinga, q.v. NYA W minga.ri, PIN minga.ri *mountain devil*. Borrowing may well account, ultimately, for the identity in form.

*mingki *laughter*. PNPN root. GAW MENGKI *laughter; joy; joke*; GID minyji+ *to laugh*.

*mintu *asleep*. PNY root. NYA mintu.jarri+Y+ Vitr *to wake up* (antonymous development); GAW MENDU.RNE+ *to fall asleep*; possibly GUP mēḍu.ṇ, RIT minḍu.ṇ' *snail* (< 'asleep?').

*minturr *fat, grease*. Possible PEPN root. UMP mintuy *fat, grease*; GID mintuurr *middle-aged man*.

*miinyja *painted up (for ceremony), illuminated*. PNPN root (not in GID). NYA minyji+R+ to *light (a fire)* (for the semantics, compare *mapa+L); NYA W minyju.rn *the smell of burning hair*, S minyju.n *smell of raw meat cooking*; GUP miny'tji *colour*, miny'tji+dharpu+ma $\approx$ to *draw, paint*, RIT miny'dji *painted design*; UMP miinha.nga+L+ to *paint (a person) up for corroboree* and possibly miintha good (< 'properly painted up?'); possibly YIM minhtha+L+ to *stick, adhere, keep company with*.

*mipa *face*. PNPN root. WLB mipa.rr.pa 1. *face* 2. *person, people*; PIN mipa.rr+pa *face*; GAW MEPA.R.KANNA *the white part of the eye*; GID mipi.ny *face, person; to know, to understand (of fact or person)*, Bandjalang MIPI.NG (sic) *jaw, chin*, Waalubal mipi.ny *face*.

*mira *conduit*. PNY root. NYA mira *vein*; BAY miri *creek*; possibly GUP mer', RIT mir' *cave*. Note PNG *miri *branch – of tree* (> NMA miri, YIN miyi (O'Grady 1966), mii (Wordick 1982)).

*miira+ to *watch, see, perceive*. PNPN root (not in GID). NYA mira.nu *knowledgeable, clever ('perceiving')*, NYA S mira.l *still see, visible*; Garadjarrri mira.ka+NG+ to *watch* (Capell, p.c.); PIN mira+L+ to *wait; to FEEL A TOUCH on the body*; UMP mi'a+Y+ to *show ('cause to see')*; YIM miira+L+ to *wave, show self, expose self*.

*mirla *shoulder*. PNY root. BAY doublet mirla *shoulder* and mirli.rr *rib* (PKM *mirla); GUP mili.pi, RIT mili.pi' *shoulder blade*.

*mirna (referent unclear). PNY root. PIN mirna *arm; tree branches*; GUP mina.ny ~ mina.n *bag, net ('(extension of the) arm')*.

*mirni (female sex organ). PNY root. NYA W mirni *vulva*; GAW MINNE *muliebria* (cognate also in Pitta Pitta).

*mirnti *hot coals*. PNY root. NYA mirnti W *hot coals*, S *charcoal*; WLB mirnti.warri *shooting star*; PIN miirnti *fire coals*, mirnti.ly.pu+NG+ to *strike a match*; GUP mindi.rr *small closely woven basket in which man carries FIRESTICKS*. For GID tima.n *charcoal*, see at *miilpa $\approx$. Note also PNG *mirnti.ly+... to *hit with a missile, shoot* (> NMA mirnti.ly.ka+, YIN mirnti.ny.ma+L+).

*mirra+Y+ to *call out*. PNY root. PIN mirra *a shout*, mirra+Y+ to *call out, shout*; WJK doublet in MIRO+W (past: MIRA+GA) to *call; to cry out*, MIRA.NG to *cry; to grieve; to lament*; BAY mirra+Y+ to *call out, cry out*; possibly YIM miirrii+l (R Conj) to *tell*. Note PMA *mirra+Yl to *call* (> WRY, THR mirra+Yl).

*mirrang *dead*. PNPN root. NYA mirra.rn *shade* (for the semantics, see *rawa); WLB mirri+L+ to *erase it ('to nullify')*; PIN mirri *corpse*. . ., mirri+L+ to *kill*, mirri.n+pa *well apart or separated; the ancestors*. . .; WJK MERRIK *a superstitious power of inflicting DEATH by enchantment*; GUP mirri.tja+N to *squeeze, knead, press* (cf the PIN reflex of *palu+); UMP infixed form mit.p.i *soul, spirit* (appar < *mirr.p.i); antonymous development in GID mirring *alive (of animates, but not of trees. . .)*, mirra.n. *pregnant*. . .

*mirri *string, rope*. PNPN root (not in GID). NYA W mirri.lyi.lyi, S mirri.lyi *rope*; WLB mirri.ji *shin, leg below the knee* (semantically related through *sinew*, e.g. of kangaroo); GUP merri *ceremonial, head of seagull with STRING* dh, mirri.mirri batha+N to *singe HAIR off*

game; UMP mi'in *string*; YIM mirri.mpa.l *crest (cockatoo, rooster)*. Note also NMA mirri.ji *hairstring, rope*. . . .

*mirrpa *anger*. PNY Y root, conceivably an infixed variant of *mirra+Y+, q.v. PIN mirrpa.rn+pa *anger*; GUP mirrwi.li *shy, ashamed*.

*mirta *old man; big, important*. PNPN root (not in GID). NYA W mirta ~ mirta.nya *grey-haired person* and mirta+mirta *grey, white*, S mirta *older brother, older sister; grey*; possibly WJK MERDA *penis*; BAY mirta.li *big, heavy, thick*, mirta.ji *older brother*; GUP mirta.n *aware, informed, having knowledge*. The presence of this root in the East is attested, e.g. in Bāgandji MERTTĀ *old man* (Teulon in Curr 1886:II:208).

*muuji₁ *navel*. PNPN root (not in GID). WLB miji.li.ji.li, YIM muuthii.l *navel*.

*muuji₂ (referent unclear). PNPN root (not in GID). GUP motj *totemic ancestor*, RIT motj *rainbow*; UMP muuji *long time* (for the semantics, see *rawa).

*muka *egg*. PNPN root (not in GID). NYA W muku.rtu.ku.rtu *kidney ('egg-shaped' – cf English kidn.ey, the latter element of which reflects PGmc *ayya(m) egg)*; WLB muka.rdi *hat* (related to egg via *head*); possibly PIN muka.la *stomach*; GAW MUKA *egg; . . . circular or oval*. . ., MUKA.MUKA *brain*, MAKARTĀ *head* (appar printer's error for *MUKARTĀ); YIM muku *back; seed; backbone, SHELL, roof*. . . . Note also Western Aranda /kwa.rtu/ kwa.rta *egg* (Hale, p.c.).

*mukul *father's sister*. PNY Y root. PKM *mukul FZ (> BAY mukul, BRD muul); GUP muku.l *bäpa FZ (bäpa father)*. UMP muka *mother's older sibling* may be a further (reshaped?) cognate. Note also YIM mukuur *cousin, nephew, uncle*. . . .

*muna₂ *far removed (in time or space)*. PNPN root (for *muna₁, see O'Grady 1979b). NYA munu *NEGATIVE – not, no* (< 'not in this (time, space)'); WLB infixed form mun.p.a.rra *very far*; PIN infixed form mun.k.a.rra *the far side, beyond*, munu.ka *a totally different thing*, +munu (Warburton Ranges) *NEGATIVE suffix*; GAW MUNA *before, first*, MUNA MEYU *ancestor* (for MEYU, see at *mayu), MUNA.NA *former; late; ancient*; possibly GAW MUDNO *an UNcircumcised person*; WJK MUÑO.NG *farther off; at a greater distance*; BAY muni.nkaarranga (song word) *long ago*; RIT muna.ŋa *white (person) ('ghost of) ancestor'*; possibly PP *+muntu *ELATIVE case marker* (< 'removed, away') (> UMP +munu, LIN +montrr); YIM munta.l *the others, the rest*. . .; metathesised reflex in GID num adv. (to go) *back*.

*munga *dark*. PNY Y root. See at *punga.

*mungka *anthill, termite mound*. PNPN root (not in GID). PNG *mungku *anthill* (> NMA, YIN mungku); PP *mungka *anthill* (> UMP mungka). Also cognate is KLY MUGU muugu *anthill*.

*mungka+ *to ingest*. PNPN root (not in GID). PIN altered form mungu+L+ *to eat*; GUP muŋ.dhu+N *to drink straight to mouth, stoop down to a pool*, RIT muŋ.gu+N *to drink*; WMK mungk+ *to eat, drink*. Note Mardadhunira and Nhuwala mungka+L+ *to eat* and YIN (respect language) munga.rti 1. *meat, flesh* 2. *animal*. . . (Wordick 1982:312).

*munku *pieces, scraps*. PNY Y root. PIN munku *whole lot; a large number of pieces of food or meat*; GUP mungu.y *small pieces, scraps*.

*muntu *coccyx*. PNY root. GAW MÜNDO *anus*; WJK MUNDO *Squalus; the shark*. . . The *extremity of the backbone*; RIT mundu *lower back*.

*munyja *name, skin*. PNPN root. PIN manyji *name*: . . . *personal and place name – not skin term*; GAW MANTINDA *skin; kangaroo skin*; GUP mäny *trail (of snake, jet) ('signature')*; UMP mantha.l *name* and possibly archaic form mantha.ti *big*; WAA munyja *name of man*.

*mupa+ *to stoop, bend over*. PDN root. NYA W pupu.ku.jarri+Y+. . . +a *to bend down; to lower the head – as in drinking*; WLB mupu.karri+Y+ *to bend, stoop*; PIN pupa+Y+ *to kneel or stoop*; antonymous development in PIN mupu.ngara+Y+ *to stand upright*. PNNSW *mupu.l *stomach* (Crowley 1976) may well be a cognate form, since (a) stooping may be seen as a flexing of the *mid-section* of the body and (b) the shape mVpV is very highly marked in Pama-Nyungan.

*mura+ (referent unclear). PNY root. WLB muru.pu+NG+ *to insert it, put it in*; PIN mura+L+ *to copulate*; GAW MUIYO MA.NGKO+ *to love*; WJK MU-YANG *to copulate*; GUP mur.yu+N *to be hot*; possibly YIM muya.n *ashamed, embarrassed*.

*murla 1. *cooked* 2. *withered (foliage, tree)* 3. *dead*. PNPN root. NYA murla *cooked, ripe*; GAW MULLA *dry*; PKA *murla *meat, animal* (> BAY, BRD murla); GUP infixed form mul.k.a *dry*; WMK mul *dead*; YIM muli *barren, infertile, sterile*; BNJ mula *hungry ('dead')*. Note also YGS murla *dead* and WRN murla *excrement*. For partial confirmation of the semantics, note PNPN *kUnka 1. *raw* 2. *green (foliage)* 3. *alive*, whose reflexes include NYA kunka W *raw, unripe, S raw meat; payment for killing*; PIN kurnka *not cooked, not ripe, raw*; and DYI kunka *raw, alive*. A lenited by-form of *kUnka appears as Proto-Nyungic *wanka, which descends as NYA wanka W *half-cooked, undercooked, S raw, alive*, NYA W wanka.nyu *alive*; PIN wanka *alive, awake, conscious; raw*. . . ; WJK WANG-E.N *alive; well; in health ~ WON-GI.N living*; . . . *green, when applied to leaves or wood*; PKM *wanka *alive* (> BAY wanka, BRD watka).

*murlki *short*. PNPN root. NYA murlku *short*; GID mulki+ *to shorten, mul short*.

*muurni *covert*. PNY root. NYA W murnu *folded – of hands*; GUP moni.tj *secretly*.

*muurra+ *to refuse, deny*. PNPN root (not in GID). NYA W murra.yu+NG+ *to cheat – e.g., to distribute worthless goods (yu+NG+ to give)*; YIM muurri+L *to forbid, refuse, deny, muurra+L+ to hesitate, refuse, not want to go*.

*murr.k.a (an emotive term). PNY infixed root. NYA W murr.k.a *solemn, scowling*; GAW MUR.K.A *cry; weeping; lamentation*; GUP murr.k.thu+N *to feel dislike, murr'.yu+N to be angry, selfish, morru.murru to look sad, depressed, discontented, furious*.

*murrku *semen*. PNY root. WLB murrku *boy – from birth to puberty*; PIN murrku *sperm*; obscurely altered GUP reflex mulgu.rr *semen*. For the semantics, compare the development of PNY *jiji, whose reflexes include PIN jiji *child* and WJK DJIDJ *semen*; note, moreover, that NYA partany *child* and parti *semen* are probably not phonologically similar by accident; the conclusion is inescapable that semen is seen as being *POTENTIALLY* a child.

*murru₁ *ridge; back, spine*. PNPN root. NYA S murru *back*; PIN mutu.lya and infixed form murr.p.u, synonyms for *spinal column; ridge of a hill, murru.kati+Y+ to convey backwards (kati+Y+ to bring, take, carry)*; WJK infixed form MURR.J.O *upper part of the back of the neck*; BAY murru.karri+Y+ *to bend, stoop* (cf the semantics of *mupa+), murru.ra *younger brother* (cf PIN marla *behind, at the rear of, marla.ny+pa brother, younger sibling*); GID murru *nose, end*.

Although human spinal columns are not conspicuously ridge-shaped, those of lizards, for example, certainly are – hence a plausible link between *spine* and *nose*.

*murru₂ *ashes*. PNP root. GAW MURRO *dust, ashes* (and Pankarla MURRU *sand, soil, ashes*); possibly WJK MURH-RO *charcoal*; GID murruu.ny *ashes*.

*murti *knee*. PNYY root. NYA W /murti.nga/ murti.nga ~ murti.ngi *knee*; WLB mirdi *knee*; PIN murti *knee joint*. . .; BAY murti.ny.kaji *knee*, murti.lha *shin*; GUP mudu.lul *lump*.

*muta *back part*. PNP root (not in GID). NYA W murta *ankle bone* (?); PIN muta.ly.ka *lower back bone*; GUP muta *back*; UMP muta *heel* ('back of foot').

*muwa₁ *gathering, collection*. PNP root. WLB muwa *unlit fire – set, but unlit* ('collection of sticks'); RIT muwa.dha.k *clothing, loose possessions*; GID muwa+ (and Gugu Yalanji muwi.ja) *to collect*.

*muwa₂ (a term referring to language). PNYY root. NYA muwa.rr W *language, speech, S word, point on agenda*, NYA muwa.rr+pi+L+ *to speak*; PIN muwa.rn.ku *one who does not hear or understand clearly*. . ., muwa.rr.kaju+N+ (Close Relationship Speech) (covers verbs of witnessing/telling a message, sending (commanding), asking, saying, telling and SPEAKING); possibly WJK MOHÄ.M *to bellow*; GUP muwa.nda.ŋ *deaf and dumb* (but see at *kaping).

*jAku+ *to mime, dance; to play*. PNP root. NYA S yaku.rr *copy, imitat[ion]*, W yaku.rr+ma+R+ *to echo* ('mimic'); WLB yaku.rarri+Y+ *to get decorated for corroboree (purlapa)* (= POTENTIAL of *to dance*); PIN yaku *ceremonies at which women and children. . . attend*; BAY, THL jaku.lya.rri+Y+ *to play; to play cards*; THR nasal-grade form nyaku.rri+Y+ *to play*; possibly KLY SAGU.L sagu.l *play; dancing* (borrowed by (?) MIR as SEGUR *play*); possibly DJA jaku.a *to celebrate, have a feast* and WEM jaku.wa *to feast, celebrate* (but cf DJA, WEM jaka *to eat*).

*jaami *mother's father*. . . . PPN root (not in BNJic). NYA jamu.ji *mother's father*. . . (.ji < *+ju my < *nga+ju < *ngay+ju < *ngay+ku my); WLB jami.rdi *mother's father*. . .; PIN jamu. . *mother's father*; FF. . .; GAW TAMA.MMU.(TTA) *grandfather on mother's side*, TAMMU.(TTA) *grandson of TAMAMMU*; WJK TAMMI.N *grandmother, grandfather*, NYU tem *cousin*; YIN thami.i MF. . . (.i < *+ju, cf NYA jamu.ji); PMA *thami MF (> WRY, THR thami); possibly GUP dhumu.n.gur FZDDCh; probably LRD jembe MF. . .; probably also LRD thama.rr.ka *bereaved brother*. . ., UMP yaami *wife's mother* and DYI jami.ya.n *younger sister*.

*jaapir *lip, verge, entrance*. PNP root. Source of widespread verbs of asking and drinking, as e.g. PIN japi+L+, YIM thaapa.nga+L *to ask*; PNK YAPPA+ *to suck, kiss, drink*; GAW TABA+ *to kiss*; NMA japi.ny.ja+L+ *to suck, draw on, puff*. NYA S japi.rr n. *lip* (= *request* in NYA W); NYA W japi 1. *the outside* 2. *song cycle*; NYA W japi.rri.pi.rri *alongside*; (NYA japi.rr.ma+R+ *to ask*); WLB japi *entrance to sugar ants' nest; entrance to humpy*; PIN internally nasalised form jami.rr.ka *lips*, japi.rr+pa *side, outside*; GAW TABI.DLA.RE+ *to pull the LIP, be sulky*; PP *jaapir *tongue* (with metonymic semantic change from *lip*, and reflected in UMP thaapi *tongue; flame* and TAY man+theep *tongue* – where man *neck, throat* has as its source PP *manu < PNP *marnu *orifice*). Note that the language name Jaabu.gay is itself probably a further reflex.

YIM nyapii.l, MUL nyapi.l, JKY nyawi.l *tongue*, while lending themselves to possible interpretation as nasalised reflexes of *jaapir, in fact appear to be deverbals harking back to a root *nyapi+L *to lick*, whose other reflexes include the PNK prenasalised verb NAMBI+, appar /nhampi+/ *to lick* and PIN nyawi+L+ *to copulate* (with intervocalic weakening, sporadic in this language). KUN ef *tongue* clearly descends from either *jaapir or *nyapi+L – which of the two is far from obvious: PNP *jipa *liver* (cf TNM yipa *liver* in Western Australia) > PP *jipa > KUN if *liver*, where V₁ in Proto-Pamic was SHORT, and PNP *piipa *mother* > PP *piipa *father* > KUN iba.ng *father* (with LONG V₁ in PP); yet we also have PNP *nyupalu *you two* > PP *nyupul ≈ > KUN ubal *you two*, and PP *paapa *breast, mother* apparently descending in KUN as afu.m *breast*. Clearly more research is urgently needed.

A further possible partial reflex of *jaapir is BNJ japaam *proximity, nearness* – cf the semantics of NYA japirripirri, above, and of English *on the VERGE of*. . . . MDI thepu *mouth* may show the rounding (and backing) of *i to /u/ in unstressed position following a bilabial segment, as also, e.g., in PNP *kapi *water* > PIN kapi, WJK GABBI, NYU kep, Djinba gapi, but gapu otherwise in Yuulngu.

*japun *young one, offspring*. PNP root. NYA japun *joey*; NYA W japun+kurtu.rtu *kitten* (kurtu.rtu S *baby*, W *puppy* < PNY *kurtu *inside part, interior, heart* (in metathetic relationship with PNP *tuku), whose reflexes include WLB kurdu *child*, kurdu.na *nephew, sister's child*, kurtu.rdu.rru *heart*; PIN kurtu.rtu, WJK GURDU *heart*; NYU kurt *heart, spouse, sweetheart*. . .; GUP godu *the inside of something, especially a boat, canoe*; and UMP kuti *stern of canoe*; the *child* and *sweetheart* referents apparently reflect much the same semantic relationships as have given rise to German mein Herzchen; in this connection note, further, NYA S japu.rtu *poor little one*, where the .rtu syllable probably is to be explained through the close semantic association with kurtu.rtu).

Additional reflexes are PIN japun+pa *young of animal or person*; possibly WJK N DJABBU.N *to pick up; to take up*, NYU japa.n *getting, picking up* and NMA japu.rr.ma+L+ *to have, hold, keep, own* (< 'to baby', 'treat as a baby' – i.e. *pick up and cradle?*); UMP thamun *puppy*, in which the /m/ appears to result from the influence of PNP *yampu *lap*. Note that WMK ep *lap* now appears most plausibly to be assignable as a reflex of *japun (contra O'Grady 1981:276-277), but with an innovative referent – namely, that formerly borne by *yampu; in YIM yampu.n *animal's young*. . . , the exact opposite has happened: *yampu is the phonological source of this form, but its semantics continue the tradition represented in *japun. PIN yampu.rli *cradling position for a baby* and UMP aampa *lap* preserve the original semantic function of *yampu.

Northern New South Wales reflexes include GID japun *girl (to puberty)* and japuu *boy (to puberty)*; BNJ japun *daughter, girl* and japu *son, boy, youth*; WAA japuung *orphan*; and GUM japu+jun *adopted son* and japung+kan *adopted daughter*.

*jaarung *mouth, opening*. PNP root. NYA jara₁ *pouch of kangaroo*; PIN (doublet) jaru *speech* (loan from northern source?), jaa *mouth*; PIN jara.rr+pa *cooking hole*. . .; WLB jaa.karri+Y+ *to be agape – of the mouth*; GAW TĀ, PNK YA *mouth*; WJK DTA ~ DA, appar /tha/ *mouth; lips; opening*, NYU ja *mouth; speech, language*; PNG *thara *mouth* (> BAN thara, NMA thaya, YIN thaa); NMA thara.rr *dirt from goanna's burrow*; PKA *thaa *mouth* (> BAY, THL thaa). In BAY, at least, thaa is a member of a doublet – cf thara *burrow – as of lizard*, and note BAY thaa+karri+Y+ *to open the mouth* (O'G), *to yawn* (Aus); the latter form and WLB

jaa+karri+Y+ conceivably evolved as compound verbals independently of each other, utilising reflexes of *jaarung and PNP *kaarri+Y *to sink, fall* (cf NYA karri+Y+ *to grow*, #karri+Y+ *STATIVE verb formative*, #karri+Y+. . . #a *to want, need* ('to be for ___'); WLB karri+Y+ *to stand*; MRN karri+ *to fall*; GUP gärri+ *to enter*; GID kaarri.ngkaa+ *to choke, drown*, BNJ ka(a)rri.nga+ *to sink, drown, submerge*, WAA karri.ngkaa+ *to sink, drown, choke*); GUP doublet dhäru.k *word* and dhä *mouth; door; opening* (on the basis of the PIN evidence, this doublet probably already existed in a not-so-recent Pama-Nyungan era).

Eastern Australian reflexes include PP *jaara *mouth* (> WMK thaa' *mouth* and YNW lin+atra *tongue* (lin < PNP *jalany *tongue*; atra < PP *jaara); GID, BNJ, WAA ja+ *to eat* (in the West, at Albany, KGS DTA is *to eat*); GID jeeyang, BNJ jee.ny, WAA jeeng *mouth*.

LRD jar.b.a *hollow place below larynx*. . . and DJA, WEM jar.p *mouth* evidently hail back to an Archaic Pama-Nyungan infixed variant of *jaaru, namely *jaarpu. DJA, WEM ja *ground, earth*, on the other hand, are probably reflexes of morphologically simple *jaaru which have evolved semantically in the south-east through the relationship between *mouth, opening, hole, pothole* and *earth* as PART and WHOLE.

We take the widespread loss of *r in *jaarung, e.g. in WLB, GAW, BAY and GUP, to stem from the presence of a LONG preceding vowel. Such loss is far less in evidence in Pama-Nyungan in forms such as *marang *hand*, in which V₁ was SHORT.

PIN yara *story, place*. . . , KLY ia ya 1. *throat* 2. *word, speech, talk* and GID, BNJ, WAA yarr.p.i+ *to sing* (< 'narrate') can all be conceived of as independently lenited variants of *jaarung. We prefer, however, to assign them as etyma of a separate root *yarV *story, song*, itself however perhaps very anciently related to *jaarung. The same holds for PNP *jaawa *mouth* (> NYA jawa, TAY thaaw *mouth*, WEM jawoe.rr *pouch of kangaroo*): the *w may very well be a child language substitution for *r which was made in a very early Pama-Nyungan era, the resulting form subsequently becoming established as a competing variant.

*jara+ngka+L *to recognise (POTENTIALLY)*, i.e. *to peer at; to recognise (ACTUALLY)*. PNYY root. NYA S jara.ngki+R+ *to look carefully at, examine*, W jara.ngka+R+ *to pore over, observe closely – e.g. carvings; to peer at, and recognise (a person); to read (a book, letter)*; PIN jara.ngka+L+ (Close Relationship Speech) *to see*; GUP dhara.ŋa+N (*ngk > ŋ) *to recognise, understand*. See further below at *jarum.

*jarum *thing, artifact*. PPN root (not in BNJic). NYA W jara₂ *handle of shield*; PIN jara *thin shield specifically for protection against boomerangs*; GAW TARRA *string; girdle*; PNK YARRA *mill*; WJK DTARH-RA *small sort of knife; barb of a spear* (that this spelling represented /thara/ rather than */tharra/ is strongly indicated by Moore's MARH-RA *hand* (*marang) and BARH-RAN *scar*. . . (*para₁, *infra*)); GUP dhära.k *spear with no blade*; LRD thara.n *coolamon type*; KLY ZA za *thing, object* (pl ZA+PUL *property*); YDN jari.n *straight woomera*; WEM jaroem *throwing spear*.

The highly marked trisyllabic structure *jarangka+L, of PNYY age, can now be decomposed as follows: *jara (< PPN *jarum) *thing*. . . + *+ngka *LOCATIVE + VERBALISING MORPHEME*, semantically the transitive counterpart of *to be in [the run of] things*, i.e. *to recognise* (note that the semantic and morphological diachrony of English *understand – to stand under (among)* is highly comparable). Modern English *to be into* *transcendental meditation*, etc., well illustrates the same principle. PIN jara.ngka.rr+pa *type of longer boomerang* must

count, in turn, as a nominal derivative of *jara+ngka+L which probably originated semantically as something like *an object deserving to be examined closely*. A further (probably) relevant form is GAW TARRA.RAI.T.PA.PE+ *to give by turns so as to make the thing go from one to another*, which is also documented in the expression WARRATARRARAITPAPE+ *to interpret; to translate* (WARRA *throat; voice; speech; word; language*).

*jinang (POTENTIAL) *foot, i.e. track, footprint; (ACTUAL) foot; hind foot (of quadruped)*. PNPN root. NYA jina *track, footprint; hind foot (of quadruped)*; NYA jinu.rl *S side opposite to direction of wind, W foot, bottom end – as of bed*; possibly NYA /jinu/ jinu.ø *slow, steady, gentle, quiet(ly)* (if this mode of progression is equated to foot travel, as opposed to the speed of a spirit flying through the air); WLB jina.rn.kiji+L+ Vtr *to trip, catch (a person's) FOOT and make him fall – as clump of spinifex, stump* (WLB wurli.ya ~ wirli.ya *foot* continues PNPN *wulu as the name of one of various parts of the leg, represented also in PNG *wulu *thigh* (NMA wulu.karli, YIN wulu *thigh*; conceivably also NMA wulu.ju *south*, YIN wulu+ *west*); UMP tali uulu *shin*, muji uulu *backbone* (for tali, cf PIN tari. . . *ankle bone* < *taru); GID wulu *ankle; foot of tree*; BNJ wulu *butt (of tree)*; WAA wulu *ankle, tree trunk*; LRD kulthu.rr *lower leg, shin* – cf PNPN *walingka *speech, language* with LRD /kang/ *kangka to speak* – may be a cognate of *wulu).

PIN reflexes of *jinang are jina *foot, footprint* and jina.ri *person who is continually on the move*. . . (PIN jama.na *foot, footprint* and PP *jamal *foot* (YIM jamal, TAY thaamar, THY mal) continue a PNPN root *jamal); GAW TIDNA, PNK IDNA *foot*; WJK JINNA *foot, JINNA+RRA feet; roots of trees; stump, JINNA.RDO ankle; . . heel*; NYU jin ~ jen *foot, feet*; PNG *jina *foot, footprint* (> NMA, YIN jina); PMA *thina *foot* (> WRY, THR thina); BAY jina (alongside juka.rra < *juuka+L₁, q.v.) *foot*; GUP djina.ga *inside, underneath* (< 'at the feet'); probably also GUP dhin'.thu+N *to track*, with as yet obscure motivation for the retroflexed nasal.

Eastern reflexes of *jinang include MUL, JKY, YDN, DYI jina *foot*; YDN jina.ra *root*, DYI jina.rr (pala) *root under water* (cf the referent range of WJK JINNA+RRA, above); GID, WAA jinang *foot*; BNJ jinang *foot, lower leg*; GUM jiina *foot*; DJA, WEM jinoe *foot, footprint*. ARW (and other Arandic) ingk *foot* is most plausibly to be ascribed to PNPN *piingka+L, q.v.

LRD /ja/ jaa *foot; footprint, track; ventral fin (of fish)* may provide a vital clue to a pre-Pama-Nyungan origin of *jinang, namely *thA+N *to stand*, ascribed by Dixon (1980:407) to 'Proto-Australian'. Additional support for Dixon's hypothesis may well lie in KLY SAN san *sole of the foot; footmark* (KLY NGAR(A) *foot; leg; pelvis of turtle, ngaara shin*, YIM ngarri *calf, shin* and possibly PIN ngarri+Y+ *to lie* are reflexes of a root *ngarri). Another possibility is that LRD jaa is related, either genetically or through diffusion, to PP *jaru *foot* (< PNPN *taru). Strength for this hypothesis derives in a general sense from the well attested predilection, in Pama-Nyungan languages, for intervocalic *r to undergo deletion – especially following long V₁. In a particular sense, moreover, note LRD wii *to scrape* as against NYA wiri.rr.pi+L+, GUP wiri.ny.tju+N *to scrape*, these forms in turn all representing a root which is one and the same as *wiiriny *fire* ('that which is produced by friction').

*jingka₁ *east*. Possible PNPN root (not in BNJic), conceivably related to *jingkil *white* via *light of dawn*. PNG *jingka, in NMA jingka.yi *east*, YIN jingka+ *upstream, interior*, NYL jingka.rl.pa ~ jingka.rr.ka *east*; GUP dhingi *high (mountains, buildings, etc.)*; possibly UMP place name Thingka.mu *Rocky Island* (situated east of Lockhart River Mission).

Assimilated form (*jingka > *kingka > *kungka) in PP *kungka.rr *north* (> UMP kungka.y, WMK kungk, NGK ngkwi.thu, THY nggwo.rr, YIM kungkaa.rr, MUL kungka.rr); YDN kungka.rl, DYI kungka.rr *north*. For the semantics of *jingka₁, compare BAY, THL kawa.ri *west* with UMP kaawa.y, LIN awa.r *east* (PP *kaawa.y, PNP *kaawa); GRY yaju, NGL yiju *east* with KNJ aajul, UMP iijul *west* (PP *Ciiju.la, PNP *yaaju); and NYA kani.ny, WLB kani.n.jarra *down, underneath* with UMP kani, WMK ken *up* (*kani).

*jingka₂ *vagina*. PEPN root. YDN jingki.n. *vagina*, jingka.l *anus*; GID jingka.rr *vagina*.

*jingkil *white*. PNP root; see *jingka₁. WLB jingka.rl.ka *WHITE down used in ceremony*; BAY jingkil *white*; KLY TIGI thigi *brain* ('white matter'); YIM thingkaa *white* (with obscurely motivated vowel lowering); GID jingki.rr.jingkii.rr, WAA jingi.rr.jingi.rr *black-and-white fantail* (*Willie wagtail*). . . , BNJ jingki.jingkil *WHITE-fronted shag*. In the West, WJK DJINGU.N *a star*. . . ('white object'?) may be a further reflex.

*jiipi₁ *alive, live; active; open (of eyes)*. PNP nominal root, related to PNP verbal *jipa+L *to activate, waken*, which is continued in PKA *jipa+L+ *to drive* (> BAY jipa+L+, BRD jiwa+L+); BAY, THL +jipa+L+, BRD +yiwa+L+ *CAUSATIVE* suffix; prenasalised reflex in UMP impa+L+, WMK imp+ Vtr *to wake (someone) up*; KUN efa+ Vtr *to wake up, rise up*; BGU thiwa Vtr *to wake up; to shift (camp)*; WEM jipa *to float up, fly – particularly of dust* ('to be "activated", disturbed'). Further cognation with *jiipi₂ *bird sp.* (< 'living being'?) is probable.

Reflexes of *jiipi₁ include NYA W jipi(.rla) *OK, ready, finished, enough; it's an established fact that* ____; PIN jipu.rtu *eye*; GAW TIPO /thipu/, DIY THIPIE *thipi alive*; possibly YDN jipi.n *navel* ('umbilical cord', i.e. 'life-line?'); possibly metathesised form in BNJ piiju.n *heart*.

*jiipi₂ *bird sp.* PNP root (not in BNJic), probably related to *jiipi₁ *alive* via the notion *living creature* (cf the semantic diachrony of English *deer*). NYA, NMA, YIN jimpu *egg* (with /m/ possibly through the influence of, e.g., NYA ngampu *S egg*, W *testicle* < *ngapu, q.v.); WLB jipi.lya.ku *water bird – esp. duck*. . . ; GAW TIWU /thiwu/ *black cockatoo*; BAY, THL jipi.li.ny.kura n. *swallow (bird)*; GUP djip.mara.ma nhä.ma [to get] *a BIRD'S eye view*; UMP jiipi.mu *painted quail*; DYI jiwu.nyu (palan) *pink-chested kingfisher*; GUM jiipi.n *bird*; NGI /thipiN/ *thipi bird*; DJA jiwa.rn *grey thrush*. . . ; WEM jiwa.le.rt *widgeon, pink-eared duck*.

*juka+L *to drink, soak up*. PPN root, conceivably related to *juuka+L₂. PIN jiki+L+ *to drink, suck, smoke*; PIN juku.rla *small rock water hole*, PNK TYEKA *hole in the rocks* ('drinking place?'); PIN juku.ly+pa *faint through lack of water*; PNK YUWI.RRI+ *to sink, soak in?*; LRD thuwa.ra *afloat (in water, as of fish); in flight (in air, as of bird)*, /thuwa.thuwa/ *thuwa.thu Rainbow Serpent, Rainbow Snake*; KLY SIK *foam, sik saliva*; YIM thuuki+L *to sluice, stir, clean with water, rinse, squeeze*; YDN jika+L *to pour water on*; GID, BNJ, WAA juka+ *to drink* (for GID jukung (Smythe), jupung (Geytenbeek and Geytenbeek) *spit, saliva*, see *jupang); DIY thuka.pi *diver* (*Podiceps poliocephallus*).

*juuka+L₁ Vtr *to correctly follow the trail of* ____; *to track unerringly*. PNP root, probably related to *junga and *yuka, q.v. NYA W juka.ra (sic) *lower half of body* (< 'foot end'); NYA S Juku.rta, W Juku.rti *Milky Way*; WLB, PIN juka.rurru *correct, right, straight* ('like a track/road'); WLB juku.rr.pa 1. *dreaming, totem* 2. *dream*; PIN juku.rr+ma+N+ *to dream*; GUP dhuka.rr *path, road, way* (= DJN dhuku.rr) and RIT dhuka.rr *path, tracks, footprints*, all of which are reflexes of a derived nominal, *juka.rr; a further GUP reflex of the latter is evidently dhubu.rr ~ dhuwu.rr *custom, way of life, rule*, in which the first alternant has been folk-etymologised back

from dhuwu.rr as having a /b/, not a /g/. Note that the above semantic associations are borne out completely in PNP *pija+Y *to dream*, whose reflexes include PIN pija+Y+ *to go, come*; UMP pijii+TH+ *to dream*; WMK pith+ *to dream of*; and GUM pijaa.rr *name, language* (KLY PIKI piki n. *dream* appears also to be a related form, pointing to *pika+Y rather than *pija+Y as the ultimate PNP reconstruction).

Further reflexes are PIN juka.l+pa *stick. . . for goanna or cat to climb; stairs; walking stick; Milky Way ('trail, pathway')*, juka.rra *stick used. . . to walk*; BAN juku.rn, NYL, NYA yuku.rn, WMK (thum) thok *smoke* (WMK thum < PP *juma < PNP *juma *fire*, cf NMA, YIN thama *fire*); PKA *juka.rra *foot* (> BAY, THL juka.rra); possibly BAY juka.yi *hand* (as ANTONYM of *foot*, or as *indicator, pointer to trail?*); GUP dhoka₁ *steps, stairs, ladder. . . , djugu' nhä.ma to focus (camera), aim (gun) ('point it STRAIGHT')*; KLY doublet TUGU *dorsal fin of fish* and ZUGU zuugu *upper arm ('indicator, pointer' in both cases)*; UMP THUKI+L+ Vtr *to track*; YIM thiika+L *to straighten, stretch. . . (Ref: yawn)*; possibly YIM jika *new, fresh, young, unripe. . .* (for the semantics, cf PNY *yaja > NYA yija, WLB yija.rdu *true*, GAW YAITYA, appar /yaja/, *proper; own; native; fresh*, NMA yija.la *now, today*, yija.ngu *new*); GYA juka *heel; underneath foot*; GID juwe *middle*, BNJ juwa, juwi *in the middle* (< 'TRUE path to follow?'); GUM juuka.r.ki.r *right hand ('CORRECT hand to use')*; DJA juwe.rung *long, tail ('straight, true')*; DIY jika *mistake, error* (ANTONYM of *correct, true*; compare, e.g., GUP dhuga *ignorant, unable* and BNJ jungul *falsely* < PPN *jungal *straight, true, correct*).

*juuka+L₂ Vtr *to copulate with*. PNP root, conceivably related to *juka+L. NYA W yika+R+ *to copulate with*; possibly GAW TIKa+ *to sit; dwell; live; be*; PNG *thuku.tha+L+ *to spear* (> NMA thuku.tha+L+, YIN thuwa.yi+L+); KLY TUGU+MI *to enter, go in*, TUGU.TUGU *spear*; UMP thuka+ *to copulate with*; DYI juku.mpi.l *woman*; GID juuka+ *to copulate*.

*jungal *straight, true, correct*. PPN root, probably related to *juuka+L₁. NYA W junga.rn *smoke ('that which stands VERTICALLY')*; WLB junga *true*, junga+ma+N+ *to determine route of tracks – esp. of animal, in hunting*, junga.rni 1. *correct, right* 2. *straight* 3. *right hand* (cf GUM juuka.r.ki.r *right hand* < *juuka+L₁); possibly PNK YUNGA.RA *wife ('she who is straight (for marriage)')* – but this form conceivably descends, rather, from PNP *yuunga *companion; one's own (kin)*; GUP djugu.ny *custom, way of life, subsection, manner of walking*; ANTONYMIC development in GUP dhuga *ignorant, unable*, dhogu.lu *deaf*, as well as in BNJ jungul *falsely*, WAA jungul *for no reason*; LRD thungal 1. *tree, stick ('standing STRAIGHT')* 2. *thing, gear, possessions*; KLY ZUNGA *tree*. Note that the relationship between *true* and *tree* is borne out in the semantic history of these roots in English; both stem from PIE *deru+. A northern New South Wales reflex of *jungal is GID jungaa.y *expert climber ('who ascends CORRECTLY')*.

*jUngka ~ juuka *earth, ground, dirt, putrefaction*. PNP root (not in BNJic).

1. *jUngka variant in NYA jungka *earth, ground*; NYA W, NMA, YIN jungka.ri n. *grave*; possible NYA W jungka.la *type of ceremonial headdress* (representing totemic sides, COUNTRY?); but this is also conceivably an NGL or NYL loan (with *r- > /j/), and so reflecting *runga+Y, the prenasalised variant of PNP *ruwa+Y *to twist; to impart a twisting motion to* (e.g., *to grind*); GAW TUNGKI, appar /thungki/ *of a bad smell; offensive, rotten*; DIY thungka *rotten, stinking*; WJK TONGA ~ TWONGA, NYU twangk (South dialect twongk) *ear* (for the semantics, see O'Grady 1979b; a further clue may reside in NYA jungka.la, above – Alpher,

p.c.); PNG *thungka (> MRD thungka.ra *ground*, YIN thungka *soil, dirt, sand*); BAY thungka.ra *earth, ground, dirt; grave*; RIT djuga.yi *LAWYER or MANAGER (relation a person has to the ceremonies and LAND of his mother's clan)*; possibly KLY SUGU *open space between houses in a village street; dancing ground in middle of kwod*; DJA jungka *to swell up (a sore)* (with semantic development from *dirt, dirty* to *rotten*, as in the GAW and DIY forms above – implying, in turn, *swollen, bloated – as a cadaver*); so also, WEM jungka *to be big, to swell up – as eye, jungki+pili fat paunch (pili stomach), jungki+wurru big, thick lips – considered ugly (wurru mouth, lips)*.

2. *juuka variant in PIN juka.nyi *excreta, anus*; GAW TOKA *mud; dirt; mortar*; PNK YOKA *mud*; GUP dhuku.n *rubbish*; WMK yuk, YIM thuuka.r, GYA juka.r *sand*.

*junyju *narrow*. PNPN root (not in BNJic). NYA W junyju *BROAD-leaved poison bush, Velleia panduriformis* (instance of ANTONYMIC change?); PKA *thunthu *narrow* (> BAY, THL thunthu, BRD thuthu); BAY thunthu.rru.ra *coastal sandhill grass, sea rushes ('narrow blades')*; possibly GUP djony'tju.mu *sp. shell fish* (< 'NARROW (shell)'); UMP thunthu.ma *straight* (cf English *straight and narrow*, and see further at *jurrkul); YIM thunyju *narrow*; possibly DYI junyju.rr.junyju.rr (pala) *pink oak* and DIY thunthu *nose bone* (< 'narrow object').

*jupang *saliva*. PNPN root. PIN jupa.ju+N+ *to spit phlegm and mucus*; GUP dhuba'.yu+N ~ dhup.thu+N, RIT dhup.u+N *to spit*; GID jupung (Geytenbeek and G.), jukung (Smythe) *saliva*, in which the second alternant may have been influenced internally by GID juka+ *to drink* (< PPN *juka+L, q.v.). GYA juwa.rra *mud oyster*. . . is probably a further reflex, the semantic association between *oyster* and *saliva* being well attested in Pama-Nyungan; consider, for example, YGS thalha *oyster*, whose cognates include GAW TADLI (appar /thalhi/), WJK DTAL-YI *spittle, froth, foam*; PNK TADLI *spittle, foam*; MRN thalhi, NYU tely *saliva*; WJK DJALLÄ(.JM) (appar /jalham/) *acrid; bitter; salt* (note: it is just conceivable that the final M in this form represents a survival from PNPN *jaalyam, which on rather convincing and independent (Bandjalangic) evidence is here reconstructed with final *m. Elsewhere in this volume, in the discussion of WJK BANDANG *all* as a reflex of PNPN *parntung *all*, we possibly err in rather airily explaining away the -NG as a reflex of *.ngu, one of several dozen PARAGOGIC elements (cf English *peasant* and, e.g., the excellent Apulian Italian examples in Cox 1982), typically CV in shape, which are rampant in Pama-Nyungan comparative work, and were partly unearthed and isolated in O'Grady (1966). Hale (1974:15) further clarifies this matter in his revealing WLB example, .ju, which he describes as a 'phonological extension', 'used to lengthen a word for stylistic euphony', as in nyampu.ju ngurrju *this (is) good* (where nyampu ngurrju would also, presumably, be entirely acceptable grammatically). A conceivable third Western example of the survival of an old Pama-Nyungan final peripheral nasal is provided by NYA pujamu *sister's child* (PPN *pujam *offspring, young one*), whose cognates include GUP buyapuya *young porpoise*; LRD buyi.rr *young of certain mammals (e.g. wallaby, dugong)*; YIM pitha *small child*, biji.rr *woman's son-in-law*, and possibly putha.rr *lightweight*; GUM bo:djuna, evidently /puuju.na/ *child, baby*; PNK BUTTA *womb*; and WLB, PIN puju *pouch of marsupial*. GID mutum *one's child*, BNJ mujum *boy, son* and WAA mujum *son* are nasalised variants of the same root, which according to recent work by McConvell (p.c.) may well have arisen as hypercorrections made in the face of child language substitutions of stops for adult-usage nasals. YDN mujam *mother*. . . involves the same (shared?) phenomenon, with ANTONYMIC change operating in addition. In a none-too-remote ancestor of NYA, then, the tolerance for final peripheral nasals would have been waning, and one at least of

the strategies adopted by speakers (in the case of final m) would have been to insert a final epenthetic u, exactly as in the case of English lamp > NYA lampu).

Further cognates of YGS thalha include PMA *jiya.rla *salt* (> WRY jiya.rla, THR D jiya.rda), which at first blush appears as a rather implausible candidate. A likely sequencing of innovations can be posited, however: (1) Proto-Nyungic *jalya saliva acquired a rightward extension in the form of one of the many paragogic CV shapes, namely *+rla, resulting in the shape *jalya+rla; (2) the resulting sequence, in successive syllables, of laterals [lʲ] and [l] triggered dissimilation, yielding *jaya.rla (compare PNPN *palya adj. *fat; good* > PIN palya *good*, palya.lu *blood of a cooked kangaroo drunk by sick people for medicinal purposes*; WRN palya.rrī *fat*; GUP boy *yellow FATTY part of crab*; UMP doublet paja *grass*, nasalised variant matha *sea-grass*; YDN paja *grassy plain* (= 'POTENTIALLY FAT kangaroos, wallabies, etc. '); but NYA paja.rli *fat, grease*, in which there is no known rule by which *ly could regularly descend as j – this form can only have arisen as a *dissimilation* from pre-NYA *palya.rli); (3) the pressure on the first *a of pre-PM *jaya.rla which was exerted by the flanking [+hi, -bk] segments resulted in Austin's starred form *jiyarla.

An identical outcome from an independently existing root also involving the segmental arrangement *jaya, though in a different Nyungic language, PIN, emerges in fact in the descent of the PNPN root *jaya+L *to send*, which appears as NMA thaya+L+, GUP dhayu.ŋa+N ~ djuj'.yu+N *to send*; GRN jaya+ *to give*; possibly LRD jayi *to miss hitting something* ('to (miss-)throw (e.g., spear)' – an ANTONYMIC development?); KLY TAI thaya+n *to throw* ('send it flying'); GYA taya+ (with *j replaced by t for reasons as yet unknown) *to give*; but as PIN yiya+L+ (~ wiya+L+) *to send*. (4) A fourth innovation, though one unordered chronologically with respect to the other three, involved the semantic change *saliva, foam*. . . > *salt* – unless, as is quite conceivable, the referent range of the ancestral form under investigation already embraced all of these meanings.

Additional cognates of YGS thalha are: GUP djoy' *sap of bloodwood tree* (and note the phonological development in the semantically somewhat controversial, but still conceivable putative case of *ngaalya *vertical face; forehead* > GUP ŋoy *underneath part of anything; seat of emotion; innermost feeling*); YDN jaja *small child* (< 'uncontrolled SALIVATOR, dribbler?'); DYI jaja (payi/palan) *baby*; GID jaatam *child (to puberty)*, jaja.rr *playful, playing the fool* ('like a baby'); BNJ jaajam *child*; WAA jaajam *child, baby*.

Just as PMA *jiyarla *salt* appears on first inspection as a rather implausible candidate for cognation with YGS thalha *oyster*, so also does LRD thalkathal *salt* seem quite unamenable to matching, segment by segment, on the basis of demonstrable sound correspondences with the selfsame PMA *jiyarla (the agreement in referent makes such an attempt at matching appear as particularly auspicious – granted, that is, that we are operating on the assumption that LRD and PMA, as well as other Pama-Nyungan languages, are not only *genetically related*, but *genetically relatable on the basis of a solid and substantial body of evidence*).

It turns out that, paradoxically enough, any attempt at an *exhaustive* segment-by-segment matching of LRD thalkathal with PM *jiyarla is doomed to failure, and yet there is ironclad evidence for the cognation of these two forms. Unless one is aware of possible *morphological*, as well as phonological, factors, one is clearly destined to 'miss the point of the course' (as Carl Voegelin was known to exclaim to budding linguists at Indiana University in the early 1960s).

The question of possible cognation here is perhaps best tackled by way of a four-stage approach (a fifth factor will be identified also): (1) before *any* cognate search is initiated between LRD and other Pama-Nyungan (or, for that matter, non-Pama-Nyungan) languages, it is crucial to consider not only the surface form, termed in Hale, Farmer, Nash and Simpson (1981) the entry-form, but also to refer back to the underlying representation or base-form. Among Pama-Nyungan languages, LRD is outstanding in this respect: *thalkathal*, as a case in point, in fact has the UR /*thalkathalka*/ (Hale, et al. 1981:202). (2) The question next arises as to whether any morphological breakdown of such an UR is possible; in this case it becomes patently clear that reduplication is present, though not synchronically recognisable as being productive in this instance (consider, e.g., NYA *warriwarri native bean tree*, which is presumably not derivable from PNP **warring cold*). (3) We therefore seek to refer the LRD morpheme partial /*thalka*-/ across to PM **jiyarla* (and to numerous other potential cognates) for matching in terms of regular correspondences. Even this is premature, however, since further morphological breakdown is necessary first: there is good reason to believe, in fact, that the /-ka-/ syllable of LRD /*thalka*-/ is paragogic in nature (cf. e.g., NYA *walya.ka*, BAY *walha.rti leaf* in the West, where, as is usual, a *dissyllabic* root **walya* is all that is assignable to PNY or, indeed, to PNP; and in the East, Hale (1976c) reconstructs PP **kuta(ka) dog* (PNP **kurta*) on the basis of UMP *ku'a.ka*, TAY *kuta*, URA *uta.ga*, NGK *twa*, etc. It seems reasonable to conclude that paragogic, i.e. morphemically inorganic/inert/contentless **.ka* was present in PNP and, probably, PPN). Support for this argument is derived from cognates such as the following: NYA *jaliny+jaliny+pi+L+ to keep darting the tongue out – as a reptile*, LRD *jal.wi to stick one's tongue out*. . ., from which we adduce a PPN verbal **jalany+pi+L* based on **jalany tongue* and VERBAL FORMATIVE **+pi+L*. In these terms, LRD emerges as a language displaying final syllable (or final **VC*) deletion not only synchronically but also diachronically. In the same sense, the (mainly) New South Wales monosyllabic nominals which Dixon (1980) views as continuing 'Proto-Australian' monosyllabic roots can be rather easily shown to have arisen, in almost every case, from ancestral Pama-Nyungan *dissyllabic* roots which contained an intervocalic rhotic continuant **r* that later underwent deletion. This is not to deny that scholars such as Merlan (1979) and Dixon may be quite justified in positing a sizeable population of monosyllabic roots in what is taken here to be an extremely ancient ancestor of Proto-Pama-Nyungan and, probably, of most other Australian language families. However, the ancestor of this Australian Phylum (not Family!) will almost certainly never be reconstructible in anything approaching systematic detail.

(4) Matching of segments for potential cognation now becomes feasible, for the LRD irreducible morpheme partial /*thal*-, along the following lines:

PNPN	*j	aa	ly	a	m
PNY	*j	a	ly	a	
PMA	*j	i	y	a	. ria
LRD	th	a	l	.	ka

Dixon (1970) presents an ironclad case for a *single* ancestral series of laminal consonants – the matching of LRD /*th*/ with PNP **j* thus presents no problem. Similarly, LRD /*a*/ : PNP **aa* (or **a*) is entirely straightforward and supportable. It is the /*l*/ : **ly* matching which stands in need of meticulous documentation – especially as such a correspondence is almost, but not quite, unheard of in Australia, and in this light must almost be perceived as verging on the bizarre. Nevertheless, in the 1960s Hale (p.c.) pointed out that there *was* LRD evidence for such a

matching. Five of the relevant instances of cognation are set out below. These probably fall considerably short in number of what could be identified in an exhaustive search.

PNPN	PNY	LRD	GLOSS	
		UR	SR	
*nyaara	*nyara	/ne/	ne.tha	<i>burn</i> n. (and v.)
*yaalyu	*yalyu	/yalulu/	yalu.l	<i>flame, tongue</i>
*ngay+ju	*nga.ju	/ngada/	nga.da	<i>I</i>
*jaalyam	*jalya	/thalkathalka/	thal.ka.thal	<i>saliva,. . . salt</i>
*jarrang	*jarra	/derr/	derra	<i>thigh</i>

Although we do not view LRD as a daughter language of PNPN, but as the descendant of a closely related sister language, pre-Proto-Tangkic (with PPN as the ancestor of *all* of the languages under analysis), it is clear that LRD has been host to a number of innovations. Of these, the change from laminal to *apical* position of articulation is best attested; it is the precise conditions under which this development took place that remain to be worked out. A further problem centres around the change from a low vowel to mid front e in *burn* and *thigh*, but not in the remaining three forms. Conceivably, complex patterns of borrowing *within* the Tangkic Group of Pama-Nyungan may be at least in part responsible. (5) It is evident that we leave ourselves open to criticism by taking LRD alone as a 'witness language' representative of Tangkic – and this is the fifth factor to be considered in a cognate search involving a language like Lardil. Indubitably, what is also needed, as Rigsby and others (p.c.) have reminded us, is a detailed reconstruction of the common ancestor of Lardil, Gayardilt, Yukulta and any other known Tangkic languages – a reconstruction which would make possible the resolution of some of the outstanding problems. Meanwhile, our defence must count as the need to attempt a *first approximation* of an in-detail reconstruction of at least part of the ancestral Pama-Nyungan lexicon. Then, too, the diachronic rules needed to map the evolution of a LRD form such as *derra*, above, would appear to be far fewer in number than the dozen or more rules each needed in charting the history of cognate Indo-European forms such as Punjabi *jīb* and English *tongue*.

Apart from LRD, attestation of the five PNPN roots cited above is to hand, in the case of **nyaara*, in NYU *nari.ny burning*, WJK *NARRO.w*, appar /nhara.wu/, *to burn*; PIN *nyaru+pu+NG+ to burn off an area* (with assimilation of V₂ to the V₃ of **nyara+pu+NG+* – an innovation which subsequently spread, to yield new-formations *nyaru+L+*, also *to burn off an area* and *nyaru blackened country after a fire*); GUP *nhära to burn, get burnt, cook*, RIT *nhara Vitr (fire) to burn*; DYI *nyara (palam) flame, bright light*. **yaalyu* descends in WLB *yalyu blood*; PNK *YALLU* (backed up by ADN /yalhu/ in modern notation) *flame*; PNG **yalhu.ru tongue* (NMA *yalhu.ru*, YIN *yathu.u*); YIM *yaaji+L Vitr to burn, be burned, get burned* and UMP *aaji+Y+ Vtr to burn, cook, light* appear on initial inspection as straightforward reflexes, but must in fact be referred to **yaaju+L* – witness NYA *S yuju.rn.pi+R+ to cook*, PIN *yuju.rn.pu+NG+ to cook in the ground* and NAN *athu+ Vtr to burn, cook*. By the same token, **yaalyu flame, tongue* and **yaaju+L to burn* – cf Hale's (1976c) PP **Caaji+* – were themselves almost certainly one and the same root in a not-so-ancient stage of pre-PPN.

**ngay+ju* and **jarrang* are dealt with *in extenso* in Capell (1956), Wurm (1972) and Dixon (1980), and need not be pursued further here except for the observation that the latter has reflection also in PIN in *jarra fork of a branch; forked stick. . .*; (in verbalised form) *to become divided into*

two groups after walking in a line – an instance of metaphor hinging on the *forking* of the two legs, in animal or human anatomy, from the torso. In this sense of the legs **EXTENDING FROM** the torso – rather than, say, the torso being supported on the legs – it seems reasonable to accept UMP *tharra reef (in ocean)* as a further reflex, though it recapitulates problems of vocalic length already evident in a comparison of GID *jarrang leg. . .*; *limb of tree*, *jarraa.n lap*, WAA *jarrang₂ thigh, confluent river*, GUM *jaarra thigh* and NGI /*tharraN-*/, WRJ *tharrang thigh*.

We now return to the point at which we cited GYA *juwa.rra mud oyster. . .* as a probable reflex of **jupang saliva*, and in justification brought forward evidence relating to the descent of **jaalyam saliva; foam, spray, froth; sap; salt; oyster, barnacle*. A further relevant root is **jangan*, which appears in NYA in the shape *janga* with all of these meanings, in KLY as *DANGA tooth; border, edge, /dhanga/ dhaanga tooth*, in MUL as *janga mouth* and in GID as *jangu.y quarrelsome, bad-tempered* and *jang bad, wicked* (BNJ has *jangu.y angry, bad-tempered; enemy, jangu.rr stranger, foreigner* and *jang+kuuriyaapu old*, while WAA luxuriates in *jang bad, dirty, sore, rotten, naughty, aching, in a bad mood, bored with, guilty, rough, secret, painful, jang+pawurr bad-tempered, crazy, angry, stubborn* (pawurr head), *jangaan sap* (= NYA *janga*, above), *jangu.rr old (of people)*, *jangu.y angry* as well as two derived verbals).

What the above concatenation of referents brings to mind quite strikingly is the notion *to bare the teeth in canine (or human) rage* as well as the associated concept of *to foam at the mouth with rage*. As corroboration of this association, two further roots need to be cited: (1) **ngirri+L to bare (the teeth)*, appearing in NYA as (yirra) *ngirri+R+* in this meaning, in WLB as *ngii.ny.karri+Y+ to grin, leer, smile with teeth showing*, in GUP as *lirra.ŋirr'yu+N to smile* and – crucially – GID *ngirri.ny angry*. (2) We have long considered UMP *irra snake (generic term)* to be a probable reflex of **rirrang tooth* (NYA *yirra*, GUP *lirra*, above). The evidence embodied in the reflexes of **janga* and **ngirri+L* confirm this supposition – especially so when the lexical collocability of *snake* in various Pama-Nyungan languages is considered. One need only note the NYA adjective *kuli+kiti* (W), *kuli+kata* (S), glossed in the latter as *poisonous snake (gen.); cheeky person, animal*, derived from nominal *kuli*, having reference to anger, argument and fighting (cf DJA *kuli.ny+uk he is angry, insect sting; kuli.en angry, roused, kuli.wil poison; snake poison* and Hale's PP **kuli anger* (WMK *kul angry, anger, THY liy cheeky*), from PNP **kuli*).

PIN *jala saliva; frothing of the mouth* and *yaya. . . saliva; sap of trees; foam produced by a frightened animal* are taken to be child language reflexes of **jaalyam* (PNY **jalya*), which otherwise would descend in PIN as **jalya*. The rather marked segment **ly* is replaced in the one instance by apical /l/, in the other by glide /y/. Whether the initial /y/ of *yaya* is due to assimilation to the medial yod, is part of Pintupi's incipient drift towards Initial-Dropping (reported on in O'Grady 1981a), or is evidence of an Arandic loan, remains as yet unclear.

**jurrung* generic n. (POTENTIAL) *snake or harmful vermiform entity, e.g. centipede, leech; ant, i.e. track of snake, centipede, . . .*; (ACTUAL) *snake, centipede, . . .* PNP root. NYA *jurru* generic n. *snake, centipede; ant. . .*; MRN, NAN *thurru animal; meat*; PNG **thurru* (> NGL *thurru*, NYL *jurru snake*; YIN *thurru* (Respect Lang.) – *parrimirnti – sea serpent. . .* (Wordick)); GUP *dhurr.yu+N to imitate SNAKE in corroboree, dhurra.y' eel*; possibly GUP *dhurru.l.ŋu place (hillock) where dirt has been piled up by goanna or bandicoot digging ('burrow) preempted by SNAKES?);* possibly LRD *jurra mark on ground leading to resting place of dead person* (< 'snake track'?); GYA *jurru corner, elbow ('having a bend/bends, like sinuous snake's track')* (cf GID, WAA *jurru.y* below); YDN *jurri.nU leech*; GID *jurru.y bend in creek or gully*;

GID, BNJ jurrung *leech*; WAA jurruung *land leech*, jurruum.pil *river leech*, jurru.y *corner*; GUM juurru *land leech* (Smythe); GIP thurrung *brown snake*; YOD thurr.el *snake sp.*; WRJ thurrung, NGI /thurruN/ *thurru snake*; DIY thuju ~ juju *reptiles and (harmful) insects* (conceivably child's word for *thurru).

WLB jurru 1. *head* 2. *top portion of sugarbag* 3. *short end of boomerang*, while a prime candidate phonologically for descent from *jurrung, must in fact be assigned as an etymon of *jiirru *outward or upward extension*, of which representative reflexes are as follows:

1. PPN root form *jiirru in PNY *jirru *head*, in YGN jirru *head*, YIN jirru *occiput; back of head* (Wordick) (cf WLB jurru); GUP djerru *spoon, shovel ('extension of the hand')*. Also conceivably related is GAW TIRRA (if /thirra/) *obstacle; hindrance*.

2. Variant form *jirri in NYA W jirri *eyelash ('(hairs) sticking out')*; NYA S jirra+R+, W jirri+R+ *to stick out, thrust, stretch out (e.g., hand), spread*; WJK DJIRI.JI *zamia tree. . . ('that which (*+ji) has palm-like fronds extending outward')*; YIN jirri *prickle, thorn, quill, needle*; BAY thirri+wartu (+wartu PROP) *long-tailed bluetongue lizard*; GUP djirri.t *small stick across sail from mast*; possibly GUP djirri (strong word) *sin. . . adultery, fornication (?metaphoric: '(antisocial behaviour) which stands out, is conspicuous')*; PP *jirri *upper arm ('limb extending out')* (> JKY jirri, KBR therr; YIM thirri.l *pubic hair*; GYA jirri.manti *coconut palm (lit. up aloft, cf WJK DJIRI.JI)*; DIY thirri.wa *east ('extending out (in the direction of sunrise)')*, jirri+ *to turn off, deviate from path*.

3. Suffixed form *jiirra+rn *maturing youth, adolescent ('extending/progressing into manhood?')* in PIN jirra.rn.ka (~ jirra.ny.ja) *older boy. . .*; YIM thiirraa.n *man, boy, male*.

4. Reduplicated form *jirri+jirri *Willie wagtail, fantail* (< 'severally flared-out (tuft of tail feathers)') in NYU jiti.jiti; PNG *jirri.jirri (> YIN jirri.jirri, BLG jiti.jiti); GUP djirri.bi.djirri.bi ~ djirri.wi.djirri.wi; MDI thirri.thirri, WEM jirri.jirri.j *Willie wagtail*; metathesised root form in JKY tiji.rr *do*; taboo-deformed reduplicated variant (due to the association of this bird with death?) in DYI jiki.rr.jiki.rr (palan) *do* (so also for YDN); blended reduplicated variant in GID jingki.rr.jingki.rr *black-and-white fantail* (see at *jingkil white).

5. Prenasalised reduplicated variant *jintirr+jinti.rr in NYA jinti.rr.jinti.rr, WLB jinti.rr.jinti.rr.pa, WIR jinti.rr.jinti.rr, NMA jinti.jinti, PK *jinti.jinti (> BAY, THL jinti.jinti, BRD jiti.yiti) (and note also non-reduplicated MNN jinti.kirriny, LRD /jindi.rr.buwa/ jindi.rr.bu) *Willie wagtail*; PIN jinti.rr.ji.rr+pa *small bird type (lives in ground holes)*.

6. Infix form *jirr+k+u, referring to sharp-pointed extending objects, in NYA jirr.k.u S *thorn bush with yellow flower*, W *thorn; mesquite tree*; WLB, PIN jirr.k.a.rli *removable spearpoint*; possibly GAW IR.K.U.TTA *sore, ulcer, abscess, swelling ('(suffering from intrusion of) a pointed foreign body (splinter, thorn)?')*; PNK TYIR.K.U.LLU *stiff, hard*; WJK IRR.G.O, appar /irrku/, with obscurely motivated Initial-Dropping, *small white bivalve. . . used for SHARPENING spears*; GUP dhirr.k.thirr.k *rough; scabies, itchy rash*; RIT dhirr.k.dhirr.k *spiny-tailed goanna, Varanus acanthurus*; YIM jirr.k.u, thirr.u *very strong taste, bitter, sour. . . ('sharp')*, thirr.k.aa.l *right through, piercing*; YDN jirr.k.a.r BLADY *grass*; DYI jirr.k.a (payi) *eel-spear ('sharp instrument')*; possibly GID jirr.k.u.luum *satin bower-bird. . . ('pointed tail feathers?')*.

7. Infix form *jirr+j+u in PNY *jirr.j.i, referring to extensions in front or back, in NYA jirr.j.i *pubic tassel*; MDB jirr.j.i, NGN jirr.j.i ~ ji.j.i *nose*; WLB jirr.j.i.nti n. *sneeze*; WJK

JIR.J.I.L-YA. . . *emu wren. . . having a long tail. . .* Note also NYA W jirr.j.a n. *a fanning out, dispersal – as of sheep.*

8. Phonologically anomalous (exclamatory) form in PNPN *jirri.j *squitter!*, in NYA W jirri.j ('onomatopoetic') *exclamation referring to sudden spurt of liquid – as when horse completes urinating*; GUP djirri.tj (refers to passing loose faeces, having diarrhoea); NGI jirri.j *squitter!* (*diarrhoea*) (Donaldson 1980:65).

It is quite conceivable that *jurrkul *straight*, q.v., is rather anciently related in some way to *jiirru, *jirru, etc. See Dixon (1980:101) and O'Grady (1981c), and note WJK DURGUL *straight; in a straight line* and LRD thurrkul *narrow, small and narrow.*

Initial *k is treated in the following paragraphs.

*kaja₁ *far*. PNPN root (not in BNJic). NYA kaja *S long way, W far*; PNK KATTA.RA *apart, distant, little way off*; BLG katha ~ kaja *far*; BAY kayi.rrri *far*; PP *kaji *far* (> UMP kaji, WMK kaj, YIM kathii); YDN kaji *long way*; possibly GID kaaya *that (previously distant. . .)*.

*kaja₂ *boil, pus; suppurating, rotten*. PNPN root, forming an early PNPN doublet with *paja do, whose reflexes include WJK BADJA.NG *matter from a boil or sore*, YIM patha *rotten* and, probably, WEM puju.n *matter from a wound or boil, 'sleep' from the eyes*. PIN kaju.ru *liquid which accumulates in wounds; pus. . .* (and, possibly, kaja.ny+pa *intestinal worms. . .*); GUP gatji.pali *bad sickness. . . boils with more than one head. . .*, gayi.gayi *core of boil, gäy' secretion from the eye; pus, 'sleep'*; PP *kaja *rotten* (> UMP, YIM katha, WMK kath); possibly YDN kaju.la ~ U *dirty (e.g. water)*; probably GID kata+, BNJ kaj+a *to ache*, WAA kaja Vtr *to hurt (as of dull, throbbing pain)*; DJA kaji.lang *sick*; DIY kaja.kaja+ *to be sore, be in pain*.

*kaju *spear, digging stick*. PPN root (not in BNJic). PIN kaji *spear*; GAW doublet KATTA, appar /katha/ *heavy stick to fight with; club. . .*, KAYA *spear. . .*; PNK KATTA *club, grubbing stick; gun, musket*, KATTA.RNA *scorpion ('having a spear')*, KAYA ~ KIYA *spear*; WJK KADJO /kaju/ 1. *native hammer. . .* 2. *strong gum, resin used for fixing on the heads of hammers. . .* 3. *basalt, whinstone. . .* (apparently diffused northwards, after the coming of steel axes, as e.g. NYA, YIN kaju *tomahawk, axe* but note BAY kaju *stone axe*) and GIDJI *spear. . .*; NYU koj orig. *small stone axe*; now *tomahawk, hatchet, axe*; YIN kayi.i *blunt training spear*; BAY kaji.ri *spear*; possibly WLB kaja.la.rra *small wooden tool used in picking fruit*; GUP gayi.t *shovel spear* y, watju.rra.pi *long pointed ceremonial stick, watja pointed*, and possibly gatha.ŋ *carpenter's plane*; RIT gadji.t ~ gayi.t ~ gäyi.t *shovel spear*; LRD /kaji.kaji/ kaji.ka *fighting spear with long point*; possibly KLY GET(A) ~ GET(O) *hand, finger; pincer of crab, geth hand ('that which a spear is an extension of?')*; PP *kaji.n *digging stick* (> UMP kaji.n, TAY kath.n); DYI kaji.n (pala) *yamstick*, kaji.n (palan) *girl ('the one who wields a yamstick')*, kaji.ya (palan) *young girl*; DJA kuyu.n *stabbing spear* (DJA kaji.n *water* may have evolved semantically as *'that which is obtained in dry stream bed by wielding digging stick'*); DIY kaji *light spear*.

*kaajung *son, child*. PNPN root (for semantic development, cf *pujam). PIN kaja *son, sister's son*; PNK KAITYA /kaja/ *small, little, infant, child*; possibly WJK GARDANG ~ KARDANG (error for *GADANG /katha.ŋ/?) *younger brother; third son; third finger*; JKY kaja *child*; PNG *kaja *older brother* (> NMA kaja, NGL katha, YIN kaya; cf also BAY kaja do); GUP gäthu *man's son or daughter. . .*; RIT gäthu+ (*brother's*) *son or daughter*; PP *kaaja *mother* (> WMK

kaath, MUM kadha(.ng)); DYI kaya (payi) *mother's younger brother*; GID watung, WAA wajung+ *mother*; BNJ wajung ~ WEJUN /wayun/ = *mother-in-law*; DJA waji.p *son*.

*kaalyu *armpit*. PNPN root (not in BNJic) Nasalised variant in WJK NGAL-YA, appar /ngalya/, *armpit*, NYU ngaly *axilla, under-arm*; YIN kaja.rta *ticklish* (Wordick); PKM *kalya *armpit* (> BAY, THL kalya, WRY kalya, THR kaja); GUP wäyu.k *arm, esp. upper arm*; possibly LRD /waji.d.ji.rr/ wajidji(rr) *armpit hair*; PP *waaju *armpit* (> UMP waatha₁; MBI athu); DJA kaja.p, WEM katha.p *armpit*.

It is possible that PIN kalyu *water*, as well as NGI /kaliN+/ *kali water*, are further reflexes. If so, the necessary understanding of the semantic development involved may well come through examples such as BAY kalyu.Ra *urine* and kalya.Ra *vagina*, recorded by Davidson, as well as PIN pinyu.ly.ma+N+ *to copulate*. . ., NUG pitnyu *armpit*, UMP pinyu *vagina* (PNPN *pinyu).

ARB, WGK kilyi.kilyi *armpit* is most plausibly explainable as a blend of reflexes of *kaalyu and of PNPN *kiiti.kiti, whose reference is to tickling.

*kami *mother's mother*. PNPN root. NYA kami.ji *MM*; DCh (w.s.); WLB, PIN kami.na *girl, maiden*; PIN kami WiMFZ; *first DD*; GAW KAMMI.LYA(TA) *grandchild*, KAMMA.MMI *grandmother on the mother's side*; GUP gami.nya.rr. . . *grandchild*, RIT gami.nya.rr+ DCh; ZSch; PP *kami *MM* (> UMP kami.ju DCh, ZDCh, . . .; WMK kem, MUM kame(+ling), URA ami, LIN mi+ *MM*); YIM kami FF, *MM*; YDN kami.m FF; GID, WAA kami FM. . .; BNJ kaami *MM*; GUM kammi *aunt*; conceivably also GIP kaping FM, with obscurely motivated replacement of *m with p.

*kampa *ahead, in front, first, before, hence (person) born at an earlier time, i.e. old person, dead person, spirit*. PNPN root (not in BNJic). WLB kampa.rru *ahead, in front, first, before*; PKA *kampa.rr *in front, before* (> BAY, THL kampa.rr, BRD kapa.rr); YIM kampa *old woman*, kampa.a.r+warra *all dead*; YDN kampu.nU *a type of spirit*.

*kaping PPN root referring to water (Capell 1956), wetness or entities existing in a watery medium – hence *egg, brain, marrow; fish*; may be anciently related to PP *kaapa *flood, heavy rain*. 1. Root form in NYA kapi *S fish (generic term)*, W *small edible fish in De Grey River*; PIN kapi, GAW KAUWE (appar /kawi/, NRA KABIE /kapi/, PNK KAPI ~ KAUO *water*; WJK doublet GABBI ~ KYPBI /kapi/ *water* and WAPPI *small sp. fish, found. . . in rivers. . .*; KAL kapi, KGS KYP *water*; NYU kep *water, rain; wine, liquor*, kepa *wine* (appar loan from WAD); GNP kap *liquor*; WJI kapi *water* (WD loan); PNG *kapi *fish* (> YIN, KUR kawi); GUP gapu, DJN gapi *water*; RIT gapu (*fresh*) *water; beer, liquor*; possible KLY quadruplet GABU gapu 1. *cold, cool* (cf MIR geb n. *cold*, however) 2. *medicine rubbed on body*, GAPI *suckerfish*, KAP(U) /kapu/ kaapu *seed, nut* (< 'egg'); a *single banana* (but cf MIR kep *seed, kernel*) and WAPI /wapi/ waapi *fish*; possibly UMP kapu *curled up – as in sleep* (< 'as if enclosed in an egg – like birdlet not yet hatched?'); BNJ kapiing *water*; DIY KUPPIE kapi *egg*.

2. PWPN extended form *kapu.lyu, in NYA W kapu.lyu *soft; dispersing, thinning out – of clouds* and ARW pu.ly *soft*; in the NYA W case, a reduplicative extension appears in kapu.lyu.pu.lyu ~ kupu.lyu.pu.lyu 1. *tadpole* 2. *water beetle*.

3. PNY extended form *kapu.rtu *round object*, in WLB kapu.rdu 1. *small cake made from seeds* 2. *plug of tobacco* 3. *football*; WJI kapu.rtu *egg*.

4. Other extended and derived forms in PIN kapu.l.tu *urine, [urinary tract]*, kapu.ra.rr.ji *kidney*; GAW KAPPE+ *to vomit*, KAUWE.KO *steam*, KAUWI.R.KA *broth; full of; soaked in water* (and note the probable root variant KAPPA *marrow*); when occurring as the second element in derived place names, NRA KABIE, above (Kühn in Curr 1886:II:147) occurs with lenited w reflex of *p, e.g. Minlacowie, Pondalowie; PNK KAUWI+ *to bring up, vomit*, KAPPA.RNA *gravy*; VAS GABBY.TCH, appar /kapi.j/ *running water*; BAY kawu.ngka *egg* (with unaccountable w for *p); PKM *kapu.rti.ny *kidney* (> BAY kapu.rtu.rtu.ny ≈, BRD kawu.rti.ny) – cf PIN kapu.ra.rr.ji, above, which clearly shows cognation between kapu. and, e.g., BAY kapu., and just as clearly contains three (probably) paragogic final elements which are utterly unrelated to BAY .rtu.rtu.ny. Whether these elements ever carried any signalling value is a moot point: instances such as the NYA reflex in *kidney*, below, seem to indicate that some of them may have: *muka *seed, egg* > NYA muku(.nya) *little girl*, NYA W muku.rtu.ku.rtu *kidney*; PIN muka.la *stomach*; GAW MUKA *egg; . . . circular or oval form*, MUKA.MUKA *brain*; ARW kwa.rt *egg* (< *muka.rtV – K.L. Hale, p.c., July 1963); GUP muwa.nda.ŋ *deaf and dumb* (< 'shut/closed (ears), sealed off – like an egg within its shell' – cf BNJ muku.l *deaf, ?closed* < PNPN related form *muku.l *father's sister, who is sealed off* from everyday modes of communication with her nephew; this form has clear reflexes also in PKA/PMA, PYU, PP and elsewhere); YIM muku *back; SEED; backbone, shell, roof, keel, etc.*; GYA muku *back* (if the referent range of this form includes *carapace of turtle*, then semantic connection with *egg* would be plausible); muki.rr *shell of oyster*; YDN muki.rV *small mussels*, muka.ru *fish net* ('something enclosed or enclosing'), muki.y.muki.y Dyalnguy *woman*; DYI muku.l.n.pa *whole, round* ('egg-like'), muku.y.ngku.n D Dyalnguy (palan) *spirit of a dead woman* (with which cf the semantics of NYA muku(.nya), YIM kapii.rr *girl, female* and DYI D Dyalnguy kapa.y (palan), *girl, (pala) yamstick*)).

*kuli *angry, anger*. PNPN root (not in BNJic). NYA kuli S *fighting person, W fight, argument*; NYA S kuli+kata *poisonous snake (gen.)*; *cheeky person, animal, W kuli+kiti having fighting qualities*; WLB kulu *anger, fight*; PP *kuli *angry, anger* (> WMK, TAY kul; THY liy *cheeky*); MDI kuli+ngai (my) *temper, anger, kule+watha to get cross*; DJA kuli+en *angry, roused, kuli+wil poison*; WEM kuli.ngula *to feel shy*.

*kuman *one*. PNPN root (not in BNJic). GAW KUMA *one; another; also, too*, KUMA+NGKA *together* (+NGKA *LOCATIVE*); PNK KUMA ~ KUBMA.NNA *one, alone, sole*; WIR kuma *one*; NMA kuma, YIN kuma ~ kuma.rla *together*; possibly GUP gumu.rr.'yu+N *to meet* ('come together?'); SAI KOMA.KOMA *one by one* (Ray 1907b:106); YIM kuma *doubled up, folded, coiled* ('together'); YDN kuman *one, alone* PNPN *kUrnu confirms these semantic relations.

*kupi+L Vtr *to hide, i.e. POTENTIALLY to lose; to lose (ACTUALLY)*. PNPN root (not in BNJic). 1. NYA kupi.lya, PNG *kupi.lya *dew, fog* ('obscuring, hiding') (> NMA kupi.lya, YIN kuwi.ja); WJK KOPI.N *secretly*, KOPI.N+IJO.W *to hide* (IJO.W *to place, put* < *ngiirra+ *to put*); possibly WJK KOPI.L *sleep*; possibly LRD /kuba(a)la/ kubaa.l *deep sea. . .* (< 'hidden, profound?') and KLY KUBI *charcoal; darkness*, KUBI.L kubi.l *dark; darkness, night* (but note MIR KUPIKUPI *dark*); YIM kupaa.r.pi+L (Coastal) *to bury, plant*; DYI kupa+L *to cover up*.

2. Prenasalised form in PIN kumpi+L+ *to hide, kumpi.l+pa. . . hidden*.

3. Nasalised form *kumi+ in KLY GUMI *secretly, secret*, UMP kumi+L+ *to lose it*.

*kuura *shame, shyness, embarrassment; shameful*. PNPN root (not in BNJic). 1. Root form in WLB kura *sexual intercourse*; GAW KURO.KARRE+ *to be ashamed; shy; to blush*; possibly WJK GORA.N *to scold; to abuse*; GUP gora *be shy, ashamed*; DYI kura (pala) *vaginal opening*.

2. PNY prenasalised form *kurnta (for *kunra; cf *jlru/*jirntu) in NYA kurnta.ny S *shy, W shy, embarrassed, ashamed*; NYA kurnta.ny+ji+L+ *to shame, embarrass*, NYA W kurnta.lyu.rr.pi+L+ *to shame by out-arguing*; WLB kurnta *shame, embarrassment*; PIN kunta *shy, respectful*, kunta.lya+N+ *to shame*, kunta.nyju. . . *very shy*; YIN kurnta 1. *respect, deference* 2. *shyness, shame, embarrassment*. A separate *shame* etymon is PNPN *piiru+, reflected in BAY piru.ngka.rr+Y+ *to be frightened; to be shy, ashamed, embarrassed*, WRG piira *frightened, fear* (Dixon 1981:113).

*kuuri *bent*. PNPN root (not in BNJic), possibly related to *kurun *eye*, (as in NYA kuru.rr *pupil of eye*; PIN, BAY kuru, UMP ku'un *eye*). 1. Basic form in GUP guri.pa *fish hook*; YIM kuuri *corner, bend*; DIY kurdi *curve, bend*.

2. Prenasalised form in DIY kurndi.kurndi *bent, crooked*.

3. Nasalised form in YIN nguri *circle* (cf YIN kuri.waarta.rr+Y+ 1. *circle back* 2. *spin around as if dizzy* (Wordick 1982:297)).

*kurnta *shame*. See at *kuura.

*kurntal *daughter*. PNY root, possibly related to *kurnta. 1. Basic form in NYA kurntal, PNG *kurntal (> NMA kurntal, YIN kurntat), PKM *kurntal (> BAY, WRY kurntal, BRD kurtal) *daughter*. UMP kulnta *wife* may be a further cognate.

2. Lenited form in PIN yurntal+pa *daughter* (cf PNY *karlti+ *to call out* > PIN yarlti+Y+, GAW KARLTA+; PNK KALTI.RRI+ *to be clamorous, beg*).

*kurpi *desirous (of), wishing (for)*. PNPN root (not in BNJic). PNG *purlpi 1. *want* 2. *like* 3. *need* (> NMA purlpi, YIN purpi, KUR purtpi); KLY UBI *wish, want, desire; greed*; UMP kuupi *wanting, liking*.

*kuyang *fish*. PPN root. NYA kuyi S *meat (edible)*, W *meat, animal*; WLB kuyu *meat; meated animal*; GAW KUYA *fish generally*; PNK KUYA *fish*; WJK GU-YA ~ GOYA *sp. frog that burrows. . . and is eaten. . .*; GUP guya *gen. term fish (not sharks)*; LRD kuyi.rr *fish sp., a fish found in fresh water*; KLY GUIE.R ~ GWIA.R *a sting-ray (Trygon)*; WMK kuuy *spotted stingray*; YIM kuyu (rare), DYI M kuya (payi) *fish (generic)*; GID kuyang *sp. mullet*, kuyaa.ny *grey possum (often used generically for any species of possum)*.

EARLY AUSTRONESIAN LOANS IN PAMA-NYUNGAN?

G.N. O'Grady and D.T. Tryon

Linguistic evidence of Macassan contacts with speakers of coastal Arnhem Land languages within the last half millenium is well documented (Macknight 1972, Walker and Zorc 1981). It is likewise well known that in the past century numerous loans have entered the languages of Torres Strait and northern Cape York Peninsula from such diverse sources as Samoan, Lifu and English (Ray 1907b). This was due largely to the presence of Pacific Islands pastors, pearlers and traders.

The possibility of the presence of much older Austronesian loans in the languages of such areas as the Western Desert, Cape York Peninsula and New South Wales has apparently not been explored, despite the fact that such loans have been detected deep in the Papua New Guinea heartland in the languages of the Trans-New Guinea Phylum (McElhanon and Voorhoeve 1970, Lynch 1981 and Chowning 1987).

Our purpose in this paper is to bring into focus a number of forms which, we feel, can plausibly be argued for as Austronesian loans which have come into these languages, all of which are members of the huge Pama-Nyungan Family. This would have happened at an early enough point in time for the borrowed items to have become part and parcel of the spread of the ancestral tongue across seven-eighths of the area of the continent.

Independent Pama-Nyungan evidence, such as the absence of great linguistic diversity in south-western Australia, points strongly to the north-eastern part of the continent as the probable centre of dispersal of Pama-Nyungan. Our aim is to show that this area (and the adjacent Gulf of Papua) is also the zone in which contact occurred between speakers of early Pama-Nyungan and Austronesian.

We seek to demonstrate that the sources of the majority of the putative Austronesian loans are the Austronesian languages of neighbouring coastal Papua. It will be argued that both the phonological shapes and meanings of the putative loans in early Pama-Nyungan match the Austronesian source items, as evidenced by reconstructed forms for Proto-Central Papuan (PCP) in particular and Proto-Oceanic (POC) in general. Moreover, the developmental sequence in the subsequent evolution of these forms within Pama-Nyungan accords well with recognised phonological innovations within this family.

The putative Austronesian loans in the Pama-Nyungan languages are as follows:

1. **Proto-Nuclear Pama-Nyungan (PNPN)** *payung *shelter, protection*
Proto-Austronesian (PAN) *payung *shelter, protection, shade, cover*

On internal Pama-Nyungan evidence from the east and west coasts of Australia as well as from the interior, a root *payung *shelter, protection* was reconstructed by O'Grady in 1984 as part of his ongoing comparative work. Reflexes of this root appear in the east in Gidabal (GID) payuung *slings for carrying a child* and Guugu-Yimidhirr (YIM) payan *house, shelter, humpy*. In the far west, Davidson (1928-1932) recorded Bayungu (BAY) BAIA *deep wooden baby tray*, presumably paya. Nasal-grade reflexes also appear in the West in inland Nyungar (NYU) may(a) *house, hut, camp, shelter*, Wadjuk (WJK) maya *house, bark of the ti-tree...*, recorded by Moore (1884) as MY-A, and in the Warlpiri (WLB) metathesised form yama *shade...*

The development of the above forms entailed the following innovations:

1. The loss of PNPN *-ng in YIM, WLB, NYU, WJK and BAY.
2. Progressive vowel assimilation in YIM, WLB, NYU, WJK and BAY.
3. Addition of -n in YIM.
4. Nasal gradation in WLB, NYU and WJK.
5. The lengthening of V₂ in GID.
6. Final vowel weakening in NYU.
7. Metathesis in WLB.

Reflexes of PNPN *payung in the above daughter languages are summarised as follows:

	PNPN PAN	*payung *payung				
	YIM	GID	WLB	NYU	WJK	BAY
peripheral nasal deletion	payu	payung	payu	payu	payu	payu
progressive vowel assimilation	paya	payung	paya	paya	paya	paya
addition of n-suffix	payan	payung	paya	paya	paya	paya
nasal gradation	payan	payung	maya	maya	maya	paya
V ₂ lengthening	payan	payuung	maya	maya	maya	paya
final vowel weakening	payan	payuung	maya	may(a)	maya	paya
metathesis	payan	payuung	yama	may(a)	maya	paya

The deletion of final peripheral nasals in Pama-Nyungan languages except for parts of the east is well known (Dixon 1980). Progressive vowel assimilation is a widespread feature. Witness the following:

Yidiny (YDN)	m a r p u	Adj: <i>one's own (part of oneself)</i>
Pintupi (PIN)	m a rl p a	<i>friend, relative</i>
Yidiny	j a t u	N: <i>shade</i>
Pintupi	j a rt a	<i>thickly standing bush or grass</i>
Yidiny	j a k u jaku	Adj: <i>can't do some task...</i>
Pintupi	j a k a jaka	N: <i>tiredness in upper leg muscles</i>

N-suffixation has been studied by Alpher (personal communication). In his opinion it is gender-related. Numerous instances of nasal gradation are documented in the western part of the continent and elsewhere. Consider, for example:

Wirangu (WIR)	p a r n t a	stone
Galbu (GLB)	b a r n d a	stone (Capell, p.c.)
Yindjibarndi (YIN)	m a r n t a	stone
Gawurna (GAW)	P I K I	moon
Wadjuk (WJK)	M I K I	moon
Pintupi (PIN)	p u r t u	[in vain]
Wadjuk (WJK)	M U R D O	in vain
Bayungu (BAY)	p u n y j a+	lick, kiss
Nyangurnarta (NYA)	m u n y j a+	kiss
Bayungu (BAY)	p u n h t h u	blunt, dull (of a point)
Wik Mungkan (WMK)	m u n h t h	blunt (< PP *munyju - Alpher, p.c.)
Bayungu (BAY)	j a k u lyarri+	play
Thargari (THR)	ny a k u rri+	play
Thalandji (THL)	p a n y u	good
Diyari (DIY)	m a n y u	good

V₂ lengthening in the Bandjalangic dialects, including GID, is discussed in Geytenbeek and Geytenbeek (1971) and Crowley (1978).

The putative loan, PAN *payung *shelter, protection, shade, cover*, is attested in present-day Bahasa Indonesia as payung *umbrella*. In Proto-Oceanic, namely the language ancestral to all Austronesian languages east of Geelvink Bay in Irian Jaya, the final nasal is not reconstructible on present evidence, the POC reconstruction being *mpa[i] *fence, enclosure*. This suggests two possibilities: either the borrowing occurred at a very early period in the development of POC, before the final nasal was lost in the daughter languages or, perhaps more likely, the loan entered Pama-Nyungan directly from a Western Austronesian source. The semantic differentiation in the meanings of reflexes of PNPN *payung in the daughter languages is taken by us as evidence that this item was borrowed at quite an early stage in the histories of Austronesian and Pama-Nyungan. The point of contact with Pama-Nyungan would probably have been Cape York Peninsula.

It has already been noted in the literature (Mulvaney and Golson 1971) that a technological revolution in axe-hafting techniques took place roughly 5000-7000 years ago in northern Australia, spreading throughout the continent. It has been suggested that this new technology owed its origin to Austronesian-Australian contacts (op. cit.). It seems quite plausible, then, that new construction techniques for human shelters could have been introduced at the same time. In this event, it would have been entirely natural for the Austronesian name for a shelter to have been adopted at the same time as the techniques.

2. PNPN *taparr *round object, heavenly body*.

PCP *daba *raba *morning, sky*.

On internal Pama-Nyungan evidence, O'Grady reconstructed a root *taparr having reference to heavenly bodies. Its reflexes include PIN taputapu/japujapu *ball, round object*; Kala Lagaw Ya (KLY) dapar *big cloud, the sky*; Umpila (UMP) taway *moon*; and YIM tawaar *star*. Reflexes referring to facial hair appear in Nyangumarta (Wallal dialect) (NYA W) tapurrji *moustache*, BAY

japurta *moustache, beard* and Gupapuyngu (GUP) thawarrak *beard, facial hair*. Ironclad Pama-Nyungan evidence for the semantic association of *beard* with *sky* includes, e.g., NYA ngarnka *beard* vs PIN ngarnka *sky; the heavens; blue sky...* (< PNPN *ngarnku *beard* – witness Dyirbal (DYI) nganku *mouth*).

The evolution of the forms in the Pama-Nyungan languages involved the following innovations:

1. Reanalysis of PCP *daba in early Pama-Nyungan as *taparr (see below).
2. Rounding of *a to u in V₂ position between a [+lab] segment and rr, in NYA W, PIN and BAY.
3. Shift of initial apicals to laminals in BAY (this innovation is incipient in PIN and GUP).
4. Loss of *rr in YIM, PIN, BAY and GUP by reanalysis.
5. Lenition of *-p- to -w- in UMP, YIM and GUP.
6. Reduplication in PIN.
7. Idiosyncratic voicing of *t- in KLY.
8. Shift from PP *-rr to -y in UMP.
9. Lengthening of V₂ in YIM.
10. Accretion involving elements (which appear to be semantically contentless) in NYA W, BAY, GUP (twice over) and YIM.
11. Apocope in GUP.
12. Rhotic merger in KLY.

Reflexes of PNPN *taparr in the above daughter languages are summarised as follows:

	PNPN *taparr		PCP *daba/*raba				
	KLY	UMP	YIM	NYA	PIN	BAY	GUP
reanalysis	taparr	taparr	taparr	taparr	taparr	taparr	taparr
rounding	taparr	taparr	taparr	tapurr	tapurr	tapurr	taparr
apical shift	taparr	taparr	taparr	tapurr	(japurr)	japurr	thaparr
*-rr-del	taparr	taparr	tapa	tapurr	(japu)	japu	thapa
lenition	taparr	tawarr	tawa	tapurr	(japu)	japu	thawa
reduplication	taparr	tawarr	tawa	tapurr	(japujapu)	japu	thawa
voicing	daparr	tawarr	tawa	tapurr	(japujapu)	japu	thawa
rhotic shift	daparr	taway	tawa	tapurr	(japujapu)	japu	thawa
V ₂ lengthen	daparr	taway	tawaa	tapurr	(japujapu)	japu	thawa
accretion	daparr	taway	tawaar	tapurrji	(japujapu)	japurta	thawarra
accretion	daparr	taway	tawaar	tapurrji	(japujapu)	japurta	thawarraka
apocope	daparr	taway	tawaar	tapurrji	(japujapu)	japurta	thawarrak
rhotic merger	dapar	taway	tawaar	tapurrji	(japujapu)	japurta	thawarrak ¹

O'Grady (1966) documented 31 elements which appear as rightward accretions in Ngayarda languages. These same elements appear to pervade Pama-Nyungan languages in general. One such

¹Spelled dhawarrak.

accretion which occurs on many nominal forms is *-rr, as in NYA malyparr and BNJ ngalurr, below, as well as in the following:

Common Australian (CA)/PNPN	*p i n	a ng	<i>ear</i>
Pintupi	p i n	a	<i>ear</i>
Mayi-Kulan (MKU)	p i n	a rr	<i>ear</i>
PNPN	*p a rl	a ng	<i>behind, at the rear of</i>
Pintupi	m a rl	a	<i>behind</i>
Northern Mangarla (MNN)	p a rl	a rr	<i>back, spine</i>
PNPN	*j a rl p a+		<i>copulate</i>
Mayi-Kulan	th a l p a		<i>copulate</i>
Umpila	th a l ' a l		<i>semen</i>
Pintupi	j a rl p a	rr + p a	<i>young one...</i>

The semantics of the above is corroborated in PIN jiji *child*, WJK DJIDJI *semen* and Ngarla (NGL) jijirr *seed* (< Proto-Nyungic *jiji).

The putative loan, PCP *daba *raba *morning, sky*, has reflexes in numerous languages of the southern coast of Papua New Guinea, for example Motu daba *morning, before the sun rises*. Noteworthy, too, are occurrences of this etymon in Papuan languages further to the west, for example Dabu dapar, Parb dabar, Dorro jafar and Peremka dapar, all glossed in Riley (1930-31) as *cloud (black)*. Dorro zapar *sky* and jafar, above, apparently constitute a doublet. It would appear that PCP *daba acquired a final -rr after it was borrowed by PNPN and that subsequently this form diffused northward into Papua.

3. PNPN *malung *shade, spirit*

PAN *m-all[n]u, Proto-Eastern Oceanic (PEO) *malu *shade, shadow*

Internal Pama-Nyungan evidence from east and west reveals a PNPN root *malung *shade, spirit*. Its reflexes include YDN (Tablelands) maluway, (Coastal) malway *spirit, shadow*; GID, Bandjalang (BNJ) malung *shadow, shade*; PIN malpu *evil spirit*; WJK MALUJ (apparently maliji) *shadow*; WJK MALLO (apparently malu), Nhanda (NAN) and Ngarluma (NMA) malu *shade*; and GUP mali, *shadow, photo, image*. (For the high front vowel in the GUP form, compare PNPN *marnu *neck, throat* > GUP mani *neck, creek*).

The following innovations occurred in the above:

1. Reanalysis of PEO *malu in early Pama-Nyungan as *malung under the pattern pressure of forms with much-favoured *CVCVng shape, such as *jinang *foot*, *marang *hand* and *pinang *ear*. A counter-argument might be advanced that the -ng in GID arose as a recent development. This seems unlikely, given the abundant evidence for *-ng in PNPN.
2. Loss of *-ng in YDN, PIN, WJK, NAN, NMA and GUP, cf *payung.
3. Incretion of *p in PIN.
4. Accretion in YDN and WJK.
5. Syncope in YDN C.

6. Anticipatory assimilation to [+hi], [-bk] in WJK.
7. Fronting in GUP.
8. Glottal closure in GUP.

The assimilation of *u to *a, as exhibited in some reflexes of PNP *payung, is apparently inhibited in this case by the intervening liquid.

Reflexes of PNP *malung in the above are summarised as follows:

	PNPN *malung							
	PEO *malu							
	YDN T	YDN C	GID/BNJ	PIN	WJK	NAN	NMA	GUP
reanalysis	malung	malung	malung	malung	malung	malung	malung	malung
periph nasal del	malu	malu	malung	malu	malu	malu	malu	malu
incretion	malu	malu	malung	malpu	malu	malu	malu	malu
accretion	maluway	maluway	malung	malpu	malu/maluji	malu	malu	malu
syncope	maluway	malway	malung	malpu	malu/maluji	malu	malu	malu
anticip assim	maluway	malway	malung	malpu	malu/maliji	malu	malu	malu
fronting	maluway	malway	malung	malpu	malu/maliji	malu	malu	mali
glottal closure	maluway	malway	malung	malpu	malu/maliji	malu	malu	mali'

Incretion, usually of *p or *k, is commonplace in Pama-Nyungan. Consider, for example, the following:

Pintupi	ng a rr i +	lie, sleep
Wirangu	ng a rr p i +	lie, sleep (< *ngarri+)
Nhanda	m a ly a	no
Nyangumarta	m a ly p a rr	averse (< *malya)
Pintupi	p i n a	ear
Nyangumarta W	p i n k a	seashell (< *pinang)
Bayungu	y u rr a +	rub
Nyangumarta	y u rr p a +	rub (< *yurra+)

PEO *malu *shade, shadow* appears to be the source of PNP *malung. Consider, for example, Mota malo *middle of the night*.

4. PNP *punga *shade, shadow, spirit, darkness*

PAN *bEng[l], POC *mpong *night, dark, evening*

Within Pama-Nyungan, a root *punga *shade...* is reconstructed on the basis of the following: Proto-Pamic (PP) *punga *sun* (antonym of *shade*), > WMK pung, Linngithigh (LIN) nga; note also UMP pungan *fish*, perhaps from '*shadowy (underwater form)*'; GID ngupukan, PIN yungurnpa *morning* (for the semantics, cf Warlpiri (WLB) yamakarlarra *morning* – literally *shadows-west*, with yama *shade...* < *payung, above); WLB (and PIN) munga *dark, darkness of night* – and note WLB, PIN mungalyurru *morning*; GAW PUNGA *shade, shadow*; GUP wungurli *photo, image, shadows* (and note GUP munga *ashes*). For the semantics, compare

Ngawun (NGW) karrpu *night, dark*, NYA karrpu *sun, day*, PIN karrpu *midday*. . . (<PNPN *kArrpu).

The evolution of these forms involved the following innovations:

1. Reanalysis of POC *mpongi in early Pama-Nyungan as *punga.
2. Progressive vowel assimilation in GID, PIN and GUP.
3. Accretion in GID (twice over), PIN and GUP.
4. Nasal gradation in WLB.
5. Final consonant masking in PIN.
6. Initial-softening in LIN, PIN and GUP.
7. Initial-dropping in LIN and PIN.
8. Prothesis in PIN.
9. V₁ dropping in LIN.
10. Metathesis in GID.
11. Apocope in WMK.

Reflexes of PNPN *punga in these daughter languages are summarised as follows:

	PNPN *punga		POC *mpongi				
	WMK	LIN	GID	WLB	PIN	GAW	GUP
reanalysis	punga	punga	punga	punga	punga	punga	punga
prog vowel assim	punga	punga	pungu	punga	pungu	punga	pungu
accretion	punga	punga	punguka	punga	pungurn	punga	pungurli
accretion	punga	punga	pungukan	punga	pungurn	punga	pungurli
nas gradn	punga	punga	pungukan	munga	pungurn	punga	pungurli
final cons masking	punga (PP)	punga (PP)	pungukan	munga	pungurnpa	punga	pungurli
IS	punga	wunga	pungukan	munga	wungurnpa	punga	wungurli
ID	punga	unga	pungukan	munga	ungurnpa	punga	wungurli
prothesis	punga	unga	pungukan	munga	yungurnpa	punga	wungurli
V ₁ drop	punga	nga	pungukan	munga	yungurnpa	punga	wungurli
metathesis	punga	nga	ngupukan	munga	yungurnpa	punga	wungurli
apocope	pung	nga	ngupukan	munga	yungurnpa	punga	wungurli ¹

It is remarkable that two Austronesian roots showing so much semantic overlap appear to have been borrowed into Proto-Nuclear Pama-Nyungan, namely PAN *m-ali[n]u *shade, shadow* and *bEng[i] *night, dark, evening*. It would seem likely that these items were borrowed in the broad context of ritual, witchcraft and ceremony.

¹Spelled wunguli.

5. PNPN *ngAlu wave, swell, current

PAN *alun, *qalun, POC *(ng)alu, PPN₂ (Proto-Polynesian) *ngalu wave, breakers, swell, undulation ; PCP *Galu current

On the basis of internal Pama-Nyungan evidence, we reconstruct a root *ngAlu wave, swell, current. Reflexes of this root include: UMP ngaalun waves, swell; BNJ ngalurr current, stream, tide; NYA W ngalala current, running water; PIN ngalarra wind [air current]. The evolution of these forms involved the following innovations:

1. Accretion in UMP, BNJ, NYA W and PIN.
2. Assimilation of V₂ to V₃ in NYA W and PIN.
3. Possible V₁ lengthening in UMP.

The development of reflexes of PNPN *ngAlu in the daughter languages is summarised as follows:

	PNPN *ngAlu POC *(ng)alu			
	UMP	BNJ	NYA W	PIN
accretion	ngalun	ngalurr	ngalula	ngalurra
assimilation	ngalun	ngalurr	ngalala	ngalarra
poss lengthen	ngaalun	ngalurr	ngalala	ngalarra

It is quite likely that the development of technologically superior modes of water transport after contact with Austronesians would have entailed the adoption of new maritime terms.

6. PNPN *jAku play, miming, dancing

POC *sangka(q) step, sway, vigorous motions with hand and/or foot

A PNPN root *jAku play, miming, dancing has been reconstructed on the basis of the following evidence: KLY sagul, play, dancing (compare Miriam (MIR) segur game, fun, play) (Ray 1907b); Wembawemba (WEM) jakuwa to celebrate; PIN yaku ceremonies...; NYA W yakurrma+ to echo; NYA S yakurr copy, imitate; GUP yaakarra+ play the part of, imitate; BAY jakulyarri+ to play.

Phonetically, POC *sangka(q) is generally held to have been realised as [saga(q)], the sequence *ngk now being considered to represent a voiced velar stop.

The development of the above forms involved the following innovations:

1. POC *s > PNPN *j (there being no fricative series in PNPN).
2. POC *a, as V₂, borrowed by PNPN as *u, possibly influenced by suffix with *-w-.
3. PNPN *j > KLY s.
4. Accretion in KLY, WEM, NYA W, BAY and GUP.
5. Verb derivation by suffix in NYA W, BAY and GUP.
6. PNPN *j- > NYA W, PIN and GUP y-.
7. V₁ lengthening in GUP.

8. Assimilation of V_2 to V_1 in GUP.
9. Voicing of PNP $*-k-$ in KLY.

Reflexes of PNP $*j\text{Aku}$ in the above daughter languages may be summarised as follows:

	PNP $*j\text{Aku}$					
	POC $*\text{sangka}(q)$					
	KLY	WEM	PIN	NYA W	GUP	BAY
$*s > *j$	jaka	jaka	jaka	jaka	jaka	jaka
$*a_2 > *u$	jaku	jaku	jaku	jaku	jaku	jaku
$*j > s$	saku	jaku	jaku	jaku	jaku	jaku
accretion	sakul	jakuwa	jaku	jakurr	jakurr	jakulya
suffixation	sakul	jakuwa	jaku	jakurrma+	jakurrma+	jakulyarri+
init softening	sakul	jakuwa	yaku	yakurrma+	yakurrma+	jakulyarri+
V_1 lengthening	sakul	jakuwa	yaku	yakurrma+	yaakurrma+	jakulyarri+
assimilation	sakul	jakuwa	yaku	yakurrma+	yaakarrma+	jakulyarri+
voicing	sagul	jakuwa	yaku	yakurrma+	yaakarrma+ ¹	jakulyarri+

The putative loan, POC $*\text{sangka}(q)$ *dance, step, sway*, is reflected in Austronesian languages of the Papuan coast, for example Misima (MIS) *saga*, Southern Suau (SUA-S) *saga dance*. Items referring to cultural features are recognised as being especially prone to cross-cultural borrowing. Given that Austronesians and Australians were in contact, especially in the areas bounded by the Gulf of Papua, it is quite probable that new dance styles were borrowed at that time.

7. PNP $*p\text{ula}$ feather, hair POC $*p\text{ulu}$ hair, feather

The PNP form $*p\text{ula}$ *feather, hair* has been reconstructed on the basis of the following attestations: WMK *pul*, Bakanha (BAK) *pula feather*; YIM *pulkathirr tail [fish, kangaroo, etc]*; Warlpiri (WLB) *purlapurla fork-tailed kite*; PIN *pulkurnpa animal with thick hair; dense shade*; GUP *pulka body hair, fur on animal*.

The evolution of the above forms entailed a number of innovations:

1. Unexplained development of POC $*-u$ to PNP $*-a$.
2. Reduplication in WLB.
3. Incretion in YIM, PIN and GUP.
4. Retroflexion in WLB.
5. Accretion in YIM and PIN.
6. Final consonant masking in PIN.
7. Progressive assimilation in PIN.
8. Final vowel deletion in WMK.

¹Spelled *yākarrman*.

Reflexes of PNP **pula* in the daughter languages are summarised in the following table:

	PNPN <i>*pula</i> POC <i>*pulu</i>					
	WMK	BAK	YIM	WLB	PIN	GUP
POC <i>*-u></i>						
PNPN <i>*-a</i>	pula	pula	pula	pula	pula	pula
reduplication	pula	pula	pula	pulapula	pula	pula
incretion	pula	pula	pulka	pulapula	pulka	pulka
retroflexion	pula	pula	pulka	purlapurla	pulka	pulka
accretion	pula	pula	pulkathirr	purlapurla	pulkarn	pulka
final cons masking	pula	pula	pulkathirr	purlapurla	pulkarnpa	pulka
progressive assimilation	pula	pula	pulkathirr	purlapurla	pulkurnpa	pulka
apocope	pul	pula	pulkathirr	purlapurla	pulkurnpa	pulka ¹

POC **pulu* *hair, feather* could plausibly have been borrowed in the context of dance and ritual, see PNP **jAku*, above. It seems quite likely that POC **pulu* could have been adopted in connection with innovative head-dress styles.

8. PNP **mAya language*

PAN(C), POCGR(OC) **maya tongue*

Within Pama-Nyungan, a root **mAya language* is posited on the basis of the following: Mayi-Kulan (MKU) *maya talk, say, speak, mayi speech, language*; Mirminy (MRN) *maya language, maya+ma+ to speak*; WJK MYA (apparently *maya*), GUP *mayang voice* (Capell, p.c.); Nhanda (NAN) *aya+ma+ to talk* (cf **maamang father > NAN ama*); GUP *mayali meaning* (and note the semantics of GUP *matha tongue, language, flame of fire*).

These forms underwent the following innovations:

1. Vowel shift of **a* to *i* in the MKU nominal reflex.
2. Stem accretion in GUP twice over.
3. Suffixation in MRN and NAN.
4. Initial-dropping in NAN.
5. Apocope in GUP.

Reflexes of PNP **mAya* in these languages are summarised as follows:

¹Spelled bulka.

		PNPN PAN(C), POCGR(OC)		*mAya *maya	
	MKU	MRN	WJK	NAN	GUP
vowel shift	maya v/mayi n	maya	maya	maya	maya
accretion	maya/mayi	maya	maya	maya	mayangu/mayali
suffixation	maya/mayi	maya/maya+ma+	maya	maya+ma+	mayangu/mayali
init drop	maya/mayi	maya/maya+ma+	maya	aya+ma+	mayangu/mayali
apocope	maya/mayi	maya/maya+ma+	maya	aya+ma+	mayang/mayali

It seems entirely plausible that a new word for *language* would have been borrowed during a period of Austronesian/Australian contact.

Problematic forms

At first blush, it would seem that UMP juuju *breast, milk*, and KLY susu *breast* are likely borrowings from POC *susu *breast, milk*. Further study by Hendrie (above), however, points to a PNPN reconstruction *tuuju *milk, breast*, whose reflexes also include PIN tuju *woman – one married with one or more children* and BAY juju/julyu *breast*. Since a laminal stop in UMP is a known reflex of PNPN *t-, the similarity in shape between UMP juuju and POC *susu may be illusory. Moreover, in the acquisition of loans in modern Pama-Nyungan languages, s is interpreted as a laminal stop and never as an apical. Examples are provided by NYA W jatil < *saddle* and jarrungu < Malay sarung *sarong*. The KLY form is also problematic, as it could derive from one of three sources, namely a daughter language of POC reflecting susu, PNPN *tuuju, or one of the early regional Pidgin varieties.

Likewise it is tempting to derive PNPN *kulum *louse* from an Austronesian source such as POC *kulu(t) *head, hair* or from POC *kutu *head louse*. However, Pama-Nyungan forms such as GID tulum, YDN kuli, GAW KUDLO and BAY kulu *louse* appear not to be of ultimate Austronesian origin. The thought still remains, though, that a word for a previously unknown species of louse, namely a head louse (POC *kutu) as opposed to POC *tuma *body louse*, could have been introduced into Australia in a variant form *kulu at the time of early Austronesian contact. The *-m would have been added later by Pama-Nyungan speakers in line with favoured PNPN canonical forms.

Recent loans from Austronesian

A number of recent Austronesian loans have found their way into the Pama-Nyungan languages of Cape York and Torres Strait through the influence of South Sea Island pastors, pearlers and traders who worked in the area as evangelists in the nineteenth century. Many of these are noted by Ray (1907b). These loans, for example KLY mimi *urine, urinate* and MIR omai, KLY umay *dog* [lit. *come here*, cf Gilbertese kamea], perhaps represent but the latest wave in a process which had its beginnings several thousand years ago.

Implications

If the putative Austronesian loanwords listed above entered Nuclear Pama-Nyungan from daughter languages of the Oceanic subgroup of Austronesian, then this would have important implications for the history and dating of Pama-Nyungan. For it is generally recognised that POC has its origins in the New Guinea area approximately 4,000 years ago. Participation of these forms in Pama-Nyungan sound shifts would appear to ensure that they have been present from an early Pama-Nyungan stage. In this case Pama-Nyungan itself cannot be older than perhaps 5000 years. The very impulse for the spread of Pama-Nyungan may well have been provided by the contact with Austronesian speakers and culture in the north-east of the continent. The technological innovations brought by the Austronesians would clearly have had an effect on speakers of early Pama-Nyungan both linguistically and culturally.

THE NUCLEAR PAMA-NYUNGAN UNIVERSAL QUANTIFIER *parntung

Geoffrey N. O'Grady

Introduction

In the context of comparative reconstruction, one of the most valuable lessons to be learned from Raimo Anttila's writings is encapsulated in the following injunction of his (1972:332):

If it seems that a word is guaranteed for the proto-language, its (alleged) absence in any of the daughter languages requires an explanation. A search often finds the reason, or the missing form itself.

Kenneth Hale named the largest coherent linguistic genetic construct in Australia 'Pama-Nyungan' twenty-five years ago. In choosing this label, he was postulating no especially close, nor especially remote, relationship between the Pamic languages in the north-eastern part of the continent and the Nyungar language of the extreme south-west. Rather, he was using words for '(aboriginal) person' from these two regions as the basis for a handy label for the language family which, in its broad outline, he had correctly delineated. Given that Pama-Nyungan is clearly a language family – Dixon (1980:226-227, and elsewhere) notwithstanding – it should be possible to carry out two operations having diametrically opposed directions of focus.

In the first place it should be possible, using evidence from a small subset of diagnostic daughter languages, to reconstruct a large percentage of the word roots and affixes of the proto-language – let us say a thousand or more (Hock 1986:567). Secondly, once a given element is securely reconstructed, it would be logical to make an intensified effort to pinpoint a reflex which is allegedly absent from a particular daughter language – especially given reasonably copious documentation of its lexicon and a comprehensive treatment of its grammar.

To explain a little more in detail: in a family encompassing languages A, B, C, X, Y and Z, let us say that about one in every four of these – namely B, G, M, O, V and Z – is chosen by the comparatist as being well documented and having diagnostic value for purposes of reconstruction. Let us further suppose that in the reconstruction of a particular word root evidence appears, on a first pass through the data base, only in languages B, V and Z. The ancestral root is then reconstructed for the immediate common ancestor of B, V and Z; on this basis the comparatist is in a position, *to the extent that the available information allows*, to predict the shape which the corresponding form would have in languages G, M and O. In the light of further

exhaustive study, the following scholarly consensus could conceivably emerge: the etymon in question has indeed disappeared without a trace in language G; in M, it appears in a marginally used noun compound, as for example *were+* in English *werewolf*, a cognate of Latin *vir*, Irish *fear man* and Latvian *vīr+s husband; man* (< Proto-Indo-European **wir+os*); in O, it survives heavily disguised by a combination of metathesis and semantic change.

By way of further illustration from Indo-European, let us consider the case of PIE **ped+* *foot*. On the basis of cognate forms such as Bengali *pa* (R. Sanatani, p.c.), Armenian *otn*, Italian *piede* and English *foot* (< **pōd+*, the lengthened o-grade form), we take this reconstruction to be 'guaranteed for the proto-language' – to use Anttila's turn of phrase. So far, so good. If we now look down from the vantage point of PIE, so to speak, into Slavic, bearing in mind the details of the phonological and other innovations peculiar to that branch, we are likely to conclude, at first blush, that the etymon in question died out of use at some point during the evolution of the Slavic languages: Russian *нога nogá leg, foot* clearly does not represent the same etymon as English *foot*, for example, and one might also presume that it is not cognate with any other element in English. A little digging is necessary before the realisation comes that we have been deluding ourselves twice over: the PIE root **ped+* *does* appear in native Russian forms. For instance, *пеший péshij pedestrian, unmounted* is recognised by Vasmer (1955:II:353) as a continuation of **pēd+sy+os*, an adjectival derivative of **ped+*; and the common instrumental expression *пешком peshkóm on foot* is derived from the same root. (Note also Russian *под pod ground, base, foundation*). *Nogá* in turn emerges as a cognate of English *nail*, German *Nagel* (< PIE **nog^h+*, with diminutive suffix **+ela+*), as well as of Portuguese *unha* and French *ongle* (Latin *unguis*), from PIE **ong^h+*. The latter alternant stands in metathesis relationship with **nog^h+*.¹ A diminutive suffix is also present in fossilised form in French *ongle*, as well as in Russian *ноготь nógot' nail; toenail* – a shape which may, however, have been influenced by *коготь kógot' claw* (G. Schaarschmidt, p.c.).

Yidiny and Wadjuk

Anttila's injunction is thus handsomely vindicated. It is reasonable that we should attempt to follow the steps outlined in comparative work involving Australian languages also. For initial purposes of exposition, two languages will be chosen more or less from the geographical extremes of Pama-Nyungan – Yidiny² in the north-east and Nyungar (Wadjuk dialect³) in the south-west of the continent. The following pair of forms from these two languages, we feel, can be taken as plausible evidence for an etymon of some antiquity in Pama-Nyungan:

Yidiny	pantu	Adj: <i>all together in a mob</i>
Wadjuk	BANDANG	a[dj.] <i>all</i>

The determination of the precise node in a fully articulated Pama-Nyungan family tree representing the immediate common ancestor of this particular pair of Australian languages will be

¹*The American Heritage Dictionary* (1970:1531).

²The four Yidiny stops, symbolised as b, d, g, g in Dixon (1977), are here represented as p, t, j, k.

³The 'prescientific' but in some respects rather sophisticated spellings of forms in Moore (1884) are identified by the use of small upper-case letters, but in all other respects are left unchanged.

involved. It is clear, however, that the node in question will be situated well up towards the dominating node representing Proto-Pama-Nyungan. Considerations of linguistic geography lead us to exclude recent borrowing as a plausible explanation for the similarity between the two forms, though borrowing at a time far back in the history of Pama-Nyungan is certainly not to be ruled out. Still, the basic nature of the meanings of Yidiny pantu and Wadjuk BANDANG leads us to regard a borrowing hypothesis as providing for a less plausible explanation for their similarity.

Another kind of logistic nightmare would loom large in the event that Yidiny and Wadjuk each had undergone multiple cumulative sound shifts subsequent to their divergence from their immediate common ancestor. Such hypothetical far-reaching successive phonetic changes in Pama-Nyungan would ultimately lead, however, to a much surer subgrouping of the languages than is likely, in fact, to be possible. What is increasingly likely to appear is evidence of almost extreme phonological conservatism – or, putting the matter another way – overwhelming indications of a rather shallow time depth for Pama-Nyungan (4,000 years at the most, say).¹

It would be reckless in the extreme – and quite unjustified – for a newcomer to Indo-European studies to posit a proto-form *gūs+ just on the strength of English goose and Russian гусь gus'. On the other hand, Pama-Nyungan comparative work indicates that cognates such as Umpila pii'al *kneecap* and Wadjuk BEBAL (evidently /pipal/) *kneecap* can be derived from a single proto-form in what seems almost a disarmingly straightforward manner. There is nothing even approaching the series of *six* successive innovations leading from PIE *gʰans+ through Proto-Germanic *gans+, *[gāns+], Proto-Anglo-Frisian *gā:s+, *gā:s ~ *gō:s (Roy F. Leslie, p.c.) and Old English go:s to Modern English goose. Instead, just *one* rule is needed each for Umpila and Wadjuk in order to derive the two forms for *kneecap*, if we accept *piipal as the ancestral shape: a rule deriving a glottal stop from intervocalic *p in Umpila; and, to judge from all the available evidence (including especially Douglas 1968), a rule by which original long vowels merge with short in Wadjuk.² In view of the overwhelming evidence for almost monolithic phonological conservatism in most Pama-Nyungan languages, it seems reasonable to undertake *direct*

¹Bruce Rigsby (p.c.) feels that the Pama-Nyungan time depth may be a mere 3,000 years – or even less.

²Comparisons involving appropriate additional diagnostic Pama-Nyungan languages are needed to confirm *piipal as the proto-form. As an example of equally dramatic conservatism in other widely scattered languages of the Family, Proto-Nuclear Pama-Nyungan *ngaja *delicacy* can be cited. This nominal is not reflected, to our knowledge, in Yidiny or Wadjuk, but descends in Nyangumarta as ngaji *sugar*, where

$$\begin{bmatrix} +\text{syl} \\ -\text{fr} \\ -\text{hi} \end{bmatrix} \longrightarrow [+fr] \quad / \quad \# \# \text{CV}(\text{CV} \dots) [+fr] \text{ ______ },$$

i.e., an *a which followed a laminal consonant in a non-initial syllable descends as i; in Bayungu, a Kanyara language (cf. Austin 1981b), the reflex is ngaja.ru *vegetable food*, in which a semantically empty ru syllable has been postposed, apparently 'for stylistic euphony' (Hale 1974:15), and semantic generalisation has occurred; in Yuulngu the outcome of *ngaja is ŋatha *vegetable food* – for *j > th, see Dixon (1970, 1980) and Heath (1981); and in Ngiyambaa this root appears as denominative verbs ngatha+L Vtr, ngatha+Y Vitr *to taste* and ngatha.y *tasty* (Donaldson 1980). Note, in passing, the fact that *two* of the languages show an identical semantic innovation – to the referent *vegetable food*. This is here taken as a tiny clue pointing toward a relatively recent Kanyara-Yuulngu unity – a unity which was maintained until perhaps a scant few centuries before the time of Christ. Independent evidence of a uniquely shared linguistic tradition involving these languages was earlier adduced by this writer (O'Grady 1959:178). The most straightforward hypothesis which would account for the identity in the referents of Bayungu ngaja.ru and Yuulngu ŋatha is as follows: in the immediate common ancestor of the Kanyara and Yuulngu languages, *ngaja supplanted ancestral *mayi as the general term for *vegetable food*.

comparisons between pairs of languages such as Yidiny and Wadjuk – at least as a preliminary to a wider search.

Turning now to the central theme of this paper, we match the consonants of Yidiny pantu and Wadjuk BANDANG, segment by segment, along the lines of the Anttila format:

(1)	Yidiny	p	a	n t	u	
	Wadjuk	B	A	N D	A	NG

One is not at all surprised to see further examples of close matching in form and meaning, as in the following:

(2)	Yidiny	p	i	j	a	r	wanta+n ¹	Vintr: <i>dream</i>
	Wadjuk	B	I	DJ	A	R		s. <i>sleep...</i>

In particular, note that Yidiny p- corresponds to Wadjuk B- (no doubt transcribable in terms of modern linguistics as /p-/). In Pintupi, an evidently cognate form pija+Y+ *to go, come* has entered into competition with earlier ya+N+ as a general verb of motion; we take the implied semantic shift from *DREAM* to *GO/COME* to reflect the probably universal association in the human mind – but especially strong in Aboriginal Australia – between the dream state and the peregrinations commonly experienced by the human spirit while under its sway. (Bayungu malhi+L+ *return* and malhi+nma+L+ *dream*, as well as Western Aranda lhi+ *go*, confirm this semantic association.)

Another example of initial bilabial stop matching is seen in

(3)	Yidiny	p	a	p	a	Adj: <i>deaf, half-witted</i>
	Wadjuk	B	A	BB	A	a. <i>weak; languid; wanting strength...</i>

We also need to be assured that the -nt- : -ND- matching in (1) is part of an overall pattern of phonological conservatism in both languages. That this is so is borne out by

(4)	Yidiny	ny	u	n t	u	2 sg pronoun
	Wadjuk	N-Y	U	N D	U ²	p. <i>Will you? Do you?...</i>

Note also Pintupi nyuntu *you* sg. The final CV sequence in this and in the Yidiny form represents a dead ergative suffix, as pointed out in Dixon (1980:340-345); but this does not affect the issue here. A further example of -nt- : -ND- matching – and a very striking one – comes from a southern dialect of Nyungaa, in which a *trisyllabic* verb is evidently a cognate of one of the handful of Yidiny *trisyllabic* verbs listed by Dixon (1977:208):

(5)	Yidiny	t	a	n t	a	p	a	+n	Vintr: <i>dance around, feeling lively and pugnacious</i>
	'King George Sound'	T	A	N D	A	B	A	+N	<i>to spring; to jump</i>

¹Yidiny wanta+n is glossed by Dixon (1977:557) as Vintr: *fall down, drop*.

²This is evidently the ergative form. Moore's NGINNI *p. thou* (p.66) appears to be the form of this pronoun which marks an intransitive subject.

It seems inconceivable that such compelling evidence could reflect anything other than common inheritance. Hypotheses either of borrowing or of accidental identity in form appear highly implausible. In both languages, the final syllable probably represents a truncation of a Proto-Nuclear Pama-Nyungan verb of motion, *wapa+Y. This claim is borne out by the related forms tantanginy *climbing* and tarnt *ankle*, cited for the inland dialect of Nyungar by Douglas (1976:75) – and note also Wadjuk DENDANG *to climb; to mount; to ascend*. The semantic relationship of tarnt, in turn, to Pintupi jarntarrpa *knee* is to be explained as an instance of metonymy. Further, the semantic connection indicated between *ankle* and *knee*, on the one hand, and *dance around, jump* on the other is richly attested to in Australian languages generally: the name of the body part felt to be centrally involved in a mode of locomotion, standing or lying is often the basis of verbal derivation. Thus a nominal form nguna is *upper arm* or *armpit* in numerous Pama-Nyungan languages, while verbal nguna+Y+ is *to lie, sleep*. Compare also, for example, the semantic association implicit between Umpila pungku *knee* and pungkukuntha *good at running*, and see Dixon (1980:407-408), where he proposes, with good reason, a relationship between ancestral forms for *foot* and *to stand*.

With regard to the initial consonant to be reconstructed on the basis of (5) and the further cognates cited, we take Pintupi j- to represent the ancestral sound-type; Yidiny has shown positional assimilation to the following apical cluster; and in the case of the two Nyungar dialects, Moore's T- and Douglas's t- may reflect problems of transcription of dental stop, [t̪] – unless, as is quite possible, latter-day speakers of Nyungar have to some extent come under the sway of Australian English speech patterns.

The -ND- of the 'King George Sound' form cited in (5) may also be illusory: early – and sometimes even quite recent – transcribers of Australian languages have frequently mistaken [ɖ], [ɳɖ] for [d], [nd]; it is quite conceivable that Moore erred in this fashion with respect to the Wadjuk form cited in (1) – of which more anon.

In regard to the remainder of the consonantism exhibited in (1), we can say that *if* Moore's spelling -NG for the final consonant of the Wadjuk form really does represent [ŋ] and not, let us say, [ŋ̃], then it is *possible* that final velar nasals, mapped meticulously by Dixon for south-eastern and north-eastern Australia (1980:241-243), survive in the West just in Nyungaa. More plausibly, however, the final consonant in Wadjuk BANDANG is the remnant of one of numerous fossilised root extenders found in Pama-Nyungan (cf. p.119, footnote 2). O'Grady (1966:106) cites, for example, Proto-Ngayarda *maya *right hand*, which nowhere appears in simple root form: the Gariyarra reflex is maya.ngu, synchronically an indivisible root, in which a fossilised .ngu suffix of hitherto indeterminable – and most probably zero – semantic function is quite possibly cognate with the .NG of Wadjuk BANDANG. In the case of pre-Yindjibarndi, *maya.rta appears in the modern language as maa.rta for *right hand*; the earlier meaning of the .rta remains just as inscrutable as that of the .ngu in Gariyarra. Harkening back to English nail, French ongle and Russian ноготь nógot', we remind ourselves that in Old World languages also, many an old morpheme boundary has been reanalysed out of existence.

The vocalic correspondences between Yidiny and Wadjuk in the V₁ (first root vowel) position are quite straightforward: we have a : A in sets (1), (3) and (5); i : ɪ in (2); and u : U in (4). Further cognate sets almost universally corroborate this assertion. In the V₂ position, the pattern is

less transparent: we have a : A in sets (2), (3) and (5); u : U in (4); but u : A in (1). This last pattern is very pervasive in Pama-Nyungan, and has been given close attention by Dixon (1980:344-345) insofar as it affects first and second person singular pronouns and the ancestral past tense suffix, reconstructed by him as *+NHu. Dixon's proposal that an earlier final *u has lowered to a accords well, as he himself points out, with modern naturalness theory. The exact conditions for the implied lowering of an old *u in the V₂ position in Wadjuk (and in other languages which share this rule) are far from being understood in precise detail, but the u in the second syllable of the Yidiny form in (1) leads us to believe that such a rule *has* operated in Wadjuk or in one of its relatively recent ancestors. Further convincing examples of a V₂ u : A correspondence for Yidiny and Wadjuk momentarily elude us; but note the putative Wadjuk reflex of *puunta+L ahead under (16).

Since the data base for Pintupi is considerably larger than for the fairly closely related Wadjuk or the other dialects of Nyungar, numerous illuminating Pintupi-Yidiny comparisons are possible:

(6)	Yidiny	m	a	r	p	u	Adj: <i>one's own (part of oneself)</i>
	Pintupi	m	a	rl	p	a	<i>friend, relative</i>

Hansen and Hansen (1974:61) cross-reference their malpa entry (where l equals our rl) with walyja *relation, same place, one's own personal effects*, lending added credibility to the semantic matching in the above. A further example with evident u : a correspondence is:

(7)	Yidiny	j	a	k	u	j	a	k	u	Adj: <i>can't do some task (but thinks he can)</i>
	Pintupi	j	a	k	a	j	a	k	a	n. <i>tiredness in upper leg muscles. . .</i>

Study of words for *left hand* in Pama-Nyungan languages indicates very strongly that set (7) represents a reduplication of the base which Hale (1976c:58) reconstructs in Proto-Pamic as *jaku. Note, for example, Umpila thaku *left hand*, and compare also Nyangumarta jakarn *slow, gentle* with the above. The evidence points to the semantic change *TIRED/SLOW (INEFFECTUAL?) > LEFT HAND* exclusively within the history of Pamic languages; but the reported presence of the same etymon in Mangarayi with the meaning *left hand* (Francesca Merlan, p.c.) complicates the picture.

In other Pama-Nyungan roots, nevertheless, we find copious linguistic evidence of the pejorative aura which surrounds the meaning *LEFT HAND* in the Australian cultural context. In Kala Lagaw Ya, Bani and Bani list mina geth for *right hand* (geth *hand*); mina in other collocations can mean *okay* (Terry Klokeid, p.c.), and is surely cognate with the root *mini reconstructed by Hale (1976c:56) for Proto-Paman, and descending in Umpila and Wik Muminh, for example, as mini *good*. The form meaning *left hand* in Kala Lagaw Ya is boedhay geth. Cognates of the first element in this construction appear as follows:

- (8) Yidiny p a n j a rA N: *madness in head*
 Umpila p a ny j a+Y+ *to go bush, abscond*
 Pintupi p a ny j a N: *rubbish, fatless meat, that which is unwanted*

No cognate form appears to be recoverable for Wadjuk. Other Pintupi forms which appear to be relevant are *panjanyilpa very bad. . .*; *pajaru+rri+Y+ to be mad or oblivious*; and *yanyjarlkaja ... child born out of an unlawful union. . .* In the latter, the y- is probably to be explained as arising prothetically after the dropping of initial *p, along the lines proposed by O'Grady (1981a:155-160).

Further semantic evidence for the relatedness of Proto-Pamic *jaku and Pintupi jakajaka is seen in the following additional set:

- (9) Yidiny w a rr a Part: *done the wrong way*
 Wadjuk W A RR A *bad (Mountain dialect)*
 Pintupi w a rr k i+L+ *to swear*
 Nyangumarta w a rr a¹ *rotten (cf warrayi fly [insect])*
 Yaralti W A RR A ME *left hand*
 Gumbaynggir w aa rr a winy *left hand*

There is evidence that the k in the Pintupi form represents an ancestral infix; see further at set (12).

The following is probably a further valid cognate set with Yidiny u again in correspondence with Pintupi a in the V₂ position:

- (10) Yidiny m a n

u

 N: *top of tree*
 Pintupi m a rn

a

bottom; a person's seat or the base of an object

The semantic difference here is probably explainable in terms of Hale's principle of the *unity of the opposites* (p.c.), exemplified in O'Grady (1979b:121-122). Further relatedness to Pamic forms such as Umpila, Wik Muminh manu *neck, throat* is likely, but the implied semantic development requires independent corroboration.

Additional sets are to hand in which V₁ is a in Yidiny and representative Nyungic daughter languages, and V₂ appears as u in both. Consider, for example, the following:

¹This form is only attested in epithets involving the sex organs.

(11) Yidiny	w a l	<div style="border: 1px solid black; padding: 2px;">u</div>	N: <i>side of head above ear, side of hill</i>
Wadjuk	W A LL	<div style="border: 1px solid black; padding: 2px;">U</div>	s. <i>an interval or open space between two points or objects. . . partial baldness</i> ... <i>the interval between night and day</i>
Pintupi	w a l	<div style="border: 1px solid black; padding: 2px;">u</div>	<i>flat rock surface, horizontal or roof of a cave; rockhole; lower grindstone</i>

Moore's later entry WAULLU s. *light; dawn. . . clear open space without trees. . . interval or open space. . .* appears to represent a variant transcription of Wadjuk WALLU, above. Note also

(12) Yidiny	m a l	<div style="border: 1px solid black; padding: 2px;">u</div>	way (Tablelands)	N: <i>spirit, shadow</i>
	m a l		way (Coastal)	N: <i>spirit, shadow</i>
Wadjuk	M A LL	<div style="border: 1px solid black; padding: 2px;">O</div>		s. <i>shade</i> ¹
	M A L	<div style="border: 1px solid black; padding: 2px;">I</div>	Jl	s. <i>a shadow</i>
Pintupi	m a l p	<div style="border: 1px solid black; padding: 2px;">u</div>		<i>evil spirit</i> ²
Gidabal	m a l	<div style="border: 1px solid black; padding: 2px;">u</div>	ng	N: <i>shadow, shade</i>

Here the semantic cohesion is strong, and it is clear that the ancestral shape was *malung, with *u > l in Wadjuk preceding the laminal J, but not in the bare root form, MALLO. Consider also

(13) Yidiny	m a r	<div style="border: 1px solid black; padding: 2px;">u</div>	n	N: <i>cloud</i>
Pintupi	m a r	<div style="border: 1px solid black; padding: 2px;">u</div>		<i>black. . .</i>

in which the implied semantic connection is supported by examples such as Warlpiri mangkurdu *cloud* : Wirangu mangkuru *black*. Wadjuk MAR s. *a cloud; wind* appears at first blush as a likely candidate for inclusion in the above set, but Douglas's lexical data for the inland dialect (1976:64) includes the minimal pair marr *cloud* : mar *hand*, suggesting that Wadjuk MAR represents an entirely different etymon from that which appears in (13).

A further example is:

(14) Yidiny	y a r	<div style="border: 1px solid black; padding: 2px;">u</div>	ny	Adj: <i>silly, stupid (person)</i>
Pintupi	y a r	<div style="border: 1px solid black; padding: 2px;">u</div>		<i>shallow. . . ; light (sleep); loose</i>

in which the semantic difference is less obviously reconcilable.

A preliminary hypothesis based on the above examples can be formulated as follows: ancestral Pama-Nyungan roots of the shape *CaCu(C) undergo lowering of the *u in Pintupi (and, probably, also in Wadjuk) if the internal consonant is an obstruent or a nasal; an internal liquid inhibits this lowering. There are indications that this rule will ultimately need to be more tightly formulated; in any event, however, the favouring in Pintupi of such canonical root shapes as Caru – as in karu, nyaru, waru, etc. – seems to lend it added plausibility.

¹To the no th the word is applied to Europeans' (Moore 1884:48).

²I consider the p, like the k in (9), to represent a fossilised Pama-Nyungan infix. Compare also, for example, Pintupi ngarri+Y+ *to lie, sleep, copulate* with Wirangu ngarrpi+ *to lie, sleep*.

While it is clear that many more cognate sets remain to be marshalled, it is hoped here that a reasonably strong case has been made for the reconciliation of the vocalic differences in (1). On the basis of just the Yidiny and Wadjuk evidence, we posit a Proto-Yidiny-Wadjuk universal quantifier *pantu.

If it can be accepted that approximately 160 Australian languages belong within the Pama-Nyungan Family, then it follows that a reconstruction such as that just offered would be more securely grounded, to say the least, if it rested on evidence from more than just *two* of these languages. Capell (1956) considers *ng to be a possible word-final consonant in Common Australian, and Wurm (1972) and Dixon (1980) are in accord with this finding. Dixon (1977:35) indicates that Yidiny has lost root-final velar nasals, and ancestral Pama-Nyungan vocalic length in this language has ceased to be distinctive. There is every reason to believe that Wadjuk has also undergone loss of distinctiveness at these two levels; moreover, we have already indicated that Moore may at times have made the common Australianist's error of mistranscribing retroflexed consonantism as alveolar; hence his spelling BANDANG may have been in error for *BARNDANG [páŋɗaŋ].

In view of the above considerations, we will now examine ten further Pama-Nyungan languages representing a wide geographical scatter and, evidently also, a number of branches of the Family. Out of fairness to Dixon, we will also research the available published materials for Ngandi, Maung and Ungarinyin for evidence of cognate material to add to set (1). The aim will be to present what we take to be the least controversial cases of cognation with (1) first, so that the reader can 'tune out' in the face of what he or she may consider to involve a progression towards excessively convoluted or implausible argumentation. In point of fact, however, this writer feels that the argument for cognation is quite strong in *all* of the cases that will be discussed; it is simply that much more space is necessary for supporting evidence than is available here.

As languages preserving vocalic length in the first syllable of a root, we choose to examine Bandjalang, Guugu Yimidhirr, Umpila and Gupapuyngu (Yuulngu) – cf Dixon (1980:406); of these, Bandjalang is also diagnostic for final peripheral nasals. Bayungu, Nyangumarta, Pintupi, Warlpiri, Gawurna and Wembawemba are drawn on as maintaining distinctive retroflex and alveolar series of apical consonants (Gupapuyngu also distinguishes these).

Bandjalang

In the Smythe appendix to Crowley (1978:400) there appears the following Bandjalang lexical entry:

panang (indef. pronoun) *all, the mob*

This form differs from Wadjuk BANDANG only in the absence of an internal apical stop, but the sharing of final velar nasals may well be misleading – we have already concluded that the Wadjuk .NG is probably the remnant of a semantically empty stylistic root extender, whilst in Bandjalang panang the -ng appears to be an integral part of the original root.

It is clear from comparative evidence such as will be presented in sets (15)-(18) that the Bandjalic dialects typically preserve both the nasal and the stop in old *nt and *rnt sequences.

It follows, therefore, that a process other than regular sound change has led to the replacement of an earlier homorganic apical nasal + stop sequence, resulting in the shape *panang* in Bandjalang. There is strong reason to believe that this process was analogical: a **panang*+ alternant became generalised following a period in the history of the language when it occurred in a context involving a further nasal + stop sequence, as when the LOCATIVE case alternant *+ka was suffixed, yielding the form **panang*+ka; cf Black (1980) on this point. A closely parallel alternation will be noted herein as being present in Bayungu.

Elsewhere in the Bandjalangic dialect area, in point of fact, Waalubal provides a hint of the presence of an alternant in -nt-: *pantang other*. If convincing independent evidence could be brought to bear to verify the semantic relatedness of *ALL* and *OTHER* in Pama-Nyungan, then we would have a case for counting Bandjalang *panang* and Waalubal *pantang* historically as alternants of the same root. Such evidence is indeed forthcoming – from Yidiny and Nyangumarta. Dixon (1977:146-148) reports for the former that +*jamu only, all* and +*pi another* have some degree of overlap semantically. In the Strelley dialect of Nyangumarta, Hale, Bradman, Bucknall and Brown (1980:40) document a form *nganirnganirn everything; etc.; others of that sort* (apparently < 'whatever'; cf *ngani what* < **ngaani* < **ngaana what*, discussed in O'Grady 1979b).

In light of this evidence, it seems reasonable to conclude that Proto-Bandjalangic was host to a universal quantifier **pantang*, whose LOCATIVE case-form was **panang*+ka. The latter provided the basis for the derivation of **panang*, a competing variant of the ABSOLUTIVE (uninflected) form, which continued to function semantically as a universal quantifier and survived into the modern Bandjalang dialect with this referent; **pantang*, meanwhile, drifted semantically toward the meaning *other*, and survived only in the Waalubal dialect. Unrelated *mapeerr* and *kumpii* filled the semantic void so created – both now answer to *many, all* in Waalubal; in Gidabal, *kumpi+pu* is the universal quantifier, and in Bandjalang *kulkii* is *other*.

As a result of the addition of the above Bandjalangic evidence to (1), we now posit a Proto-Yidiny-Wadjuk-Bandjalangic universal quantifier **pantung*.

Bayungu

To move from Bandjalang to an examination of Bayungu, spoken on the opposite side of Australia, may seem reckless to a practitioner of *rigorous* comparative method linguistics. But after all, the claim made here is that these two languages are genetically related within the Pama-Nyungan *Family*, along with approximately 160 other Australian languages.

This claim is borne out by extensive grammatical evidence as well as lexical cognates such as the following transitive verbs:

(15) Bandjalang	p	a	n	t	+e	<i>to smell</i>
Gidabal	p	a	n	t	i+	<i>to sniff</i>
Waalubal	p	a	n	t	i	<i>to smell</i>
Pintupi	p	a	r	n	t	i+L+ <i>to smell, sniff</i>

Bayungu	p a r n t i+L+	to smell, sniff
Nhanda	a r n t i+	to smell

Yidiny appears to miss this root. In the same sense, while German Holz *wood* flourishes as an everyday word, its English cognate, holt (< Proto-Germanic *hulta+ < *kl+d+, an extended zero-grade form of PIE *kel+₂ *to strike, cut*) languishes as an archaism beyond the competence of most present-day speakers. Such absences merely reflect an overall pattern whereby a scattering of forms suffer obsolescence in a language over a given period of time. This attrition is much less, however, than one might judge from superficial appearances – witness the fact that after 5,000 years PIE *wir+os, as noted earlier, still lives on in English in the old Germanic compound werewolf,¹ even if primarily through the medium of horror movies and comic strips only.²

Wadjuk BINDA.NG v. *to smell* clearly belongs in (15) also, even if the vocalism, at first blush, appears to pose a problem. Douglas (1968) lists no verb of olfactory perception in his lexicon, and we are left with the thought that either (a) if the internal consonants in this form were indeed [ŋd],³ then Moore may have overreacted to the retroflex and centred allophone of a preceding /a/ and written <i>, or (b) *a was indeed replaced by /i/ in the V₁ position here. In this event, the most reasonable explanation would take into account a metathesis rule whereby, in verb roots at least, *C₁V₁C₂V₂+ > *C₁V₁V₂C₂V₂+ > C₁V₂C₂V₂. That is, in a disyllabic verb root the consonant and the vowel of the second syllable metathesise, while a copy of V₂ is left in its old position; V₁ is then deleted, and the copy of V₂ is subject to a rule partly assimilating it to the following consonant. Thus ancestral *parnti+L > *pairnti+ > *pi(r)nti+ > BINDA.(NG), with the final *i assimilating to presumed /ng/ for [bk]. Since /ng/ is [+hi], it must be assumed that the A of BINDANG is the product of analogy – verbs documented with -ANG by Moore, such as NURDURĀNG *to snore* or GOTANG *to bag, carry in a bag* clearly represent a highly favoured pattern in this language. Further support for this hypothesis can be derived from the inland dialect of this language, documented by Douglas, where Proto-Nyungic *yuka+ *to stand* > *yuaka+ > *yaka+; the combination of this form with a /ny/ extension results in the attested form yaki.ny *standing* (cognate with Wadjuk YUGO.W /yuka.wu/). So also in this dialect, PNP *pu.ma+ *to hit* > *puama+ > *pama+(ny) > pami.ny *hitting* (cognate with Wadjuk BUMA); and Proto-Nyungic *yu+nga+ *to give* > *yuanga+ > *yanga+(ny) > yangi.ny *giving* (Wadjuk YONG-A ~ YUNG-A, presumably /yunga/). It is evident that the scope of the metathesis and V₁ deletion rules was considerably more constrained in Wadjuk than in its inland neighbour.

¹Not to mention Latinate forms such as trium.virate.

²Then, too, Dixon points out that he is preparing a Yidiny Thesaurus, which will contain much more lexical data than the vocabulary given in his Grammar. Further cognate material will then assuredly come to light. Dixon estimates (1980:2) that a full dictionary of an Australian language would contain something like 10,000 lexical entries. The late T.G.H. Strehlow's unpublished Aranda work could well provide an opportunity for testing this estimate. Hale (p.c.) reports that the MIT Australianist team has assembled 7,000 Warlpiri entries so far – suggesting that Dixon's estimate is entirely realistic. This being so, it is clear that in cases where 1,500 to 2,000 lexical entries have been assembled for a given Pama-Nyungan language, many proto-forms will not appear to have reflexes simply because the relevant evidence did not happen to turn up in the linguist's data set. Thus the 'absence' of a reflex of ancestral *ngirri+ *to bare (the teeth)* in such-and-such a Pama-Nyungan language may well be more apparent than real: the researcher may not have thought to elicit such a form, nor stumbled across it in spontaneously generated material. Nyangumarta ngirri+R+ *to bare (the teeth)*, Warlpiri ngii.ny.karri+Y+ *to grin, leer, smile with teeth showing*, Gupapuyngu lirra+ŋirr+yu+N *to smile (lirra tooth < *rirrang)* and Gidabal ngirri.ny *angry* may barely represent the 'tip of the iceberg'!

³Interpreted herein, following Hoard and O'Grady (1976), as /rnt/.

Further evidence of the stability, by and large, of Pama-Nyungan *nt clusters is provided by *puunta+L *to pluck (e.g., feathers), to pull out*, the prenasalised variant of *puurra+L.

(16) Kala Lagaw Ya	P U	D A+I	Vtr: <i>to let fall; pull out, dig out, stretch out</i>
	p u	d a+n	Vtr: <i>to pull out, extract</i>
	P U	D I	Vtr: <i>to fall (drop down); undress; COME OUT, OF FEATHER</i>
Yidiny	m u	n t a+L	Vtr: <i>to pull</i>
Dyirbal	p u	n t i+L	Vtr: <i>to take out</i>
Bandjalang	p uu	n t +a	<i>to singe</i>
Gidabal	p uu	n t a+	<i>to pluck, to break by pulling</i>
Waalubal	p uu	n t a	<i>to pick, pluck</i>
Warlpiri	p u	n t a+L+	<i>to take it from. . .</i>
Nyangumarta	p u	n t a+R+	<i>to pluck</i>
Pintupi	y a	n t a+L+	<i>to pull out and break off</i>
	m u	n t a+L+	<i>to snatch, grab. . .</i>
Bayungu	m u	rn t a+L+	<i>to snatch</i>
Wadjuk	B Ä	RN A.N	<i>to sweep; to clean; to clear away. To pluck out hair or feathers</i>

The Kala Lagaw Ya and Wadjuk forms alone, coming from virtually the north-easternmost and south-westernmost parts of the Pama-Nyungan speech-area, would seem to guarantee that *TO PLUCK (e.g., FEATHERS)* was at least part of the referent range of *puunta+L. This strong indication is still further buttressed by the meanings of the Bandjalangic and Nyangumarta forms; note further, e.g., Dyirbal *punti+L*. The apparent doublet in Pintupi may well result from the incursion of *yanta+L+* as a loan from Arandic. For the three *m*-forms, see ahead at the discussion leading up to Gupapuyngu *maṇḍa*. More study is needed of the two forms recorded as retroflexed. Wadjuk *BÄRNA.N* falls into place as being plausibly derivable from *puunta+L, quintessentially via the same rules as were applied to *parnti+L, above (after allowing for the merger, in Proto-Nyungic, of PNPN long and short vowels): *puunta+L > *punta+L > *puanta+ > *pa(r)n(t)a+ > *BÄRNA.(N)*. Concerning the disappearance of *t, see the accompanying discussion of Bandjalang *panang* and Bayungu *parna+*, which is synchronically derivable from *parnta*; note, moreover, the Yindjibarndi reflex of *pinti(.pinti)+, given under (18).

Yet another PNPN form with internal *nt consonantism is *pintam *stick, thing(s), belonging(s)*:

(17) Proto-Pamic	* p i n t a	..., <i>arm</i>
Uradhi	w i n t a	<i>arm</i>
Linngithigh	n trr ae [æ]	<i>arm, upper arm</i>

Umpila	+ p i n t a	PROPRIETIVE suffix
Guugu Yimidhirr	p i n t a	<i>stick, twig, splinter</i>
Yidiny	p i n t a	<i>shoulder, top of tree, top of waterfall</i>
Gidabal	p i n t i m	<i>driftwood in a river</i>
Nyangumarta	p i n t i	<i>sticks used in making string-cross</i>
	# p i n t i	INSTRUMENT, <i>thing for. . .</i>
Bayungu	p i n t i. rra	<i>yamstick</i> (Austin, n.d.)
Wadjuk	B I N D I	<i>the stick, or skewer, with which the cloak is fastened</i>
	B I N D A. RT	<i>personal effects. . .</i>
Nyungar	p i rn t	<i>skewer, button, pin, fastener, clip</i>

The referent *STICK* must be seen as ancestral, since it is documented in languages as far apart as Guugu Yimidhirr and Wadjuk. A larger *STICK*, i.e. *BRANCH/LIMB*, is in turn widely associated semantically with the body part *ARM* in languages of the world (see the Umpila and Mawng examples below; in the mythology of the Old World ancients, Daphne flees from Apollo and is transformed into a tree, her arms turning into branches). The further semantic development from *ARM* to *SHOULDER* in Yidiny appears as a straightforward case of metonymy followed, in the case of the *TOP OF. . .* meanings, by metaphor. The grammaticalisation of *pintam in Umpila took place through the developments *STICK* > *WOOD/TREE/THING* > *PERSONAL POSSESSION (ONE'S 'THINGS')* > *POSSESSED OF, i.e. PROPRIETIVE*. That in Nyangumarta #pinti (O'Grady 1960:2) was even more straightforward: *STICK* > *THING* > *THING FOR. . . ING* (as *kaja+rna#pinti chair* from *kaja+rna sitting*) or *THING USED AS AN ADJUNCT TO. . .*, e.g., *janyja#pinti thermometer* from *janyja heat of the sun*. In the case of *Gidabal pintim* (which provides key evidence for *-m), it seems reasonable to claim that the *Gidabal* experience of the real world centred oftentimes around flooding and the subsequent deposition of branches and sticks along the high water mark. Worthy of note on the phonological level is the evidence of vocalic assimilation in Nyungic (*pinta > pinti); this assimilation was evidently inhibited in the evolution of Wadjuk by the prior presence of what may well have been a stylistic rightward root extension of the shape *.rta, giving *pinta > *pinta.rta > BINDA.RT, while the Wadjuk non-extended counterpart, BINDI, underwent vowel assimilation. Note further that in the closely related Ngayarda languages, 1,400 km to the north, .rta is the fifth most favoured of 31 endings on trisyllabic or quadrisyllabic nouns, every one of which could conceivably turn out to be stylistic in nature.

Many of these root extenders were no doubt present in a fairly early stage of Pama-Nyungan. The shape *.rra clearly enjoys the highest frequency of occurrence in the Ngayarda daughter languages (O'Grady 1966:96), and is also present in Bayungu pinti.rra, above. Clearly the addition of *.rra to this form is quite recent, since the cognates in Nyangumarta and Wadjuk lack

it. Furthermore, unlike in Wadjuk BINDART, vocalic assimilation was able to run its course, and the *.rra extension was *subsequently* added.

Umpila palnta *branch of tree, arm* may be obscurely related to the foregoing reflexes of *pintam (if, say, *palntam in some way could be shown to represent an earlier form, with subsequent developments whereby *palntam > *payntam > *piyntam > *pintam. But to judge from surface indications at least, the implied chronology doesn't make sense, and as of now we take it that Umpila palnta is simply not related to *pintam. At least the semantics of palnta provide backup for the *BRANCH:ARM* association imputed in (17) – as do, for example, Mawng i+mawurr (Noun Class I) *a man's arm*, ma+mawurr (Cl. V) *branch*, u+mawurr (Cl. IV) *arm of a river* (Capell and Hinch 1970:47).

In point of fact, Umpila palnta probably forms a doublet with a form panti *bullet spear* in this language, and goes back to PNPN *palntan *spear*. Other cognates include Guugu Yimidhirr panta *rear part of spear*, Warlpiri warnti *lance* and, probably with ANTONYMIC semantic shift, Bandjalang pantaan *axe*; and the Bayungu denominative parnta+L+ *to split, cut off, sever, chop down* may have undergone parallel semantic development. Note also Warlpiri panti+L+ *to spear* and Nyangumarta yarnta+R+ *to spear, stab, sew, write* (with *p- > Ø > y- in the latter denominative, for reasons unknown as yet). Further attestation is still needed. Such a semantic association as that between *ARM* and *SPEAR* in the Australian context is, however, no longer a mystery – the arm and the spear held poised count as parts of a whole, in the speaker's conceptualisation. Or, putting the matter a little differently, the spear is seen as being an extension of the arm. Independent corroboration of this claim is provided, for example, by PNPN *marang *hand* (Capell 1956) > Nyangumarta mara *fire saw*, and by reflexes of *kajun, apparently the name of an ancestral implement, including Proto-Pamic *kajin *digging stick* (> Umpila kajin with this referent); Arabana, Pintupi kaji *spear*; Bayungu kajiri *spear*; and Wadjuk KADJO *a native hammer* . . ., probably diffused northward with the spread of Europeans – cf Bayungu, Ngarluma, Nyangumarta kaju *axe*. In particular, this etymon makes its appearance in Kala Lagaw Ya *kajun > *kajin > *kaji > *keji > . . . geth *hand*.

The population of PNPN forms of the shape *pV(r)ntV also includes a transitive verb of opening, *pinta+L. Representative attestation is as follows:

(18) Umpila	p i n t i+	Vtr: <i>to open</i>
	p i n t i. pi	<i>gap in scrub; crack which extends right through ('opening')</i>
Gidabal	p i n t i+	<i>to spread one's legs to form a V-shape</i>
Nyangumarta	p i n t a+R+	Vtr: <i>to open, force open – e.g. a person's mouth</i>
Pintupi	p i n t i. ri	<i>camp area (< 'open (ground)', 'cleared area')</i>
	(< *pinta.ri)	

This etymon may be related ultimately to a PNPN verb of running (< *TO OPEN UP a considerable distance between'?*), which in any event is independently reconstructible as *pinti(.pinti)+ – witness Umpila pinti.pinti(i)+TH+ *to run*, Nyangumarta pinti.rri.nti.rri

wapa.ka+R+ *to take a running jump* (wapa.ka+R+ *to jump* < *wapa+Y *to go* – cf the mode of locomotion of marsupials), Yindjibarndi pini.ngka.rri+Y+ *to go fast, run* (< *pinti.ngka.rri+Y+ by haplology, followed by analogical new-formation pini *fast, quick* (Wordick 1982)) and Pintupi pirnti.rri *star* ('*that which runs/races (across the sky)*') – cf the semantics of Malgana wapa.rnu *sun*, from *wapa+Y, just cited).

It is also possible, though unlikely, that a set of forms having to do with *DIGGING* may belong in (18). These include Kala Lagaw Ya (Muralag) PIDA+I *to dig?* and Bandjalang piint+a, Waalubal piinta *to bury* (conceptually, these actions are perhaps seen as *OPENING UP* a hole in the ground). Waalubal pinta *to put in* is conceivably the second member of a doublet here which resulted from dialect mixture. The meanings *TO BURY* and *TO PUT IN* (a hole?) can reasonably be regarded as closely related: in the Nyangumarta of Wallal, for example, the usual verb *to bury* is pirti+ngi+ji+L+ (hole in the ground+LOCATIVE+CAUSATIVE+L-Conjugation marker). Gawurna PINDI *pit; den; ditch; grave; the habitation of souls before birth, and after death; European*. . . constitutes southern evidence for a probably cognate nominal – and note Pintupi yinta *durable water supply*. . . (< '(water)hole?'). Nyangumarta and Pintupi pirti *hole in the ground* may also be related, albeit obscurely so from a phonological viewpoint. Thus for the present, we tentatively reconstruct a further root, *plnta.

To return to the primary quest of this paper: we are concerned to identify, if possible, a cognate from Bayungu which we could with justification add to set (1). To judge from sets such as (15) and (17), the sound correspondences will be anything but convoluted. Nevertheless, we experience a momentary setback in our search when, in the English-to-Bayungu printout, we find wurrayi+mpa for *all* (wurrayi *many*) – clearly not cognate material. We therefore consult the Bayungu-to-English file, and immediately the following entry comes into focus:

parntanyjarri they (PL)

On the basis of research so far, this appears as an alternate form to thana (< *jana). From a semantic point of view, it appears entirely reasonable to match this form to Yidiny pantu, Wadjuk BANDANG, Bandjalang panang and Waalubal pantang. If such a matching can be accepted, the problem of the suffixal extension on the Bayungu form must be tackled. This turns out to be immediately and transparently amenable to analysis – it is the productive allomorph of the PLURAL suffix in this language, as in kaparla+nyjarri *dog+PL*. That it is, in fact, also in productive use with a root parnta is clearly seen in parnta+kutharra *they two* and parnta [pánda] *he, she*. Many genetically related languages in all landward directions from Bayungu show a reflex of *pa+lu *that+ERGATIVE* with third person singular reference, or functioning as a mid-distal deictic: Wadjuk BA.L, Nhanda a.la, Nyangumarta pa.li+ny *he, she, it*; Pintupi, Nyangumarta pa.la *that (mid-distal)*; and note Gupapuyngu wa.la.la *they PL*. In Bayungu itself, pa.la is also *he, she*; whether it differs functionally from parnta or is a variant way of making third person singular reference is not yet known. Considering the evidence already cited from Yidiny, Wadjuk and Bandjalangic bearing on *pantung, it becomes abundantly clear that the *function* of this etymon in Bayungu has undergone an innovation. It remains to posit plausible stages through which this development could have occurred.

It appears that the innovation occurred in just three stages: (a) at some point in the evolution of Bayungu, *parnta *all* drifted semantically in the direction of third person plural reference; (b) in this emerging function, it came under paradigm pressure from forms such as ngunha+nyjarri *that (distal)+PL* and began to take on overt plural marking with the suffix +nyjarri also; (c) subsequent speakers generated parnta *he, she* by back-formation.

Bayungu also provides evidence contributing towards a principled explanation of the absence of *t* noted earlier in Bandjalang panang: when Bayungu parnta carries a suffix +mpa, apparently an emphasis marker, the *t* fluctuates with its own absence: parnta+mpa+ya ~ parna+mpa+ya. We have already noted that Paul Black has shown this type of alternation to be pervasive in Pama-Nyungan. It is clearly a phenomenon of haplology.

Before we leave the discussion of Bayungu, it should be noted that Davidson recorded an adjective PANDA.BULA *big* in this language. This is historically a compound (cf. Wadjuk BULA *abundant; many; much, plentiful*) and reflects a further outcome of the etymon being studied here – as also does Arabana parnta *big*. The semantic development in both forms (*ALL > MANY/BIG MOB > BIG*) surely falls within Bynon's conception of 'plausible' (1977:62).

Yuulngu

As already stated, we projected earlier (O'Grady 1959; the *Sydney Morning Herald*, 26 February 1960) that the Australian languages which are genetically the closest to the Murngin (later: Yuulngu) dialects of north-east Arnhem Land might well turn out to be those of the Kanyara Subgroup spoken in the Exmouth Gulf area – half a continent away. These include Bayungu. It therefore seems reasonable, since no Australianist appears ever to have contradicted this claim, to turn next to a representative Yuulngu dialect – Gupapuyngu.

As in the case of Bayungu, pursuit of forms meaning *all* in Gupapuyngu leads nowhere relevant to the present quest: Gupapuyngu warrpam' *all, every* and nhanbinya *all* show no conceivable phonological congruence with Wadjuk BANDANG, etc. We also draw a blank in a careful search of the 17 pages of forms with initial bilabial stop, *b*, in the Lawton/Lowe MS. 'temporary Gupapuyngu dictionary'. Where else to search?

In Pama-Nyungan comparative work, experience teaches one to expect sporadic exceptional shifts between an initial stop and (1) the homorganic nasal or (2) the homorganic glide. Examples of the former are not at all rare: Nyangumarta pinga *small black ant*, Warlpiri pingi *ant* (with progressive vowel assimilation) but Pintupi minga *ant (generic)* must surely count as being related forms, even though the evident replacement of the **p*- in *pinga with *m*- in the Pintupi form remains unmotivated (cf. *pinang *ear* > Pintupi pina, not *mina). So also, *punyja+L *to drink* > Ngarla, Wangkangurru and Umpila puntha+ *to drink*; but this etymon appears in Nyangumarta as munyja+R+ *to kiss* – i.e. with the initial consonant altered, perhaps as part of a phenomenon of sound symbolism. Alternatively, the phenomenon may at least in part originate in child language – cf McConvell (1985:9), though according to his suggestion, the direction of change is the opposite to that imputed here.

This seeming contradiction is probably to be resolved in the following sense: (a) children in many Pama-Nyungan speech communities have re-created certain nasal-initial forms, e.g., conceivably, *ngamu, in such a way that the initial nasal has been replaced with the homorganic

stop; thus *kamu would have resulted as the corresponding child language output; (b) adult speakers have been at pains to 'correct' these as unwanted innovations; but in so doing, they have created sporadic, but by no means rare, hypercorrections within the large set of forms never modified in child language use.

The *converse* of McConvell's rule for the generation of child language forms is thus probably to be seen at work in new-formations based on old *p- entries in the ancestral Pama-Nyungan lexicon such as Pintupi munta+L+, cited under (16), Pintupi minga, or Nyangumarta munyja+R+, above.

That such a process of hypercorrection has operated on the grammatical as well as on the lexical level is amply demonstrated in the descent of the *nine* different Pama-Nyungan monosyllabic *pa elements (q.v.). Most of these are reflected as ma in one or the other daughter language, and whatever the source of the innovative consonantism, it must in the majority of cases have nothing whatever to do with regular sound change.

A further relevant set can usefully be portrayed in tabular form:

(19) Kala Lagaw Ya	p	aa		d	a		<i>mountain</i>
Yidiny	p	u		n	t	a	<i>N: mountain, big hill</i>
Wirangu	p	a	r	n	t	a	<i>stone</i>
Mirminy	p	u	r	n	t	a. ngu	<i>stone</i>
Kaititj		a	r	tn	t		<i>stone</i>
Warlpiri	y	a	r	n	t	a. ru	<i>stone</i>
Ngarluma	m	a	r	n	t	a	<i>stone</i>

Here Kala Lagaw Ya appears to show the regular voicing of stops in nominals following a homorganic nasal, with subsequent loss of the nasal (the vowel length is separately motivated); cf *mungka > KLY muugu *anthill*, and note also boedha.y geth *left hand*, cited in the context of (8), where boedha.y reflects ancestral *panyja. It is possible, however, that Kala Lagaw Ya paada is a loan from a Papuan source; cf Kiwai PODO, Bugi PAD *hill, mountain*. Yidiny and Mirminy independently show rounding of the first vowel in *pArnta (following bilabial *p).¹ Kaititj shows the regular Arandic loss of initial consonants, loss of contrast in final vowels, and the pre-stopping of nasals conditioned partly by a short V₁ and partly by initial non-nasal consonants (Kenneth Hale, p.c.). The Warlpiri form with initial y is possibly, but *not necessarily*, an Arandic loan. The likelihood of an entirely different kind of genesis for initial y and l in certain roots in Pintupi (and perhaps also in Warlpiri) is broached in O'Grady (1981a:155-160), where the claim is made that this language has joined the ranks of the numerous Pama-Nyungan Initial-dropping languages. Ironically enough, speakers have continued to react to the ironclad constraint that *all* words begin with a consonant by 'patching up' the damage caused by loss – so far primarily only of certain instances of *p- and *k- – with y or l. See also under (8).

¹Yidiny pantu, cited in (1), shows no compensable effect. In Mirminy, however, there are clear examples of the rounding of *a following initial *m. Compare, e.g., Wir ngu mama, Mirminy muma.rlu *father*; Wir ngu mapa.rla, Mirminy mupa *ashes*; Nyangumarta, Western Desert ma+rra, Mirminy mu+rra *take it!* It is clear from other Pama-Nyungan evidence that in each case Mirminy u reflects ancestral *a.

From the point of view of *systematic* language change, the m- in Ngarluma marnta remains unexplained. Yet by the same token, common sense dictates that this form represents the selfsame etymon as in the other six languages. To reject it as not being related to Wirangu parnta, for instance, would be quite unrealistic. In the same sense Lockwood, in discussing the reflexes of PIE *ni+sd+os (> English nest), has this to say about the Lithuanian form (1969:180):

Peculiarly enough, Lithuanian has lizdas instead of the expected *nizdas. Bearing in mind all the circumstances, one must here assume an exceptional shift of n to l, for some reason unknown; it would be unrealistic to regard the Lithuanian as an unrelated word.

GUP lurrkun' *three* is likewise no stranger to Nyamarl and Mangarla murrkurn *three*, despite the superficially unmotivated difference in the initials. PIN murrkamurrka *very many*. . . lends strength to the argument that *m was the ancestral initial. Again in Gupapuyngu, no straightforward reflex of *pArnta *stone* appears in the available materials, but in another Yuulngu dialect, Galbu, Capell has recorded banḍa (i.e., banḍa in the local orthography) with this meaning. In Gupapuyngu itself, gunḍa *rock, stone, money* is probably to be counted as a version of the same etymon reshaped for reasons so far unknown. Judging from the above Yidiny and Mirniny evidence, however, the innovation may well have taken place through two stages: (a) *parnta > *purnta; (b) *purnta > *kurnta (> kurnda, i.e., <gunḍa> after a separately motivated fortis/lenis contrast arose in medial stops); an explanation for the replacement of *p- by k-, <g->, in this form would then be required. A precedent for such an innovation elsewhere in Pama-Nyungan – also preceding *u – is seen in PNPN *pu.ma+ *to hit* > Wayilwan ku.ma+ (Donaldson 1980).

We return to the central theme of this paper clearly with good reason to seek a Gupapuyngu cognate of Wadjuk BANDANG, etc., under the heading m- as well as under b-. Immediately the following pronominal form comes into alignment:

manḍa *they two*

Any comparatist, seeing this form placed directly alongside Yidiny pantu, for example, would presumably be deeply sceptical of possible cognation, on grounds of both phonology and semantics. The plausibility of cognation with Bayungu parnta would presumably be perceived as being far greater. The feeling is strong, in fact, that the evolution of specifically third person pronominal reference in the etymon under study may well have occurred in the *immediate* common ancestor of Yuulngu and Kanyara (and, perhaps, of the Yura languages of South Australia, of which Gawurna is discussed below). One would assume that subsequent to the breakup of Proto-Kanyara-Yuulngu, the etymon being studied here came under strong paradigmatic influence from long-established pronouns with initial nasals – *ngali *you and I*, and so forth – in an early Yuulngu stage, and was re-created in the shape manḍa. Semantically, meanwhile, it underwent a shift from third person plural to third person *dual* reference.

The fact that this etymon is documented in both Bayungu and Gupapuyngu with *retroflex* articulation of the apical nasal + stop sequence is taken here as evidence that this distinctive variety of apical articulation is fairly old. If, in fact, it is regarded as being at least of Nuclear Pama-Nyungan age, then it finally becomes possible in this paper to posit – hopefully with good reason

– the most archaic shape of the root from which Yidiny pantu, etc., descended, namely *parntung. In terms of naturalness theory, the Yidiny form, for example, would then be derived historically through two quite straightforward developments:

PNPN *parntung

1. loss of final

+nas	segment:	*parntu
-cor		
-ant		

2. cluster simplification: pantu

It should be noted that the second of these rules has had wide application in a large swathe of languages in eastern Australia; in particular, (15) shows its effect in the Bandjalangic dialects in a vocalic context far removed from that which Dixon (1980:155-156) claims as having been responsible for the genesis of distinctive retroflexed consonants in Australian languages other than those of the east. If indeed distinctive retroflexion arose in Australia in something like the manner proposed by Dixon, i.e., first after *u, and later spreading to other vocalic environments, then this development is clearly of greater age than Pama-Nyungan.

In point of fact, we believe the manner of genesis of a two-way contrast for apical consonants in Australia to have been distinctly different from that posited by Dixon. In our view, the original triggering mechanism was afforded by the presence, apparently since very ancient times, of a contrast between two kinds of rhotic sounds – an alveolar flap or trill, *rr [ř ~ ř], and a retroflexed continuant, *r [ɾ]. That this contrast is extremely archaic, and certainly pre-Pama-Nyungan, is seen in its presence even in Tiwi, a language isolate virtually on a par with Haida or Basque. There appear to us to be two ways in which distinctive retroflex sounds could have arisen elsewhere in the phonology. (a) Assimilation, especially anticipatory assimilation, could have led to the phonetic retroflexing of an apico-alveolar segment appearing in the syllable *immediately preceding* a further syllable beginning with [ɾ]; subsequent innovations could have led to the establishment of a /t/ : /ɾ/ contrast, for example, if we had, say, *mataɾa > *maɾaɾa > *maɾaa > *maɾa. Another form, *mata, would have emerged at the end of the same period of linguistic history completely unchanged. (b) The precedent existing in the form of *ɾ could well have led to a general predilection, in *part* of the Australian speech-area, to pronouncing *t, *n and *l with conspicuous retroflexion. Retroflexing would have evolved into a highly favoured way of pronouncing the single series of apical consonants – but especially, as Dixon suggests, following *u. Modern Umpila could well stand as an example of this prototype – witness /kangkul/ *elbow*, pronounced [kánɣ:kɯ!], or /pata/ 1. *flat*, 2. *death adder*, heard as [pátʌ]. In such a language, [ɾ, ɳ, ɭ] would have counted as the 'unmarked' apical sounds (unexpected as this may seem in the light of current phonological theory); in borrowing from neighbouring languages with phonetically non-retroflex apicals, speakers would have learned to pronounce the 'exotic' apico-alveolars [t, n, l], and so contrasts /ɾ/ : /t/, /ɳ/ : /n/ and /ɭ/ : /l/ (here represented as /rt/ : /t/, /rn/ : /n/ and /rl/ : /l/ respectively) would have arisen (in contexts other than word initial).

Such a manner of genesis could thus have closely paralleled that of the contrasts /th/ : /j/, /nh/ : /ny/ and /lh/ : /ly/, which sprang from a single series of laminal consonants (Dixon 1970).

In the ancestral Pama-Nyungan tongue, spoken probably 3,000-4,000 years ago, we feel that two distinctive series of apicals would have been present, but only one of laminals (as well as of bilabials and velars). The functional load carried by the alveolar:retroflex contrast would probably have been quite low, with retroflex sounds occurring in words much more frequently than alveolars. In a sense it would seem reasonable, then, to represent the retroflex series as unmarked *t, *n, *l (and *r), and the alveolars as *tʳ, *nʳ, *lʳ, i.e. counting as apical sounds from which retroflexion has been subtracted. For convenience of exposition, however, and bearing in mind the requirements of practical orthographies as well as phonetic conventions, we will rest content with that part of the system of representation proposed for Nyangumarta (Hoard and O'Grady 1976) in which /t, n, l, r/ are written as t, n, l, r, and /t, n, l/ are symbolised rt, rn, rl. That is, retroflex segments are interpreted as clusters of /r/ with /t/, /n/ and /l/ respectively. The alveolar flap /ɾ/ (typically with trilled realisation syllable finally) is not now held by this writer to be derived in any sense from /r/, and is written here as rr for convenience' sake only.

In languages such as Warlpiri and Nyangumarta, the imbalance in the frequencies of occurrence of the two apical series is maintained down to the present day – the retroflex segments occur in lexical items much more frequently than the alveolars. In modern Warlpiri, moreover, speakers from different dialect areas vary in their internalisation of certain lexical items containing an apical segment or segments; some will use a retroflex pronunciation, others an alveolar (Kenneth Hale, p.c.).

Gawurna

The next language to be examined is the extinct Gawurna tongue of South Australia. Considerations of geography might lead one to expect that the *genetic* linguistic distance between this language and, say, either Bayungu or Gupapuyngu might be also as remote as for any conceivable pair of Pama-Nyungan languages. This is quite clearly far from being the case. It comes as no great surprise, then, that the third person plural pronoun documented for this language in Teichelmann and Schürmann (1840) is PARNA. This is clearly the etymon being investigated here. The indications are that it has supplanted a reflex of the Pama-Nyungan pronoun *jana *they* (PL) in the not-too-distant past – the closely related Initial-softening language Parnkala had YERDNA, probably /yartna/, for *they* (Schürmann 1844), a clear reflex of the latter. It seems reasonable to claim, in fact, that in the history of Gawurna the reflex of *parntung came under analogic pressure from the not-yet-obsolete reflex of *jana, with the result that the internal consonantism was reanalysed as just *rn.

There is strong reason to believe that *parntung descends in Gawurna also as the first element in a compound form, namely WORTA.BURRO (presumably /wartapur(r)u/) *all; the whole*. The apparent lenition of *p- to w is not clearly motivated, but may be related to the nasal element in the *rnt cluster; cf *parna+Y *to fall – as of rain* > Gawurna WORNE+ /warni+/ *to fall, be born*. If this is correct, then the loss of *n in WORTA. would have occurred subsequent to lenition; cf *wanyja *where* > Gawurna WĀDA and Proto-Nyungic *warnti *tail, penis* > WORTI (evidently /warti/, with rounded allophone of a) *the tail of an animal; membrum virile*.

Umpila

In Cape York Peninsula, amid a seeming sea of languages whose phonologies have undergone drastic innovation, Umpila stands out as a language in which the ancestral Pamic phonology is preserved *relatively* intact, as indicated in a preliminary fashion in O'Grady (1976). Methodologically, of course, it is our duty to scan the extant rosters of ancestral Pamic or Pama-Maric proto-forms generated by Hale, Alpher, Rigsby, Sutton, Black and others for the appropriate sub-Proto-Nuclear Pama-Nyungan reconstruction reflecting Proto-Nuclear Pama-Nyungan *parntung. In the apparent absence of such, it seems reasonable to proceed directly to the alphabetised Umpila computer printout, wherein the entry paantiku *all* (with which cf Bāgandji parnti *full, complete*) appears. Semantic agreement with the Yidiny and Wadjuk cognates is excellent, so that the areas in which some accounting is due are phonology and morphology. There are four stages, in fact, through which the Umpila form is to be derived historically:

	PNPN	*parntung
1. loss of final peripheral nasal		*parntu
2. cluster simplification, with compensatory lengthening of *a		*paantu [*pá:ntu]
3. fronting of final *u following *t		*paanti
4. high-frequency association with *+ku suffix (or stylistic root extender), followed by fossilisation		*paanti+ku > paanti.ku

Rule 1 here is shared with a decided majority of Pama-Nyungan languages. Rule 2 is strongly reminiscent of a process reported on by Dixon for the Ngajan dialect of Dyirbal, for example (1980:213), where 'a vowel plus syllable-final l, r or y (but not rr) has been replaced by a long vowel', as in *kupa > kupaa *scrub wallaby* and *jalku > jaakuu *meat*. O'Grady (1981b) cites examples in Umpila in which an initial *y has dropped, with compensatory lengthening of the following vowel.

Rule 3 appears harder to motivate on articulatory grounds, but is attested in Umpila also in the development *ngurru *nose* > *wurru > *wutu > wuti *fingernail* (in which the semantic change is independently attested in Pama-Nyungan a number of times over); for further documentation, see O'Grady (1981a:156-157), and note Gugu-Yalanji tanti (pp.145-146 below). We have also noted, in the phonetics of Canadian Western Arctic Inuktitut, that /u/ which is flanked by alveolar consonants is fronted to [ü], as in pinngasut *three*. It would only require a subsequent unrounding rule to produce a result identical to that seen in the second vowel of Umpila paantiku and wuti. Interestingly enough, Rischel (1974:136) reports for West Greenlandic that 'the most advanced position of the tongue occurs before coronal consonants, i.e. /t, s, l/ etc., particularly if the vowel is also preceded by a coronal consonant. In such environments /u/ may be advanced so much that it lies somewhere between [ʉ] and [y] (= our [ü]) in quality (example: both syllables of /tuttut/ *reindeer*, PL)'. To cap these examples, note Egyptian Arabic [ü], consistently heard by us in the place name Asyut.

Umpila Rule 4 reflects an all-pervasive conspiracy in Pama-Nyungan, elaborated on at length in O'Grady (1966; and see pp.121, 123 herein) whereby a disyllabic root often acquires a suffixal third syllable. Even within the scope of this short study this phenomenon has surfaced in a considerable number of forms. Consider, for example, Wadjuk BANDANG in (1), Yaralti WARRA.ME, Gumbaynggir waarra.winy in (9), and Mirniny purnta.ngu, Warlpiri yarnta.ru in (19).

Guugu Yimidhirr

To the south-east of Umpila, beyond the territory occupied by speakers of the phonologically highly innovative Lamalama dialects, Guugu Yimidhirr is host to the form *panpaarrku whole, complete, full*. . ., as listed in Haviland (1972). Considering the relative geographic proximity of this language to Umpila, it seems reasonable to suspect that the final ku syllable counts as evidence of a shared tradition, either areal or genetic. In any event, the sharing of a third syllable, -ku, in these two languages seems hardly likely to be accidental, and impels the comparatist all the more energetically to seek a plausible reconciliation between ancestral *parntung and Guugu Yimidhirr panpaarrku. The most reasonable hypothesis which would account for the second p in the latter must presumably appeal to a rule of lag assimilation, with *parntung > *parntu > *parnta > *panta, suffixally augmented to *pantaa+rr+ku (with lengthening of V₂) > panpaa.rr.ku. The chain of arguments implied here is perhaps the most vulnerable offered in this study, and is set out with the hope either of decisive refutation or confirmation by other Australianists.

This innovation is reminiscent, in a roundabout way, of a development which Dixon (1980:177) proposes for Yidiny:

For instance, gunda-l *to cut* in Yidiny is undoubtedly cognate with gunba-l *to cut* in neighbouring Dyirbal; the stop b has assimilated in place of articulation to the preceding nasal.

We feel that he is missing the point completely here. If he were not so dogmatic in his desire to throw out Pama-Nyungan as a genetic construct, he would note Wirangu kurnta+ *to hit* – *as with the hand*, Pintupi kunta+L+ *to cut*. . ., Bayungu wurnta+L+ *to cut* and numerous other cognates of the Yidiny verb gunda-l (i.e. kunta+L in the system of representation followed here). Yidiny kunta+L clearly reflects an old Pama-Nyungan verb, where by 'old' we mean something of the order of 4,000 years – not 40,000! It is thus Dyirbal kunpa+L that requires some explanation. It is highly probable that this form is not related to Yidiny kunta+L at all, but is *also* an old Pama-Nyungan root which *still* retains an original *np sequence. An excellent candidate for cognation with Dyirbal kunpa+L *to cut* is Parnkala KUNMA+ *to kill*; the latter form shows plausible evidence of a process of progressive assimilation for the feature [nasal], reinforced, in the case of *verb* roots, by nasal-initial suffixes such as +NTU+ CONTINUATIVE. . . or +NNA IMPERFECT, PRETERITE. Since neither Dyirbal nor Parnkala preserves Pama-Nyungan ancestral vowel length, the proto-form must be symbolised for present purposes as *kUnpa+. The extreme positional stability of old *np and *rnp clusters in Pama-Nyungan is abundantly in evidence, e.g., in Nyangumarta /janpa+Y+/ *to bathe*, Gidabal janpa+ *to wash*, transparently from *janpa+; or Warlpiri kurnpu *edible sap*. . ., Yindjibarndi kurnma *delicious* (Wordick, p.c.) and Gupapuyngu

gunba.la. . . *sugar bag, jam*, which we refer to **kurnpa*. Yindjibarndi *kurnma* and Pamkala KUNMA+ show an identical type of assimilation to a nasal.

It should be pointed out that Pamkala KUNMA+ coexists with a verb KUNDA+ *to strike, beat, kill*, a cognate of Yidiny *kunta+L*, and reflecting **kurnta+L*.

In all of the above argumentation – including that having to do with Guugu Yimidhirr *panpaa.rr.ku* – a major point that should be noted is that we are operating at all times in the context of a *coherent* perspective – i.e., a Pama-Nyungan one. Given the massive Australia-wide evidence for postulating **parntung* as the shape of the universal quantifier under study, an argument for a particular kind of assimilation logically follows. The alternative – to regard Guugu Yimidhirr *panpaa.rr.ku* as lacking cognates anywhere in the continent – would be to take a stance in defiance of powerful counter-indications.

Warlpiri

For the deeply studied Warlpiri language in the north-central part of the Pama-Nyungan speech area, Hale (1974:59) reports a quantifier *panu* *many*. An identical form with the same meaning appears also in Mangarla. Although Warlpiri and Mangarla *panu* are taken here as plausibly reflecting **parntung*, several troubling questions arise in this connection.

Firstly, we are claiming here that Bayungu, Gupapuyngu and Gawurna each show an /a/ reflex of the **u* vowel of **parntung*. If, as seems probable, these three languages are members of a relatively low-level genetic grouping within Pama-Nyungan, then this lowering rule may well be part of their recent common inheritance. The presence of /u/ in the Warlpiri and Mangarla forms raises the question as to whether the immediate common ancestor of these two languages is derived from a higher node in a Pama-Nyungan family tree than that of Bayungu, Gupapuyngu and Gawurna. Alternatively, it is conceivable that Warlpiri and Mangarla *panu* is a loan from some external, hitherto unidentified source.

The second question concerning *panu* stems from the presence of /n/ rather than /rn/ in this form. We take a cue here from Kenneth Hale (p.c.). As noted earlier, he has pointed out that in Warlpiri dialect variation, certain forms show fluctuation between the two kinds of apical sounds: in one dialect, a word is pronounced with alveolar /t, n, l/, and in another with retroflexed /rt, rn, rl/.

With regard to the loss of **t* in the presumed development **parntung* > **parntu* > **parnu* > *panu*, we take this to be motivated in similar fashion to, but independently of, the corresponding innovations in Bandjalang and Bayungu.

Pintupi

From the point of view of the correct identification of a reflex, plus possible derivatives, of **parntung* in representative Pama-Nyungan languages, Pintupi is the most problematical member of our sample. This is the case despite, or perhaps in fact because of, the so far unprecedentedly large size of its published lexicon. Hansen and Hansen are, indeed, affording us a glimpse into

what a full-fledged Pama-Nyungan etymological dictionary would look like: an assemblage comprising from 1,000 to 2,500 roots and their reflexes in representative daughter languages, with histories every bit as convoluted as is routinely the case in Indo-European.

If one assumes that the lowering of *u took place in Pintupi in the context *Carnt__ as well as with preceding *rn or *rl, exemplified in (6) and (10), then the Pintupi form which phonologically can be taken to represent the outcome of *parntung in this language is parnta.ny+pa *very old female animal. . . old woman who has had MANY offspring* (our emphasis). Semantically, it remains for the implied development to be justified as being 'reducible to generally attested semantic associations' (Bynon 1977:62). If the association involving *OLD FEMALE ANIMAL, OLD WOMAN* with *ALL* was indeed mediated by way of *MATURE, ALL-KNOWING* here, then Pintupi puntu. . . *initiated man. . . ; big, great, important* would appear as a further possible outcome of *parntung, with the u vowels possibly replacing pre-Pintupi *a's through being symbolic of bigness or importance.¹ Alternatively, puntu could have evolved semantically as follows: *ALL > MANY > BIG/IMPORTANT* (and hence *INITIATED*).

From a semantic viewpoint, it is not possible to feel highly confident that Pintupi parntu *salt; salt lake* has anything to do with *parntung; still, it is conceivably a loan from an unknown source lying outside the domain of the *u > a shift implied in (6) and (10). Possibly the horizon-to-horizon sweep of some of the larger inland playas was conceptualised as being *ALL-encompassing*.²

Perhaps *parntung has its least problematic reflection in Pintupi yarna.ngu *people, body. . .* This could have happened by way of borrowing from an Initial-dropping source such as Arandic, but as emphasised already, we feel that there is excellent reason to claim that the Initial-dropping process already has a good head start *in Pintupi itself!* If phonological and semantic comparison is made directly between Pintupi yarna.ngu and Gawurna PARNA, then a strong case can be made for the sharing of an innovation: *ALL > THEY (> PEOPLE, BODY* in Pintupi). In Pintupi also, *p- > Ø- > y-; and the ubiquitous Pama-Nyungan stylistic root extender *.ngu made its appearance on *yarna in numerous forms. In possible contradiction to this claim, it should be pointed out that the semantic change *THEY > PEOPLE, BODY* and the addition of *.ngu may just possibly be shown ultimately to be correlated; most evidence seems to indicate, though, that such striving for deeper analysis is a reflection of a vain hope. If the .ngu in Mirniny purnta.ngu *stone*,

¹Later herein, we make the claim that ancestral *tarntu(+rr) *tight, taut, firm* appears in Pintupi as tuntu.rn+pa *...nipple of a girl at the yukarra stage*, in which the vocalic substitution may reflect the same symbolism. See, however, pp. 147-148.

²The same kind of conceptualisation is perhaps reflected in the history of *kuju (> Pintupi kuju *one, only*, Gawurna KUTYO *little, few, the rest*, Umpila kuthu *some*) – cf. Nyangumarta kuju.rl *alone, lonely*, kuju.ngu.rru *sea*; the semantics of the latter may have been mediated through *UNIVERSAL (WATERY DOMAIN)*, and Wadjuk GUDJYT *the sky; the firmament* could belong here also. An alternative hypothesis relating to the semantic history of Pintupi parntu appeals to *ANTONYMOUS* meaning shift: if we assume the semantic change *ALL > NOTHING* for one of the reflexes of *parntung, then by specialisation the latter could have come to focus on the *NOTHINGNESS* of the seemingly limitless dry salt lakes. Fuel for this theory is provided by PPN *paki *everything*, which descends in Lardil as paki *everyone, everything*, in Nyangumarta W as /waki.ji.kirra/ wakijikirri *all, everyone* and in Yidiny as paki.l *another* (cf. Waalubal pantang and the relevant Yidiny and Nyangumarta evidence cited on p.126). By way of semantic contrast, the Gupapuyngu reflex, waki.n.ngu, is glossed *nothing* by Capell (p.c.) and as *illegitimate, belonging to no one, uninhabited place* by Lawton and Lowe. Heath (1980:219) cites Ritharngu wakin(ngu) as meaning *bad, no good*.

Whatever the correct etymology of Pintupi parntu may be, the problem of its a...u vocalism must count as remaining unresolved.

cited in (19), be the same creature as the .ngu in Pintupi yarna.ngu or in Gariyarra maya.ngu *right hand*, then any attempt to recover earlier semantic content for presumed ancestral *+ngu would appear doomed to failure.

Although Koch, as indicated elsewhere, views a large segment of Pintupi y-forms as loans from an external Initial-dropping source, we would reiterate that *many* such y-forms which ancestrally began with *p underwent a *p- > Ø- > y- innovation spontaneously within the Western Desert language. We cited Yidiny and Bayungu evidence (O'Grady 1981a:160) to demonstrate that in contradistinction to these two typical Pama-Nyungan initial-retaining languages, Pintupi has undergone the innovation in question in roughly one-fourth of pre-Pintupi *p- forms. A further argument along these lines centres around final high vowels: if ancestral *piku(+ny) descended in Arandic, say, and then entered Pintupi as a loan, then how does it appear in the latter as yiku *face*...? Did it pass from Arandic into Western Desert *before* the merger of vowel finals in the former? If it is such an old loan, i.e. borrowed by Proto-Wati (including Warnman) or even Proto-Nyungic, does it show this by appearing with initial y- in a goodly scattering of their descendants? These are searching questions indeed, and force us also to face the question of whether, e.g., Arandic Initial-dropping is much older than Arandic merger of vowel finals. To sum up: the most plausible hypothesis concerning the evolution of Pintupi yiku is, to us, one that posits Initial-dropping *within the Western Desert language*.

Nyangumarta and Wembawemba

Two further Pama-Nyungan languages examined for the purposes of this study – Nyangumarta and Wembawemba – are not documented as showing plausible reflexes of *parntung. Quite possibly, the etymon under investigation is still present in the former, but lies hidden in a little-used part of the lexicon – much like the ancient Indo-European element were. lying half hidden in English were.wolf. Otherwise, Nyangumarta is to be seen as being entirely analogous in this regard to the hypothetical Language G used in exemplification in our opening remarks, since (a) *parntung appears *guaranteed* as having descended at least into Proto-Nyungic, an intermediate ancestor of this language,¹ and yet (b) Nyangumarta appears nevertheless to lack a reflex.

The lack of a documented reflex of *parntung in Nyangumarta, then, is of no particular significance with regard to the genetic affiliations of this language. Rather, as noted earlier, it is to be seen as a typical example of the largely random give-and-take pattern of lexical retention and loss in languages of the world.

Wembawemba, on the other hand, appears to have no close relatives among the other eleven Pama-Nyungan languages being studied – conceivably its genetic relationship to each of them is not a great deal closer than that of English to Russian. The chances are greater, then, that this language will not be represented in a given Pama-Nyungan cognate set; a given proto-form could,

¹Note that we adhere wholeheartedly to Hale's assignment of Nyangumarta to the Nyungic (~ South-west) Branch of the Pama-Nyungan Family – a genetic grouping whose members' territories cover over 40% of the area of Australia. Our evidence for the reflection of *parntung in Nyungic comes from Wadjuk, Gawurna, Warlpiri and, putatively, Pintupi. As indicated elsewhere, Bayungu (as well as some of its neighbours) and Yuulngu may belong in a closely related, but distinct, Kanyara-Yuulngic grouping.

for example, be assignable to a *sub*-Proto-Pama-Nyungan level of reconstruction only – to the common ancestor of Nyungic and Kanyara-Yuulngic, let us say.

At times, this paper has seemed to raise more questions than it has answered. Perhaps this is inevitable in a field such as comparative Pama-Nyungan in which perhaps three hundred person-years of basic research still needs to be done – let alone in comparative Australian! Despite the tentative nature of some of the conclusions offered herein, much seems to be emerging in the nature of backup for Hale's claim of the early 1960s to the effect that Pama-Nyungan is the largest *coherent* genetic construct in the Australian linguistic picture.

Ngandi, Mawng and Ungarinyin

As indicated earlier, we have yet to turn the spotlight on Ngandi, Mawng and Ungarinyin as examples of languages seen by Hale as lying *outside* his large Pama-Nyungan Family. To the extent that Hale is correct in envisaging such languages as being ultimately 'relatable' to Pama-Nyungan only in a phylic, rather than in a familial, sense, there should be far less likelihood that a run-of-the-mill Pama-Nyungan proto-form such as *parntung could be mapped in some sense across to plausible cognates in these languages. We now turn our attention, then, to these three prefixing tongues.

Search through Heath (1978b) and Capell and Hinch (1970) does indeed confirm our negative expectations: no element – either root or affix – appears to be present either in Ngandi or in Mawng which could be counted as being plausibly relatable to *parntung. Ungarinyin, on the other hand, *does* show strong surface indications of a nugget which could conceivably be mapped across to this Pama-Nyungan etymon. The third person non-singular independent pronoun in this language is pantu!¹ The possibility for a justifiable mapping of this form across to *parntung may be more apparent than real, however: Coate and Oates (1970:28) clearly identify the p as a plural prefix – witness antu *he* (Noun Class I), ny+antu *she* (Class II), w+antu *it*, e.g. *tree*, *stone* (Class III) and m+antu *it*, e.g. *shade*, *cave* (Class IV). We are clearly faced with a root antu here. Hale assigned Ungarinyin to the Wororan Phylic Family (O'Grady, Voegelin and Voegelin 1966:35), and what is obviously needed now is a detailed reconstruction of the evolution of Ungarinyin from Proto-Wororan through Proto-Ungarinyinic, so that the history of Ungarinyin antu might be more confidently assessed.

In the meantime, we would venture the following speculation: at a point far back in the pre-Proto-Pama-Nyungan past – possibly 8,000 to 10,000 years ago – *parntung may already have 'pre-existed' in something like ancestral *pa(r)ntu shape and functioned as a universal quantifier. During a remote past stage in the evolution of the Wororan and other northern 'prefixing' languages, *pantu, the generic noun *mayi *vegetable food* and possibly one or two other generic forms came to occur 'in syntactic construction with a specific noun, most frequently immediately preceding it' (Dixon 1980:273). Thus there arose noun class systems highly similar in a number of respects to those of Bantu languages. In the process, *mayi underwent truncation, when

¹Fluctuating to pantun when it has specifically *plural* reference.

occurring in such syntactic constructions, to *m(a)+; conceivably *pantu contracted to *p(a)+¹ in entirely parallel fashion. In another context, *pantu survived into modern Ungarinyin as a general third person pronominal element *antu* (cf. Bayungu *parnta*), allowing speakers to generate the forms cited above.

The extremely archaic, and quite possibly Proto-Australian universal quantifier *pa(r)ntu would meanwhile have come under pressure to acquire a final consonant, as the Pama-Nyungan scenario put forward with superb insight by Hale (in Dixon 1980:318-320) began to unfold. In addition, contrasts such as *-nt- : *-rnt- ([-nt-] : [-ŋt]) would have become firmly established, so that *pa(r)ntu would have evolved into *parntung. Subsequently, in later Pama-Nyungan, the final velar nasal would have gone into limbo again in *roots* in all of the languages being examined here excepting the Bandjalangic dialects. In languages such as Warlpiri, however, it was destined to survive as a result of the reanalysis of ERGATIVE and LOCATIVE case markers.²

With regard to the appearance of material in a given Australian language which can plausibly be counted as a reflex (or cognate) of *parntung, Nyangumarta and Ngandi, say, equally score a 'minus'. In the same sense, however, neither modern German nor Hungarian shows a reflex of an extended zero-grade form of PIE *d^heu+₁, namely *d^hw+el+ (> PGmc *dwel+ > Old English dwell+an > Modern English dwell). On the basis of extremely copious inherited IE material in German, of course, there is no question whatever but that this language is an integral member of the Indo-European Family; Middle High German *twell+en to delay, harass* was simply not destined to survive into modern times, so that we are merely being treated here to yet another example of the obsolescence of a form in a language. The absence of a reflex of PIE *d^hw+el+ in Hungarian, on the other hand, is part of a *systematic absence* of Indo-European material in this language (apart from loans such as *barát friend; friar*, mediated through Slavic from PIE *b^hrāter+ *brother*, or *hét seven*, thought to represent PIE *septm in this language).

In view of the Dixon attack on the validity of Pama-Nyungan as a genetic construct, it behoves conscientious Australianists who are doing continent-spanning comparative work to make a concerted, impartial attempt to trace a given etymon ultimately in *each and every Australian language in which it appears*, as well as its borrowed form in whichever Papuan languages, such as Miriam, it has penetrated. Contrariwise, if a strong case can be made for the entry of Papuan (e.g. Kiwaian) or Austronesian loan material *into* an early stage of Pama-Nyungan, then an exhaustive search for the etyma in question should likewise be made in *all* Australian languages. The results of such research, weighed together with the results of the further intensive comparative study of Australian phonological, morphosyntactic and semantic systems, should lead once and for all to *balanced* genetic and typological classifications of the Australian languages.

In the context of such exhaustive study we are confident that the vast majority of widely distributed etyma will turn out to have a provenience correlating closely with the boundaries of the Pama-Nyungan Language Family as delineated by Hale. When individual languages are then sampled with a view to determining the population of such etyma, we feel strongly that tongues

¹Unless, perhaps, *p(a)+ is to be derived from *paarru *person*, which may be the source of the Ungarinyin third person plural subject prefix *pirri+*.

²Nyangumarta /+lu ~ +ju/ 'ERGATIVE' shows not a trace of this, but /+ng.a ~ +ja/ 'LOCATIVE' reveals a survival of what was formerly a noun-final *ng.

such as Yidiny, Pintupi and Wadjuk will be found to reflect 40-70% of the total inventory of proto-forms – even given the fact that no reasonably complete dictionary of an Australian language has yet been published (cf. Dixon 1980:2). Tiwi will presumably figure in 1% or less of all instances. Where languages such as Ngandi, Mawng and Ungarinyin will exactly fit in this picture, only time will tell. We hazard the estimate herewith, however, that each of these three languages will be represented in not more than, say, 3% of the 1,000 to 2,500 cognate sets which will without a doubt eventually be assembled.¹

A control form: PNP **tarntu(+rr)*

In the case of **parntung all*, it would be useful for present purposes to be able to cite the reflexes, across Pama-Nyungan, of a further proto-form of minimally differing shape. In this way, we may reasonably hope to count such a form as offering at least a *partial* control over the degree of reliability with which the hypotheses advanced concerning purely *phonological* innovations can be invested. We aver 'partial control' advisedly, since the rôles of analogy, expressive formations, baby talk, taboo-deformation, sound symbolism and diffusion in Australia are still far from being understood in detail, though recent important work by Heath especially (1978a, 1980, 1981) has thrown much new light on the lastmentioned.

The reconstruction selected for this purpose is PNP **tarntu(+rr) tight, taut, firm; stubborn*. The reader is urged to judge independently – allowing for the abovementioned six factors – the proportion of the hypotheses generated which can stand the test of searching scrutiny from scholars in this enormous field.

Our choice of **tarntu(+rr)* as a control form is motivated not only because it shares a string of five medial segments, **__arntu(__)*, with **parntung*. It also represents a highly marked morpheme shape in PNP. This is partly due to the fact that only 5% or so of all proto-forms of PNP appear to be reconstructible with an initial **t*. A further contributing factor is the strong pressure, in ancient times as well as in modern, for configurations such as **tV(r)ntV* to bow to the effects of dissimilation or haplology. Among the thin scattering of surviving forms, the task of identifying potential cognates is made relatively straightforward. The reduction in the degree of difficulty (vis-à-vis the 'average' situation) in unearthing correct etymologies is roughly comparable to that experienced in the study of PNP **yamu* (cf. O'Grady 1981b:267-269).

Of the twelve Pama-Nyungan languages drawn on in the reconstruction of the Universal Quantifier **parntung*, eight show plausible reflexes of **tarntu(+rr)*. One of the four languages lacking a reflex in the available data base is Yidiny. For the geographically close Dyirbal language, however, Dixon (1972:400) documents a pala-class noun *tantu* as meaning *tree, wood* in the Dyalnguy (mother-in-law language) of its Dyirbal dialect. We take this form as constituting evidence for the same tradition of phonological conservatism in the descent of vocalic segments whereby the vocalism of **parntung* remains unchanged in Yidiny *pantu*. Whether this Yidiny-Dyirbal tradition might result from *diffusion* rather than direct inheritance, manifested in the borrowing of forms with conservative vocalism, let us say, by one or the other language in which

¹In view of the gargantuan amount of work involved, this will far more be by dint of the efforts of others than of this particular writer. What is required is clearly a team effort.

a rule such as *Ca(C)Cu > Ca(C)Ca may have operated, is not possible at this time to demonstrate. It does seem clear in an areal sense, though, that the geographical region in which the Yidiny and Dyirbal speech-areas are included constitutes a zone of conservatism in the reflection of certain vocalic configurations in disyllabic roots – including *Ca(C)Cu. Sets such as (17) would appear to point to an overlapping but much larger area in which shapes of the type *Ci(C)Ca(C) retain their vocalism – witness PNPN *pintam > PP *pinta > Uradhi winta, Guugu Yimidhirr pinta, etc.

The diachronic semantics of Dyirbal D Dyalnguy tantu (TAUT > HARD/HARDWOOD > WOOD/TREE) represents a by no means unique development in Australia: witness PNPN *mankarr *hard, hardwood* > Gidabal mankarr *red gum (several sp.)*, Waalubal mankarr *sp. gum-tree*.¹

To the north of Yidiny and Dyirbal appears a zone of languages in which evidence is slowly accruing for a vocalic innovation, albeit of an extremely constrained nature: *u > i /t__#, i.e., *u fronts to i word-finally following *t. This is seen in Umpila in *ngurru *nose* > *wurru > *wutu > wuti *nail, claw*, (noted above), as well as in *parntung *all* > paanti.ku *all*. What of a possible reflex of *tarntu(+rr) in Umpila? The answer, frustratingly, is that no form for *hard* (as the antonym of *soft*) was elicited in this language, nor appeared in texts; note, however, the intriguing Wik Mungkan form yanta.mp *hard* and Kaantju yanta.pa *hard*, both recorded by Hale (*t- > *j- > y- ?). To the south, the lexical item tanti is documented in Gugu-Yalanji, and answers to *hard, unbreakable, tough, strong, durable* (Oates and Oates 1964b:88). Note also Mulurudji tanti *hard*, documented in Hale's Test List for the language. The final i is seen here as indirectly corroborating, i.e. in an areal sense, the above claim that unstressed *u following *t descends as i in Umpila. What is emerging, in other words, is evidence for a Yidiny-Dyirbal-... zone of conservatism in the descent of unstressed *u which followed *t, and to the north, an Umpila-Gugu Yalanji-... innovative area. Clearly a great amount of further research is necessary before it will be possible to delineate the boundaries of these two areas realistically. In the case of Guugu Yimidhirr, the available evidence is inconclusive, since the etymon under close study as a control form appears in its extended variant, *tarntu+rr (> tuntu.rr *white gumtree sp.*). Final liquids certainly exert a profound effect in Pama-Nyungan in blocking or triggering vocalic change, and the tuntu.rr reflex here may well betray the former effect resulting from the [+bk] feature of the final rhotic. This, in turn, could have triggered – or permitted – the anticipatory assimilation of the *a to the *u – a stage not yet attained in Bandjalang tantu.rr *strong, hard, able, capable; hot – of sun* or Waalubal tantu.rr *hard* (Waalubal tanta.y.kam *old man ('capable/knowledgeable one')* and perhaps tanti *to embrace, cuddle ('hold TIGHT?')* appear as further reflexes illustrating the varying effects exerted on V₂ – diachronically at least – by consonantal segments following it).

The domain of the Umpila-Gugu Yalanji-... rule whereby unstressed *u fronted to i following *t is extremely limited – perhaps only one in five hundred forms would have had the necessary

¹Evidence for the ancestral referent of *mankarr comes from Bandjima, Yindjibarndi mankarr *hard*, Rithamgu man'ga 1. *hard ground* 2. *white clay* and Gupapuyngu man'ka *red and white clay (mixed)*. Pintupi mannga *stubborn* illustrates another direction which semantic innovation has taken. This form is a blend of *mankarr and *puulngu *soft* (the latter descending in Umpila puulngu *soft, gentle – of wind*, Gupapuyngu bulngu *soft (ground fruit)*, Rithamgu bulngu' *fine, powderlike, in fine pieces; ashes*); and contrariwise, Pintupi nyunnga *soft* is a blend of *puulngu and *mankarr (O'Grady 1981b:269), with its evolutionary history being still further complicated by Initial dropping.

*CV(C)tu configuration in PPN or PNPN for it to be able to operate. It is worth noting, however, that elsewhere in the Pama-Nyungan speech-area, Yuulngu shows independent evidence, though of a slightly differing nature, for the fronting of *u in the V₂ position following an alveolar: Gupapuyngu *mani neck, creek*, a probable cognate of the forms cited in (10), and *mali' shadow, photo, image* (also attested for Ritharngu), no doubt to be added to (12). The seemingly haphazard appearance of the final glottal stop in the latter form almost certainly has nothing to do with the *-ng of ancestral *malung, but instead bespeaks an interdialectal borrowing history in which the influence of the Arnhem Land glottalisation *Sprachbund* was decisively felt in certain forms, but passed others by.

On the basis of instances of the reflection of *parntung such as Bayungu *parnta*, Gupapuyngu *mandā* and Gawurna PARNA (all showing assimilation of *u to *a), the question arises as to whether the *u of *tarntu(+rr) has undergone the same assimilation in these three languages. The answer in *all three* cases is positive. In Bayungu, the reflex is *tharnta.rn firm – as of breasts* (with which compare Nyangumarta W *tarnta.rn* 1. *tight, taut* 2. *faultless (enunciation)*, the non-etymological .rn having the effect of creating a pseudo-reduplication; cf also the English loan *purarnpurarn frying pan*). In Gupapuyngu, *dana.tju+N* is *to be or become stiff, taut, tight*, in which *dana.* reflects *tarntu and .tju+N is a verb formative descended from PNPN *juu+N *to put; to put (words in a person's ear)*, i.e. *to say* (cf. Dixon 1980:405, where he reconstructs *DHu+n *to put*). The loss of the second *t here is seen as part of such a commonplace phenomenon that it should by now appear plausible as an innovation (once again, cf Black 1980), even though it cannot yet be predicted for any given starred form (the high-frequency association of suffixes having homorganic nasal + stop initial consonantism with particular roots only, leading to haplology, must surely to some extent be idiosyncratic).

Other parallels to this *t loss in Yuulngu exist. Consider, for example, PPN *walgka *breath, voice* > Gupapuyngu *waja to talk, speak, tell* and Ritharngu *waja to speak, talk*; other reflexes include Pintupi *wangka speech, talk* and *wangka+Y+ to talk*, Dyirbal *walgka* (pala-class) *breath*, Gumbaynggir *ngaawa language* (*walgka > *waangka, followed by C₁C₂ metathesis and deletion of *k); and, questionably, Lardil *kang/kangka to speak, talk – of a person; to produce characteristic sound. . .* Further examples are: PNPN *wunta *fired area, burnt country* > Nyangumarta *wunta country burnt out less than a year ago*, Gupapuyngu *wuna.ki.na fire*, Umpila *unta+L+ Vintr to burn* and (either through conscious alteration in word play, or Initial-dropping, with *w- > Ø > l-) Pintupi *lunta blackened country after fire*, *lunta+L+ to burn off a grass area and make it black*; PNPN *jalmpi ~ *yalmpi *flank, side* > Gupapuyngu *djamu.rr ribs* (*i > u following [+lab] segment and preceding [+bk] rhotic – cf PNPN *piku(+ny) *forehead* > Gupapuyngu *buku forehead, . . . cliff, face*, noted in O'Grady 1981a:156), Ngarluma, Yindjibarndi *thampi rib*, Kala Lagaw Ya *thaba.y shoulder* and Umpila *yampa ear*. In case the implied semantic developments here may be viewed as implausible (or inconceivable?), the reader is urged to suspend all disbelief at least momentarily – long enough to study the entirely independent evidence afforded by PNPN *palngkam ~ paangkal *rib*. Reflexes of the latter fully confirm, in the sense intended by Bynon (1977:61-63), the semantic correspondences shown by reflexes of *jalmpi ~ *yalmpi. These include Proto-Pamic *paangkal *shoulder* (> Uradhi, Linngithigh *aghaw*, Mpalitjanh *angkal* – Hale 1966, 1976a,b); Bakanha *palngka rib, side*; Jaabugay (Tjapukay) *wangki.rr*, Arabana *pangki*, Proto-Kanyara *pangu.rru *rib* (> Bayungu,

Thalandji pangku.rru – Austin 1981b:322); Nyangumarta pangka *section, part S, half of carcass cut lengthwise* W; Wadjuk BANG-GA *part of; half of anything*; Ngarluma pangkarl.pi+L+ Vtr *to split*; Pintupi yangkarl+pa *buttock area; meat cut*, yangku.ru *ear* (< 'side (appendage)') with Initial-dropping (*p- > Ø > y-); Bandjalang pangkim *temple, cheek* (< 'side' < 'rib'). Kala Lagaw Ya baaga *jaw* is possibly a further reflex, but Miriam BAG *cheek* and Mawata BAGO *chin* must surely count as pointing to possible diffusion; more study is needed to determine its direction. Further to the south, the Brother-in-law equivalent of pilu *hip, pelvis, side of hip* and a half dozen other body part terms in Guugu Yimidhirr, palngki.rr, is clearly a further outcome of the *palngkam alternant, and probably is part of a recent tradition, either areal or genetic, shared with Jaabugay wangki.rr, above. The vocalic development whereby *a > i here is apparently triggered by the rhotic extension; further documentation is needed, however.

Turning now to the reflex of *tarntu(+rr) in Gawurna, we note TANTA.NNA.KO *a heavy stick to fight with; club*. . .,¹ plausibly /thanta.nha.ku/, as fulfilling our expectations concerning the assimilation of *u to *a, based on the example of *parntung > Gawurna PARNA. The semantic change is comparable to that observed in Dyirbal D Dyalnguy tantu or Guugu Yimidhirr tuntu.rr.

In the West, Nyangumarta W turntu.rurru *firm – of breasts* shows another end result in vocalic evolution from that noted in tarnta.rn, above – and cf also Warlpiri turntu.rn.pa *incipient breasts* and Pintupi tuntu.rn+pa. . . *nipple of girl at yukarra*² *stage*. More work is needed to determine whether the u...u pattern here stems from an innovation in the immediate common ancestor of Nyangumarta, Warlpiri and Pintupi; whether it reflects diffusional forces at work; and over and above these considerations, whether it arose through being symbolically expressive of largeness, as we have suspected in these pages. The accruing weight of evidence points more and more strongly to the probability that a straightforward process of assimilation is involved. Consider, for example, the following pairs of cognate forms in which Pintupi u...u vocalism corresponds to a...a vocalism in certain other Pama-Nyungan languages:

(20)	Pintupi	puntu	<i>big, great, important; initiated man :</i>
	Waalubal	pantang	<i>other</i> (for the semantics, see <i>infra</i>)
(21)	Pintupi	turlku	<i>social corroboree :</i>
	Gumbaynggir	taalka	Vtr: <i>to sing</i>
(22)	Pintupi	tuntu.rn+pa	<i>nipple of girl. . . :</i>
	Bayungu	tharnta.rn	<i>firm – as of breasts</i>
(23)	Pintupi	yumu	<i>without a care, unconcerned :</i>
	Dyirbal	yama	<i>gently, slowly. . .</i>

To judge from surface appearances, at least, the Pintupi evolutionary pattern which is in evidence here directly contradicts that of sets (1), (6) - (7) and (10): *both* groups of forms reflect ancestral *a...u vocalism (as in *parntung *all*). But whereas the assimilation that was identified in

¹This form is indirectly glossed by Teichelmann and Schürmann via a cross-reference to KATTA.

²yuka.rra: *girl who has reached puberty* ..., etymologically 'standing (-out breasts)', from Proto-Nyungic *yuka+ *to stand, stand out, extend*; its root is itself cognate with Proto-Pamic *yuku *tree, stick*. The semantic relationship TO STAND: TREE is recapitulated in its entirety on Vancouver Island in Kwakw'ala (Kwakiu I) lawəs; cf. also English expressions such as *a stand of pine*.

(1), etc., was seen to operate rightwards (i.e., was a phenomenon of *lag*), that seen in (20) - (23) clearly operates in a leftward direction; that is, it is *anticipatory* in nature.

A theory which recognises both lag and anticipatory vocalic assimilation in the diachronic phonology of one and the same language may not be so self-contradictory as may seem at first blush: in Warlpiri, for example, Kenneth L. Hale (p.c.) recognises different dialects, in one of which vocalic assimilation has been leftward-operating, and in another, rightward. Conceivably, then, the modern Pintupi lexicon could be of a complex stratified nature, with different layers reflecting a variety of phonological rules that have operated over the centuries in various communalects from which Pintupi has subsequently borrowed. If this be the case, then phonological innovations will superficially appear to have operated selectively as in (24), where *g- in PIE *genə+ *give birth, beget* has six different outcomes in Modern English – zero, z, ž, ĵ, g and k:

(24)	Mir	Ø	nation – from OFR, from Latin (g)nāscī <i>to be born</i>
		z	a (title of honour) – from Arabic amīr + Persian zād <i>born</i>
		g	gendarme – from French gens d'armes, from Latin gēns <i>race, people, sex</i>
pre	g	g	general – from OFR, from Latin generālis <i>relating to all</i>
		g	enant – from Latin praegnā(n)s (prae 'before')
		k	kin – from PGmc *kuny+am, from PIE suffixed zero-grade form *g _n +to+.

Elsewhere in English, a seventh reflex, č, appears – witness chin, reflecting PGmc *kinn+uz, from PIE *genw+, itself a variant form of *genu+₂, *jawbone, chin*.

Yet in the case of Pintupi, other possibilities exist. In at least some instances, the *consonantism* of a form may have determined the direction which vocalic assimilation has taken; consider, for instance, the rounding of *a to u which is conditioned in Mirniny by a preceding bilabial consonant, and is attested in four examples (see footnote, p.133). Then too, in a small number of cases, sound symbolism may have been at work, as has already been suggested in these pages.

If the Pintupi and other Pama-Nyungan lexicons are as multi-layered as that of Modern English, then the correct assigning of Pama-Nyungan etymologies for the vocabulary as a whole will indeed be a formidable task – even if ultimately achievable, probably, for at least 80% of the entries. But by the same token, the gain in our understanding of the nature of the evolution of natural languages will be truly enormous.

For present purposes, we leave open the possibility that we are dealing with at least two layers of vocabulary in modern Pintupi. This stance is reflected in the notations PIN₁ and PIN₂ which are employed in Figures 1 and 2 below.

In the task of moving closer to an eventual resolution of the above questions, the correct identification of many hundreds of further cognate sets will clearly be both necessary and feasible.

Within the realm of Pintupi forms which can be mapped in some sense back to *tarntu(+rr), further possibilities exist – but with still more problems in the vocalism whose full resolution eludes us as yet. Consider, for instance, tinta.rl.ka *a stiffening of body after constant lying usually associated with death*. This form, in turn, appears to share morphemic content with tinta.rl.ka+N+ *to kill* and tina.ju+N+ 1. *to hold the butt of a rifle against the body to steady it*. . . 2. *to stand one's patient in a posture with an arm outstretched*. . . – *of a doctor*. . . In the Dyirbal Dyalnguy note, further, the *transitive* verb tinta+L *to stand*. The implied ancestral root *tinta+L may, in fact, have existed independently of *tarntu(+rr) throughout the Pama-Nyungan era, but be mysteriously related to it in a pre-Pama-Nyungan epoch. The semantics certainly point to the plausibility of a relationship, as well as the highly marked *t...(r)nt... consonantism. The possibility seems strong that Gupapuyngu dana.tju+N *to be or become stiff*. . ., cited earlier herein, is to be assigned as a *direct* cognate of Pintupi tinta.rl.ka, etc. and Dyirbal Dyalnguy tinta+L, and should be flagged as perhaps being related further, and rather indirectly, to Pintupi tuntu.rn+pa and the other forms assigned here as direct reflexes of *tarntu(+rr).

Even greater difficulties in the secure establishment of cognation are presented by Pintupi tin.k.i+L+ *to attach*. . . (< 'to make a tight/secure connection', with k-infix?), tirnu+L+ *to cause to adhere to*. . . and tirna *big, great – of older men* (perhaps from 'of firm resolve, strict, authoritarian'). Guugu Yimidhirr tintaa.l *quick, quickly*, its possible polar opposite tani *slow, quiet* and Pankarla TARNA *fast, strong* may count as further cognates, and have semantic histories extremely similar to that of English *fast* (< Old English *fæst* *firm* < Proto-Germanic *fast+ <PIE *past+ *solid, firm* – cf Armenian *hast* *firm*).

In view of its phonology, Wadjuk DANDA *angular; having corners like a square bottle* (Moore 1884:18) also demands consideration as a possible reflex of *tarntu(+rr). The possibility of semantic reconciliation, however, seems quite remote, and Moore's sometimes problematic transcription system militates further against the correct identification of any given etymon. If his spelling of this form in fact represented /tharnta/, then cognation with inland Nyungar tarnt (sic) *ankle* and Pintupi jarnta.rr+pa *knee*, discussed earlier at (5), seems much more likely. Such an assignment of cognation would appear to be corroborated on universal semantic grounds – English *angle* and *ankle*, for instance, represent the Italic and Germanic outcomes of the same PIE root *ank+ ~ *ang+ *to bend*.

While Bayungu murti.ny.kaji, nyama and putu.piriny /purrupiriny/ *knee* clearly represent different etyma from the above, the expression nyama tharnta.rr *bent knees* (nyama *knee*) in the close sister language Thalandji clearly provides a further cognate pointing to an ancestral (Proto-Nyungic) *jarnta. At first blush, Gawuma TARND *a large reddish species of kangaroo*. . . might seem semantically quite remote from what has been presented so far. There is excellent reason to believe, however, that the fleet-footed marsupials have often been named in Pama-Nyungan languages for this very characteristic – their speed being seen as a concomitant of energetic *knee action*, i.e. rapid and coordinated flexing and unflexing thereof. Note, for example, Proto-Pamic *pungku *knee* (> Umpila pungku, Uradhi wungku, Linngithigh ngko, Kuku-Thaypan nggi in this meaning, and cf also Umpila pungku+kuntha *good at running* cited under (5)). Bayungu provides a further cognate in pungku.rti *grey kangaroo*.

Figure 1: The evolution of selected reflexes of PNP *parntung

Figure 2: The evolution of selected reflexes of PNPn *tarntu(+rr)

Returning to *tarntu(+rr), we tackle the remaining task of demonstrating that the alternant with a final rhotic is approximately as much of Nuclear Pama-Nyungan age as is *tarntu. Towards this end it is necessary, pending a detailed subclassification of the Pama-Nyungan languages, that the reader accept the node in a putative family tree representing the immediate common ancestor of Bandjalang and Nyangumarta as virtually tantamount to 'Proto-Nuclear Pama-Nyungan' (cf. the question of Yidiny and Wadjuk, referred to earlier). This being so, higher-level nodes will represent the branching off of Pama-Nyungan Outlier languages only – i.e. Lardil, and possibly also some languages of the south-east such as Wembawemba. The reason for our implied claim that Bandjalang and Nyangumarta are genetically related as remotely as any other conceivable pair of Nuclear Pama-Nyungan languages is threefold: (a) their grammatical structures differ considerably – though not so much that they cannot be recognised as being genetically related in a fairly obvious way; (b) they share only 9% of the 100 items of a lexicostatistic Test List; (c) they lie on opposite coasts of the Australian continent – a circumstance pointing to the likelihood that the time of their divergence from their common ancestor lies back in the very dawn of the Nuclear Pama-Nyungan epoch.

The Nyangumarta W form which appears to be the direct cognate (except for its initial segment) of Bandjalang tantu.rr *strong, hard*. . . is parntu.rr *muscle*. But why the discrepancy in the initial? The answer appears to lie in the typical collocations in which Nyangumarta W parntu.rr occurs: it is attested far more typically in the compounds marrja+parntu.rr *physically strong* (marrja *hard, forcefully, energetically*) and manyu.rla+parntu.rr *physically weak* (manyu.rla ~ manyu.rlu *tired, lazy*) than independently. This circumstance seems to have led to a dissimilative replacement of *t with p in what would otherwise have been a long sequence of syllables containing [+cor] consonants. Earlier *tarntu.rr would then have been re-created in *all* contexts as *parntu.rr, by analogy. Conceivably, Nyangumarta W parntu *calf of leg* subsequently came into existence through back-formation when the root-final *rr was reanalysed as having derivational properties. That this could have happened is made more likely by virtue of the evidence in Nuclear Pama-Nyungan for a *+rr noun-deriving suffix. Compare, e.g., Nyangumarta pirlu *guts* (cognate with Umpila pilu *hip, thigh* < *pirlu) with Nyangumarta pirlu.rr *doughy part inside loaf of bread* or Nyangumarta piya+R+, Kaititj ya+ *to grind*, Guugu Yimidhirr piya.l *persistent, determined, hard* (< 'grinding away (at a task)') (< *piya+L *to grind*) with Pintupi paya.rr+pa *lower grinding stone*. The acceptance of Pintupi piyu.rr+pa *pink and grey galah* as forming a doublet with the foregoing, as well as of Nyangumarta piyu.rr.piyu.rr *galah* under the same rubric, demands merely a minimum of ornithological and phonological awareness: (a) that birds of the parrot order of creation reduce nuts, etc., to digestible proportions by a side-to-side *grinding* action of their beaks¹; and (b) that vocalic developments in Pama-Nyungan languages repeatedly turn out to be crucially affected by a following tautosyllabic liquid consonant, as seen already, e.g., in Guugu Yimidhirr tuntu.rr. The innovative nature of the u-vocalism in Nyangumarta piyurrrpiyurrr, Pintupi piyurrr+pa is further attested to in Bayungu piya.rl.ji *galah*, in which formatives other than *+rr appear suffixed to the ancestral transitive verb *piya+.

If dissimilation was the mechanism by which pre-Nyangumarta *tarntu.rr was reanalysed as parntu.rr, then it is just possible that Wirangu karnti.karnti *hard* also evolved from the *tarntu

¹As pointed out to this often blissfully unaware writer by his practical-minded, ever-down-to-earth wife, Alix O'Grady.

alternant by way of dissimilation, but with the [+cor/+ant] specification for the *t- showing a *twofold* feature value change.

Only in the context of a massive, full-fledged comparative study of Nuclear Pama-Nyungan can alternative hypotheses to account for the evolution of such forms either be fully vindicated or decisively rejected. In the former event, Nyangumarta parntu.rr and Wirangu karnti.karnti would appear in a full-fledged Nuclear Pama-Nyungan etymological dictionary under the lemma *tarntu(+rr).

Since the surest ultimate correction to arise out of the ashes of the various classifications of Australian languages will probably be the one which rests on a careful study of *shared innovations*, it would appear reasonable to conclude this essay at least with an attempt to construct tree diagrams depicting the evolution of the various reflexes imputed to the PNPN roots *parntung and *tarntu(+rr). These are given in Figures 1 and 2.

It is clear that considerable difficulties remain to be surmounted. Thus, for the present, we are forced to recognise a minimum of two strata of vocabulary in Pintupi (PIN₁ and PIN₂ in the diagrams); in the first of these, Initial-dropping is clearly well under way (though primarily, as yet, affecting only *k- and *p-forms), and an *u in the V₂ position which is *not* preceded by a liquid is seen to have undergone assimilation to an *a in V₁. In the second, the status of Initial-dropping is less clear, but an *a which occupied the V₁ slot has unquestionably assimilated to an *u in V₂.

While difficulties remain, it must be emphasised that much has emerged that shows an essential regularity. In view of the fact that most of the materials examined (except the Hansens') probably encompass only 10-20% of the total actual lexicons of the various languages, the conclusion appears inescapable that Pama-Nyungan languages in general are indeed quite closely related genetically.

A heavy onus rests on the shoulders of those Australianists who continue to deny the *genetic* validity of Pama-Nyungan; what they are assuming is that it is possible to expand such tree diagrams for reconstructed (Nuclear) Pama-Nyungan elements as the two attempted here so as to include, more or less as a matter of course, cognate material from reasonably well-documented non-Pama-Nyungan languages, e.g., Mawng and Ngandi. If this turns out to be possible – as seems unlikely in the extreme – then they will have equalled the miracle, imputed to certain of the ancients, of transmuting base metals into gold!

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SOME PROTO-PAMA-NYUNGAN PARADIGMS: A VERB IN THE HAND IS WORTH TWO IN THE PHYLUM

Barry Alpher

Introduction

This paper provides comparative evidence for certain inflected verb forms in Proto-Pama-Nyungan. The methodology used is the comparison of entire verb stems in construction with inflectional endings in modern Pama-Nyungan languages. These endings mark tense, aspect, and mood, or a combination of these. They are referred to below as *tense-mood* endings, or simply as *tense* endings. The comparative methodology proceeds from a heuristic assumption that sound-change is regular and phonologically conditioned. While this assumption cannot, at the present state of knowledge, be shown to hold true in all details of the facts considered below, neither can it be demonstrated to be exhaustively true of all known developments in any language yet investigated (cf. Bloomfield's remarks on English, 1933:356-357). Its heuristic value is nonetheless crucial (as will be seen below, and as has long been recognised; cf. Bloomfield 1933:364). Australian Aboriginal languages are not different from other languages in this regard. The comparative process here shifts focus back and forth among small-scale subgroup comparisons, comparison on the scale of Pama-Nyungan, and comparison on the scale of the Australian continent itself – the Australian language phylum. The resulting reconstructions provide support for the claim that Pama-Nyungan is a true genetic family.

This comparative effort stems in part from the author's frustration in trying to reconstruct verb paradigms within small subgroups – the languages of southwestern Cape York, and the Pama-Maric group which contains them – and in so doing provide evidence for hypotheses about the genetic subgrouping of these languages. This strategy of working from the small towards the large seems sensible, but it is not in fact the path followed in the early years of Indo-European scholarship, the usual paradigm case of linguistic historical comparison. The reconstruction of Proto-Indo-European proceeded from the evidence in one or two languages of each subgroup – Germanic, Slavic, Indic, and so on. This work did not wait for the reconstruction of Proto-Germanic, Proto-Slavic and the rest, but rather by its results influenced these efforts, and the two levels of effort continue to cross-fertilise. Nor did the original effort at reconstruction in Indo-European depend in any fundamental way on decisions about subgrouping, and contemporary scholars are still arguing about the existence of Italo-Celtic and Balto-Slavic.

In the Australian field, why Pama-Nyungan? Because the contemporary attestations do indeed show enough similarity to permit reconstruction, and because published linguistic research on Australian Aboriginal languages has in these days accumulated to the point where researchers are able to make extensive comparisons of points of grammar. A contingent but most important reason for the scope of the present study, moreover, is that the author's efforts to understand the historical roots and typological background of ablaut phenomena in Yir-Yoront, as in *pay+I bites* vs. *puy bit* (Alpher 1986) led inevitably towards a broad comparison of languages which, like Yir-Yoront, attest Proto-Pama-Nyungan **patja bite*.

The reconstructions below are based on paradigmatic forms in the modern languages which resemble each other in sound and meaning; numerous forms from the same paradigms in the various languages are cast out as non-cognate. The results are programmatic as to the number of paradigms reconstructed and tentative as to the number and nature of inflectional categories within each paradigm. These results include a couple of very well-attested paradigms (those of **patja bite* and **ya go* and verbs like them), the inflectional pattern of which appears to be limited to Pama-Nyungan. A few other paradigms reported here (**nga eat*, **pu hit*, **nyaa see*, and **nyiina sit*) find much more sporadic and equivocal attestation in Pama-Nyungan languages for which information is available, and their reconstructions here are little more than summaries of the data. A few of these latter (notably *hit* and *see*) do, however, find echoes in the paradigms of non-Pama-Nyungan languages, and a refinement of the reconstructions of these paradigms might well proceed with an eye to the non-Pama-Nyungan evidence.

Attestation and reconstruction

***patja bite:** The wide attestation and availability of evidence on the verb *to bite* is, it seems likely, due in part to the ease of elicitation of sentences like *the dog bit me*, *the dog might bite you*, etc. Whatever the reason, however, various tense-forms of *to bite* are routinely illustrated in the grammatical sketches in the O'Grady *et al* (1966) survey. In other cases, the existence of a reflex of **patja* is reported, its conjugation membership stated, and the paradigm for that conjugation given; the comparison below (for this and other verbs, where appropriate) proceeds by putting the verb together according to the instructions, as if the particular tense-form in question were actually attested in print. The phonological shape of the modern attestations is, unless otherwise mentioned, in accord with what is known about developments in these languages, as for example with regard to loss of final vowels and position of laminal stops.

***patjala:** A reading of Imperative is suggested.

Western Desert (Warburton Ranges and Pintupi):	patjala	<i>bite+IMPERATIVE</i>
Watjarri:	patja(r)la	<i>bite+FUTURE</i>
Uw-Oykangand:	athal	<i>bite+IMPERATIVE</i>
Kok-Kaper:	pvthel	<i>bite+IMPERATIVE</i>
Umpila:	pathala	<i>bite+IMPERATIVE</i>

The Kok-Kaper (Koko-Bera) form *pal* [pvl] *bite+IMPERATIVE* attests the same suffix with a truncated reflex of **patja* that is the basis for some tense-mood forms in the languages of this part of Cape York. Other Cape York languages attest the same suffix with similar but less widespread

verb stems, as in Guugu-Yimidhirr gadhala *tie*+*IMPERATIVE*. Note that widespread attestations in North-east Australian languages of imperatives in zero, like Yidiny badja, Margany-Gunya badha *bite*, find no cognates in the languages of the West and are in any event suitable candidates for independent innovation (as Dixon 1980:414 also observes).

***patjarnV:** A reading of Past Perfective is suggested; see the remarks about *patjanma below. The retroflex/alveolar distinction implicit in the *rn is here assumed to be Proto-Pama-Nyungan in age, although nothing regarding the general shape of tense-mood distinctions hinges on the presence or absence of this distinction. The colour of the final vowel, as between a or u, is not clear at this stage of investigation. Although Dixon's (1980:382) suggestion that it was *u is plausible, it remains as unaccounted-for residue in phonological terms.

Ngarluma:	patjarna	<i>bite</i> + <i>PAST</i>
Thalandji:	patjarna	<i>bite</i> + <i>PAST</i>
Walmatjarri-Djaru:	patjani	<i>bite</i> + <i>PAST</i>
Western Desert (Warburton Ranges and Pintupi):	patjarnu	<i>bite</i> + <i>PAST</i>
Warlpiri:	patjarnu	<i>taste</i> + <i>PAST</i>
Dyirbal:	badjan	<i>bite</i> + <i>NONFUTURE</i>
Aghu-Laya (Kuku-Thaypan):	then	<i>bite</i> + <i>NONFUTURE</i>
Mpakwithi:	thana	<i>bite</i> + <i>PAST</i>
Linngithigh:	than	<i>bite</i> + <i>PAST</i>
Uradhi:	wathan	<i>bite</i> + <i>PAST</i>
Umpila:	pathana	<i>bite</i> + <i>PAST</i>

***patjanma:** A reading of Past Imperfective, in contrast to the Past Perfective of *patjarnV, is possible; but in view of the Imperative and Future attestations mentioned below, a more general Imperfective or Continuous reading may be correct. The suggestion made in Alpher (1972:79-80) that *-nm is an innovation in certain Cape York languages is evidently in error.

Western Desert (Pintupi):	patjanma	<i>bite</i> + <i>P IMPF</i> , <i>bite</i> + <i>IMP IMPF</i>
(Warburton Ranges):	patjanma	<i>bite</i> + <i>IMP IMPF</i> , <i>bite</i> + <i>FUT IMPF</i>
Uw-Oykangand:	athanm	<i>bite</i> + <i>P IMPF</i>
Kuuk-Thaayorre (possibly):	pathm	<i>bite</i> + <i>P IMPF</i>

It is likely that the Watjarri IMPERFECTIVE IMPERATIVE patjanma also continues PPN *patjanma, and this likelihood suggests that the Ngarluma IMPERATIVE patjanma, which participates in no Perfective/Imperfective contrast, also continues this form.

***patjalku:** A Purposive or Future reading is suggested. The form *patjalku itself is open to suspicion of independent innovation in separate areas, due to the widespread attestation of Datives in *-ku. The question bears on the hypothesis of the existence of a separate non-past *patjal, which see below.

Watjarri:	patjalku	<i>bite+PURPOSIVE</i>
Ngarluma:	patjalku	<i>bite+PRESENT</i>
Western Desert (Warburton Ranges and Pintupi):	patjalku	<i>bite+FUTURE</i>
Bidjara-Gungabula:	badhalgu	<i>bite+PURPOSIVE</i>
Warungu:	badjalgu	<i>bite+PURPOSIVE</i>
Kuk-Narr:	payilk	<i>bite+PURPOSIVE</i>
Ogo-Nyjan:	athalg	<i>might bite</i>

***patjal**: Attested, generally with a Non-past reading, only in Cape York, this form may (as suggested above) underlie Futures and Purposives of the form *patjalku and be Proto-Pama-Nyungan in age.

Yidiny:	badjal	<i>bite+NON-PAST</i>
Yir-Yoront:	payl	<i>bite+NON-PAST</i>
Kuuk-Thaayorre:	pathr	<i>bite+NON-PAST</i>
Uradhi:	wathal	<i>bite+PRESENT</i>

Note that Guugu-Yimidhirr continues this ending in gadhal *tie+NON-PAST*, and that the Guugu-Yimidhirr -l suffix is phonologically distinct from the IMPERATIVE suffix -la. The occurrence in Central Australia of -l (FUTURE) in Warumungu pakil *spear* (see below) strengthens the claim that tense-forms of the type *patjal are Proto-Pama-Nyungan in age.

Numerous other reconstructible verbs pattern like this. For some, their attestation is slightly less equally widespread in the languages which have contributed forms to the *patja reconstruction; their conjugational pattern is nonetheless clear. One such is *paka, as in Warlpiri pakarnu *hit+PAST*, Bidjara-Gungabula bagalgu *dig/scratch+PURPOSIVE*, Warumungu pakala and pakil *spear* (IMPERATIVE and FUTURE, Guugu-Yimidhirr bagala, bagal *dig* (IMPERATIVE and NON-PAST), and so on. Together with *patja, such proto-verbs, from the standpoint of their inflectional paradigm, will be said to comprise the *L conjugation.

Given that *patja *bite* and *paka *dig, hit (etc.)* were inflected according to the same paradigm, comparisons are possible that suggest tense-forms not among those reconstructed above. There is a widespread eastern suffix *-ya, attested in Mpakwithi thaya *bite+FUTURE* (with tha- < *patja), Pitta-Pitta, patjaya *bite+PRESENT*, and Ngiyambaa bagayaa *dig+IMPERATIVE* and bagaya (or bagara) *dig+PRESENT*. It is possible that this continues a tense-form distinct from both the original Imperative and Purposive; it is possible on the other hand that this *-ya is extended analogically in these languages from the Imperative in the paradigm of a verb like *nyaa *see* or *wantV *fall* (see below).

Although the best attestation for verbs with this paradigm consists of transitive verbs, and they were doubtless numerically preponderant from the beginning, it is likely that some intransitive verbs also were inflected this way. Such is *waka, attested as wa(+l) *go(+IMPERATIVE)* in Yir-Yoront, as *go up* in Warlmanpa waka- (with the same paradigm as Warlmanpa paka- *strike*), in Warungu, Gunya, Bidjara, and Gugu-Badhun waga-, and in Ngarluma waka- *go*. (Note that in Gugu-Badhun and Ngarluma it does not share the paradigm of patja- *bite*).

Certain languages whose affiliation with Pama-Nyungan is questionable attest a verb whose general form resembles *patja but attest none of the paradigmatic forms reconstructed above.

Among these are the Gunwinyguan languages Gungarakany (N. Evans, p.c.), in which *bite* has the tense-mood-forms *peyi* Imperative, *peyang* PAST PUNCTILIAR, and *patjin* NON-PAST, and Warray (M. Harvey p.c.) with *pi* IMPERATIVE, *piny* PAST PUNCTILIAR, *pe* NON-PAST. So also with Proto-Tangkic (N. Evans, p.c.), where the reconstructed paradigm of *bite* contains **paatja* IMPERATIVE and **paatja* NONFUTURE and lacks any other forms that even come close to the Proto-Pama-Nyungan paradigm. All things being equal, these facts constitute evidence that these languages are not Pama-Nyungan.

**ya go*: As Dixon (1980:415-419) pointed out, this verb has frequently been restructured as a disyllable; hence attestations of its monosyllabic form are less common than might be hoped for. Note that the historical basis for vowel length in Kuuk-Thaayorre is not at present well understood.

**yarra*: A reading of Imperative is suggested.

Western Desert (Pintupi):	<i>yarra</i>	<i>go+IMP (PERF)</i>
Nyangumarta:	<i>yarra</i>	<i>go+IMP</i>
Watjarri (possibly):	<i>yarran</i>	<i>go+IMP(PERF)</i>
Yir-Yoront:	<i>yarr (~ yaw)</i>	<i>go+IMP</i>
Kuuk-Thaayorre:	<i>yaarr</i>	<i>go+IMP</i>

**yanV*: A reading of Past is suggested. See the discussion of **patjarnV* above for remarks pertaining to the colour of the vowel.

Watjarri:	<i> yana</i>	<i>go+PAST</i>
Western Desert (Pintupi):	<i>yanu</i>	<i>go+PAST</i>
Nyangumarta:	<i> yana</i>	<i>go+PAST</i>
Walmartjarri:	<i> yani</i>	<i>go+PAST</i>
Nyawaygi:	<i> yani</i>	<i>go+PAST (PERF)</i>
Dyirbal:	<i>yanu</i>	<i>go+NONFUTURE</i>

**yanma*: Reading of tense-mood as for **patjanma* (above). Very imperfectly attested and tentatively put forward.

Watjarri:	<i>yanma</i>	<i>go+IMP (IMPF)</i>
Nyawaygi:	<i>yanma</i>	<i>go+PAST(RECENT)</i>

**yanku*: Reading of Purposive or Future suggested.

Western Desert (Pintupi):	<i>yanku</i>	<i>go+FUTURE</i>
Nyangumarta:	<i>yanku</i>	<i>go+OPTATIVE</i>
Walmartjarri:	<i>yanku</i>	<i>go+FUTURE</i>
Warlpiri:	<i>yanku</i>	<i>go+IMMED FUT</i>
Gumbaynggir:	<i>yaanku</i>	<i>go+PURPOSIVE</i>

***yani:** Reading of Non-past suggested; other considerations as for ***patjal** (above). Very imperfectly attested and tentatively put forward.

Warlpiri:	yani	go+NON-PAST
Nyangumarta:	yani.nyi	go+PRESENT
Kuuk-Thaayorre:	yan	go+NON-PAST

Two other verbs appear to have patterned like ***ya**. They are ***tju** and ***ma(a)**. Together, these proto-verbs, from the standpoint of their pattern of inflection, will be said to constitute the ***N** conjugation. The first, ***tju**, is attested in Western Desert (Warburton Ranges) as **tju-put**, with tense-mood-forms **tjurra** IMPERATIVE, **tjunu** PAST, **tjunku** FUTURE/POTENTIAL. It is cognate with the North-east Arnhem Land (Yuulngu) verb formative **-dhu-** (with alternants **-dju-**, **-yu-**, and others). This is attested in Ritharngu **-(j)urru** FUTURE, **-(j)un** PRESENT, and **-(j)una** PAST; in Dhuwal (Djapu) **-(dh)urr** POTENTIAL (including imperative), **-(dh)un** UNMARKED (including non-past and some imperatives), and **-(dh)unan** PERFECT; and in Dhuwala (Gupapuyngu) **-(dh)urru** SECONDARY (including commands) and **-(dh)un** PRIMARY (including present and same-day future). The cognation of these forms with the Western Desert forms of **put** (which also forms compounds, like **kumpi-tju- hide it**) is one of the arguments for the inclusion of the North-east Arnhem Land languages in the Pama-Nyungan family.

The other verb that appears to have patterned like ***ya go** is one of the ***ma** verb formatives (there are at least two; Dixon 1980:405 reconstructs this one as ***maa**, with the vowel length based on Guugu-Yimidhirr evidence, but notes that it occurs in Guugu-Yimidhirr also as the verb formative **-ma-**, with short vowel). In Western Desert (Warburton Ranges) this is present in verbs like **ngaalyma- breathe** and conjugates like **tju-put**; its IMPERATIVE is **-marra**. With this compare Guugu-Yimidhirr **maa- take** (**maarraa** IMPERATIVE, **maanaa** NON-PAST, and **maani** PAST) and Proto-Ngayarda ***ma-**, as attested in Ngarla **ma- take it, pick it up** (the Proto-Ngayarda reconstructed paradigm is ***marna** PAST, ***manku** PRESENT). The similarity in conjugation of ***ya go** and ***ma(a) take (etc.)** suggests that the similarity of inflection between Kuuk-Thaayorre **yat go+PAST** (with **-t** unattested as a PAST suffix elsewhere in the language) and Nhanda **mati get, take+PAST** may not be a coincidence – but speculation at this point of the investigation will yield little return.

The ***-rra** (or ***-rru**) Imperatives in this conjugation find an echo in the paradigm of the disyllable ***kaalkV fall** (see below).

***ya go** has long been known as one of truly pan-Australian forms, a suitable candidate for Proto-Australian. But the attestation of its paradigm outside the putative Pama-Nyungan languages does not resemble the above. The paradigm of **go** in Mangarayi is **yag** PRESENT, **yaj** PAST PUNCTILIAR, **yinyi** PAST CONTINUOUS, and **yag** IMPERATIVE. The defective paradigm of **ya go** in Nunggubuyu contains **yanggi** PAST 2, **yanggan** EVITATIVE, and **yaarrii** NON-PAST 2. This last, when combined with a person-number prefix of the "A" series, can have a continuous imperative or continuous future sense (Heath 1984:337-344). But Heath (1984:415) tentatively suggests that the **rr** can be assigned historically (not synchronically) to an augment ***-rra-**, attested elsewhere in Nunggubuyu verb inflection and presumably not relatable to the ***rra** of the Proto-Pama-Nyungan Imperative.

***nga eat:**

*ngala (Imperative) is attested in Nyangumarta ngala *eat+IMPERATIVE* and possibly Watjarri ngala *eat+IMPERATIVE*; its attribution to Proto-Pama-Nyungan is based on parallelism to the paradigm of *patja *bite* rather than wide attestation.

***nga(r)nV (Past):**

Watjarri:	ngarna	<i>eat+PAST</i>
Walmatjarri:	ngarni	<i>eat+PAST</i>
Nyangumarta:	ngarna	<i>eat+PAST</i>
Warlpiri:	ngarnu	<i>eat+PAST</i>
Kurrtjar:	in	<i>eat+PERFECTIVE</i>

***ngalku (Purposive):**

Nyangumarta:	ngalku	<i>eat+OPTATIVE</i>
Warlpiri:	ngalku	<i>eat+IMMED FUT</i>
Kurrtjar:	ik	<i>eat+POTENTIAL</i>
Kuk-Narr:	ngalk	<i>eat+PURPOSIVE</i>

*pu *hit*: Certain languages attest themes in *puwV, but there is not enough attestation in corresponding tenses to attempt reconstruction here.

***puma (Imperative):**

Djapu:	buma	<i>hit (UNMARKED; used as Imp.)</i>
Ritharrngu:	buma	<i>hit+PRESENT (not Imp.)</i>
Nyawaygi:	buma	<i>hit (POS IMP)</i>
Gumbainggir:	buma	<i>hit+IMPERATIVE</i>

***punyV (Past):**

Warumungu:	wal-punyu	<i>hit+AORIST</i>
Walmatjarri:	punya	<i>hit+PAST</i>
Djaru:	bunya	<i>hit+PAST</i>
Nyawaygi:	bunya	<i>hit (UNMARKED)</i>
Djapu:	bunha	<i>hit (PAST NON-INDICATIVE)</i>

Djaru and Watjarri also attest pinya in this usage.

***pungu (Past):** Among Pama-Nyungan languages, only Warlpiri and Western Desert attest this, as the Past tense-form *pungu*. But it finds echoes in the non-Pama-Nyungan languages: Nunggubuyu *Bang* (P1 tense; "B" here represents a *w* that alternates with *b*, Heath's "w2") and Dalabon *bong* (PAST PERFECTIVE; the cognate verb in other Gunwinyguan languages suggests Past Perfective **bom* for this group, however).

***pungku (Purposive):**

Walmatjarri:	<i>pungku</i>	<i>hit+FUTURE</i>
Djaru:	<i>bunggu</i>	<i>hit+PURPOSIVE</i>
Western Desert:	<i>pungku</i>	<i>hit+FUTURE</i>
Warlpiri:	<i>pungku</i>	<i>hit+IMM FUT</i>

Lack of attestation in eastern languages makes **pungku* a highly tentative reconstruction.

***nya see:** The widespread attestation of paradigmatic forms built on **nyaatji*, **nyaaka*, and **nyaawa* makes this verb very problematic; some Cape York languages, like Guugu-Yimidhirr, Gugu-Yalanji, Kuuk-Thaayorre, and Kok-Kaper, build different tense-forms of the same paradigm on different ones of these themes. On the theme **nyaatji*, for example, Kok-Kaper builds its FUTURE-PURPOSIVE *nhatjink* but not its PRESENT *nham* or PAST *nhakal*, Guugu-Yimidhirr creates its PAST *nhaadhi* but not its NON-PAST *nhaamaa*, and Gugu-Yalanji builds both its COMPLETIVE aspect *nyadjin* and its NONCOMPLETIVE aspect *nyatjil* but not its IMPERATIVE *nyaka*. While Uw-Oykangand builds all its tense-forms on **nyaawa* (PAST *ewal* etc.), Linngithigh builds exclusively on **nyaatji* (*tjiy* IMPERATIVE, etc.). Because certain non-Pama-Nyungan languages, like Mara and Ngandi, contain forms of the type *+nadjin-* in their paradigms for *see*, it is likely that a comprehensive reconstruction of this verb for Pama-Nyungan will have to take account of the forms in **-tji*, etc.

Other stumbling blocks in the material reported below are the apparent doublets and triplets, as with the putative Imperatives, Pasts, and Non-pasts; these may indicate a greater number of tense-forms than have been postulated here. There is also the questionable cognation of such forms as the Kalkatungu ones built on *rnu-* and *rna-* and the Ngiyambaa ones built on *ngaa-*. For all these reasons, the reconstructions below are highly tentative.

***nyaaya (Imperative reading suggested, but see comments below on **nyaawa* and on **-ya* in other paradigms):**

Warumungu:	<i>nyaya</i>	<i>see+IMPERATIVE</i>
Kok-Kaper:	<i>nhay</i>	<i>see+IMPERATIVE</i>
Guugu-Yimidhirr:	<i>nhaaya</i>	<i>see + might</i>

Note also the Warumungu FUTURE *nyayi*.

***nyaawa** (Imperative; see also ***nyaaya** above):

Western Desert:	nyawa	<i>see+IMPERATIVE</i>
Guugu-Yimidhirr:	nhaawa	<i>see+IMPERATIVE</i>

***nyaangu** (Purposive; lack of attestation in eastern languages makes this reconstruction highly tentative):

Walmatjarri:	nyangu	<i>see+FUTURE</i>
Djaru:	nyangu	<i>see+PURPOSIVE</i>
Western Desert:	nyangu	<i>see+FUTURE</i>
Warlpiri:	nyangu	<i>see+IMM FUT</i>

***nyaanya** (Past):

Watjarri:	nyanya (~ nyinya)	<i>see+PAST</i>
Walmatjarri and Djaru:	nyanya	<i>see+PAST</i>
Warumungu:	nyanyi	<i>see+AORIST</i>
Kurrtjar:	any	<i>see+PAST (IMPF)</i>
Kuk-Narr:	nhany	<i>see+PAST IMPF</i>
Kok-Kaper:	nhany	<i>see+PAST IMPF</i>
Ritharrngu:	nhaanha	<i>see+PAST</i>
Kalkatungu:	rnanya (?)	<i>see+PAST</i>
Ngiyambaa:	ngaaNH (?)	<i>see+PAST</i>

Note also the PAST1 tense form *nany saw* in the non-Pama-Nyungan Nunggubuyu.

***nyaangu** (Past):

Western Desert:	nyangu	<i>see+PAST</i>
Warlpiri:	nyangu	<i>see+PAST</i>
Kuk-Narr:	nhing	<i>see+PAST</i>

Note also the PAST PERFECTIVE forms *nang saw* in the non-Pama-Nyungan Gunwinyguan languages Kunwinjku and Dalabon.

***nyaawany** or ***nyaawang** (Past):

Uw-Oykangand:	ewanh	<i>see+PAST IMPF</i>
Kok-Kaper:	nhawiny	<i>see+PAST IMPF</i>
Yaygir:	nyaawang	<i>see+PAST</i>
Gumbainggir:	nyaawang	<i>see+PAST</i>

***nyaama** (Non-past):

Djapu:	nhaama	<i>see (UNMARKED)</i>
Ritharrngu:	nhaama	<i>see+PRESENT</i>
Kuk-Narr:	nham	<i>see+PRESENT</i>
Kok-Kaper:	nham	<i>see+NON-PAST</i>
Guugu-Yimidhirr:	nhaamaa	<i>see+NON-PAST</i>

***nyaanyi** (Non-past):

Warlpiri:	nyanyi	<i>see+NON-PAST</i>
Margany:	nhaanhi	<i>see+PRESENT</i>
Kalkatungu:	rnanyi (?)	<i>see+PRESENT</i>
Ngiyambaa:	ngaaNH (?)	<i>see+PRESENT</i>

***nyiina sit:** Here there are widely attested forms that lack the *na. It is problematic whether it is the *nyiina forms or the *nyii forms which are the result of reanalysis; the reconstructions below are based on the assumption that the latter is the case. Of the two reconstructible Imperatives, *nyiinaka and *nyiinaya, it is the latter that is the more likely to be the product of analogy in the daughter languages. The Imperative ending *-ya has possible analogical sources in the paradigms of verbs like *nyaa *see* and *wantV *fall*, whereas the *-ka Imperative of *sit* is (as suggested below) a putative source for the Imperatives of Warlpiri verbs of the paka *hit* class.

***nyiinaka** (Imperative):

Warlpiri:	nyinaka	<i>sit+IMPERATIVE</i>
Mpalitjan-Luthigh:	inaw	<i>sit+IMPERATIVE</i>
Uradhi:	inaghu	<i>sit+IMPERATIVE</i>

***nyiinaya** (Imperative):

Bayungu:	nyinaya	<i>sit+IMPERATIVE</i>
Thalandji:	nyinaya	<i>sit+IMPERATIVE</i>
Burduna:	nyinaya	<i>sit+IMPERATIVE</i>
Uw-Oykangand:	inay	<i>sit+IMPERATIVE</i>
Kok-Kaper:	yi'ney	<i>sit+IMPERATIVE</i>

***nylinanya** (Past):

Watjarri:	nylinanya	<i>sit+PAST</i>
Kurrtjar:	nanh	<i>sit+PAST (IMPF)</i>
	~ nany	
Uw-Oykangand:	inanh	<i>sit+PAST IMPF</i>
Yir-Yoront:	nhinnh	<i>sit+PAST IMPF</i>

Djapu:	nhinanha	<i>sit+PAST</i> <i>NON-INDICATIVE</i>
Ritharrngu:	nhiinanha	<i>sit+PAST</i>
Kuk-Narr:	ngininh (?)	<i>sit+PAST IMPF</i>
Yidiny:	nyinaany	<i>sit+PAST</i>
Umpila:	nhiinanha	<i>sit+PAST</i>

nyiinami (Non-past):

Warlpiri:	nyinami	<i>sit+NONPAST</i>
Kok-Kaper:	nyi'nem ~ 'nyinvm	<i>sit+NONPAST</i>
Kok-Narr:	nginim (?)	<i>sit+PRESENT</i>

Possibly the Watjarri and Western Desert CONTINUOUS IMPERATIVE forms, both nyinama, belong with these. The Watjarri and Umpila PRESENTs, respectively nyinamanya and nhiinamanha, strongly suggest *nyiinamanya. While susceptible of separate invention, this form may represent a distinct tense-mode category.

*nyiinakku (Purposive):

Watjarri:	nyinaku ~ nyinawu	<i>sit+PURPOSIVE</i>
Djaru:	nyinawu	<i>sit+PURPOSIVE</i>
Kurrtjar:	nok	<i>sit+PURPOSIVE</i>
Uw-Oykangand:	inagh ~ inaw	<i>sit+PURPOSIVE</i>

Other conjugations, like that of *tjana *to stand*, *wuna and *nguna *lie* *wu *give*, *ka *carry*, *nhuu(ma)- *smell (Tr)*, *tu *cry*, etc., are doubtless reconstructible for Proto-Pama-Nyungan either directly or by assimilation to one or another of the paradigms reconstructed above. While these are not attempted here, two others, *wantV *fall* and *kaalkV *fall*, both have relevance for this discussion.

The first, *wantV, is a possible analogical source for Imperatives in *-ya (see the discussions of *nyaaya and *nyinaya above): it is possible to surmise Imperative *wantVya on the basis of Warlpiri wantiya and Kok-Kaper wan'ta(y), both IMPERATIVE. It is also likely that the Western Desert FUTURE wantiku and the Walmatjarri-Djaru FUTURE/PURPOSIVE wantiwu continue an original Future/Purposive *wantVku, and that Walmatjarri wantinyi, Djaru wantinya, and Tjaapukay wantany continue an original Past *wantVnyV.

The second, *kaalkV *fall*, is a possible confirmation of Imperatives in *-rrV (see *ya- *go*): Djapu gaalkirr (UNMARKED; used as Imperative), Ritharrngu galkirri (FUTURE, used as Imperative), and Uradhi algharri (IMPERATIVE) suggest an Imperative *kaalkVrri (and Djapu gaalkin(a) (PERFECT), Ritharrngu galkina (PAST), and Uradhi alghan (PAST) suggest a Past *kaalkVna).

It must be observed, however, that various of the modern languages have undoubtedly constructed new inflectional paradigms for verbs, and the presence in a given language of a verbal paradigm with, say, a recurrent -rr-, does not in and of itself permit the identification of that

paradigm with a paradigm in another language with recurrent *-rr* or the supposition that both continue a single proto-paradigm. Even – to give an actual example – in the case of the Yir-Yoront RR conjugation and the RR conjugation of its close relative Koko-Bera (see Alpher 1972:76), it is difficult to identify one with the other in terms of actual cognate inflected forms. And there is no question (with presently available evidence) of identifying either with the RR conjugation of Guugu-Yimidhirr, let alone with anything outside Cape York.

Discussion

Scope

To what group of languages are these reconstructions referable? The questions of subgrouping and of selection of languages to reconstruct from are obviously related in a very intricate way. Numerous tense-forms in the languages which have contributed to the reconstructions above have been discarded. Examples include the imperatives of *bite* with zero marking mentioned above, forms which like Yir-Yoront *yaw go + PAST* are built on reanalysed stems, and forms with suffixes evidently acquired analogically, like Pitta-Pitta *patjaka bite + PAST*. There are also entire languages which appear on other grounds to be Pama-Nyungan but which contribute nothing to this reconstruction.

Geographically Pitta-Pitta is squarely in the centre of the area from which these comparisons are drawn. But as the investigation moves further from this core area, other putative Pama-Nyungan languages pose more serious problems. Languages of Victoria and New South Wales for the most part lack the relevant verb stems for comparison. Where they attest them, it is with uniformly reanalysed stems (as in Wangkumara *yanhtha- go, walk*). Does what is reconstructed above apply to these languages, or do these languages constitute one or more separate subgroups, or do the data from these languages invalidate these reconstructions? Because the reconstructions above are grounded in languages spoken as far apart as the tip of Cape York and the West of Western Australia, they carry weight, and the divergent data from Victoria and New South Wales would appear to require some sort of separate account – a detailed explication of why it is said that they are indeed Pama-Nyungan and an account of changes in the verb lexicon and inflectional paradigm. The former has been begun (Evans 1986, Blake 1988), with encouraging results, based on pronoun paradigms, the form of case-suffixes and evidence of other sorts; the latter remains as a task for the future.

These reconstructions support the findings of Evans (1986) and Blake (1988) that Pama-Nyungan languages comprise a genetic subgroup within the larger Australian phylum. It is expectable, of course, that some Proto-Pama-Nyungan verbs continue some of their tense-forms from earlier prototypes attested outside as well as inside this subgroup. Such might well be certain of the tense-forms of *see* and *hit*, as suggested above. But there is a large weight of forms attested exclusively in Pama-Nyungan.

Given these reconstructions in the area for which they have indisputable validity, it is possible to make instant judgments about what is innovative and what is conservative in a part of the territory. Past tense endings in Pama-Maric in **-rr* and **-nt*, for example, would seem clearly to be innovations. With suitable precautions about the possibility of borrowing (see Merlan 1982, where it is claimed that Mangarayi paradigms are borrowed from Gunwinyguan), it is possible to

draw tentative conclusions about subgrouping from the distribution of such suffixes (see Alpher 1972 and Alpher and Nash 1987).

Conclusion: methodological and theoretical observations

Reconstructing from full tense-forms, however artificially generated in certain instances, is not just a formal nicety. Reconstructing endings alone, disembodied from stems, gives no confidence that the result is in fact a proto-paradigm. Where verb stems are less widely attested than *patja *bite*, recourse will have to be made to the assembling of partially reconstructed paradigms into larger pictures. But this will be best done with entire verb forms.

The reconstructions above differ, sometimes radically, from those proposed in Dixon (1980:378-421). The differences are a consequence of several different historical, methodological, and theoretical assumptions. Historically, Dixon's decision to reject 'Proto-Pama-Nyungan' out of hand as against 'Proto-Australian' would be expected to lead naturally to the rejection of features limited to Pama-Nyungan languages. In fact, his discussion is almost exclusively limited to putative Pama-Nyungan languages. His reconstructions, criticised below, are thus based on the same group of languages as those presented above and are directly comparable with them.

Dixon's assumptions and procedures differ from those used above in a number of points (his examples are here retranscribed in a 'ptk' orthography to facilitate comparison):

- (1) The postulation as Proto-Australian (1980:381) of the suffixes *-ku Purposive, *-ka Imperative, and *-NHu Past not only on the basis of wide geographical distribution but also on the basis of recurrence in different paradigms in individual languages.
- (2) The assumption that every Proto-Australian verb inflected for one of these tense-mood categories contained the relevant one of these elements as all or part of the suffix.
- (3) The assumption that conjugation markers (of which the *l of *patjalku and the *n of *yanku are examples) were invariably present in every inflectional category of the relevant verbs, and the suggestion (1980:409) that these conjugation markers were originally part of their respective roots.
- (4) The comparison of disembodied suffixes.
- (5) The identification of a specific conjugation in one language with a specific conjugation in another (1980:398) primarily according to the form of the affixes, secondarily according to the preponderance of transitive versus intransitive roots, and lastly (as a subsidiary criterion, and almost exclusively in the case of monosyllabic roots like *ngu- *eat*, *ya- *go*, etc.) according to the actual verbs which are inflected according to the relevant paradigm).
- (6) The treatment of 'the conjugation', evidently conceived of as an ensemble of suffixes, as the entity that is reconstructed and the entity that has reflexes in the attested languages (1980:396).

Every one of these assumptions and procedures is questionable. They go together with (indeed require, in order to produce the conclusions stated) two theoretical assumptions. The first is an extreme position on the nonregularity of phonological change, which is held to be conditioned by the semantic nature of inflections (1980:412) and by the presence of inflectional morpheme boundaries. This is a position that is at variance not only with the neogrammarian theory of sound

change but also with certain important and very commonsense varieties of generativist theory (see Kiparsky 1973:75), and it is a position that as will be seen licenses all kinds of mischief.

The second of these theoretical assumptions concerns the degree to which borrowing can be held responsible for lexical replacement in Australian Aboriginal languages. Dixon holds that this degree is extreme (see Alpher and Nash 1987 for an extensive critique of this position), making the supposition of borrowing ubiquitously available to account for anomalies of phonological correspondence.

The following examples from Dixon's treatment exemplify the interaction of these principles and the elaborate justifications which become necessary in order to bring the facts into line with any claim that sound change is regular:

(1a) The Pintupi IMPERATIVE of *go*, *yarra*, is held to originate (1980:390) from **ya+n+ka* via the series of changes **nk > *nt > *t > rr*. But this is done in the face of the existence in Pintupi of forms in *nk* like (i) *wanka* *alive, raw, unripe* (attested in the same phonological form and with similar meaning in Warlpiri, the Ngayarda languages, the Kanyara languages, and the Mantharda languages), (ii) *kankarra* *above* (Warlpiri *kanka+rlarra* etc., Proto-Kanyara and Proto-Mantharda **kankara*, and Proto-Ngayarda **kanka*, all *up, above*; in view of Cape York forms for *up, above* in *kani*, these *kanka* forms must contain an archaic morpheme boundary between the *n* and the *k*), and (iii) *nyanka* *nape* (Proto-Ngayarda **nhanka nape*). The only escape from the dilemma is special pleading on the postulated sound-changes or an appeal to massive borrowing.

(1b) The Warlpiri IMPERATIVE of *go*, *yanta*, must be held to originate from **ya+n+ka* in the face of the existence in Warlpiri of *wanka* *raw, uncooked*. The wide distribution and presumed age of the latter form and the difficulties it makes for the argument are documented under (1a) above.

(1c) The Nyawaygi IMPERATIVE of *go*, *yana*, is held to originate (1980:399) from **ya+n+ka* via the loss of **k*, in the face of the existence in Nyawaygi of *kunka* *raw, green, unripe, alive*. The distribution of this latter right across the Pama-Nyungan languages (cf. Yir-Yoront *kun' alive, unripe, raw*, Aghu-Laya *n.gwo raw, dead*, Margany *gurn.ga raw*, Dyirbal *gun.ga alive, raw*, Pintupi *kurnka not cooked, not ripe, raw*, Nyangumarta *kunka raw, uncooked*) suggests the reconstruction PPN **ku(r)nka*. It makes difficulties for the postulated **nk > n* sound-change similar to those discussed in (1a) above.

(2a) The Guugu-Yimidhirr IMPERATIVE of *dig* (here retranscribed in 'ptk'), *pakala*, is held to originate (1980:394) from **paka+l+ka*, in the face of the existence in Guugu-Yimidhirr of *kalka* *spear*, whose cognates, widely distributed in Cape York, permit the reconstruction **kalka*. The difficulties are as described in (1a).

(2b) The Western Desert IMPERATIVE of *bite*, *patjala*, is held (1980:389) to originate from **patja+l+ka*, in the face of the existence in Western Desert of the future tense-form *patjalku* (< **patjalku*), of *tjilka* *thorn* (cf. Warlpiri *tjilkarla spine, sticker*) and of trisyllables in *lk* of the form *tukulku* *steady, well-supported*.

In each of cases (1a-2b) and many more like them, resort has to be made to ad-hoc postulation of sound changes and/or postulation of borrowings of a recurrent sort. There are similar exceptions in a number of discrete languages, for which no principled generalisation seems appropriate (there does not seem, for example, to be a particular intonation pattern associated with

the Imperative that would condition these effects). Reconstructing as in this paper, on the other hand (while it still leaves many phonological mysteries), works comfortably with what is at hand. Take the case of imperatives as examined above, for example. There is no need to suppose that imperatives of the form *patjala or *yarra ever contained an element *ka. Partially related forms, like the Warlpiri IMPERATIVE patjaka *taste it*, can be seen to have acquired -ka analogically from other paradigms, in this case very probably the paradigm of the Warlpiri stance verbs like nyina *sit*, IMPERATIVE nyinaka.

What is surrendered thereby is firstly the claim that verb inflection in the protolanguage was conjugationally invariant and secondly the hope that by reconstructing these inflectional endings what is being reached is Proto-Australian rather than Proto-Pama-Nyungan. What must also be abandoned is the claim that the conjugation markers have uniformly originated as the final consonants of verb roots; the evidence on *ya-go from non-Pama-Nyungan languages (see above), for example, shows no trace of the conjugation-marker in *-n. As for the conjugation markers, the position voiced by Merlan (1979:40) seems correct, that these, in view of their strong correlation with transitivity or intransitivity in the contemporary languages, have an origin as grammatically significant morphemes and cannot be accounted for as the relics of root-final phonemes. Moreover, the conjugation markers show up for the most part only in the Purposives, of those forms reconstructed here. But in many modern Pama-Nyungan languages, the conjugation-markers recur in more than one of the tense-suffixes of individual verbs, and for most inflectional categories the conjugation-marker that is appropriate to a verb's conjugation membership comprises part of the suffix. What emerges in reconstruction is a system that lacks the conjugational symmetry that many of the modern languages possess.

It might be urged against the solution proposed here that it fails to give an account of allomorphic differences like that between the *-la and *-rra imperatives or that between Pasts in *-(r)nu and those in *-nyu (whether or not these bear a relation to conjugation markers). To that, it can only be replied that further comparative study of Pama-Nyungan coupled with comparison at greater time-depth may yet present clues, but the origin may well be lost in time. Note also that characterising such differences as 'allomorphic' prejudices issues concerning the nature and number of inflectional contrasts.

Any supposition that the Aboriginal languages of Australia are somehow special in regard to regularity of sound change or frequency of borrowing would appear in cases like these to work against a sound heuristic procedure – in fact, to open the way for confusion. Whatever the contribution of methodology, however, it is the final formulation which must be judged on standards of plausibility, internal coherence, and the ability to account with maximal simplicity for the facts observed. The solution outlined above, it is hoped, has these qualities in sufficient measure to constitute a solid beginning.

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¹ Now the Australian Institute of Aboriginal and Torres Strait Islander Studies.

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THE MINKIN LANGUAGE OF THE BURKETOWN REGION

Nick Evans

Introduction¹

The Minkin language was spoken near present-day Burketown, on the southern coast of the Gulf of Carpentaria, in the area containing the headwaters of the Leichhardt and Albert Rivers (see Map 1). Tindale gives a more easterly location for it, placing Burketown in Yukulta (Ganggalida) country, but the historical evidence suggests that the Yukulta people only 'took over' the Burketown area after the Minkin people died out (cf Trigger 1985, chapters 5 and 6).²

Thanks to the early establishment of Burketown, by all accounts a particularly unruly and disease-ridden settlement (see Memmott 1982), the Minkin language died out very early, and our only substantial records of it date back to last century. In this article I shall try to piece together from these sources what little can be gleaned of the Minkin language, and to elucidate its genetic position among other Australian languages.

In particular, I shall argue that Minkin is not a family-level isolate, as posited by existing classifications of Australian languages, but belongs to the same group as the Tangkic languages.

Cultural position

What little we can know of Minkin society indicates that their cultural affinities lay to the west. Tindale (1974) shows them as being the easternmost group, along the Gulf coast, to practise circumcision and subincision³. It seems they also had a section system, some of whose terms at least are cognate with those to the west. The two known female section terms are kajila (M4⁴ gung-eel-ah) and ɲarit^y palanji (M4 mari-bul-ung-eh); these correspond to two of the North-

¹I am grateful to Gavan Breen for sending me copies of the archives containing Minkin material and for his extensive comments on an earlier draft of this paper, to Paul Black for giving me access to his field notes, and to Barry Blake for encouraging me to write this article.

²Map 22 of the *Language atlas of the Pacific area* (Wurm and Hattori 1981) erroneously shows Minkin as having no sea boundary. Among other mistakes introduced into the portrayal of the region, it shows Waanyi as bordering Minkin, fails to mention Yangkaal altogether but includes another Tangkic dialect, Nyangga, whose existence has never been properly demonstrated, and incorrectly groups Nguburindi, a Tangkic language, with Warluwarra and Yindjilandji.

³Once a circumcising tribe, according to their tradition, they abandoned the initiation rites at least a century ago. On the map they are placed within the area where both rites were practised on the authority of informants at Normanton who gave the Leichhardt River as the boundary' (Tindale 1974:181).

⁴See The sources for an explanation of this abbreviation.

eastern subsection terms, whose proto-forms McConvell (1985) reconstructs as *kañila* and *ɲaritʷ(palan)*.

The practice of circumcision and subincision, and the evidence of section terms, places them at the north-eastern periphery of the vast central Australian cultural area that extends west to the Pilbara. Among their immediate neighbours it allies them with the Nguburindi and Yukulta to the south-west and west respectively; as we shall see in the Conclusion, the linguistic evidence also runs this way.

By contrast, their eastern and southern neighbours (the Mayi and Kukatj peoples) did not circumcise or subincise, and had a section system that employed a completely different set of terms – in Mayi-Kulan, two tribes to the east, the section terms were (1) Marringo (male), Ngarranngungo (female); (2) Yowingo (m), Carburungo (f); (3) Bathingo (m), Munjingo (f); (4) Jimalingo (m), Goothamungo (f) (Palmer, cited in Breen 1981b).

In short, a cluster of cultural traits – the circumcision and subincision boundaries, and the isoglosses for section terms – forms an important cultural boundary between Minkin and the Tangkic languages on the one hand, with their links to Central Australia and the western Gulf, and the Mayi languages on the other, with their links to the east.

Alleged genetic position of Minkin; neighbouring languages

Existing classifications of Australian languages (O'Grady, Voegelin and Voegelin 1966, Wurm and Hattori 1981) classify Minkin as a family-level isolate, treating it as a non-Pama-Nyungan enclave surrounded by Pama-Nyungan languages. Although they do not lay out their evidence for this result, it implies a very low level – below 15% – of shared lexical items with any other Australian languages, including its neighbours. In the Conclusion, I shall argue against treating Minkin as an isolate, and adduce evidence that it is related to the Tangkic languages, though not particularly closely.

The languages that adjoin Minkin are:

- (a) to the west and south-west are the co-dialects Yukulta and Nguburindi. Together with Yangkaal, Kayardild and Lardil, spoken in the various Wellesley Islands (see map) these make up the Tangkic group. In terms of vocabulary, Tangkic can be divided into two 'languages' – Lardil on the one hand, and the remaining Tangkic dialects (Yukulta, Nguburindi, Yangkaal and Kayardild) on the other. However, grammatical differences suggest a further subdivision, with Yukulta and Nguburindi in one group, and Yangkaal and Kayardild on the other (see Evans 1985, ch. 1).
- (b) to the south and south-east are various dialects of the Mayi group.
- (c) to the east is Kukatj, a member of the Norman Pama subgroup (Black 1980).

The sources

All substantial sources on Minkin date from last century. The three major sources, which I shall label M1, M2 and M3, are:

Ethnographic boundaries: Eastern boundary of circumcision and subincision

—————

Language subgroup boundaries

Map 1: Minkin and neighbouring languages

M1: Curr list, number 90, recorded in Burketown by T. Coward, entitled 'Burketown' (language).

M2: Curr list, number 94, recorded by E. Curr himself, entitled 'Mingin'.

M3: A list by W. Turnbull (1896), on the 'Leichhardt Minkin tribe'.

The percentage agreement between the lists is as follows:

	M2	M3
M1	70% (56/80)	78% (22/28)
M2		93% (23/25)

I shall assume that all three sources dealt with the same language. This is partly because no internal differentiation into dialects was ever mentioned by contemporary sources, but more importantly because of the extensive similarities between the three lists. I shall assume that differences between them are due to misunderstandings, elicitations of synonyms and so on (see the Conclusion).

There are two other minor sources:

M4: W. Turnbull (1911) has four more "Minikin" words, plus partial marriage class rules giving two male and two female section names.

M5: Sandra Newland, in the 1960s, recorded three Minkin kin terms from the late Alice Gilbert. Alice Gilbert was a fluent speaker of Yukulta (Ganggalida), but, judging by the phonetic form of the words (e.g. *hilila* for *sister*, most probably /yilulana/), had learned these from other 'rememberers' who had gradually distorted the pronunciation.

Two further possible sources fail to provide additional information on the language:

- (i) Daisy Bates (n.d.) recorded a 'native vocabulary' of 'Mingin Maimira' or 'Maiabi Maimira' in Broome from Burangani of Burketown, also known as Queensland Tommy. However, the words it contains are clearly Mayi-Yabi (Breen 1981b) rather than Minkin.
- (ii) Paul Black, in 1975, interviewed Dick Brookdale of Doomadgee. Brookdale said that Yukulta/Ganggalida and Minkin (which he pronounced "Mindjin") were 'the same language ... two lots of people ... all in one mob ... belong to Burketown'. As evidence, Brookdale gave the Yukulta sentence *t'inangka ɬaɬinma?* (phonetically ['d'inəŋgə 'dəðinmə]) for 'where is that man?', then said 'Mindjin same way'.

Now although Brookdale's Yukulta is quite correct, his claim that Minkin is 'the same' conflicts with the other sources (see Lexicon), which give the completely different TanVɲaRa for 'where are'. Also, his pronunciation of the language name as Mindjin, in contradiction of all other sources (which write it Minkin, Mingin, Min.gin or Minikin) probably originated as a mispronunciation of a written source with a 'soft g'.

All in all, it seems likely that Brookdale's claimed knowledge was politically motivated rather than factually based (in Western terms), a result of the 'takeover' of Minkin lands by the Yukulta. Nonetheless, the similarity he claims between Yukulta and Minkin may be significant in the light of the genetic relationships I suggest in the Conclusion.

Accuracy of the sources

As one would expect from nineteenth century sources, the phonetic renditions of M1 - M4 are very unsatisfactory. No rhotic distinction is recorded, and the recording of nasals and vowels is unreliable. Some stop positions (notably [t] and [tʰ]) are not consistently recorded, though retroflexes are generally well transcribed.

Despite these shortcomings, there are three factors that allow us to reconstruct most forms with at least some confidence.

Firstly, the existence of three lists allows a good deal of cross-checking. M1 and M2, for example, both mistranscribe initial /ŋ/ as /n/, but M3 usually hears it, writing gn: M2 nurka, M3 gnurgah, *M¹ /ŋaRka/ *aboriginal man*; M1 nungurra, M2 na-nga-ra, M3 gnar-ngarah, *M¹ /ŋaRŋaRa/ *hand*.

As another example, the digraph ng is used by M1 both for /ŋ/ and /ŋk/, intervocalically, and possibly for /nk/ as well. But M3 uses a hyphen to distinguish intervocalic /ŋ/, as in ning-ab-ah (*M/Niŋapa/ *hold*). And M2, at least sometimes, writes nc for /nk/ or /ŋk/ as in M1 bildingoora, M2 pelgingoora (both *baby*), also M1 pilgingoora, M2 pilgingoora (both *little*). All are probably variant transcriptions of a single word /piltʰinkuRa/ *little (one); baby*.

Secondly, we are fortunate to have an example of how Curr (henceforth EC) transcribed another, nearby, language whose phonetics are known. His 'Yangarella' list (no. 89, also in Curr 1886) is certainly drawn from Yukulta. On my count it has 75% (51/68) Tangkic vocabulary. That it is Yukulta in particular is shown by its highly characteristic non-zero nominative endings, which distinguish Yukulta from the other Tangkic languages such as Kayardild and Yangkaal (which one might have expected it to be, from the name 'Yangarella'). Thus we have *Y1² /makuwa/ (EC magooa) *woman*, cf YUK /maku-wa/ *woman-NOM*, *Y1 /kunʰaɾa/ (EC cognara) *small baby*, cf YUK /kunʰa-ɾa/ *small-NOM*, and *Y1 /ʔukanta/ (EC tookanta) *beard*, cf YUK /ʔukan-ta/ *beard-NOM*; cf Kayardild /maku/, /kunʰa:/, /ʔukant/, the nominative citation forms.

By seeing how Curr transcribed 'Yangarella' we can calibrate some of his 'Mingin' graphemes. For example, Curr transcribes /tʰulta/ *bone* as chulda, showing that he sometimes writes /u/ as u. This allows us to posit *M /tuRa/ as a plausible phonemicisation of his (M2) turra *bowels, excrement*, establishing it as a cognate with Tangkic /ʔulta/. Without the Yangarella evidence the most likely phonemicisation would be /taRa/, far less plausible as a cognate, since all three sources more usually write oo for /u/ and u for /a/.

If one further assumes that Curr's transcriptions were fairly typical of the time, other inferences become possible. Thus Curr, sometimes, transcribes initial /ŋ/ as m, writing (Yangarella) mookooa *water* against Yukulta /ŋuku-wa/. Assuming that M2 (T. Coward) sometimes made similar mistakes would account for the mistranscription makola for *breasts*, where a *M phonemicisation /ŋukula/ is suggested by M1 nookoola *breasts*, and M2 nogoola *milk*.

The third factor assisting a modern phonemicisation is the existence of Tangkic cognates for over a third of Minkin words. These cognates must be treated cautiously lest they 'over-Tangkicise' the reconstructed vocabulary, but in some cases they are manifestly helpful. Thus M1 has gurna for *grass*, suggesting the alternative phonemicisations /kuŋa/ or /kaŋa/, but the existence

¹Phonemicisations reconstructed from the sources will be labelled *M.

²The abbreviation *Y1 will be used for phonemicisations of Curr's 'Yangarella' list.

of Tangkic /kaŋ-ta/ *grass*, and the unlikelihood of /a/ becoming /u/ in this environment, favours the phonemicisation *M /kaŋa/.

Unresolvable segments

Despite the above, certain segments cannot be precisely reconstructed, usually when there is only one, ambiguous source. For such cases, I use the following abbreviations:

T	stop - /t/, /tʰ/ or /tʷ/
TH	stop - /tʰ/ or /tʷ/
N	nasal - /n/, /n̥/, /n̥̄/, /ŋ/ or (initially) /nʷ/
NH	nasal - /n/, /n/ or /nʷ/
NG	/ŋ/, /ŋk/ or /ŋk/
W	(initial) /ŋ/ or /w/
K	(initial) /ŋ/ or /k/
G	/k/ or /tʰ/
L	/l /, /l̥ / or /l̥̄ /
R	/r/ or /r̥/
E	/i/ or /a/
O	/u/ or /a/
V	/i/, /u/ or /a/

Phonology and grammar

Phonology

For phonology, as for the grammar and lexicon, the Minkin corpus is too unreliable and too restricted for definite conclusions to be reached. The transcriptions are not phonetically accurate, and the corpus is too small for us to isolate minimal pairs or conditions on allophones. All statements about Minkin phonology must therefore be tentative in the extreme. However, the areal and genetic situation does allow us to interpret the sources to an extent that would be more difficult in other parts of the world.

Phoneme inventory

Within Australia, one can predict a great deal about the phoneme inventory of a language simply by knowing its geographic position (cf Dixon 1980:146-147). From Minkin's location, we would expect it to have six points of articulation for stops and nasals, and more than one lateral (ibid: map 5, p. 141). We would also expect two rhotics – a glide ɾ and a trill or tap ʀ – plus semivowels w and y, and three vowels.

The available material is quite consistent with this picture. There is good evidence for all six stop positions, for all but one of the nasals (the lamino-dental), for at least three laterals (l, l̥ and lʷ), and for w and y. There is only minimal evidence for a rhotic distinction. Finally, there appears to have been a three-vowel system; it is impossible to tell whether there was contrastive vowel length.

The phoneme inventory, then, appears to have been as follows. Bracketed segments show unattested phonemes that one would definitely expect; bracketed and queried segments show unattested phonemes one would possibly expect.

Table 1: Tentative Minkin phoneme inventory

	Peripheral		Apical		Laminal	
	Bilabial	Velar	Alveolar	Retroflex	Dental	Palatal
Stop	p	k	t	ɖ	ʈ	tʲ
Nasal	m	ŋ	n	ɳ	(n̪)	nʲ
Lateral			l	ɭ	(l̪ʲ)	lʲ
Rhotic			(r̥)	r̥		
Glide		w				y
Vowels			i	a	u	

I will now give samples, for those phonemes whose presence in the table needs evidence, of words in the sources where the transcription clearly suggests the relevant sound.

Evidence for retroflexes

The sources fairly consistently represent this by writing an r before the retroflexed consonant.

/ɭ/: e.g. *M /waʈikiRi/ *old woman* (cf YUK waʈikiɭi), M1 wırdıgarıy, M2 ooardıgırı; *M /paʈıŋaRa/ *old man* (cf YUK paʈı- *grey hair*, paʈıwuɭu *old man*), M1 bırdıniarra, M2 paɖıngara.

/ŋ/: e.g. *M /kaŋa/ *grass* (cf YUK kaŋa), M1 gurna.

/l/: e.g. *M /yıl̪ayankipa/ *let go*, M3 yerlie-an-gib-ah; *M /wuɭpa/ *swamp*, M3 woortbah.

Evidence for palatals

These are less consistently recorded than retroflexes.

/tʲ/ is often recorded with simply a d or t in one source, but a g in another, e.g. *M /pıltʲıŋkuRa/ *baby, little, younger sibling*, M1 bıldıngoora, M2 pelıŋkoora. If the tendency to write t for /tʲ/ occurred in all sources one might suspect there was a single laminal stop phoneme, with allophones /t/ and /tʲ/. However, the most phonetically accurate source, M3, never writes t/d for this phoneme initially, always j, g or ch, and uses a different representation (d'th) for what is presumably a lamino-dental (see below). This suggests there was a laminal contrast, but that M1 and M2 failed to hear it.

/nʲ/ is often not recorded where comparative evidence leads one to expect it, e.g. M1 koonamerra *big*, presumably an (antonymic) cognate of Yukulta kunʲamiɾa *very small*. However, what is clearly a palatal nasal appears, transcribed n-y, in *M piRıtʲıŋ'a *live*, M3 bray-gin-yah and *M Taŋanʲı *run*, M3 dıŋ-an-ye.

/lʲ/ is unambiguously recorded only in M1 ticantallio-duallio *four*, most likely /tikintalʲu-Tuwalʲu/, although it may be /tikintaliyu-Tuwaliyu/. Note that the Tangkic languages do not have /lʲ/ outside (borrowed) subsection terms.

Evidence for interdentalals

/t̪/ is most often not recorded – i.e., it is written simply t or d where comparative evidence suggests t̪, e.g., M1 talgora *kookaburra*, presumbaly t̪alkuŋa from the evidence of YUK t̪alkuŋka *kookaburra*; and M3 caderah *river*, presumably kaŋaŋa by comparison with YUK kaŋaŋa *river, estuary*. In three words, however, all in M3, there are clear attempts to represent /t̪/: M3 writes d'thunbah for *thigh*, probably t̪anpa, mun-d'thun-yee for *same*, probably man̪t̪anʲi, and nad-thap-ah for *it*, probably naŋapa. Another representation of probable t̪ is the dh in M1 wudha *water*, and the doubled consonant in M2 wadda, also *water*¹, presumably waŋa.

There is no clear evidence for /ɲ/ or /ɳ/, but these phonemes are relatively rare anyway, and not present in any non-Minkin cognates. So one cannot know whether they were part of Minkin's phoneme inventory.

Rhotics

There is virtually no evidence within the sources of the two rhotics (a glide and a tap/trill) that one would expect. Where one would expect /r/ on the basis of cognates both r and rr are encountered in the sources – cf M2 ooroonda *boy* and YUK wuŋunta *young (initiated) man*, but M1 wirramirra *wind* and YUK waŋmaŋa *wind*. Similarly, both r and rr occur when one would expect /r̥/: M2 nurka, M3 gnurgah for *aboriginal man*, cf Warlpiri ŋaŋka; M2 pirri, M1 peery *woomera*, cf YUK piŋi-ya *woomera*.

The only possible evidence for the two rhotics comes from the M3 transcription of *thunder*, bidie-mur-ah-dah (cf YUK piŋimaŋaŋa) in which the (presumed) glide is written r and the presumed flap d. Perhaps their juxtaposition as successive syllable-initials made the contrast easier to hear here.

Apart from this weak evidence, the sources fail to show the existence of two rhotics in Minkin. Although it is possible that Minkin collapsed the rhotic distinction, it is more likely that the investigators simply failed to hear it.

Phonotactics

All Minkin words begin with a consonant, and all end in a vowel with the possible exception of Naŋkalʲ or Naŋkay *elder brother*. There is a strong preference for open syllables; where closed syllables occur the syllable-final segment is a sonant, never a stop, e.g. ŋaŋka *aboriginal person*, kulaŋkali *young man*, puŋt̪i *stomach (?)*, *heart (?)*. The sources contain some occurrences of initial pR-, e.g. M3 bringah *star*, M3 bray-gin-yah *live*, but comparison with other sources and with

¹Acoustic studies of Yanyuwa (Bradley 1980) and Kayardild (Evans 1985) have shown that one auditory clue to interdentalals is their longer closure relative to /t/ and /t̪/.

Yukulta forms suggests an intervening vowel: M2 biringa *moon* (*M piRiŋa *star* (?), *moon* (?)); Kayardild piŋtʷi-tʷa *be alive* (*M piŋtʷi-nʷa *live*).

All these phonotactic characteristics are in conformity with the most conservative Tangkic language, Yukulta¹. The Mayi languages are also similar, except that they permit words to end in one of a small number of consonants (Breen 1981b:25). Kukatj, and to a greater extent the other Norman Paman languages, have undergone a variety of sound changes leading to a departure from this pattern.

Verbs

The sources contain twenty-one verb lexemes. Verb lexemes have conjugation-specific suffixes, but no prefixes. There is no evidence of person or number of core participants being coded on the verb.

Nor is there unambiguous evidence allowing us to reconstruct inflections for tense/mood, although there is one pair of words that may be differently inflected forms of the same lexeme: yaNkiya *go, walk* and yila yaNkipa *let him go* which probably comprises a hortative or permissive particle yila and the imperative or hortative form yaNkipa of the verb yaNkiya. Alternatively, yaNki-pa is a causative form, *cause to go*, derived by shifting from a (one-member) -ya conjugation into the predominantly transitive -pa conjugation.

For comparison I give the corresponding verbs plus conjugation markers that Dixon reconstructs for 'proto Australian', but which most other commentators consider to go back, as conjugation markers, only to the level of Proto-Pama-Nyungan (PPN) – see Evans (1988) and Alpher, Evans and Harvey (to appear). I also give either the past perfective or the non-past form of the corresponding verbs reconstructed for Proto-Gunwinyguan in Alpher, Evans and Harvey. There we argue that Proto-Gunwinyguan did not have conjugation markers per se, but that sometimes the past perfective and sometimes the non-past forms contain material that served as an analogical base for the development of conjugation markers in Pama-Nyungan. The PG forms given below are past perfective unless otherwise specified.

1. -nʷa (transitivity mixed):

Ni-nʷa	<i>sit</i> ₁	PPN NHii-n, PG ni-ŋinʷ
piRitʷi-nʷa	<i>live</i>	
(yu)wintʷ inta(R)watʷi-Na	<i>hear</i>	

2. -nʷi (transitivity mixed):

Taŋa-nʷi	<i>run</i>
wawunti-Ni	<i>drink</i>

3. -(a)pa (trans):

kaw-apa	<i>take</i>	PPN kaa-ŋ, PG ka-ŋ
Niŋ-apa	<i>hold</i>	
(yila)yaNki-pa	<i>let (him) go;</i>	PPN ya-n <i>go</i> , PG yaŋka

¹Lardil, and to a lesser extent Kayardild and Yangkaal, have undergone a battery of final truncations that have led to many C-final words – see Hale (1973).

wuN-apa	<i>give</i>	PPN wu-ŋ, PG wu-ŋ
piŋim-apa	<i>make</i>	
Naw-apa	<i>see</i>	PPN NHaa-ŋ, PG na-ŋ
(yu)wiŋ-apa	<i>feel</i>	
NaL-apa	<i>burn with fire</i>	
4. -yu (intrans):		
tʰawu-yu	<i>go away</i>	
kunu-yu	<i>sit₂</i>	
yuŋ(k)u-yu	<i>sleep</i>	PPN yu-n PG yu-ŋ
yuRpi-yu	<i>die</i>	
5. -tʰi:		
wa-tʰi	<i>speak</i>	
The remaining two or three conjugations have one member only:		
6. TayaTaya	<i>eat, drink</i>	PPN DHa-l, PG jaŋaŋ, jal (non-past)
TaRa		
7. yapu	<i>walk</i>	
8. yaNki-ya	<i>go, walk</i>	PPN ya-n, PG (non-past) yaŋka

Correlations with transitivity

There is a partial correlation between conjugations and transitivity. All verbs in Conjugation Three are transitive (with the possible exception of *yanki go*), and all verbs in Conjugation Four are intransitive. The remaining conjugations are mixed, or only have one member.

In addition to the possible derived causative *yankipa cause to go* mentioned above, /Piŋimapa/ *make* may also be a derived causative, if we posit an antonymic shift for the adjectival /piŋi-/ from *bad*, as in Tangkic, to *good* in Minkin¹ (cf English *terrific*), and assume the decomposition *make good, cause to be good* for /pitimapa/, as is common in many Australian languages (cf Warlpiri ngurrjumanì, Kayardild mirrayalatha). On this analysis, /pitimapa/ would decompose to *piti good*, -m-, causative or factitive suffix (with widespread cognates in Australia) and the transitive conjugation marker -apa.

Correspondence to conjugations in Pama-Nyungan and Gunwinyguan

Seven Minkin verbs have clear reflexes in both Proto-Pama Nyungan and Proto-Gunwinyguan. The conjugation markers of three out of the seven can be related equally well to either PPN or PG, since the relevant verbs end in -ŋ in both these groups. The conjugation marker of another one, Ninʰa, is not straightforwardly relatable to either PPN or PG. In the remaining

¹One problem is that the attested Minkin word for *good* is puRuka. But there is nothing to stop Minkin having several synonymous words for *good*, only one of which is attested as a free form. Alternatively, piŋi may have been an earlier word for *good*, supplanted by puRuka as a free form but retained as a bound root.

three, in which the forms of the relevant PPN and PG cognates differ significantly, there is more formal resemblance to the PG forms.

Consider first the following three verbs from Minkin Conjugation Three. The corresponding forms in both PPN and PG have a final segment in -ŋ. Two of the Minkin forms in this class have, synchronically as part of the root, a segment /w/, which may be a lenited form of the PPN/PG conjugation marker. The third, /wuN-/, has a final nasal, of indeterminable place of articulation but possibly a velar, which would be the unaltered conjugation marker.

M		PPN		PG	
kaw-apa	<i>take</i>	kaa-ŋ	<i>carry</i>	ka-ŋ	<i>take</i>
Naw-apa	<i>see</i>	NHaa-ŋ	<i>see</i>	na-ŋ	<i>see</i>
wuŋ-apa	<i>give</i>	wu-ŋ	<i>give</i>	wu-ŋ	<i>give</i>

These three could be brought under a single change from either PPN or PG if /ŋ/ lenited to /w/ after the low vowel /a/. If the PPN forms are taken as original, we need further to postulate loss of vowel length.

For one verb – Ni-n^ya *sit* – there is no particularly strong case for relating the conjugational suffix to either PPN NHii-n or PG ni-ŋin^y.

For the remaining three verbs, the forms appear closer to those in PG than in PPN:

M		PPN		PG	
yun(k)u-yu	<i>sleep</i>	ŋu-n ~ wu-n	<i>sleep, lie</i>	yu-ŋ	<i>sleep, lie</i>
TayaTaya	<i>eat, drink</i>	DHa-l		jaɾaŋ	<i>eat, drink</i>
TaRa				jal	(non-past)
yaNkiya	<i>go, walk</i>	ya-n	<i>go</i>	yaŋka	<i>go</i> (non-past)

In the case of *lie/sleep*, the Minkin form resembles the PG form both in beginning with a /y/, and in having a velar rather than an apical nasal. In the case of *eat/drink*, if we take the second variant TaRa, both the appearance of /R/ and of a following /a/ link the Minkin form more closely to the PG form, although here it is also possible that /R/, which may stand for a phonetic retroflex continuant, is simply the Mingin reflex of an earlier /l/ phoneme. In the case of yaNkiya *go, walk*, the presence of the segment /Nk/ links it to the PG form yaŋka; similar forms are also found in a number of other non-Pama-Nyungan languages.

To put the above in more general terms, wherever a Minkin verb root can be related to a verb plus conjugation marker in one of the two reconstructed systems mentioned above, it can be related to a PG form. Where it can be related to a PPN form, there is equally good evidence for relating it to a PG form. The above data, then, provides some evidence that Minkin is not Pama-Nyungan, and is more closely related to some non-Pama-Nyungan groups such as Gunwinyguan.

Possible derivations of some conjugation markers

As we have seen, the inherited conjugation markers have become buried within the root in Minkin, and new markers have been developed, probably through verb compounding. This

process has given rise to what are essentially conjugation markers in other Australian languages, particularly in the Gunwingguan group (see Carroll 1976). The semantics of the compounds I propose below – involving the verbs *go about*, *go* and *lie* – suggest that they code ongoing aspect or perhaps present tense, and are thus conjugation-sensitive tense/aspect inflections rather than pure conjugation markers.

Conjugation Three appears to involve compounding with a root (w)apa. Such a root is widely attested in Western Pama-Nyungan with the meaning *go about* (e.g., Warlpiri wapa-mi, Warumungu api), and is a natural candidate to develop an ongoing or continuous meaning.

Conjugation Four appears to involve the root yu- *lie*, whose stative meaning would be compatible with the intransitive verbs in this conjugation.

Conjugation Eight, restricted to the verb yaNkiya *go*, appears to involve the first syllable of the root yaNki *go* added to itself with an aspectual meaning. Conjugations One and Two are not obviously analysable as compounded verbs; furthermore, we cannot rule out the possibility that the -n^yi and -n^ya suffixes are different tense forms of the same conjugation.

To summarise, it is possible that the Minkin verb system developed by compounding various verb roots – *go around*, *go* and *lie* – with main verbs. The suffixed motion or stance verbs would likely have given a continuous aspectual or present tense meaning; different 'aspect' verbs would have been suffixed to different main verbs, according to semantics. Systems making use of stance and motion verbs to code aspect or tense have been reported elsewhere in Australia, e.g., Diyari (Austin 1981a), Djapu (Morphy 1983) and Kayardild (Evans 1985); in Djapu the choice of aspectual verb depends partly on the meaning of the main verb.

The inherited conjugation markers would have been 'buried' inside the newly suffixed aspectual verbs. This has happened with the η conjugation discussed above.

Pronouns

The reconstruction of Minkin pronoun forms from the sources is particularly problematic. To the problems of incompleteness and mistranscription, shared with all lexemes but amplified by the frequency of (presumed) initial /ŋ/ in pronominal forms, are added the semantic misidentifications common in eliciting pronoun forms – in particular, the confounding of first and second person. Finally, forms given for the various person/number combinations are confusingly scattered across at least three case categories – nominative, accusative and possessive.

To make sense of such data, one needs strongly constraining assumptions, and in what follows I have assumed a basically Tangkic system, on the basis of the lexical affinities described in 4. While this succeeds in organising the otherwise chaotic data, it weakens the usefulness of pronoun data as independent evidence for genetic affinity, and this must be borne in mind.

As an example of how the 'Tangkic assumption' is useful, consider the following data. M3 gives nunah (/NaNa/?) for *I* and M1 gives unnah (/WaNa/?) for *you*. Now it is likely these are really transcriptions of the one word, /ŋaNa/, with the person value being confused by the difficulties of eliciting deictics. That the correct person value is first rather than second is

suggested by the existence of a clearly cognate first person singular form /ŋaŋma/ in Yukulta, and /ŋaŋa/ in Yangkaal, while the second person form, /nʲiŋka/, is clearly not cognate¹.

Similarly, M3 gnargnar (/ŋaRŋaR/), glossed *you*, may really have meant *we (exclusive)* – the investigator may have been seen as asking for the term whose referent was his addressees. This would make it cognate with Tangkic /ŋaŋ-/ *we dual exclusive*. If, on the other hand, the gloss is taken at face value, cognates are difficult to find both in Tangkic and elsewhere (Tangkic second person roots are nʲi- (sg) and ki- (non-sg); typical non-Tangkic roots derive from 'Proto-Australian' (possibly Proto-Pama-Nyungan – see Blake, 1988) 2sg ŋin-, 2du NHu(m)baIV, 2pl NHurra (Dixon 1980:334)).

On the basis of these factors, I suggest the following (partial) paradigm. Source references are to M3 unless otherwise stated.

Person:	Subject (nom):	Object (acc):	Possessive:
1	NaNa (M3 nunah <i>I</i> , M unnah <i>you</i>)	? <-----	Napanʲa (M3 nabunyah <i>mine</i>)
11 or 111	ŋaRŋaR (M3 ngar-ngar <i>you</i>)	WaNTil-NHa (M3 wandilnah <i>us</i>)	
12		NakOnʲa (M3 nah-gunyah <i>we two</i>)	
122		NalkulNHa (nahI-gul-nah <i>we</i>)	Nalkilyananka (nahI-gil-yen-un-gah <i>our</i>)
2 (no form attested)			
3 masc	(n)yuwanaRaya	(you-an-arire)	
3 fem	NinaRinawinayi	(nin-nar-in-now-in-ay)	
3 neut	Naŋapa	(nad-thap-ah)	

Object forms, it appears, add an accusative suffix -NHa to the stem. The final syllable of the *I* form may be an accusative suffix, or part of the stem. As shown below, the 'emphatic' form of the 1sg pronoun in the Tangkic language Yangkaal has developed to ŋaŋa.

A pronominal accusative -NHa is widespread in Pama-Nyungan. Subtracting this from the object forms, we get the following stems, compared below with their Tangkic equivalents. Minkin words are given in two forms — a less determined form, derivable solely from the source, and in brackets a more precise rendition assuming cognacy with the Tangkic forms. The third person forms are not cognate with Tangkic, which has a genderless third singular form niya.

¹In fact, comparison with other Australian languages, or with Proto-Pama-Nyungan or Proto-Australian forms, would also suggest a first person value here.

Person:	Minkin:		Tangkic: ¹
1	NaNa	(ŋaŋa)	ŋaŋa,
	or		Ya ŋaŋa from PT (Proto-
	Na-	(ŋa- ²)	Tangkic) ŋaŋ-ma
11 (111?)	ŋaRŋaR-	(ŋarŋar)	ŋař- (11)
12	NakO-	(ŋaku-)	ŋakuř-
122	Nal kil-	(ŋalkil-)	ŋakul-

The resemblance of the non-third person terms is striking. Particularly diagnostic is the presence of the plural morpheme *-l-*, and the contrast between an exclusive set, built on a simple root *ŋa-*, and an inclusive set, built by suffixing *-ku-* to the *ŋa-* stem. The main difference from Tangkic is that where the Tangkic plural inclusive forms have *-l-* only after the *-ku-* augment, the corresponding Minkin forms mark it at the end of both the first person (*ŋa-*) and inclusive (*-ku-*) segments.

These similarities conform with the lexical similarities mentioned in the Conclusion, and suggest a genetic link between Minkin and Tangkic.

Note that the distinctive characteristics of the Tangkic pronouns are in fact also shared with the languages of the Maran group; so strictly speaking the Minkin terms are cognate with Tangkic-Maran rather than just Tangkic.

Interrogative pronoun

The sources contain two versions of a sentence with the interrogative pronoun *where*: M1 *darne nar kommo* and M2 *tano ara mingoo*, both given for *where are the blacks?* Assuming the last word in each is a variant word for *blacks*, this suggests an interrogative *where* whose most likely phonemicisation is *TanaŋaRa*. The Tangkic equivalent is *t'ina*, unlikely to be a cognate unless the first Minkin segment was *t'y* (which is possible – see Phonology).

Recoverable nominal morphology

Since the lists contain isolated words, not sentences, one would not expect, and does not find, evidence of case inflection. However, stems recurring either between different Minkin lexemes, or between a Minkin lexeme and one in Tangkic, reveal two nominal suffixes of a derivational nature:

- (a) *ŋaRa*, *having* or *after*: The *having* meaning is postulated on the basis of the Minkin lexeme *paŋiŋaRa* *old man*, the Tangkic stem *pati* *grey hair* and analogy with the Tangkic nouns *paŋiwuŋu* (Yukulta) and *paŋiwuru* (Kayardild), both of which mean *old man* and both of which involve the *having* suffix, respectively *wuŋu* and *wuru*.

An alternative interpretation is that *-ŋaRa* is some sort of *after* or *consequential* suffix, and that the etymology of **M paŋiŋaRa* is *after (getting) grey hair*. This would fit, better than the

¹Unless otherwise specified, forms given are Yukulta stems. The Yangkaal form is an emphatic, and derives from a Proto-Tangkic emphatic form, *ŋaŋma*, comprising the stem *ŋaTH-* plus the emphatic clitic *-ma*, with nasal assimilation of TH to *ŋ*.

²This variant assumes the *-Na* is an accusative suffix.

having meaning, with the second occurrence of ŋaRa, in the word kawuNTuNGaRa *tomorrow*, since M kawuNTi *night* plus a consequential suffix would give the compositional meaning *after the night*, quite plausible for *tomorrow*.

If the consequential meaning of ŋaRa is accepted, this morpheme is cognate with the Tangkic consequential suffix -ŋarpa. See (c) below for examples of Tangkic sonant plus stop corresponding to Minkin sonant in penultimate position.

- (b) -wa is also postulated on the basis of a derivative of kawuNTi-: cf kawuNTi *night*, kawuNTiwa *yesterday*. It is not clear what meaning to ascribe to this suffix – possibly a locative.
- (c) Nominative forms: As mentioned in Sources (p.168), a distinctive characteristic of Yukulta (and probably of Proto-Tangkic) is the presence of a non-zero nominative inflection. It is likely that the initial reason for this augment was phonotactic, since Yukulta words must always end in a vowel. After sonant-final stems, the augment takes the form -Ta, where T is a stop homorganic with the preceding segment. After vowel-final disyllabics it is -ya after i, -wa after u, and -ra after a. After stops, and the trill, it is -a.

Minkin, like Yukulta and PT, requires words to end in a vowel. Without evidence from paradigms, stem boundaries cannot be identified securely. But if we assume they were placed as in their Tangkic cognates, the picture emerges of a similar but simpler pattern of augmenting to avoid final consonants. Consider first:

A		Tangkic:	Minkin:
<i>wind</i>	(K)	wařmar-a	waRmaR(-)a
<i>grass</i>	(K, Y)	kaŋ-ŋa	kaŋ(-)a
<i>cold</i>	(K)	ŋuřin-ta	KuRin(-)a
<i>excrement</i>	(K)	tuř-ŋa	TuR-a
	(Y)	tuł-ŋa	

Here Minkin augments with just a vowel, i.e. no homorganic stop is inserted.

Stems ending in velar nasals are undecidable because of the unresolvable source grapheme (written NG) which could be ŋ or ŋk:

B		Tangkic:	Minkin:
<i>mosquito</i>	(Y, K)	kalařaŋ-ka	kalaRaNGa
<i>fat</i>	(K)	pařaŋ-ka	paRaNGa
<i>lightning</i>	(K)	piřiŋ-ka	piRiNGa <i>star</i>

Disyllabics in Minkin receive no augment:

C		Tangkic:	Minkin:
<i>woomera</i>	(Y)	piři-ya	piRi
<i>shield</i>	(Y)	t'arpi-ya	t'aRpi
<i>camp</i>	(Y)	nařa-ra	Nařa
<i>rotten</i>	(Y)	puka-ra	puka

A similar correspondence of Tangkic SONANT-STOP-a with Minkin SONANT-a is found with two words in which the Tangkic sonant plus stop cluster does not span a morpheme boundary. (Note, though, that many eastern languages have *wajal* for *boomerang*, suggesting the Tangkic *k* is not original).

D		Tangkic:	Minkin:
<i>kookaburra</i>	(K)	ʔalkurk-a	ʔalkur(-)a
<i>boomerang</i>	(K, Y)	wajalk-a	wajil(-)a

This raises the question of whether Minkin once had a Tangkic type rule adding homorganic stop plus /a/ after sonants, which was later simplified to adding /a/ alone when global application of the de-clustering rule applied as in the D examples. On the available scant evidence this question is undecidable.

Finally, note that there are two apparent exceptions to the above set of correspondences: Y1 wuRuNTa, M wuRuNTa (both meaning *young man*); and Y ʔalunta *bark (of tea tree)*, M -Talunti (in compound meaning *wood*). These may be late loans from Tangkic.

Lexicon

The bulk of what can be known of Minkin is lexical rather than grammatical or phonological. In the Appendix (see p.185), I give phonemicisations of all retrievable Minkin lexemes (column 1), with their sources (column 2), their equivalents in Tangkic (column 3; Yukulta if available, otherwise Kayardild), non-synonymous Tangkic cognates (i.e. lexemes that have undergone some semantic change) in column 4, and cognates wider afield in column 5. Uncontroversial cognates are solidly underlined, while more speculative cognates are underscored with a wavy line.

For some lexemes, two phonemicisations are given. The first is made on the basis of the historical sources alone. The second, in brackets, is more precise but also more hypothetical: it is made on the assumption that certain phonetic features (e.g. place of articulation of stops or nasals, or rhotic quality) are identical to their Tangkic cognates. Sources for non-Minkin languages are Evans (n.d.) for Kayardild, Keen (1983) for Yukulta, Curr (1886) for Yangarella, Hale et al (1981) for Lardil, and Black (n.d.) and Breen (p.c.) for Kukatj.

Conclusion: the genetic position of Minkin

In this section I shall review the evidence for Minkin's genetic position, by comparing its lexicon with each of the three neighbouring language groups (Mayi, Kukatj (Norman Paman) and Tangkic), and then see whether this fits with the scanty grammatical evidence from pronoun and verb paradigms. Before doing this, however, it is worth pointing out the limitations that a reliance on old sources imposes on the lexicostatistical method.

To be applied properly, the same set of lexemes should be compared across all languages; furthermore, comparisons must be based on an accurate corpus for each language. In the present case, neither condition is met.

Firstly, it is very much a whim of fate which particular lexical items have come down to us; and to restrict our count just to those words that are found in all languages under comparison would give a very small sample size. So I have compared whatever words can be compared, even if this means that the number of items compared, and which domains they occur in, are not held constant across all comparisons. A second effect of underattestation is that particular lexemes are attested now in one dialect, now in another. Again, a strict application of the lexicostatistic method would restrict itself to a single dialect, and again I have relaxed this restriction so as to cast the net wider. Within Tangkic, I have looked first for Yukulta cognates, but where no Yukulta word is attested in Keen's vocabulary (which, although fairly comprehensive at some 2,000 entries, nonetheless lacks many terms), I have sought cognates in Kayardild or in Curr's 'Yangarella' list. Within Mayi, I have looked at all dialects equally, since none are particularly well attested.

Secondly, the sources for Minkin, in addition to their phonetic problems, undoubtedly contain a fair dose of semantic inaccuracy. Curr's Yangarella list, taken under similar conditions to the Minkin lists, is instructive here, since it can be compared with an accurate modern list (Keen's Yukulta vocabulary). It makes such semantic misattributions as *thigh* for *kooldoora* (cf YUK *kuḷuṛa calf*), *tomahawk* for *karawa* (cf YUK *karwa-ṛa*, actually *nulla-nulla*), *day* for *yanda* (cf YUK *yanta now, today*) and *moon* for *koorooba* (cf YUK *kuṛupa star*). As a result, one would expect two lists, made on the same language by different nineteenth century investigators, to have well below 100% cognacy with each other, and the percentages with other languages would be comparably depressed. This would be emphasised by the obtaining of different synonyms, by different investigators. To compensate for this I have counted as cognates words showing a reasonable degree of semantic similarity, leaving open the question of whether this is due to semantic shift in one language, or merely misidentification by the investigator. Examples of this type are items 17, 41, 90, 99, 125-127, 131 and 137 in the vocabulary given in the section on the Lexicon.

For these two reasons, the percentages arrived at below are not directly comparable to those obtained by rigorous comparisons of accurate modern sources. However, I hope the procedures outlined above (i.e. pooling more than one dialect, and counting semantically related items as cognates) approximately compensate for the deficiencies in the sources, which would otherwise artificially depress the counts.

The following table gives approximate cognacy rates with the three other language groups under comparison:

Minkin-Mayi	5.5%	(8-9/155)
Minkin-Kukatj	7.4%	(9/121)
Minkin-Yukulta/Tangkic	28.5 - 35%	(49/172 - 61/173)

Discussing each comparison in more detail:

- (1) With the Mayi dialects to the south and south-east, Minkin shares a mere 5.5% of its basic lexicon (8 or 9/155) with a basket of dialects. Almost all of these are common Australian words: *eye* (M *mit^yEla*, Mayi *miil*), *tooth* (M *liya*, Mayi *lirra mouth*), *thigh* (M *ṭanpa*, Mayi *tharra*), *foot/track* (*t^yana* in both), *rotten* (M *puka*, Mayi *pukarn*), *sit* (M *Nin^ya*, Mayi *yina*), *go/come* (M *yapu*, Mayi *wapa*), and *see* (M *Nawapa*, Mayi *nhama*). The only shared word outside the CA set is *yes* – *njya* in both, a form widespread in eastern Australia. The total

absence of any cognates other than those shared with the rest of the continent starkly outlines the lack of borrowing or of any close genetic affiliation.

- (2) With Kukatj (Norman Paman subgroup), spoken to the east, the cognacy rate is almost as low, at 7.4% (9/121). Three of these nine shared items are CA: KUK *ɬaɹ*, *ɬawal* *thigh*, M *ɬanpa*, PA THara; KUK *ŋaa- see*, M Nawapa, PPN Naa-; KUK *yin sit down* (with initial lenition of the nasal), M Ninʼa, PPN NHii-n. The remaining six words are regional: KUK *ŋuɹm reed spear*, M *ŋuRmi*; KUK *piɹ woomera*, M *piRi* (and YUK *piri-ya*); KUK *kan lower back*, M *kOnta back*; K *kɔɹək dog*, M *kuTu*; K *kuw nose*, M *kiwiRa*; K *pakəɹ tree*, M *pakuRu bark*. So there appears to be a slightly higher rate of borrowing with Kukatj than with the Mayi languages, albeit at a very low level.
- (3) With the Tangkic languages to its west, Minkin shares a similar pronominal system, as we saw in Pronouns. The rate of lexical correspondence is likewise high. Between Minkin and Yukulta the cognacy rate, for all known vocabulary, is 28.5% (49/172). If we count cognates in all dialects and sources (i.e. Yukulta, Curr's 'Yangarella' list, and Kayardild) the percentage rises to 35.3% (61/173). The great proportion of these are not PA, nor are they found in any other Australian languages but Minkin and Tangkic. It is unlikely that this percentage is solely the result of borrowing.

Firstly, why should the cognacy rates be so (relatively) high with Tangkic, and so low with Minkin's other neighbours, the Mayi languages and Kukatj? Note also that the Tangkic languages have a very low cognacy rate with *their* other neighbours, such as Garawa and Waanyi. Clearly languages in this region do not typically share large percentages of vocabulary with neighbours unless a fairly close genetic relation exists. This is in contrast to the situation Dixon describes for the Cairns rainforest region (Dixon 1972), but comparable to the situations found in many other parts of Australia, such as the Top End and the Kimberleys.

Secondly, a good way of distinguishing between shared vocabulary due to borrowing and shared vocabulary due to a common genetic inheritance is to compare the cognacy rates for verbs with the overall rate. Since verbs are rarely borrowed, the two rates are, usually, roughly comparable where the languages are related, but when the majority of the shared vocabulary is due to borrowing the cognacy rate for verbs is well below the overall rate. If we perform this comparison for the Tangkic/Minkin rates, we find that cognacy for verbs is 28.5% (6/21) – comparable with the overall rate of 29-36% – supporting the argument that Minkin and Tangkic are genetically related, and reasonably closely.

The overall picture, then, is that Minkin has practically nothing in common with its eastern and southern neighbours, Kukatj and Mayi respectively, but is rather closely related to the Tangkic languages to its west. This conclusion comes from

- (a) the relatively high percentage of vocabulary shared with Yukulta – about 30%, compared to 5-7% with its other neighbours.
- (b) the similar pronominal systems in Minkin and Tangkic.
- (c) less importantly, the similarities in phonotactics, the presence of a non-zero nominative ending in Minkin similar to that found in Yukulta (and Proto-Tangkic), and possibly in one recoverable nominal suffix *ŋaRa*, which may have had an *after* meaning in Minkin; a similar suffix *ŋarpa*

encodes the consequential case in the Tangkic language Kayardild, and was probably present in Proto-Tangkic.

The evidence of the verbal system is compatible with the above. Several Minkin verbs appear to preserve inherited conjugation markers. The fact that the forms of these correspond more closely to those reconstructed for Proto Gunwinyguan than to the Proto Pama-Nyungan conjugations reconstructed by Dixon (1980) confirms the grouping of Minkin with the non-Pama-Nyungan Tangkic group. An apparent problem for this grouping is that verbs in Tangkic lack any trace of conjugation markers. However, I have suggested elsewhere (Evans 1985) that the Tangkic languages totally remodelled their system of verb inflections, deriving virtually all new categories from nominalisations inflected for case. This is not incompatible with Minkin and Tangkic belonging to the same subgroup, if one assumes Minkin is more conservative and the remodelled system of verb inflections is a shared innovation of the Tangkic languages.

Unfortunately, we have no knowledge of case suffixes, or of verb inflections in Minkin, both of which are highly distinctive in Tangkic, and whose attestation in Minkin would have allowed a more decisive classification. But on the basis of what is available – the evidence of (a) to (c) above – I tentatively suggest the following classification:

Appendix

No.	Meaning	Minkan	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
1.	<i>man (Aboriginal)</i>	ŋaRka (ŋaŋka)	M2 nurka M3 gnurgah	Y ŋaŋka-ŋa		WLB ŋaŋka <i>man</i> ; KUK ŋalkaŋ <i>old men</i>	
2.	<i>'the blacks' (a)</i>	yaŋ(k)ana	M1 yungunna	Y ŋaŋkawalat-a			
3.	<i>'the blacks' (b)</i>	wampuRa	M2 wompoora	K ŋum uwa ŋaŋkaa			
4.	<i>'the blacks' (c)</i>	kOmu	See items 190				
5.	<i>'the blacks' (d)</i>	miŋ(k)u	See items 190				
6.	<i>white man (a)</i>	piŋa	M1 birda	Y2kantukantu			
7.	<i>white man (b)</i>	Takantana	M2 takandana	K palaŋa ŋaŋkaa			Probably a contraction of the reduplicated form of Takana blood; cf K kaŋŋukaŋŋu red; white man; kaŋŋu blood.
8.	<i>young man (a)</i>	kulankali	M1 kulangally	Y maŋŋuwaŋa			
9.	<i>young man (b)</i>	wuRunta (wuŋunta)	M2 ooroonda	Y <u>wuŋunta</u> <i>young man</i> (initiated)			
10.	<i>boy (M3), children (M1)</i>	wuRaRa	M1 woorara M3 woora-rah				
11.	<i>baby (also 'little', 'younger brother')</i>	pilt'iŋkuRa	M1 bildingooru M2 pelgincoora	Y puŋupuŋu			
12.	<i>girl</i>	puLupuLa (puŋupuŋa)	M3 bool-oo-boolah	Y ŋuŋiwa	Y <u>puŋupuŋu</u> <i>baby</i>		
13.	<i>woman</i>	maku	M1 mago M2 magoo M3 macoo	Y <u>maku-wa</u> (K maku-wa)			
14.	<i>old man</i>	paŋiŋaRa	M1 birdyniarra M2 pardingara	Y <u>paŋiwulu</u> (paŋi <i>grey hair</i> , -wulu <i>having</i>)			Probably paŋi- <i>grey hair</i> plus -ŋaRa <i>having</i> .

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
15.	<i>old woman</i>	waŋkiRi (waŋkiŋi)	M1 wurdigarry	Y <u>waŋikiŋi</u>			
16.	<i>father</i>	kEyaŋi	M2 ooardigiri	Y kaŋaŋu		KUK kəŋa:nʔi <i>father</i>	
17.	<i>mother</i>	kuntunu	M1 kihadgy M2 kiagi M1 gondongu M2 kuntunu M5 durunduru	Y ŋamaŋu	K <u>kuntunuŋu</u> <i>mother with baby</i>		As noted, M5 is not a sufficiently reliable source to treat this item seriously.
18.	<i>sister (a)</i>	wuŋ(k)uRa-paŋa		M1 ongoora-bunga	Y yakukaŋu		
19.	<i>sister (b)</i>	yilulaŋa	M2 yllolunga M5 hllila				
20.	<i>brother, elder</i>	Naŋkaŋʔ or Naŋkay	M1 nungai M2 nancile	Y ŋapuŋu			
21.	<i>brother, younger</i> (cf 11)	piRiʔinkuRa	M2 birgenkoora	Y kunaŋu			Probably a mishearing, and misidentification of piŋʔinkuRa <i>small</i> (No. 146).
22.	<i>mother's mother</i>	Tiŋila	M5 titila	Y ŋaŋiŋu			
23.	<i>God</i>	ʔʔORpuyu	M2 churbooyo	—	Y <u>ʔʔaŋpikala</u> <i>eaglehawk, aeroplane, *ʔʔaŋpi- sky</i>		The Y form suggests an old compound <i>sky-flier</i> ; cf kala- ʔʔa <i>fly</i> . The form ʔʔaŋpi- <i>sky</i> is hypothetical, based on this.
24.	<i>ghosts</i>	paŋa	M2 parda	Y ŋapaya			
25.	<i>'being who taught them everything'</i>	kuwaRi	M3 koo-ar-ee	—			

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
26.	<i>head</i>	wiʔa	M1 wirda M2 wedda M3 wirdah	Y ɲal-ta			
27.	<i>hair of head</i>	puLumpa	M1 booloomba M2 boormba M3 boolumbah	Y <u>pulumpara</u>			
28.	<i>hair of beard, beard</i>	yaRinʔa or yaRiŋa	M1 yarrania M2 yarin-nga M3 yair-in-yah	Y ʃukan-ta			
29.	<i>eye</i>	mitʔELa	M1 midialla M2 migilla M3 midyelah	Y mipuʔ-ta	Y <u>mitʔil-ta</u> <i>scoop net</i>	CA mii, miil <i>eye</i>	
30.	<i>ear</i>	maRa (maʔa)	M1 murra M2 mara M3 murreh	Y <u>marral-ta</u>			
31.	<i>mouth</i>	paRka	M1 burka M2 parka M3 parkah	Y waʔa-ʔa			
32.	<i>teeth</i>	liya	M1 lia M2 lia	Y ʔaman-ta	Y ʃiʔa <i>snake</i>	CA liʔa ~ tiʔa <i>tooth</i>	
33.	<i>tongue</i>	THalga ~ THanʔa	M1 ʔalnia M2 charn-nga	Y <u>tʔalɲana</u>			
34.	<i>nose</i>	kiwiRa	M1 kwira M2 kiwira M3 guə-əar-he	Y <u>kiʔka</u>		KUK kuw <i>nose</i>	
35.	<i>face</i>	yiRa	M3 yerrah	Y kiʔka			
36.	<i>neck</i>	panTaLmaRa	M3 pandal-murrah	Y ʔawuʔa			

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
37.	shoulder	tʼaʼa	M3 cherdah	Y <u>tata-ra</u>	K tʼaʼi-ya behind shoulders	KUK kan back	M1 may have misidentified the meaning here. Curr's 'Yangarella' list mis-identifies kooldoora /ku ʼuʼa/ calf as thigh.
38.	breasts, milk	ʼukula	M1 nookoola M2 makola breasts M2 nogoola milk	Y muniʼa	Y ʼukulaʼukula gecko		
39.	back	kOnTa (kanta)	M3 gundah	Y kiʼil-ta			
40.	stomach (a)	paʼaka	M2 pardaga	Y <u>paʼaka</u>			
41.	stomach (b)	puLʼʼi	M1 boolgee		Y <u>pulʼʼi-ya</u> heart		
42.	chest	payuʼa	M3 byolah	Y kaʼkaʼa			
43.	thigh (a)	piʼpa	M1 bilba M2 bilba	Y ʼaʼa	Y <u>piʼpa-ra</u> ankle		
44.	thigh (b)	ʼanpa	M3 dʼthunbah	Y ʼaʼa			
45.	leg	tʼila	M3 geelah	Y ʼaʼa			
46.	ankle	mukuʼa	M3 mogoolah	Y <u>mukuʼa</u> ankle-bone			
47.	foot	tʼay(k)a	M1 gangah M2 changah M3 jungah	Y <u>tʼa-ra</u>			
48.	track of a foot	tʼay(k)ay. tʼaNa	M1 gungy M2 tyana	Y <u>tʼa-ra</u>	CA tʼa- foot		
49.		waʼLEra	M3 wallerah	Y <u>ʼaʼa-ra</u>			
50.	wrist	{ muni-muni maNay- maNay }	M3 munie-munie	Y maʼakuʼa			

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
51.	<i>hand</i>	ŋaRŋaRa (ŋaŋaŋa)	M1 nungurra M2 na-nga-ra M3 gnar-ngarah	Y maŋ-ŋa	K <u>ŋaŋaŋa</u> <i>claws</i> Y ŋaŋaŋa <i>footstep</i>		
52.	<i>fingers</i>	ŋaŋa	M3 gnarah	Y maŋ-ŋa	K <u>ŋaŋaŋa</u> <i>claws</i>		
53.	<i>skin</i>	pakuRu	M1 buckeroo M2 pagooroo M3 pak-gur-oo	Y ŋara-ŋa			
54.	<i>bone</i>	TimERa (ŋimiŋa)	M1 dimara M2 dimira	Y t'ul-ta	Y <u>ŋimiŋa</u> <i>backbone</i>		
55.	<i>blood</i>	takana	M1 duckana M2 tagana	Y kaŋtu-wa			
56.	<i>fat</i>	paRaŋ(k)a (paŋaŋka)	M1 buranga M2 paranga	K <u>paŋaŋka</u> (Y ŋura)			
57.	<i>bowels, excrement</i>	TORa (tuRa)	M1 durra <i>bowels</i> M2 turra <i>bowels, excrement</i>	Y tuŋa			
58.	<i>excrement</i>	malina	M1 malina	Y tuŋa			
59.	<i>kangaroo (a)</i>	punkana	M1 boongana	Y ŋaŋaŋa			
60.	<i>kangaroo (b)</i>	t'aku-t'aku	M2 jaco-jaco	Y2 t'aku-t'aku			
61.	<i>possum</i>	wapuRa	M1 wahbera M2 wapoora	Y maŋiyanta			
62.	<i>tame dog</i>	kutu	M2 koodoo <i>tame dog</i> M1 goodoo <i>wild dog</i>	Y ŋawu-wa		KUK koŋuk <i>dog</i> Proto-Pama-Maric *kutaka	
63.	<i>wild dog, dingo</i>	mit'iŋpaRa	M2 megilpurra <i>wild dog</i>	Y t'iŋi-ya			
64.	<i>emu</i>	puLan't'ana	M1 boolongena M2 poolunganna	Y { t'aŋapu kaŋaŋan't'a }			

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
65.	<i>black duck</i>	piyan't'uRa	M1 beangura	Y luŋku-wa	Y piya-t'a swim		
66.	<i>wood duck</i>	yapiRa-	M1 yabbra-	—			
		muntun't'iRa	mondongera				
67.	<i>pelican</i> (a)	yukuTaRa	M1 yokkotara	Y paŋu-wa			
68.	<i>pelican</i> (b)	pitiltu	M2 piteldoo	K wanikaŋa			
69.	<i>laughing jackass</i> (<i>kookaburra</i>)	TalkuRa	M1 talgora	Y <u>talkuŋka</u>			
70.	<i>native companion</i> (<i>brolga</i>) (a)	Tila-TalkuRa	M1 dilla-dulkoora	Y ŋalwat'i			Etym. could be t'ila leg (45) plus ŋalkuŋa <i>kookaburra</i> PuRalku may be borrowed from English <i>brolga</i> .
71.	<i>native companion</i> (<i>brolga</i>) (b)	puRalku	M2 pooralgu				
72.	<i>white cockatoo</i> (a)	TayalpuwaRa	M1 dialpoarra	Y ŋaŋala			
73.	<i>white cockatoo</i> (b)	kaRimpala	M2 karimbala	Y "		kaŋampula in Burdekin area (G.Breen, p.c.)	Curr 'Yangarella' : wongoola
74.	<i>crow</i>	waŋkula	M1 wongoola	Y1 <u>waŋkula</u>			
			M2 wongoola	(Y t'aŋaŋka)			
75.	<i>swan</i>	kunankuta	M1 goonangoda	Y —			
				K wuŋpululu			
76.	<i>wild turkey</i>	piRinkuRa	M2 piringoora	Y waŋurugu			
77.	<i>egg</i>	yapipa	M1 yabbaba	Y kuŋu-wa			The M1 form with initial y- is taken as correct; cf item 105 where M1 has ya and M2 ooa, with independent evidence that M2 is wrong.
			M2 ooabiba				
78.	<i>snake</i> (a)	palaŋ(k)aRa	M1 balangara	{Y ŋiŋa}	Y <u>palaŋkali</u> brown snake		
79.	<i>snake</i> (b)	pakanpapa	M2 paganbaba	"			

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
80.	<i>fish</i>	waRa	M1 warra M2 worra	Y yakulɨ	Y waja-ɾa <i>mouth</i>		
81.	<i>crayfish</i>	miNTuLa	M1 mintoola	Y maɬu-wa			
82.	<i>mosquito</i>	kalaRaŋ(k)a (kalaŋaŋka)	M1 kalaranga M2 kallararra	Y <u>kalaŋaŋka</u> <i>black mosquito</i>			M2 probably a metathesised mishearing.
83.	<i>fly (a)</i>	wuŋaRa	M1 wooniarra	{ Y ŋiŋɟuɬa <i>fly</i>		Warluwarrɪ warrɪna	
84.	<i>fly (b)</i>	kuRiNa	M2 koorina	{ Y pin't'aŋa <i>march fly</i>			
85.	<i>grass (a)</i>	kOŋa (kaŋa)	M1 gurna	Y kaŋ-ta <i>grass (generic)</i>		Waanyɪ kaŋpa	
86.	<i>grass (b)</i>	puLpa	M2 boolba	Y kupulta <i>grass, fur</i> Y1 pul-Ta <i>grass</i>			Curr 'Yangarella': boolda
87.	<i>bark (a)</i>	kuRumpa	M1 kooroomba	{ Y kaɬu-wa }			
88.	<i>bark (b)</i>	pakuRu	M2 pakooroo			KUK pakɔŋ <i>tree</i>	Identical with 53, <i>skin</i> .
89.	<i>wood (a)</i>	wiLa	M2 willa	Y ŋit-a <i>firewood</i>			Identical with 104, <i>fire</i> .
90.	<i>wood (b)</i>	wiLaTaLOnti (wiLa ɬalunti)	M1 willadalhundi		Y ɬalunta <i>bark of ti-tree</i>		
91.	<i>war-spear (a)</i>	waRinwaRina	M1 warinwarrina	Y miyaɬ-ta <i>spear (gen.)</i>			
92.	<i>war-spear (b)</i>	maɬt'iNTaRa	M2 mulgendara	" "			
93.	<i>reed-spear (a)</i>	waRin	M1 woring	Y1 kupuRama			
94.	<i>reed-spear (b)</i>	ŋuRmi (ŋuŋmi)	M2 ngoormi	"		KUK ŋuŋm	Curr 'Yangarella': kooboora-ma. M1 assumed to be a misreading of handwritten warina; cf <i>war-spear (a)</i> above and vowel-final phonotactics.
95.	<i>woomera</i>	piRi (piŋi)	M1 peery M2 pirri	Y pirri-ya		KUK piŋ	

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
96.	<i>shield(a)</i>	Tapuna	M1 tarboona	Y t'aŋpi-ya	K ʃaʃa-na of the shoulder		On <i>shield/shoulders</i> polysemy; cf Arandic dialects with alkwerte <i>shield</i> and alkwertal-kwerte <i>shoulder-blade</i> .
97.	<i>shield(b)</i>	t'aŋpi (t'aŋpi)	M2 charpi	Y t'aŋpi-ya			
98. 99.	<i>tomahawk (a)</i> <i>tomahawk (b)</i>	THaŋiyapina t'aRiwiNTila	M1 tardiabina M2 churiwindilla	{ Y t'ulpuŋtinta } "	Y1 t'aŋiya <i>shield</i> K t'aŋiyali <i>fighting stick</i> (thrown)		
100.	<i>boomerang</i>	wanila	M2 wangilla	Y wanalka			Curr 'Yangarella': chardia <i>shield</i> . Note that Curr 'Yang.' gives, for <i>tomahawk</i> , the word karawa, where Yukulta kaŋawaŋa means <i>fighting stick</i> . dd in the sources may well represent an interdental, which is typically longer than an apical.
101.	<i>carvings on boomerang</i>	waLit'i	M4 wang-il-lah M4 wah-lli-gee	—			
102.	<i>canoe</i>	kamiRa	M2 kamera	—			
103.	<i>camp</i>	NETa (naʃa) (ŋita)	M1 nidda M2 nadda	nata-ra	Y ŋit-a (root ŋi-) <i>fire</i>		
104.	<i>fire</i>	wiLa	M1 willa M2 willa M3 wilah	Y ŋit-a <i>fire</i>			
105.	<i>heat (a)</i>	yaLuLu (yalulu)	M1 yalooloo M2 ooloola	Y ŋan't'al-ta <i>flame, light</i>	K yalulu <i>flame, light</i>		
106.	<i>heat (b)</i>	mawuRina	M3 mourinah	" "			

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
107.	<i>smoke</i> (a)	Tumpuŋa	M1 toomburna	{ Y nʔuŋa-ŋa }		Gunya ɕumbinʔ <i>smoke</i>	(a) probably means <i>flame</i> , <i>light</i> . Meaning (b) probably refers to the absence of darkness, with -NaRay deriving the privative of 111.
108.	<i>smoke</i> (b)	kuya-kuya	M2 guia-guia	{ watu-wa }			
109.	<i>light</i> (a)	NawaNawa	M3 now-now-ah	{ Y ŋanʔtʔal-ta }			
110.	<i>light</i> (b)	kawuntuNaRay	M2 kaondonarai	{ " }			
111.	<i>dark</i> (= <i>night</i>)	kawuNTi	M2 kavondi	Y kiŋwita <i>darkness</i>			cf the polysemy of K piŋka <i>fat</i> , <i>grease</i> , <i>honey</i>
112.	<i>water</i> , <i>rain</i>	waŋa	M1 wudha <i>water</i> M2 wadda <i>water</i> M3 watah <i>water</i> , <i>rain</i>	Y ŋuku-wa	Y wun-ta <i>rain</i> , <i>cloud</i>		
113.	<i>food</i>	La(R)kuLa	M1 larcoola	Y yaŋputa <i>meat food</i> Y wuŋanta <i>vegetable food</i>	PT *laŋ- <i>cooked</i> : cf K raŋ-waŋa <i>cook in ground</i> <i>oven</i> ; -waŋa <i>inchoative</i> <i>suffix</i> K paŋaŋka <i>fat</i>		
114.	<i>honey</i> (= 56 <i>fat</i>)	paRaŋ(k)a (paŋaŋka)	M2 baranga <i>sweet</i> , <i>i.e. honey</i>	Y maŋamaŋa 'bread' of the <i>sugarbag</i>			
115.	<i>thirsty</i>	NVRmuNTu (ŋawaRmuNTu)	M1 normundo M2 noormoondo	Y ŋawaŋi <i>thirsty</i>	Y ŋaman-ta <i>hungry</i> K ŋaman-ta <i>hungry</i> , <i>thirsty</i>		
116.	<i>hungry</i>	NaLu	M1 nollo M2 nullu	Y ŋaman-ta <i>hungry</i>			
117.	<i>stone</i> , <i>hill</i>	kapaŋa	M1 kabirda <i>stone</i> M2 kabada <i>stone</i> , <i>hill</i>	Y kamaŋ-a <i>stone</i> , <i>hill</i>	K kapara <i>salt pan</i>		
118.	<i>ground</i>	kuŋa	M1 koorta M2 koorda	Y ŋulk-a	K kuta-a <i>paperbark</i> , <i>coolamon</i>		

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
119.	<i>river</i>	kaTaRa (kaʔaʔa)	M3 caderah	Y <u>kataʔa</u>			
120.	<i>lake, lagoon</i>	paNka	M3 bungaʔ	Y <u>panki-ya</u> <i>waterhole</i> K <u>panki-ya</u> <i>lagoon</i>			
121.	<i>swamp</i>	wulpa	M3 woorbah	Y <u>pankimiʔa</u> <i>swamp country</i> K <u>tʔiŋka-a</u> <i>swamp</i>			
122.	<i>sea</i>	mawORa	M3 mowera	Y <u>mala-ʔa</u> <i>sea, salt water</i>	K <u>mawuʔa</u> <i>spirit home across the sea</i>		
123.	<i>sun</i>	tʔiRiŋaŋa	M1 tiringana M2 chirinaana M3 ger-nung-ah	Y <u>waʔku-wa</u>			
124.	<i>moon (a)</i>	palajaʔi	M1 ballanichi M3 balung-a-gee	Y <u>wallaʔa</u>	K <u>palu-tiinta</u> <i>new moon</i>		The K term has the etymology <i>sitter in the west</i> . M would be cognate if it were a compound including pala- west.
125.	<i>moon (b) (prob. star)</i>	piRiŋ(k)a (piŋiŋka)	M2 biringa	Y <u>kuʔupa</u>	K <u>piŋiŋka</u> <i>lightning</i>		
126.	<i>star (a)</i>		M1 barinia M3 bringah				
127.	<i>star (b) (poss. sky)</i>	TaLaLa (ʔalala)	M2 tulula	"	Y <u>ʔaʔaʔa</u> <i>sky</i>		
128.	<i>thunder</i>	piʔimaRa(-Ta)	M2 birdmirra M3 bidie-mur-ah-dah	Y <u>piʔimaraʔa</u>			
129.	<i>wind</i>	waRmaRa (waʔmara)	M1 wirramirra M2 wormora	Y <u>waʔmara</u>			
130.	<i>rain</i>	puLuLaŋ(k)ana	M1 boollolungana	Y <u>wun-ta</u>			

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
131.	<i>day</i> (a)	palmanmaLa- maLa	M1 balman-malla- malla	Y waʔku-wa <i>day, sun</i>	K <u>palmpimaʔa</u> 'til to- morrow		
132.	<i>day</i> (b)	yinaŋtʔi	M3 yernungie	Y waʔku-wa			
133.	<i>today</i>	yanaNiŋ(k)a, yanaLiŋ(k)a	M2 yanalinga <i>day</i> ; <i>today</i> M1 yanalinga <i>today</i>	Y <u>yan-ta</u> <i>now, today</i>			
134.	<i>night</i> (a)	miLiმაჲ	M1 millimarda	Y ŋimi-ya			
135.	<i>night</i> (b)	kawuNTi	M2 kowoondi M3 cowandee	"			
136.	<i>yesterday</i> (a)	kawuNTiwa	M1 kouondua	Y paʔuŋʔa-ya Y1 kawuNTuwa			Final -iwa can easily be heard as -uwa. cf item 139, tomorrow.
137.	<i>yesterday</i> (b)	yaluNTay	M2 yalundie	*Y <u>yalunta</u> <i>sunset</i>			Curr 'Yangarella' kouondua Y root hypothesised to account for attested yaluntawaʔa <i>get dark, late</i> ; -waʔa is the inchoative verbaliser.
138.	<i>dawn</i>	ŋaNaRaNa or yuNaRaNa	M3 unar-a-nah	Y yalalu			
139.	<i>tomorrow</i>	kawuNTu, kawuNTuŋ(k)- aRa	M2 kowoondoo M1 kaontoongara	Y palmpi-ya			
140.	<i>by-and-by</i>	kiTaNTa ŋaʔa	M1 gedanda niadja	Y —			

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
141.	<i>cold</i>	KuRiNa (<i>ruřina</i>)	M2 goorina M1 woorine	No Y word Y1 kuRinta K <u>ruřinta</u>			Curr 'Yangarella' goorinda. The conflicting initials M1 w and M2g would be explained by an initial ŋ. I assume the M1 final sequence -ine is, except-ionally, /ina/ or alternatively, it represents quite a different word — /wuRaŋ/.
142.	<i>good</i>	puRuka	M1 boorooga M2 poorooga M3 boorooga	Y miřa-řa			
143.	<i>bad</i>	TuRka	M1 toorka M3 doorgah	Y piři-ya			
144.	<i>big (a)</i>	puLaNa	M2 poolana	Y pařaŋu	Y <u>pulupulu</u> <i>baby</i>		Note that 144 and 145, if truly cognate with YUK, share the same antonymic shift, <i>little/ baby</i> > <i>big</i> .
145.	<i>big (b)</i>	kuNamiRa (<i>kun'amifa</i>)	M1 koonamerra	.	Y, K, Y1 <u>kun'amifa</u> <i>tiny</i>		
146.	<i>little</i> (also <i>baby</i> , No. 11)	pilt'inkuRa	M1 bilgingoora M2 pilgingoora	Y kun'a-řa			
147.	<i>dead, rotten</i>	pukayaNa, puka	M1 bookiana M2 pooga <i>dead, bad</i>	Y <u>puka-řa</u>		CA puka <i>rotten</i>	
148.	<i>sweet</i>	kaRaLkaRaLa	M1 karal-karella	Y —			
149.	<i>one</i>	t'uwaRn'u~ t'uwaLn'u	M1 tualnu M2 choarng-ngo M3 ju-un-you	Y t'ařa-řa			
150.	<i>two</i>	Tikin'a	M1 digana M2 tigina M3 tick-in-yah	Y kiyařŋ-ka			

No.	Meaning	Minkan	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
151.	<i>three</i>	Tant'ilta	M1 tangilla M2 tarngiltna M3 tan-gil-ah	Y2 tamt'ilta		Curr 'Yangarella' tamgilda	
152.	<i>four</i>	Tikintal'u- TuwaL'u, Tikint'aLin'a	M1 ticantallio-duallio M3 tick-in-yel-in-yah	Y — K kiyaŋka-kiyaŋka			
153.	<i>plenty, many (a)</i>	yunkuna	M1 yonkoona	Y nuʒa-ra			
154.	<i>plenty, many (b)</i>	wan(a)puRa	M2 wonapoorā M3 wamburah				
155.	<i>none, no (a)</i>	wiŋiŋa	M1 wirninga	Y wajiŋa			
156.	<i>none, no (b)</i>	Wawiŋa	M3 owing-ah	"			If -iŋa is a privative suffix, then 155 and 156 may be reconciled as referring to different lacks – of wiŋ- and of Waw-.Alternatively, w in M3 results from misreading of n and both are wVŋiŋa.
157.	<i>any</i>	waNTini	M3 wan-din-ee	Y —			
158.	<i>some</i>	t'iiliŋa	M3 jeling-ah	Y — K t'anjka:			
159.	<i>same</i>	maŋʔan'i	M3 mun-d'thun-yee	Y — K ŋi:ta			
160.	<i>other</i>	t'awuNiliŋa	M3 jour-nel-ing-ah	Y —	*Y t'awi- other, foreign		*Y t'awi- is hypothesised on the basis of attested t'awiyalaʒa spit out (foreign body). X-yalaʒa verbs generally mean do as one does with an X.

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
161.	<i>to walk (a)</i>	yaNkiya	M1 yankia	Y waŋa-tʼa		PG yanka	
162.	<i>to walk (M2), go (M3)</i>	yapu	M2 yappoo	Y ʃaa-ʃa <i>go walkabout</i>			
163.	<i>to run</i>	Taŋaŋʼi	M3 yab-oo	Y tʼawi-tʼa <i>run, run away</i>			
164.	<i>to go away</i>	tʼawuyu	M3 jah-oh-yon	Y tʼawl-tʼa <i>run away</i>			
165.	<i>to come here</i>	ŋaŋʼa	M1 nidja	Y ʃa:liŋʼa <i>come, come here</i>			
			M3 gnad-jah				
166.	<i>to sit (a)</i>	Ninʼa	M1 ninya	Y ʃi:tʼa, wiʃitʼa		PPN NHi- PG ni-	
167.	<i>to sit (b)</i>	kuNuyu	M2 koonooyoo	" "			
168.	<i>to take</i>	kawapa	M3 cow-ab-ah	{ Y kaŋma-ʃa <i>hold</i>		PPN kaa-ŋ, PG ka-ŋ	
169.	<i>to hold</i>	ninapa	M3 ning-ab-ah	{ Y kaŋŋi-tʼa <i>hold, grasp</i>			
170.	<i>to let him go</i>	yiŋayaNkipa	M3 yerlie-an-gib-ah	Y ʃana-ʃa			Probably comprises a particle yiŋa <i>o.k./do it</i> plus a hortatively inflected form of yanki-, or yankipa is a derived causative; see Verbs.
171.	<i>to give</i>	wuNapa	M3 on-ab-ah	Y wuu-tʼa			
172.	<i>to burn with fire</i>	Nalapa	M3 nullabah	Y kaŋa-tʼa	Y ŋaŋaŋa <i>hot</i>		
173.	<i>to make</i>	piŋimapa	M3 burdi-mup-er	Y miŋalaŋa	Y piŋi- <i>bad</i>		If we assume antonymic shift from <i>bad</i> to <i>good</i> , piŋimapa could be the factitive verb from <i>good</i> . <i>Make good</i> is a common etymology for <i>make</i> .

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
174.	<i>to sleep</i>	yur(k)uyu	M1 yongoyou M2 yungooyoo	K <u>yirwi-t'a</u> <i>sleep</i>		PPN ru-n'wun, PG yu-ŋ	
175.	<i>to die</i>	yuRpiyu	M3 iur beyoo	Y pukawaŋa			
176.	<i>to live</i>	piRit'in'a	M3 bray-gin-yah	Y — K <u>pir'i-t'a</u> <i>be alive</i>			
177.	<i>to eat</i>	TayaTaya TaRa	M1 tiehtie M2 tara M2 chi-chi <i>drink</i>	Y <u>t'ya-t'a</u>		PPN DHa-l, PG jaraŋ, jal	It is common for there to be a general verb <i>ingest</i> , and it is likely that M1 tiehtie and M2 chi-chi are transcriptions of the same word. M2 tara may be another inflected form.
178.	<i>to drink</i>	WawunTini	M1 owondinny	Y kuŋama-t'a			
179.	<i>to speak</i>	wat'i	M3 wadgee	Y kampuŋi-t'a		KUK wat'a-ŋi <i>say</i>	
180.	<i>to see</i>	Nawapa	M1 nowaba M3 now-aba	Y kuŋi-t'a		PPN NHaa-ŋ, PG na-ŋ	
181.	<i>to feel</i>	(yu)wiŋapa	M3 wing-ab-ah	K puŋm'i-t'a <i>feel around</i>	Y <u>yurwi-t'a</u> <i>move out of sight</i>		
182.	<i>to hear</i>	(yu)wiŋ't'in-ta(R)wat'iNa	M3 wing-jin-dur-wad-gin-ah	Y mafi-t'a			
183.	<i>to know</i>	mit'il-maRa	M3 midjil-murah	Y — K muŋuŋu			Clearly a compound nominal, 'eye-ear' (cf 29, 30).
184.	<i>yes</i> (for no see 155-156)	Niya (ŋiya)	M1 ne-a	Y ŋi			

No.	Meaning	Minkin	Sources	Yukulta or other Tangkic equivalent	Other possible Tangkic cognate	Non-Tangkic cognate	Comments
185.	Others: <i>'Name of a place where the being camped'</i>	maalpay or maalpi	M3 maal-bi				
186.	<i>Marriage class A (male)</i>	LiyaRaNu	M4 lear-a-noo				
187.	<i>Marriage class C (female, marries A)</i>	kaŋila	M4 gung-eel-ah	L kaŋala		Form kaŋila is widespread in northern subsection systems.	
188.	<i>Marriage class B (male, marries D)</i>	kayaLOLa	M4 kyar-lul-ah				
189.	<i>Marriage class D (female, marries B)</i>	ŋaŋit'palanji	M4 mari-bul-ung-eh	L ŋaŋit'palanji		Form ŋaŋit'palan is widespread in northern subsection systems.	
190.	Sentences: <i>Where are the blacks?</i>	a) TaŋaŋaRa komu? b) TaŋaŋaRa miŋ(k)u	M1 darne nar kommo M2 tano ara mingoo	See 2.			Prob. TaŋaŋaRa <i>where</i> plus variant words for <i>Aborigines</i> — miŋ(k)u and komu. Neither are cognate with lexemes #1-5. Only kuŋa <i>ground</i> (#118), prob. also <i>place</i> , is identifiable.
191.	<i>I don't know</i>	waNTaŋ Naŋ(k)i kuŋa/ waNTaŋ Naŋ'it'i kuŋa	M1 wandong nangy goorda				

<p>1. The first mention of the name of the county is found in the Domesday Book, where it is given as "Berkeshamre".</p>	<p>2. The name of the county is derived from the Saxon word "berc", which means a hedge or enclosure, and "ham", which means a home or dwelling.</p>	<p>3. The county of Berkshire is one of the most fertile in England, and is well watered by the River Thames.</p>	<p>4. The county of Berkshire is bounded by the counties of Oxfordshire, Gloucestershire, Wiltshire, and Surrey.</p>	<p>5. The county of Berkshire is divided into several parishes, and is governed by a county council.</p>	<p>6. The county of Berkshire is one of the most beautiful in England, and is well worth a visit.</p>	<p>7. The county of Berkshire is one of the most important in England, and is well worth a visit.</p>
<p>8. The county of Berkshire is one of the most fertile in England, and is well watered by the River Thames.</p>	<p>9. The county of Berkshire is bounded by the counties of Oxfordshire, Gloucestershire, Wiltshire, and Surrey.</p>	<p>10. The county of Berkshire is divided into several parishes, and is governed by a county council.</p>	<p>11. The county of Berkshire is one of the most beautiful in England, and is well worth a visit.</p>	<p>12. The county of Berkshire is one of the most important in England, and is well worth a visit.</p>	<p>13. The county of Berkshire is one of the most fertile in England, and is well watered by the River Thames.</p>	<p>14. The county of Berkshire is bounded by the counties of Oxfordshire, Gloucestershire, Wiltshire, and Surrey.</p>
<p>15. The county of Berkshire is divided into several parishes, and is governed by a county council.</p>	<p>16. The county of Berkshire is one of the most beautiful in England, and is well worth a visit.</p>	<p>17. The county of Berkshire is one of the most important in England, and is well worth a visit.</p>	<p>18. The county of Berkshire is one of the most fertile in England, and is well watered by the River Thames.</p>	<p>19. The county of Berkshire is bounded by the counties of Oxfordshire, Gloucestershire, Wiltshire, and Surrey.</p>	<p>20. The county of Berkshire is divided into several parishes, and is governed by a county council.</p>	<p>21. The county of Berkshire is one of the most beautiful in England, and is well worth a visit.</p>
<p>22. The county of Berkshire is one of the most important in England, and is well worth a visit.</p>	<p>23. The county of Berkshire is one of the most fertile in England, and is well watered by the River Thames.</p>	<p>24. The county of Berkshire is bounded by the counties of Oxfordshire, Gloucestershire, Wiltshire, and Surrey.</p>	<p>25. The county of Berkshire is divided into several parishes, and is governed by a county council.</p>	<p>26. The county of Berkshire is one of the most beautiful in England, and is well worth a visit.</p>	<p>27. The county of Berkshire is one of the most important in England, and is well worth a visit.</p>	<p>28. The county of Berkshire is one of the most fertile in England, and is well watered by the River Thames.</p>
<p>29. The county of Berkshire is bounded by the counties of Oxfordshire, Gloucestershire, Wiltshire, and Surrey.</p>	<p>30. The county of Berkshire is divided into several parishes, and is governed by a county council.</p>	<p>31. The county of Berkshire is one of the most beautiful in England, and is well worth a visit.</p>	<p>32. The county of Berkshire is one of the most important in England, and is well worth a visit.</p>	<p>33. The county of Berkshire is one of the most fertile in England, and is well watered by the River Thames.</p>	<p>34. The county of Berkshire is bounded by the counties of Oxfordshire, Gloucestershire, Wiltshire, and Surrey.</p>	<p>35. The county of Berkshire is divided into several parishes, and is governed by a county council.</p>
<p>36. The county of Berkshire is one of the most beautiful in England, and is well worth a visit.</p>	<p>37. The county of Berkshire is one of the most important in England, and is well worth a visit.</p>	<p>38. The county of Berkshire is one of the most fertile in England, and is well watered by the River Thames.</p>	<p>39. The county of Berkshire is bounded by the counties of Oxfordshire, Gloucestershire, Wiltshire, and Surrey.</p>	<p>40. The county of Berkshire is divided into several parishes, and is governed by a county council.</p>	<p>41. The county of Berkshire is one of the most beautiful in England, and is well worth a visit.</p>	<p>42. The county of Berkshire is one of the most important in England, and is well worth a visit.</p>
<p>43. The county of Berkshire is one of the most fertile in England, and is well watered by the River Thames.</p>	<p>44. The county of Berkshire is bounded by the counties of Oxfordshire, Gloucestershire, Wiltshire, and Surrey.</p>	<p>45. The county of Berkshire is divided into several parishes, and is governed by a county council.</p>	<p>46. The county of Berkshire is one of the most beautiful in England, and is well worth a visit.</p>	<p>47. The county of Berkshire is one of the most important in England, and is well worth a visit.</p>	<p>48. The county of Berkshire is one of the most fertile in England, and is well watered by the River Thames.</p>	<p>49. The county of Berkshire is bounded by the counties of Oxfordshire, Gloucestershire, Wiltshire, and Surrey.</p>

PAMA-NYUNGAN: THE TIP OF THE LEXICAL ICEBERG

Geoffrey N. O'Grady

This contribution arose out of the wish to demonstrate, if possible, that ultimately the roster of Proto-Pama-Nyungan and sub-PPN reconstructions will run to a four-digit figure. This estimate is arrived at in the following way.

We choose to reconstruct just those forms whose initial consonant was *p, followed by the low vowel *a. Thus the following pages contain 170 putative cognate sets with original initial *pa. Suppose now, for a moment, that only 50% of these are ultimately deemed plausible by a consensus of comparativists. Suppose further, however, that the surviving 85 sets represent only one-half of the actual roster of viable sub-PPN reconstructions in *pa- which a large, well-coordinated team of adequately funded comparativists could ultimately assemble, utilising state-of-the-art computer technology.

It is reasonably clear that PPN starred forms in *pa- will account for approximately one-fourteenth of a full-blown roster of PPN reconstructions. It follows from the above, therefore, that $\text{ca. } \frac{170}{1} \times \frac{50}{100} \times \frac{100}{50} \times \frac{14}{1} = 2,380$ viable PPN and sub-PPN cognate sets would ultimately emerge. This figure would put Pama-Nyungan on an entirely comparable footing to families such as Austronesian, Indo-European and Algonkian with respect to the breadth and depth of coverage of the ancestral lexicon.

Proto-languages drawn on in the assembling of the 170 putative cognate sets in *pa- which are presented below are Proto-Pamic, Proto-Ngayarda, Proto-Kanyara, Proto-Mantharda and Proto-Northern New South Wales, as well as Capell's (1956) Common Australian and Dixon's (1980) Proto-Australian. Languages drawn on are Nyangumarta, Warlpiri, Pintupi, Gawurna, Pankarla, Nyungar (Inland), Wadjuk, Ngarluma, Yindjibarndi, Bayungu, Gupapuyngu, Ritharngu, Lardil, Kala Lagaw Ya, Umpila, Wik Mungkan, Guugu Yimidhirr, Yidiny, Dyirbal, Wargamay, Gidabal, Waalubal, Gumbaynggir, 'Gippsland', Madimadi, Djadjala, Diyari, Wembawemba, Bāgandji and Ngiyambaa. This particular sequencing is intended to reflect our notions concerning relative genetic distances. Thus Warlpiri is listed immediately after Nyangumarta because Kenneth Hale and the writer see these two languages as belonging to a northern tier of Desert Nyungic as opposed to a southern tier comprising Pintupi and its immediate congeners. Similarly, Bayungu is listed next to Gupapuyngu (and Ritharngu) to reflect our long-held belief that the Kanyara and Yuulngic languages are especially close genetically, though remote from each other in geographical space.

In the case of very closely related communalects such as Pintupi and Yurlbaridja in the Western Desert, the former is normally drawn on for comparison simply because of its larger database. Yurlbaridja forms are given only when they shed further useful light. Pintupi is thus to be seen as a 'witness' language. Likewise, Gidabal stands as witness language for the putative Bandjalangic Group of Pama-Nyungan, so that Bandjalang and Waalubal forms are cited only when they shed light not provided by Gidabal.

P1 PPN *pa₁ Deic *that; that way, thither.*

Perh ult rel to *pa₂.

Lgs: 30.

1. Root form in GAW PA *he, she, it; him ...* (ABS form of 3SG pronoun); KLY PA *prefix indicating motion away or outward from speaker* (< 'thither'; cf PIN *ma*, below).

2. Suffixed forms:

(a) *pa+lu *that+ERG* in NYA, PIN *pa.la that (mid-distant)*, NYA *pa.li+ny that one; he, she, it* (cf *pula+ny they DU*, NYA S *kuja.rra+ny both* (< *kuuja+rra *two*)), NYA S *pa.la.ma* (ERG form: *pa.la.ma+lu that (close)*; WRN *pa.la.warni.ny that (near)*; *he, she, it*; PIN *pa.lu.nya ~ pi.lu.nya that ... previously mentioned or understood*; OOL *pa.lu.ru he, she* (*pa.lu+mpa his, her*); GAW, PNK PA+DLO *he, she, it* (in ACTIVE, i.e. ERG form), GAW PA+DLAI+TYA (appar *pa+tla+ja*) *to him, for him*; NYU *pa.l he, she, it; that (mid-distant) person/thing*, *pa.l+ap ~ po.la+p they*, *pa.l.aj look out! beware!*; WJK BAL *he, she, it*, BAL+GUN *they*, BAL+GU+P *them*, BE.LLI.BE.LLI *on this side or that side*; VAS BAL+AL *he himself, she herself*; PNG *pa.lu (> NMA, GRY *pa.lu that (mid-distant)*; *he, she* (NOM form); NMA *pa.lu+la on him*, *pa.lu+kutha they DU (mid-distant)*; BAY *pa.la he, she*; GUP *ba.la movement away from speaker* (cf PIN *ma*, KLY PA, *ba.la.nya like this*; RIT *ba.la, ngum.ba.la that way* and possibly *baa.la.y' away, gone away*; possibly LRD *ba.lu.mben western, of the west* (< 'that way?') and KLY BAL *across* (< 'thither?'); PP *pa.lu *this way, hither* (with sem shift to the ANT of *thither*) (> UMP *pa+lu*, WMK, NGT *pa.l*, BAK *pa.le*); DYI *pa.la there (visible)* noun marker: *pa.la+n ~ pa+n* (ERG form: *pa+ngku+n*) *Noun Class II marker*, *pa.la+m ~ pa+m* (ERG: *pa+ngku+m*) *Noun Class III marker*, *pa.la ~ pa* (ERG: *pa+ngku*) *Noun Class IV marker*, *pa.l+u* (occas *pa.la+rru*) *to there (towards a place)* – the longer form implying an 'indefiniteness of locational specification' (Dixon 1972:255; for DYI *pa.l+i*, see below under *pa.la+rr*i*); DIY *pa+da there*.

(b) *pa+nya *that+ACC* in PIN *pa.nya(.pa) same ...*, *pa.ny.p.a wangka+Y+ say that which has been said*; PNK PA.NNA (appar *pa.nha*), MRN *pa.nha.rtu*, BAN *pa.nha he, she, it*; NAN *a.nha that one (far)*; *he*; YGN *pa.nya*, YGS *pi.nya that; he, she, it*; BAY *pa.nha(.mpa.ya) he, that ANAPHORIC* (Austin, p.c.); KAI *a.nh that*; LRD /*ba.nya.n dangka/ ba.nya.n+da stranger* (< 'outsider' < 'person (/dangka/) from away over yonder' – cf the semantics of PNK PADITYI(DLI), NYA *wala.nyu* and WLB *wala.ya*).

(c) *pa+la+rr*i that+LOC+ALLAT, thither*, in NYA *pa.la+rr*i thither**, but with ALLAT force lost in NYA W *pa.la.rr*i+ngi in that place (near)**; DYI *pa.la+rr*i to there (in an indefinite direction)**, *pa.l+i to there (in a specific direction)* – identified in Dixon 1972:254-255 as a reduced form of *pa.la+rr*i**.

(d) *pa+rnu *that+OBL* (certain case-forms only) in GAW PA+RNU ~ PA+RNU+KO *of him*; PNK PA+RNÜ+NTYU+RU *his*, PA+RNÜ+NTYU+DNI *of, from him*, PA+RNÜ+NTYU+DNI+NGE *with him*; PNG *pa+rnu+ *that+OBL* (> NMA, GRY pa+rnu+mpa+ngu *that ACC (mid-distant)*; *him, her*, NMA pa+rnu+mpa+ngu+tharntu *his, her*; for the etymology of +tharntu, see *jArntu).

(e) *pa+rni *that+ELAT, thence*, in GAW PA+RNI *here, hither*, PNK PA+RDNI *hither, this way*. The occurrence of reflexes of the +*rni alternant of ELAT is extremely restricted in these two languages and in Ngayarda languages and NYA. Note, e.g., YIN warta.nta+rni *from the north* (wartat *north*) vs. ngurra+ngka+ngu *camp+LOC+ELAT from the camp* where +ngu is the productive alternant of ELAT. In NYA W, +rni marks ELAT only in the two forms kaka+rni *from the east* (kaka.rra *east*) and ku+rni *from the south* (/kurila/ *kurili south*). Even then, ku+rni alternates, apparently stylistically, with kurila+ngu.

(f) Further suffixed forms in DYI pa+yi *Noun Class I marker*; GAW PAI+NTYA (appar pa+nyja) *this here, that one, there, here* (the core meaning appears to be *there*, to judge from Teichelmann and Schürmann's sentence example (1840:35) – cf GAW YAI+NTYA, below; PNK sentence-final PA.RÁ, glossed *he, she, it* in Schürmann 1844:53, but *him* in the sentence cited; PNK PA.THA(R) *there*, PA.THA+RU *thither*, PA.THI.TYE *that*. The form PA.DI.TYI(.DLI) *strange, unknown* apparently also belongs etymologically within this assemblage – witness LRD banyanda and NYA W wala.nyu, which see *infra*. The development whereby 'that' > 'strange' reflects the pan-human tendency to take a rather parochial view of the world; cf PIE *eghs *out* > Latin ex+ter+ *outward*, extrāneus *foreign, strange* and Old French estrange, Modern English strange, as well as PIE *d^hwer+ *door* > Latin for.ās *out of doors, abroad* > Late Latin forān+ > OFR forein > NE foreign. Note that PNK PATHITYE and PADITYI, above, may well represent Schürmann's valiant attempts to transcribe one and the same form – probably /pathiji/.

3. Nasal-grade forms in PIN ma *pre-verb DIRECTION indicator: away from speaker* (cf KLY PA, above); DYI M +mi *PERFECTIVE REL CL marker* (with unexplained vowel change, but paralleling that in DYI +pi, a reflex of *pa₄).

4. Suffixed nasal-grade forms:

(a) In GID ma.yu (form is *pa+lu) *there near, general area, not in sight of speaker, in context of present time*, and doublet ma.laa *that way (near, general direction)/ma.yaa that (previously near, known or presumed moved since last seen by speaker)*; WAA ma.yu *that (intermediate in distance, invisible, not formerly present)*, ma.la *that (intermediate in distance, visible, non-human)*, ma.yaa *that (distant, invisible, not formerly present)*; DJA doublet ma.luk *there – out of sight, a long way off with epenthetic k* (as also in URA, e.g. in mayik < *mayi *vegetable food*, reported in Hale 1976a) ma.yuk *over there – a long way off*; WEM ma.yo *over there, that one, very far away*, ma.la *that one over there, that one quite a long way off, in space or in time* (occurring as ma.lu in one song), ma.la+nga *there, a long way away*.

(b) In WEM ma.nya (for *pa+nya) *that, that one, that one some distance away and out of sight*.

(c) In WEM ma.rr.ka *that other one, some distance away* (Hercus 1969:59), and cited on p. 253 of her work as marrku *that (other) one; Demonstrative pronoun of distance (rare)*.

5. Suffixed IS-grade ERG form **wa+lu* in NYA W *wa.la.nyu stranger; foreign* (cf LRD *banyanda*, PNK *PADITYI(DLI)*, above); WLB *wa.la.ya sea* (< *'that (water) yonder'*); YIN *wa.la that near; he, she, it*; GUP *wa.la.la they PL*.
6. Probable early ID-grade by-form **ya*, evolving semantically into a PROXIMAL deictic, in GAW *IA* (appar *ya*) *this*; YDN *yu+ T INVISIBLE, C yonder VISIBLE* is possibly an outgrowth of **ya* showing symbolic vowel change. It appears more plausible, however, to count it as a direct or indirect (borrowed) reflex of a further ancestral deictic, **nyu*, posited by Dixon (1980:358ff). This may well have entered YDN as a loan from one of the members of the north-east Queensland *Sprachbund* in which pronominals, at least, have been affected by the development **ny- > y*, as in **nyun+tu you SG+ERG > GYA yun.tu you SG* and **nyurra you PL > GYA yurra* (other reflexes of **nyu* include NYA *nyu.ngu this* and PP **nyu.lu* (OBL: **nyu+nga+*), WRG *nyu.nga*, WAA *nyu.la 3 SG* as well as WEM *nyu.la this one now*).
7. Suffixed ID-grade by-forms:
 - (a) **ya+lu this+ERG* in WLB *ya.lu.mpu that near; there (near you)*, *ya.li that removed* (with obscurely altered vocalism), *ya.la.rni that removed (indefinite or invisible location)*; PIN *ya.la+ngaa.ja this close object previously mentioned*, *ya.la+pa.la.ja that mid-distant object previously mentioned*, *ya.la+nyarra.ja that distant object previously mentioned*; NYU *a.li(.wa) look out!, look there (distant)!*; WJK *A.LLI(JA) it; that is it*; BAY *yu+lu, THR yu+du this+ERG*, and BAY *yi.la that*; DYI *ya.la here (visible) noun marker*, reduced to *ya+* in such forms as *ya+ngku+n*, the ERG/INSTR form of the Noun Class II marker in this paradigm; DYI *D Guwal/M Dyalnguy ya.la+ma+L, M Guwal/D Dyalnguy ya.la+pa+L* (transitive adverbial) *to do like this*; NGI *ya.laa thus*.
 - (b) **ya+nya (> *yi+nya this+ACC* in WLB antonymous form *yi.nya that beyond*; GAW *I.NNA+KO* (appar *i.nha+ku*) of this; BAY, THR *yi.nha this*; KLY *I.NA i.na this, here – of female and large things* (cf *I.NU i.nu this, here – of male and small things*, conceivably with symbolically differing vocalism); WMK *i.n this*.
 - (c) **ya+rnu this+OBL* in BAY, THR *yu+rnu* with this function and referent (see also above at **pa+rnu*).
 - (d) **ya+ngku/*ya+ku*, with old ERG variant (or semantically contentless suffix?), in WLB *ya.ngka the, that evocative – i.e., the one you know about*; PIN *ya.ka over there, straight ahead*; RIT *ya.ku this* (cf *yi.ki that (immediate)*); YDN *C yi.ngku here*.
 - (e) **ya+ngu this+POSS* in YDN *C yi.ngu this*; WEM *yi.nga this way*.
 - (f) **ya.nyju*, conceivably *this nearby*, in GAW *YA+INTYA* (appar *ya+nyja*) *here* (Teichelmann and Schürmann 1840:35). The spelling with <Y> leads one to interpret the authors' *IA this*, above, as *ya* rather than, say, **iya*; YIN *yi.nyja.a alike ('close in appearance')* and possibly the first element in the name *Yindji.barndi*; THL *yi.nhtha.nyi close*; UMP *yi.nyju near*, with cliticised by-form *+inyju*; YDN *yi+nyju this (human, OBL)*; DYI *yi.nyja not yet (although expected)*, a sense which is widely expressed in Australian creoles as *close up* or *very near*.
 - (g) **ya+ja this+PERT*, i.e. *of/from this (place, time)*, hence *the here and now, actual, true, proper*, in NYA *yija S certainly, truly, W true, indeed, real, actual* and cliticised NYA *W /#yija/ +yiji ~ +iji truly, very*; WLB *yija.rdu true*; GAW *YAITYA* (appar *yaja*) *proper; own; native*;

fresh; NMA yija.la *now, today*, yija+ngu *new*.; BGU yanja(n) *really, indeed*. See also at *+paju.

8. Cliticised form in NYA #pa₁ *REL CLAUSE marker*, parallel etymologically to English *that* as in *I saw the dog that bit you*; NGI +pa *SUBORDINATION marker* (cf NE *that* in *I said that it would bite you*).
9. Cliticised IS-grade form in NGI +wa *further* (< '*that way*'), forming a doublet with +pa, above; DIY +wa *distant* (cf DIY +ya₁, below).
10. Cliticised ID-grade form in DIY +ya₁ *NEAR*, forming a doublet with +wa, above. Note also *pa₄ > DIY ya *and* and *pa₆ > DIY +ya₂ *DUBIT*.

P2 PPN *pa₂ Interj *away! let's be off!*

Perh ult rel to *pa₁.

Lgs: 30.

1. Root form in NYA W pa! *let's make a start! let's go!*; KLY PA! *go away! be off!*; possibly symbolically altered variant in GUM puu! *go on!* (Eades 1979:349).
2. Suffixed forms in PNK PA.RU.PÀ *very well, do so*; YIN pa.rra₂, pa.rra.yi *go on!, go do it!* (Wordick 1982).
3. Nasal-grade form in GUP ma'! *get on with it!*; YIM ma! *now! good! ready! let's go!*
4. Suffixed nasal-grade form in DIY ma.yi! *well then! all right!* See also *pa₅.

P3 PPN *pa₃ Interj *Exclamation of surprise.*

Lgs: 30.

1. Root form in NYA S pa! *oops! sorry! apology!*; PNK PÀ, PÀ *hush, hst!*
2. Suffixed forms in GAW PA.IA *interj. expressive of wonder or astonishment*; GUM paa.li₁ *exclamation of surprise ...* (see GUM paa.li₂ at *pa₆; WEM pa.rra.yi! *well! exclamation of pleasure and surprise; exclamation calling for attention*).
3. Suffixed nasal-grade form in DYI ma.li! *exclamation of joy when food or drink is coming*.
4. IS- and ID-grade forms in GID wa! ~ a! *exclamation of mild surprise, Oh!*; GUM wo'! ~ 'o'! *Well!, all right! – expresses surprise, or willingness to perform some order* (Smythe 1948:62); NGI IS-grade form waa! *expression of dismay* and cliticised by-form +waa *EXCLAMATIVE marker*.
5. Suffixed ID-grade form in PIN ya.la! *expression of surprise or agreement*.

P4 PPN *pa₄ Part *and*

Lgs: 30.

1. Root form in GRJ, WIR, MDI, DJA, WEM, ARW *pa and*; conceivably KLY BA *INCOMPLETE ACTION*. Beyond Pama-Nyungan looms a *pa* connective in Mawng, which is used specifically in the conjoining of clauses (Capell and Hinch 1970:91); it appears to be one of the rare putatively cognate elements shared by Mawng with PMN languages.
2. Suffixed forms in THR *pa.rru and*; GUP doublet *bi.li₁ and, because ...* (see GUP *bi.li₂* at **pa₆*) and *bu.lu more, again, then*; RIT *bu.lu again, but*; LRD *ba.na and; also, as well, in addition, too; including*; WMK *pu.th and*; and GUM BA.IA *until, in order that* (Latin *ut*).
3. Nasal-grade form in a handful of ARW fixed locutions, e.g. *tharra+ma+tharra two+AND+two, four*.
4. Suffixed nasal-grade form in WLB *ma.nu and, (inclusive) or*; PIT *ma.thu too*; YIN *mu.ntu, NGI mi.ntii and*.
5. Suffixed IS-grade form in WJK *WE.R and; also*.
6. ID-grade forms in DIY *ya and* (with which cf. DIY *+ya₁ near* < **pa₁* and *+ya₂ DUBIT* < **pa₆*); possibly KLY A *a and* (the latter then forming a doublet with KLY BA, above). It is also possible that the source of these two forms is a **ka* particle – itself perhaps ultimately related to **pa₄*; alternatively, KLY A *a* could have its origin in a Papuan language such as Miriam, Bugi or Kiwai, in each of which a particle A *and* is attested (Ray 1907b).
7. Cliticised form in NYA #*pa₂ and*; YDN *+pa one of a group of people* – [+human] noun coordinator, apparently forming a doublet with YDN *+pi another*; DYI *+pi too* (likewise with unexplained vowel change, but see DYI M *+mi* at **pa₁*); BNJ *+pa increased length of action* (cf. the use of NE *and* in *he ran and ran*).
8. Suffixed cliticised form in GID *+pa.n also*.
9. Fossilised cliticised form in a number of secondary pronominal formations (but see also at **pa₅*):
 - (a) In **ngali+pa*, originally *we DU INCL+and*, i.e. *we PL INCL*, appearing in this sense in WLB *ngali.pa* (which is in turn cliticised in the object-dative counterpart *+ngal+pa*) and in KLY NGAL.PA *ngal.pa*, as well as in nasal-grade form in RIT *ngali.ma and*, probably, GUP *ngali.mu.rru* (< **ngali.ma.rru*). It is possible that in the case of KLY, for example, independent and parallel developments are involved. In any event, it is evident that reflexes of **ngali+pa* have superseded PPN **nganyju we PL INCL* during the evolution of these languages, since the latter is represented in a wide scatter of PMN tongues – witness NYA /*nganyjurra/ nganyjurru* and NGL *nganyjarra* in the west, and YDN *nganyji* in the east (NGT *ngantha.na* answers to *we PL EXCL*). Note, further, our proposal (O'Grady 1981a and *infra*) that **ngali* is *itself* the product of cliticisation: at the very dawn of Pama-Nyungan history, conceivably 3,500-4,000 years ago, a combination of the extremely archaic Australian first person singular base **nga(y)* and a pronoun-conjoining particle **li* came to be the preferred way of expressing *we two*. The compound **nga+li I+and (thou)* later came to be reanalysed as a unitary morpheme. The erstwhile independent existence of **li* is still attested in Mawng.
 - (b) In quite modern times, an entirely comparable process has operated in YDN, but involving the second person SG pronoun **nyun.tu* – which itself contains a long-since fossilised ERG

case suffix allomorph **+tu*: *nyun.tuu+pa* is now the normal second person non-singular pronoun in this language, replacing a reflex of earlier **nyurra* (Dixon 1977:176-177).

(c) In early KLY there existed alongside **nga.li.pa* (> modern *nga.l.pa*) a first person PL EXCL form **nga.li.pa+ju*, with exclusivising suffix **+ju* (cf YUL *+ju*, WRN *+ja* and THR *+yi*, which function in this role). Subsequently, **nga.li.pa+ju* evolved through several stages into NGA.L.BA.I *nga.l.ba.y*. Semantically, meanwhile, speakers adapted this form to the sense *we DUAL EXCL*. And correspondingly, **nga.li* evolved into NGOI *ngoey we PL EXCL*. That KLY *ngoey* is indeed the reflex of **nga.li* is seen in its OBL form *ngoel+ma* (< **nga.li+ma+*), in which **l* was protected from palatalisation. Semantically, these developments brought about a need for a new first person DU INCL form. In the modern language, this is embodied in the pronoun NGABA *ngaba*, whose history apparently involved the following developments:

- (i) A further PPN first person PL pronoun, **ngana*, came to be marked for emphasis in north-eastern Australia (along with several other pronouns) with a reflex of **pa₅* (q.v.), so that the form **ngana+pa* resulted.
- (ii) In Pamic, or possibly in a common ancestor of Pamic and KLY, **ngana.pa* evolved through a **ngan.pa* stage to **ngam.pa*, which stands as Hale's reconstruction (1976c:57) of one of the two alternants of the PP first person PL INCL pronoun.
- (iii) Either directly, or through borrowing, this later became subject to the voicing rule of KLY which affected stops following nasals (**ngam.pa* > **ngam.ba*), as well as to the subsequent nasal-deleting rule (**ngam.ba* > *nga.ba*). Semantically, *nga.ba* was reanalysed as a first person DU INCL pronoun. The phonological development is matched in PPN **mungka anthill* > KLY MUGU /mugu/ muugu (in which **m* inhibited the breaking of **u*), and in PPN **kumpu seat, buttocks* > KLY KOB /koewbu/ koewbu *tail* (borrowed by Miriam as KEUP).
- (iv) A comparable example of pronominal semantic interchange in a PMN language is evident in Yuulngu, where GUP, RIT *ngarra I* has clearly usurped the role played earlier by *ngayi he, she* (< PPN **ngayu* < PA **ngay I*, the latter cited in Dixon 1980:339ff). YUU *ngarra* is the result of reanalysis, through paradigm pressure from other first person forms, of **nyarrang*, a deictic with reflexes including NYA, PIN *nyarra that (distant)* and GUM *yarrang there (not very far), that, the* (Smythe 1948:145), *there, that* (Eades 1979:354).

P5 PPN **pa₅* Part *EMPHASIS/INTENSITY* marker

See also **+paju*.

Lgs: 30.

1. Root form in YIM *pa₁ ...EMPH particle* (see YIM *pa₂* at **pa₆*).
2. Cliticised form in PNK *+PA very*; YIN *+pa EMPH clitic ...* (Wordick 1982); BNJ *+pa(a) ~ +mpa EMPH particle* and possibly GID *+pee MILD INTENSIFIER; very, only*; BNJ *+pe INTENSIVE particle*, apparently forming a doublet with the foregoing (but see also at **+paju*); GUM *+pu STRENGTHENING particle* (Smythe 1948, Eades 1979); BGU *+pu EMPH suffix*; NGI *+paa ASSERTION marker* (but note also NGI *+para CATEGORIAL ASSERTION marker*).

3. Suffixed cliticised forms in WJK +BA.K *indeed, very*; DYI +pa.n *EMPH marker*.
4. Suffixed nasal-grade cliticised form in DIY +ma.yi *EMPH suffix*. This is possibly a by-form of DIY ma.yi (see *pa₂). The correct etymological assignment of the latter should perhaps rather be as a reflex of *pa₅ also.
5. Suffixed IS-grade cliticised form in GID +waa.rr *but* and BNJ +wa.rr *EMPH particle* (but see at *ka for a possible alternative etymology).
6. As one of the true 'Devonian rocks' of Australian comparative linguistics, *pa₅ also had a PMN (and, in fact, pre-PMN) history as an element which was cliticised on to the extremely archaic Australian pronoun *nga(y) *I*. Thirty years ago Capell detected the presence of ngapi and ngapa first person singular forms in the extreme north and extreme south of Australia; note, for example, MAW nga.pi *I* (Capell and Hinch 1970), BAA ngapa *I* (Hercus 1982) and YAR nga.pi *I(S function)* (Dixon 1980:366, citing McDonald 1977). A clue to the history of these forms in MAW is afforded by an emphasising particle, apa, which also appears in this language in a cliticised variant, +pa, as in nuyi+pa *you SG+EMPH, you!*. It appears that cognates of PPN *pa₄ and of PPN *pa₅ have survived into modern MAW with their separate identities intact.
7. The element *pa₅ also occurs as a fossilised extension of the monosyllabic consonant-final S-function PPN pronoun *nyun *you SG* in NGL nyin.pa and DYI G ngin.pa (the corresponding A-function forms in these languages are: NGL nyin.ta, DYI G ngin.ta. A comparable extension to the S-function first person SG pronoun gives DYI G ngay.pa, while in NGL we have ngaya in this function. That the pressure in PMN towards the rightward extension of pronominals via a reflex of *pa₅ has continued into modern times is dramatically highlighted in URA, for which Hale (1976a:45-46) reports the *optional* use of +ba on all vowel-final nominative pronouns, as in ay.u(.ba) *I* and an.tu(.ba) *you SG* (the latter from old PPN ERG form *nyun+tu, with a replacing *u by analogy to *ngayu, *ngali, etc.).
8. In NYA, *pa₅ is attested in a phonologised role, whereby an epenthetic /pa/ syllable has the effect of obviating non-permitted clusters such as *nrn, *nl, etc. Compare, e.g., NYA W /kampa+rna+n+rna+ngu#ra/ *cook+PAST+2 SG+REFL+OBL+PURP, you SG cooked it for yourself*, realised on the surface as kambarnanbarnanga, with /kampa+rna#pula+rna+ngu#ra/ *they DU cooked it for themselves*, pronounced as kambarnabulurnunga (Hoard and O'Grady 1976). In languages such as NYA and YUL, words can end with a closed syllable, as in YUL miparr *face* (of which the dative case-form is miparr+ku). In PIN, YGS and YGN, such forms are terminated in the ABSOLUTE with the syllable pa, as PIN miparr+pa *face* (DAT as in YUL, above).

Dixon (1980:209-210), citing Hale, points out that in WLB erasure of the morpheme boundary preceding epenthetic pa has taken place, so that the forms in this language corresponding to the above are miparr.pa and miparr.pa+ku. Phonologised reflexes of *pa₅ also appear in the ABS form of underlyingly consonant-final nominals in THR – as ma following nasals and as pa elsewhere: thadany+ma *tongue (ABS)* (with *l > d, as detailed in Austin 1981b) and warany+ma *vegetable food (ABS)* (PPN *maara), but pawurr+pa *cicatrices (ABS)* (PPN *pawu+L). For further detail, see Klokeid (1969).

In GAW and PNK, no reflex of *pa₅ appears to have survived. In these two languages, a constraint whereby every word must end with a vowel has been satisfied by the use of totally

different strategies: in GAW, the addition of a has resulted in the development *jarlany *tongue* > TADLANY.A (appar thatlany.a), while in PNK fronting, apocope and IS have produced the reflex YARLI yarli.

In NGI, a +pa+L syllable appears in all the stems of transitivised Y-conjugation verbs, as in yunga+Y+pa+L *to cry at* (< PPN *runga+Y *to cry, howl*). Donaldson (1980:163) raises the question as to whether this pa is epenthetically derived. In the interpretation followed herein, it is taken to be a cognate, e.g., of BAN +pi+, as in paka+pi+L+ Vtr *to break*, derived from intransitive paka+Y+. NGI +pa+ in yunga+Y+pa+L is thus to be equated, historically at least, to the +pa+L which constitutes the derivational suffix treated by Donaldson in detail (e.g., on pp. 65, 80 and 163) and to her DELOCUTIVE +pa+Y (pp. 238, 242). All of these NGI elements thus reflect *+pa+, q.v.

P6 PPN *pa₆ Part INTERROGATIVE/DUBITATIVE marker

Lgs: 30.

1. Root form in NYU pa *perhaps; it might be* (occurs finally in equational clauses); YIM pa₂ INTERROGATIVE... particle (see YIM pa₁ at *pa₅); possibly MDB pa in nya...pa CONDITIONAL (Capell 1956).
2. Suffixed form in PMR *pa.ra *perhaps* (> NYA W, L pa₃ in the fixed locution yija#pa 'indeed+PERHAPS', used in expressions of hoping (Fr Kevin McKelson, p.c.) (for NYA yi.ja, see at *pa₁); GRJ pa.ra *perhaps*. This element forms a doublet with GRJ pa.ri INTERROGATIVE particle; maybe (with which cf NAN a.ri INTERR particle); GUP bi.li₂ ...INTERR word (see bi.li₁ at *pa₄; RIT baa.ri ~ ba.ri Part maybe; GUM paa.li₂ exclamation of ... query (see GUM paa.li₁ at *pa₃).
3. Suffixed nasal-grade form in WLB ma.yi SELF INTERR, I wonder (Hale 1974:16).
4. Suffixed IS-grade form in GUM wa.la *perhaps, maybe* (Smythe 1948, Eades 1979).
5. Cliticised form in GID +pa clitic marking polite request; please (only with IMPERATIVE verb forms; < 'perhaps you would (be good enough to) do such-and-such?'); PIT +pa INTERR clitic (Dixon 1972:18, citing Roth 1897:28).
6. Cliticised nasal-grade form in MDB +ma (Capell 1956), DYI +ma INTERR marker (Dixon 1972: Dixon notes also (1977:382) that YDN lacks a cognate of DYI +ma); ARW +ma INTERR clitic (Dixon 1972:18, citing Strehlow 1944:19).
7. Cliticised prenasal-grade form in PTJ +mpa INTERR clitic (Dixon 1972:18, reporting Trudinger 1943:222).
8. Cliticised ID-grade form in DIY +ya₂ DUBIT (cf the descent of *pa₁ in this language as +ya₁ near and of *pa₄ as ya and).

P7 PPN/Tangkic *pa+ Vintr to speak, utter

Lgs: 30.

1. Root form in GID pa+ *to say, utter*.

2. Nasal-grade form in WLM *ma+L+ to speak* (Hudson 1978).
3. Possible archaic IS-grade interjective counterpart in NYA *W wa'! say it!, speak!*
4. Gramaticalised element (DELOCUTIVE suffix) **+pa+* in LRD *ngari.be to hiccup* and a handful of other fossilised forms; likewise rarely in UMP *.pa+TH+*, as in *pulku.pa+TH+ Vintr to boil* (< pre-UMP **pulpul+pa+TH+ 'to make bubbling noises'*, with subsequent dissimilation of the second **p* to *k* – cf NYA *W pulpul boiling, frothing – as of ocean surge against rocks*). Note also UMP *tungku.pa+TH+ Vintr to beat – of the heart*, a prenasal-grade form of pre-UMP **tuku+pa+TH+ 'to go pitter-patter'*, whose cognates include GUP *duk.tuk.thu+N to palpitate* and PIN *tuku.rl+pa sound of an emu honking* alongside the PIN extended metathesised form *kurtu.rtu heart*.

DYI *+(m)pa+Y*, as in *jikirr.mpa+Y to make the jikirr-jikirr noise* (*jikirr.jikirr call of the Willie wagtail*); GID by-form *pa+L, pa+Y* (see above), as in *jalkay pa+L noise of tree limbs creaking* (*jalkay rhythmic sound*) and *kurrkurr pa+Y stamping or bumping noise*; WAA *+pa*, as in *wuuny+pa to whistle* (*wuuny whistling*); and NGI *+pa+Y*, as in *yama+pa+Y Vtr to express doubt (to someone)* (*yama DUBIT, yes or no* – Donaldson 1980:241-242).

5. Nasal-grade DELOCUTIVE suffix **+ma+* (cf WLM *ma+L*, above) in NYA *W ...+karra+ma+R+ to make the sound ...* as in *raarr+karra+ma+R+ to roar – of surf* (*rarr roaring sound, +karra ADVERBIAL*), *ngangkirri+kirri+mi+R+ to snort* and *miyu+kurru+mu+R+ to make the miyu sound of cats, to miaow*; WLB *+ma+N+*, as in *nguurr+ma+N+ to gulp, breathe heavily* (*nguurr.pa larynx, throat*); PIN *+ma+N+*, as in *kinykiny+ma+N+ to make the noise of numerous voices ...* and *yurru.ly+ma+N+ to make the sound of a snake rustling in the grass ...* (*ruurru.ly+pa ~ yurru.ly+pa sound of ... rustling ...*).

P8 PPN **+pa* Allomorph of LOC case suffix following [+lab] segments

Lgs: 30.

1. Basic form in YDN, DYI, GUM *+pa LOC case marker following m*; WAA *+pa LOC case marker* (with inanimate nouns and names of smaller animals and birds ending in *m* or *w* – see Crowley 1978:65). Inflected noun example: **pujam+pa son/child+LOC > YDN nasal-grade form mujaam+pa mother+LOC* (with semantic change to RECIP kin term) and likewise nasal-grade pre-Bandjalangic **mujum+pa son+LOC*. Crowley's description indicates that the reflex of this inflected form is proscribed in modern WAA because *mujum son* is [+anim]; but note, e.g., WAA *jiyaw+pa eye+LOC* (the ancestral initial consonant of **pujam* is reconstructed as **p* because of GUM and NYA evidence from opposite shores of the continent – witness GUM BO:DJU.NA *child, baby* (Smythe 1948:138) and NYA *pujamu S son of female Ego, W son, daughter*. Of the languages examined, only YDN shows the *mother* referent for this etymon, so that semantic change is here attributed to this language (for additional detail, see elsewhere at **pujam* and **kaaja*). Note further that in NYA and, in fact, in PMR and PNY, the form **pujam+pa son+LOC* must have been long since superseded through reanalysis: the ABS form **pujam* would have been extended to *pujamu* as the western constraint against the occurrence of final peripheral nasals became established (cf NE *ram > NYA yuramu, lamp > lampu*); and the LOC case form was recreated via a reflex of ancestral **+ng.ka*: **pujamu+ng.ka* (Dixon 1980, citing Hale) *> NYA /pujamu+ng.a/ pujamungu*.

2. Possible fossilised survival of PPN allomorphy in a *western* PMN language in *ngakam+pa *dog+LOC* > NYA ngakum.pa *ignorant* (< 'as a dog', 'in a dog (-like state)' – e.g. with regard to incest taboos); cf UMP ngakamu *dingo*, GID ngakam *dog* (WAA *tame dog*). The Bandjalangic dialects appear to be sufficiently remote from UMP – both genetically and in geographical distance – to allow one a reasonable degree of confidence in positing *dog* as the ancestral referent of PPN *ngakam. NYA ngawu S *deaf, mad* ..., W *unaware, heedless, mad* suggests the presence of a doublet in this language; note, further, GUP wawu *unaware, off guard, ignorant* (with assimilation of *ng to w).

P9 PPN *+apa+ ~ *+pa+ Verb-deriving nominal suffix

Prob early truncation of *wapa+Y, q.v.

Lgs: 30.

1. Formative in rather early PMN verb *jarnta+pa+ *to jump (around)* (< 'to go "full knee"'), whose reflexes include KGS TANDA.BA+N *to spring; to jump* and YDN tanta.pa+N *to dance around, feeling lively and pugnacious*. This interpretation is supported by NYA mirti N *running* vs NYA /murti.nga/ murti.ngi *knee* and UMP pungku.kuntha *fleet of foot* vs pungku *knee* (< PP *pungku). Rigsby (p.c.) points out, moreover, that in Cape York Creole *go full rib* is *to gallop*.
2. Further reflexes in the rather productive NYA verb-deriving suffix +pi+L+, as in muwarr+pi+L+ *to speak* (muwarr N *language, word*); note that at least some instances of NYA +pi+L+, however, probably have their origin in the conjugational reanalysis of PA *pu+M *to hit* (Capell 1956, Dixon 1980). (Rarely) in PIN, e.g. in kiti.ny.pi+L+ *to poke someone with finger in order to gain [his, her] attention* (< PPN *kiiti *tickling*); cf PIN kiti.kiti+L+, UMP tiiti.nga+L+ *to tickle*; (productively) in the GAW CAUSATIVE suffix +APPE+, as in WORN+APPE+ (appar warni+yapi+) *to make fall, throw down* (GAW WORNE+ *to fall, be born* < PPN *pa.rna+); likewise productively in NYU +api.ny INCHOATIVE, *becoming*, as in pujurr+api.ny *to turn to dust* (pujurr *ground*) and in WJK +AB(BI.N) *to be, become*, as in DJUL+AP *to become bad* (DJUL *bad*); in NAN +pa+, as in innga+pa+ *to die* (innga *dead*), kulyu.ra+pa+ Vtr *to wet* (kulyu.ra *wet* < *kalyu *water*); in the BAN TRANSITIVISING suffix +pi+L+, as in paka+pi+L+ Vtr *to break* (cf paka+Y+ Vintr *to break*); (rarely) in YUU, as in GUP, RIT gurru.pa+n *to give*.

(Rarely) in LRD, as in kurra.be(e) ~ kurre.be *to be silent, quiet*, conceivably related to PPN *kUrRa *bad, NEGATIVE*; see also P7, another possible cognate of LRD .be; (rarely) in KLY, e.g. in MAGU.BI *to increase* (possibly related via antonymic referent change to MAGI moegi *small*); DUDU.PI *to be drowned* and PATA.PI *to finish*; in just four YDN verbs (Dixon 1977:208), including wunga.pa+N *to look for [meat], hunt* and tanta.pa+N, cited above; in DYI +pi+L, which forms intransitive verbal stems, e.g. pulka.n+pi+L *to become big* (< PPN *purlka *big, important*); in BNJ +pa a) *to make, cause*, as in waju+pa *to make (someone) speak* and b) *to go*, as in yang+ku+pa *here+ALLAT+go, to come*; in GUM muukum+pa *to make ... blunt* (Eades 1979:353), DJARA.BI+ *to crawl, creep, stalk* (Smythe 1948:139); (rarely) in WEM, as in perroe.pa *to climb (trees)*, jilerr.pa *to pinch (someone)*; and in NGI +pa+L, which forms transitive verbs, e.g. yunga+y+pa+L *to cry at ...* (cf yunga+Y Vintr *to cry* < PPN *runga+Y *to cry, howl*); note the closing remarks under *pa₅.

P10 PPN *paja N pus, boil; rotten

Prob forms early doublet with *kaja₂, q.v.

Lgs: 30.

1. Root form in YIM patha *rotten* and possibly also in KLY BADA *sore, ulcer baadha a sore* (but see also at *panyja₁).
2. Reduplicated form in GUP batj.patj *sickness*.
3. Suffixed forms in WJK doublet BADJANG *matter from a boil or sore ...*, BIDJA.K *stinking; offensive*; MDI puthu.ni *matter – from a wound; a boil*; WEM puju.n *matter from a wound or boil, 'sleep' from the eyes*.

P11 PPN *paja+₁ Vtr cut

Prob ult rel to *paki+L.

Lgs: 30.

1. Root form in WLB paji+L+ *cut, tear; break (a horse)*; KLY PATAI patha+n *cut, cut off, chop (wood)*; BNJ paj+e *cut, strike* (for BNJ paji.l+e *rain*, see at P20).
2. Possible ID-grade form in PIN yiji.pu+NG+ *torture ...*.

P12 PPN *paja+₂ Vtr bite, sting; ache, pain

(Dixon 1980:403-408).

Lgs: 30.

1. Root form in NYA paji+R+, WLM paja+RR+, PIN paja+L+, PNK PAIA+, YIN paa+L+, PP *paja+ (> UMP, BAK patha+L+, WMK path+, YY pay), YDN paja+L *bite*; GAW PAIA+ *bite, chew; understand*; RIT batha+₂ *sting*; DYI paja+L *bite, chew*.
2. Suffixed form *paja+rr *bite+AGT* in PIN paja.rr.pu+ng+ *knock out a tooth ...* ('hit a biter'); GID payaa.rr, WAA payaa.rr.payaa.rr *centipede*; BNJ payaa.rr *brown snake* (< 'one that bites'). GUP baya.rra.k *non-stinging bee*; WEM pathang *large black ant*.
3. Nasal-grade form in DIY matha+ *bite*.
4. Possible taboo-deformed variant in GUP ratha+n *bite*.

P13 PPN *pAja+ Vtr leave, reject; throw (away)

Lgs: 30.

1. Root form in GAW BATTE+ *throw*; YDN paja+R Vtr *leave*. Semantically, compare NYA yaka+R+ ... +a *leave*, YGS yaka+ *throw* (< PNY *yaka+).
2. Suffixed forms in BAY paya.tha+L+ *throw* and patha.rr.kuji *right hand* (< 'throwing (hand)'); RIT baya.k.dhi+ *reject*, bay'.yu+n *leave*.

P14 PPN *paaja₁ N growl, roar – as of surf; dangerous, disliked or 'cheeky' entity

See *paaja+₁, below.

Lgs: 30.

1. Root form in GAW PAITYA (appar paja) *vermin, reptile, monster, any dangerous or disliked animal*; PNK PAITYA *angry, hostile, quarrel, fight*; YIN paya (i) *fight (Aboriginal English), war*; (ii) (a) *viciousness*, (ii) (b) *fierce, savage, vicious*; (iii) (a) *anger, rage*, (iii) (b) *angry, wild*; (iv) (a) *force*, (iv) (b) *forceful, bossy* (Wordick 1982:335); KLY PAZA *flat fish with poisonous stings* (not documented in MIR).
2. PNY derived form *paja+purtu *angry, aggressive*, in GAW PAIT.PURTU *irritable, quarrelsome*; YIN paya.wurtu *fierce, angry or bossy type* and paya.wurtu paru *buck spinifex* (< 'injurious, spiky'); BAY paja.purtu *aggressive, 'cheeky'*.
3. Further suffixed forms in NYA W paja.rtu *surf, breakers*, BNJ paaja.p *roar of the sea*; NYA W payi.rti *horn – as of sheep or cattle*; PNK PAITYARTA *noxious, dangerous, venomous*, PAITYA.NDO *fierce, strong, able*; NYU paja.rr *fight, a fight*; BAY patha.rr+Y+ *scold, chastise; to fight* and paja.ku.rr+Y+ *get angry, wild*.

P15 PPN *paaja₂ time, morning, tomorrow

Lgs: 30.

1. Root form in WJK BATTA *sun's rays*; UMP denominative paaja+ *to dawn, break – of day*, and possibly WMK path.ath+, JKY wayi+ Vtr *to light, ignite (a fire)*; BAA paaja+ *shine, with a white sheen* (Hercus 1982:276). GYA paya *fire* and MNN paya.pu+ Vitr *burn – of fire* may not stem from English fire, but could rather be continuations of *paaja₂.
2. Suffixed forms in WJI patha.l+pa *morning, tomorrow* and KLY BATA.INGA batha.y.nga *tomorrow*.

P16 PPN *paaja+₁ Vtr scold, berate

See *paaja₁, above.

Lgs: 30.

1. Root form in PIN payi+L+ *scold*; PNK PATTA+ *scold, abuse, accuse*; conceivably GUP bāya.rra *pay, pay back, take vengeance* and KLY poey.bi *call out, shout, bark, miaow*; PP *paaji+ *shout* (> WMK pej+, BAK paji+, YIM paathi+L₃); possibly DYI pata.y pirra+ *answer, retort* (pirra+ *throw*).

P17 PPN *paaja+₂ Vtr taste, perceive

Lgs: 30.

1. Root form in WLB *paja+L+ taste it*; PNG **paja+L+ (> NUW *paja+*, MRD *paya+ drink*; NMA, GRY *paja+ eat*; BAY *paja+L+ eat, drink, suck*; PP **paaja+ (> WMK *paath+ taste*; BAK *pathe+ drink*; YIM *paata+L taste, sample, try, ask*; probably PNK *PATTI+ be silent, wait, consider* (< 'savour the situation', 'play it by ear'))*.*
2. Suffixed form in MDI *patha.y.ma feel, touch*; WEM *pathe.ma try, or taste, food*.
3. ID-grade form in PIN *yaji+L+ taste; test, try, copy*.
4. Member of cpd in NYA W *milya.paji+R+ ... +a rub one's nose* (< 'perceive that one's nose (milya, nasal-grade form of **puulyal*) is itchy').

P18 PPN *paaja+₃ Vtri sing

Lgs: 30.

1. Root form in MRN *patha+*, WMK *path+*, BAK *aji+*, YIM *paathi+L₂*, JKY *paji+* and DYI, WRG *paya+L sing*; PNG **patha+RR blow – of wind* (> YIN *payha+RR+*).

P19 PPN *pajing N lower arm, hand-held implement

Lgs: 30.

1. Root form in NYA W *paji split stick – as used in making fire*; PNG **paji (> NYL, BAN *paji lower arm*), YIN *payi radius (bone), (loosely) forearm* (Wordick 1982); DJA *pajing*, WEM *pathing knee*. Note also GUP *bätju digging stick*, BAA *patha+ma+ to dig out*.*
2. PDN derived form **paji+pu+NG+ make fire by friction*, in NYA *paji+pi+L+ W make fire, using fire saw with split stick, S spinning or rubbing action when making fire in traditional manner*; PIN *paji.pu+NG+ ignite fire by rubbing spearthrower on another piece of wood*.
3. Suffixed forms in GUP *batji.kali pannikin*; YIM *pathi.pay ~ pathi.pi bone*; MDI *pathi.ki tomahawk*, DJA *paji.k stone tomahawk*.
4. Suffixed nasal-grade forms in NYA W *panyi(.marra) wrist, forearm*, S *panyi.marra arm*.

P20 PPN *paju N water, rain; cold, cool

Lgs: 30.

1. Root form in WJK BADTO (appar *pathu*) *water*.
2. Suffixed forms in NYA W *paja.l.pi spring, spring water*, *paja.wa.karti cloud and/or rain from south in summer* (for #*karti side*, see at **rika*); PNK PAI ALLA (sic: *appar paya.la*) *cold*; YIN *payhu.rru* and possibly KLY PAD.BUL *flood*; UMP *paya.mu rainbow*; possibly YDN *paja.kal king tide*; BNJ *paji.l+e to rain*; WEM *patha.k hailstone*.

P21 PPN *pAju N *bird sp.*

Lgs: 30.

1. Suffixed form in NYA S paji.wirri.wirri *swiftlet – sp Apodidae*; PIN paju.pirri *bat type*; YDN paji.n *sutton [sic] bird*, DYI paji.n.ji.la D (palan) *satin [sic] bird*; MDI patha.ngal, DJA paji.ngal *pelican*.

P22 PPN *paaju Adj *sad, tearful; sympathetic*Prob ult rel to *paarri+ *cry*, q.v.

Lgs: 30.

1. Root form in NYA paju S *sorrowful, apologetic*, W *sorrowful for the dead, or for person departing on journey*.
2. Suffixed form in PIN paju.ri ... *sympathetic ... joins sides with another in a fight*; GAW PADYO.TTI *blind; a blind person* (< 'one who evokes sympathy').
3. Verbal derivative in PP *paaji+ *cry* (Rigsby 1976:72), in YIM paathi+L *cry, wail*, THY dhi+ *cry*. Prob further reflex in YDN pati+N *cry, sob*.

P23 PPN *pAju+ V

(Conceivably a verb having to do with physical separation.)

Lgs: 30.

1. Root form in DYI paji+Y Vintr *fall (off, down)* (cf DYI paji.ka+Y Vintr *duck away*).
2. Reduplicated form in PNK BATHU.BATHU+ *shake out, empty a bag*.

P24 PPN *paaju+ Vintr Act *turn, Pot emerge, be born*

Lgs: 30.

1. Root form in GAW BATTE+ *throw*; NMA patha+RR, BAY patha+L+ *hit with missile, shoot*; YIN payha+RR+ *throw at; spin; drill with firestick* (sic) (for the semantics, cf *ruwa+Y); KLY asi+n *become* (cf PIE *wert+ *turn* > German werd+en); YDN payi+L *emerge*; DYI payi+L Vtr *turn round, stir, wring*; BNJ BAJ+A (appar pay+a) *arise, get up, appear, wake up, come into view*.
2. Suffixed form in RIT biyi.rr'yu+N *twist*.
3. IS-grade form in UMP waaji+ *turn, be born*.

P25 PPN *+paju Suff *very, really, truly*

(See at *pa₁.)

Lgs: 30.

1. Basic form in ADN +waja, PNK PA, BAY, THL +paju *very, really*; UMP +uthu *very*.
2. Extended form in YIM +puthu.n *very, real*; DYI +paju.n *really, very*.
3. Conceivably cognate stem in GUP batha.la *huge, massive, very big*.

P26 PPN *paka₁ N *tail, lower part*

See at *paka.rr.

Lgs: 30.

1. Root form in PNK BAKKA *stunted, dwarf ... tree*; GUP bāka (with unclearly motivated long V₁) *tail, lower leg, handle*; RIT baaka *lower leg, esp. the shin bone*; KAT paka *knee*.
2. Reduplicated form in GUM paka.paka *knee*.
3. Suffixed form in KLY PAKA.l *a tail, streamer? Tail of a mask*; GID paka.wang *cuckoo-shrike ... ('longtail')*. WAA paka.wang *leatherhead*.

P27 PPN *paka₂ N *frost*

Lgs: 30.

1. Root form (sic) in GAW BAKKADLA *hoar frost*; ... *salt*; PNK BAKKALLA *hoar frost*; WAA pakay *ice, frost, snow*; GUM kakaa *frost*.

P28 PPN *pakarr N *down, below*

Prob ult rel to *paka₁ via the sense of 'at the tail'.

Lgs: 30.

1. Root form in RIT baagay *south* (with unexplained long V₁); PP *pakay *down, below* (> UMP pakay, LIN kar – Hale 1976b:25); GID pakarr *far side*, WAA pakarr *over there, distant*.
2. Possibly suffixed form in PNK BAKKU.LLU *onward, along*.
3. Suffixed IS-grade form in TRK waka.rarra *up*.

P29 PPN *paka+L Vtr *to spear*

Lgs: 30.

1. Root form in WLB paka+L+ a. *strike – with stick, hand or other instrument; chop*; b. *bump – as with body or car*; GAW BAKKA+ *dig out roots*; NYU paki.ny *poke, touch*; WJK BAKKA+N

bite, to ache, to pain; KLY PAGA.l₁ ... *pierce, sting, prick* ... (paga+n *spear, stab*); YIM paka+L *dig, dig up, sting, stab, poke, peck, jab*; GID puka+ *poke, pierce, write*, with unexplained u for *a. For further reflexes, see Merlan (1979).

2. Suffixed forms in GUP bāka.la *harpoon* and baka.rra.ma *wooden spear*; RIT baka.' *spear with two hooked wooden prongs*.
3. IS-grade form in PIN, YUL waka+L+ *to spear*
4. Suffixed IS-grade form in NYA W waka.l.ma+R+ *touch a sore spot*.

P30 PPN *pAka+ Vitr (be) broken, smashed, cracked open

Lgs: 30.

1. Root form in PNG *paka+Y+ *break, come apart* (> BAN paka+Y+, YIN paa+Y+); GID paaka+ *smash, crack*; BNJ paak+a Vtr *break*; WAA paka.numa *knock over*.
2. Suffixed forms in GUP bak.thu+N *break, get hurt*; RIT bak.u+N *break off, become broken off*; YIM paka.l *crack, opening (in tree or window)*; GID pakaa.n *crack, narrow slit or gap*.

P31 PPN *pakl+L Vtr to cut

See also P11. Lgs: 30.

1. Root form in GAW BAKKE+ *to cut*.
2. IS-grade form in YIM waki+L *to cut*.

P32 PPN/Tangkic *pAkl Adj all, everything; totally

Lgs: 32.

1. Root form in LRD paki *everyone, everything*.
2. Suffixed forms in JKY paki(rr) *other* (Hale, p.c.); YDN paki.l *another*; DIY paka.rna Adj *also, same, too*.
3. Suffixed IS-grade forms in NYA W waka.rt *altogether, totally, entirely*, waki.ji.kirri *all, everyone*; GUP waki.n.ngu *illegitimate, belonging to no-one, uninhabited place*, with antonymic semantic change. (For the connection between *all* and *other*, see, e.g., *parntung).

P33 PPN *paku₁ Adj tired, weak; tiringly far

Perh ult rel to *paku₄.

Lgs: 30.

1. Root form in PIN doublet paku *tired, pregnant woman* and paki *long way*.
2. Suffixed forms in RIT baka.ra *tortoise* ('slowpoke'); GUM PAKUU.RREI+ *lie down, sleep* (tiredness POTENTIALLY leads to sleep).

3. Suffixed prenasal-grade form in PNK PANGKU.RRU *weak, sick* (cf PPN *puka₁ *rotten* > WIR punga.la ~ punga.rra).
4. Suffixed IS-grade forms in NYA waka.la *tired* (< pre-NYA *waku.la) and GUP waga.batj *very long way away*.

P34 PDN *paku₂ N 'hide' made, e.g., in spinifex

Lgs: 30.

1. Root form in NYA W paku *'hide' made in spinifex – e.g. by wallabies*.
2. Suffixed form in WLB paku.ru *bandicoot sp.* (< "builder of a 'hide'"?).

P35 PPN *paku₃ N vine sp.

Lgs: 30.

1. Root form in GUP baku *lawyer vine, armlets made from vine*; GID paki *sp. vine*; BNJ paki *bush, scrub, jungle*; NGI paka *wild banana vine* (Donaldson 1980:71).
2. Suffixed forms conceivably in NYA W paki.ri *flowers of 'nalgoo' plant*; NMA paku.rta, YIN pau.rta *needlewood* (Wordick 1982); YDN paki.ram *tea-tree sp.*; DJA paku.rt *wild currant, Astroloma sp.*; WEM pako.pany *milk thistle* (loan from Yotayota).
3. Suffixed IS-grade form in GID waku.y *vine (generic)*, forming a doublet with GID paki, above.

P36 PEPN *paku₄ Part almost, nearly

Lgs: 30.

1. Suffixed forms in UMP aku.yu.m, BNJ paki.n.ji, WAA paki.ny(.ja) *almost, nearly*; possibly also in GUM paku.rry.ny *final ... initiation ceremony ...* (< 'almost (fully initiated)'?).

Alternatively, GID takal *almost*, UMP aku.yu.m and NYA W katu.ngurru *almost* could conceivably form a cognate set reflecting ancestral PPN *taku. The NYA form would then have undergone metathesis along with a handful of other *tVkv(...) forms (note also, e.g., English tickle vs. German kitzeln). Evidence is needed from UMP's sister Pamic languages.

P37 PPN *paakul N dry outer bark or husk

Lgs: 30.

1. Root form in GAW BAKKA *dry bark; husk or peel ...*; GUP bākul *stingray* (for the semantics, cf NYA W karnu *skin, spotted stingray*); GID pakul *bark of tree*; BNJ pakul *bark, canoe, boat*; WAA pakul *bark, canoe*; GUM paakul *bark, canoe made from bark*; DIY paka *outer shell, husk* (Austin, p.c.).
2. Reduplicated form in WLB paka.paka *dry and flaking – as of skin, foot*.

3. Suffixed forms in WLB paka.rli *paperbark*; PIN paka.rr.ji *dry hard earth*; PNK BAKKA.RRA *lump, clod*.

P38 PPN *pAku N dots; spotted

Lgs: 10.

1. Suffixed form in GAW BAKKU.RTA *dots on the chest and back*.
2. Partially reduplicated suffixed IS-grade form in PNK WAKA.ITYA.KAI.TYA (appar waka.ja.ka.ja) *spotted, striped*.
3. Reduplicated suffixed prenasal-grade form in JKY pangka.ny.pangka.ny *spotted*.

P39 PNYY *paku.paku N bellbird

Lgs: 30.

1. Basic form in WLB, BAY paku.paku, ADN vaku-vaku, PNK BAKKU.BAKKU, WJK BOKA.N.BOKA.N *bellbird*; GUP бага.pаgа *пied heron*. For the WJK vocalism, see P140, P97.

pakurri *where*. MRN element of unknown etymology, possibly substratal. Lgs: 30.

P40 PPN *pala₁ N helper, companion

Lgs: 30.

1. Reduplicated form in GID pala.palee *helpful person*.
2. Infix/suffixed form in GUP bal.p.a.ra *helper*; RIT bal.p.a.ra *companion, mate*, bal.p.a.ra'+yu+N *accompany*.

P41 PPN *pala₂ Part perhaps

Lgs: 30.

1. Suffixed forms in NYA S pala.pali *probably, maybe* (cf NYA ngurni.pali *perhaps, I don't know*; GUP bala.ngu *might, could, should?*).
2. IS-grade form in GUM wala *perhaps, maybe*.

P42 PPN *pAla N flying phalanger?

See P44. Lgs: 30.

1. Root form in GYA pala *flying phalanger, sugar squirrel*.
2. Suffixed forms in WJK BALLA.WARA, WJK N BALLA.GAR, KGS BALLA.RD *small squirrel-like opossum*; GUM PALLA.WIR *flying fox*.

P43 PNY *pala+₁ Vintr pull (face), grimace

Lgs: 30.

1. Root form in PNK PALLA+ *pull, draw, let loose, start*.
2. Reduplicated form in PNK PALLA.PALLA+ *jerk one's tongue, express surprise*.
3. Suffixed form in NYA W pala.la.karri+Y+ *convulse the face with fear*.

P44 PPN *pala+₂ Vintr rise, climb

See P42. Lgs: 30.

1. Suffixed forms in PNK PALLA.KARRI+ *rise, get up, hasten*; KGS BALINGUR *climb*; KLY PAL.GI+ *fly, jump* pala.gi+n *to fly*; BNJ pala.kay+a *dodge, avoid*; DJA pala.k *small bird, 'lark...'*.
2. Possibly suffixed ID-grade form in UMP aal.ma+ *grow, mature*.
3. Reduplicated suffixed form in WEM pala.m.pala.m *white butterfly*.

PPN *pa.la+rri. See at *pa₁.

P45 PPN *pali+ Vtr tread on, kick; weigh heavily on

Lgs: 30.

1. Root form in PIN pali+L+ *tire, press, flatten – as object because of its weight ..., make (person) feel exhausted – of a lump in the groin*; KLY pala+n *kick* (Bani and Bani); YIM brother-in-law lg form pali+L *walk, go; to paddle – in canoe, boat; wade about*.
2. Suffixed form in GUP bala.nha+N *tread on*.

P46 PPN *pali/u N mirage, haze; darkish

Lgs: 30.

1. Suffixed forms in PNK PALU.WORRA *light clouds in a hot day, haze*; YIN pali.n *mirage*, pali.irri *blue-tongue lizard*, in which Wordick (1982:330) glosses pali+ as *dark-coloured*; YIM pala.wungkal *cyclone*.

P47 PPN *palja N side, flank; branch

Lgs: 30.

1. Root form in GAW PALT₁ (= palthi?), PALT₁.WALT₁ and PNK PALL₁ *flank, groin*; KLY PASI *side; wall of house* (not documented in MIR), pasi+n *lie on one's side*. UMP palnta *arm, branch of tree* is conceivably a blend of reflexes of PP *pinta *arm, shoulder* and PPN *palja.

2. Suffixed forms in NYA W paLja.rra.nguny (sic) *left hand (esp with respect to throwing boomerang)*; WJK BALLA.RO.K *cognomen of one of the great families ...*; RIT baltha.rr *leg, branch ('side')*; KLY pasi.ya *beside, next to*; GID pata.rr *front side*.
3. Suffixed/prefixed form in, e.g., WLB Ja+palja.rr *male subsection name*, Na+palja.rr *female subsection name* (for a discussion of the diffusion of such forms, see McConvell 1985).

For the diachronic semantics of *palja, cf P77.

P48 PNY Y *palju N (going) by foot, on foot

Prob ult rel to *parlku.

Lgs: 30.

1. Suffixed forms in PIN palju.l+pa *on foot*; GUP baldhu.rr' *mark made on ground and stamped with footprint as a sign to people following*, baldhu.rr'+yu+N *kick, mark out, borrow*. NYA S palju.rn.pa+R+ *sit up* is conceivably a further reflex.

P49 PEPN *palka+ Vtr hit with long, rigid implement

Lgs: 30.

1. Root form in DYI palka+L *hit with long, rigid implement, held in hand; kill*.
2. Suffixed form in MDI palka.tha *hit, wound*.
3. Prenasal-grade form in YDN palngka+R *hit with stick*.

P50 PPN *pAlmpu N sealed, closed

Perh ult rel to *pApu egg.

Lgs: 30.

1. Root form in WLB, PIN pampa *blind*; PNK BAMBA(LLA) *without*; WJK doublet member BAMBI *bat* (< 'blind creature'); YDN pampi+L *to cover*, palmpi.ny *grasshopper* (< 'covered with exoskeleton').
2. Suffixed forms in NYA, NMA pampu.ru *blind in both eyes*; PK *pampu.ra *blind* (> BAY pampu.ra, BRD papu.ra (Austin 1981:322)); WLB parlpu.ru *well – of sore, no longer an open wound* (< 'closed up'); PIN palpu.ru *shut, covered ... wound which is completely healed*; NYU pampu.l *old man, elder, leader* (< 'blind person?'); WJK BAMBA.LA *film or cataract formed over the eye*, BABI.L.GUN *bat sp.*; possibly KGS BAPPI.GAR *mend, stop up*; YIN pampa+ngarri+Y+ *to sleep* (pampa *sleep* + ngarri+Y+ *to lie, be*); GUP, RIT bamba.y *blind*.

P51 PEPN *palngka N stick

Lgs: 30.

1. Root form in YDN palngka+R *hit with a stick*.

2. Cpd form in GID pangka.pikirr '*paddymelon tree*', from which throwing sticks were made (i.e., POTENTIAL throwing stick).
3. Possibly also cognate, but with obscurely differing consonantism, is GRJ paka *stick*.

P52 PEPN *palngku Adj *multihued*

Lgs: 30.

1. Root form in DYI pangka+L *paint with finger, write*.
2. Suffixed form in YIM palngku.ka *small fish sp* ('manua fish' – pretty colours).
3. Reduplicated suffixed form in GID pangki.rr pangkii.rr *mixed colours, variegated*.

P53 PDN *palpi+ Vtr *scold, rebuke*

Lgs: 30.

1. Root form in NYA S palpi+R+ *rebuke, tell off*.
2. Suffixed ID-grade form in PIN yarlpi.rr *... person broadcasting a grievance ...*.

P54 PNY *palu Part *unaware, accidentally*

Perh ult rel to *palu+.

Lgs: 30.

1. Suffixed form in NYA W pala.l(pala.l) *unaware, inattentive, misunderstanding, not noticing*, NYA S pala.l.pala.l *no notice, still asleep*; WJK BALLU.K *accidentally, unintentionally*.

PPN *pa+lu. See at *pa₁.

P55 PPN *palu+ Vintr *die, be extinguished*

Lgs: 33.

1. Root form in WLB pali+Y+ *die; go out – of fire*; GAW PADLO+ *die; desire, wish, long ...*; PNK PADLU+ *die, be extinguished*; ARW ilu+ *die*.
2. Suffixed forms in WLB palu+pu+NG+ *extinguish it – light, fire, kill it*; PIN parli.l+pa *tiredness of spirit ...*, parli.ju+N+ *close one's eyes, intending to sleep*; GAW PADLO.APPE+ *kill*, PADLO.NI.NTYE.RLA *strongly desiring; longing* (cf NE I'm dying to go!); WJK BALLA.JA+N *... assault; attack; slay*; BAY palu.rr+Y+ *go out – of fire*; GUP balu.ka *robber* (< 'killer'); conceivably UMP payi.na+ *die away – of wind* (cf NYA W rawi.n *calm* (windless) < *rawa); GID palaa.ny *corpse*, palu.kaa.n *one kind of male spirit-being, handsome*, palu.pa+ *make low, extinguish – fire or lamp*; WAA palaa.n.ka *die*; GUM palu.ngking *thirsty* (cf the semantics of PIN yilu+Y+, below).

3. Nasal-grade form in UMP *maati+ to vomit*.
4. IS-grade form in GUM *waalii+ die*.
5. Compound IS-grade form in JKY *wali.yinka die*.
6. ID-grade form in PIN *yilu+Y+ die ..., thirst for water* (Arandic loan?).
7. Reduplicated suffixed ID-grade form in PIN *yilu.ru.yilu.ru one who pines ... for home or country*.

P56 PPN *palya₁ N *fat, grease*

Lgs: 30.

1. Root form in WLB *palya wax – from spinifex; native adze*; PIN *palya good ... pleasing, palya+L+ make, construct, repair, make good, heal*; GUP *boy yellow, FATTY part of crab* (emph mine – O'G). For the phonology of the GUP form, cf GUP *djoy'* (< *jalya), *moy'* (< *malya) and *ngoy* (< *ngaalya); UMP *paja grass*, YDN *paja grassy plain*, in which grass is apparently considered as POTENTIALLY fat (game); PIT *palyi N fat*.
2. Suffixed forms in NYA *paja.rli W fat, dripping, S fat, grease* (with dissimilation from *palya.rli); WRN *palya.rr i fat, grease*; GAW PAIT.PURLA (appar *paj.purla*) *grease, fat, oil* (with which cf MDI *paypu.lu fat, kidney fat*); WJK BAL-YA.TA *firm, fixed, firmly united – of man and wife, embedded ...* (for the semantics, cf PIN *palya+L+*, above); PNG *palha.ma+L+ *rub it, paint* ('make him/it good') (> BAN *palha.ma+L+*, YIN *patha.ma+L+*); PNG *palha.rra *green* (cf *grass* in UMP, YDN above) (> NMA doublet *palha.rra green, blue, palya.rra budgerigar* ('green-plumaged bird'), with which cf YIN *patha.rra budgie*); conceivably RIT +baya.ngu, as in *gupu.lu+baya.ngu fat, thick*, in which *gupu.lu* is *body*.
3. Reduplicated suffixed form in WLB *palya.n.ji.palya.n.ji covered with a sticky substance*.

P57 PNY *palya₂ Adj *empty, void*

Lgs: 30.

1. Root form in PNG *palya *bony, skinny* (> NMA *palya*, YIN *paja* – Wordick 1982:335).
2. Suffixed forms in WJK BYL-YU.R (appar *palyu.rr*) *hungry, empty*; RIT *bay.ngu nothing*.

P58 PNY *palya₃ N *shrub sp*

Lgs: 30.

1. Root form in GAW PALYA *shrub resembling myrtle; small hook made of [same]...*
2. Suffixed form in YIN *paji.la turkey-fruit, banana caper, caper bush* (Wordick 1982:335).
3. Infix form in PNK PAIL.B.A (appar *paly.p.a*) *bush, shrub*.
4. Suffixed/infix forms in PIN *paly.k.a.ny+pa tree sp, sandals made from its bark*; PNK PAL.K.A.RA *sp eucalyptus, blue gum*.

P59 PDN *palya.palya N cool breeze

Lgs: 30.

1. Basic form in PNK PALYA(PALYA) *cool breeze, evening breeze*.
2. Nasal-grade form in NYA W malyi.malyi *strong cool wind blowing from area of rain*.
3. Suffixed root form in PNK PALYAMBA *weak*. Bearing in mind the diachronic semantics of PPN *yamu (O'Grady 1981b), PNK PALYO *slowly, gently* appears as a further plausible cognate.

P60 PNY *palyja

Possibly an adjective having to do with being numb from cold.

Lgs: 30.

1. Suffixed forms in PIN palyja.l+pa *numb from cold*; GUP baltja.m'.thu+N *make fire* (< 'seek warmth of fire?').

P61 PDN *palykl+ V crack, break

Lgs: 30.

1. Root form in PIN palypi+L+ (with lag assim) *break legs [or] arm joints ... of a 'roo before cooking*; PNK PALKI+ *crackle – as fire*.
2. Suffixed form in PNK PALKI.RRI+ *crack, break, become loose*.
3. Metathesized form in NYA W pilyka *a crack, split*.

P62 PNY *palyu+ V intr fall, go down

Lgs: 30.

1. Suffixed forms in WLB palya.rr.(w)anti+Y+ *fall and shatter – as lump of earth*; PIN palyu.ti+Y+ *to fall*; possibly BAY palya.ngka+Y+ *creep up*.
2. Suffixed/infix forms in NYA W paly.p.u.rr.paly.p.u.rr+jarri+Y+ *become deflated, go down – of tyre*, paly.p.a.rr.paly.p.a.rr (sic) *an inaccurate throw – as of boomerang*.

PP *pama₁ N *person, aborigine*. See at *mapang.

P63 PPN *pama₂ N delicacy

Lgs: 30.

1. Root form in WLB pama *delicacy*.
2. Suffixed form in GUP bama.ra.ng *fruit sp.*

3. IS-grade form in PIN wama *delicacy*; KLY WAM *honey-comb*; WMK wom *beeswax*.
4. Suffixed IS-grade form in NYA W wamu.lu *native tomato*; WJK WAUMI.L-YA.R (appar wami.lya.rr ... *Manna. A white, sweetish substance*

P64 PPN *paama N stone, hill, cliff

Lgs: 30.

1. Suffixed forms based on PDN *pama.rr, in NYA W pama.rr *humpy*; WLB pama.rr.pa *stone, hill, mountain* (for the semantics, see *kanya and *karnku; a stony outcrop or overhang is a POTENTIAL shelter).
2. Suffixed IS-grade form in BNJ waama.ny *cliff*.

P65 PPN *paama+ Vtr take out

Lgs: 30.

1. Root form in NYA W pama+R+ *eviscerate, gut*.
2. Infix ID-grade form in UMP aampi+ *take out – as from oven*.

P66 PPN *pAma+ Vtr to spear, dig

Lgs: 30.

1. Root form in GAW PAMMA+₁ *to spear, pierce*; KLY pama+n *dig a hole* (Bani and Bani 1975).

P67 PPN *pamay N plain, flat country

Lgs: 30.

1. Root form in GID, WAA pamay *plain, flat*.
2. IS-grade form in GAW WOMMA (appar wama) *plain*.

P68 PEPN *paampa+ Vintr be frightened

Lgs: 30.

1. Root form in MDI, DJA, WEM pampa *be frightened* and, possibly, in WNG paampa+ *jump about* (Sutton 1978:242).
2. Suffixed form in YDN pampa.ra+N *be frightened*.
3. Reduplicated suffixed form conceivably in GNL bamba.rk.pamba.rk *cockroach* (< 'scuttles off in alarm if disturbed'?).
4. IS-grade form in GUM waampi *afraid, surprised, amazed*.

P69 PPN *paampi/a N stingray

Lgs: 30.

1. Root form in *-a in WJK BAMBA *stingray-fish* ...; KLY BABA *long feathers of a bird's wing and tail* (not as yet documented in MIR); YIM paampa *fish-tail*.
2. Root form in *-i in WJK BAMBI *small sort of flounder fish* (forming a doublet with BAMBA, above); GUP bāmbi *stingray*.

P70 PPN *pampu+L Vtr touch, test; ask

Lgs: 30.

1. Root form in YUL pampu+L+ *touch*; PIN pampu+L+ *touch; feel a patient – of doctor*; GAW PAMMA+₂ *touch, border upon*; YIN pampaa+ *test, try*; UMP pampa+L+ *ask*. For the semantics, cf NE *he's a soft touch*.
2. Suffixed form in KUN ampa.yi+ *ask about, enquire*. cf GYA papa.ji *ask*.

P71 PPN *pampum N bruise

Lgs: 30.

1. Root form in WAA pampam *swelling* (cf GID pam pam *bruise, swelling*).
2. Suffixed form in DYI pampu.n Adj *quite fat* ... ('swollen'); KLY doublet PAPA.LI V (not in MIR), mabu+ *bruise*.
3. Reduplicated suffixed form in PNK BAMMA.LLA.MMA.LLI+ *break out; form eruptions on the skin* (with unclearly motivated loss of *-p-).
4. Suffixed IS-grade form in PIN wampu.ri *bruise under the skin*.

P72 PPN *pana N water, rain

Lgs: 32.

1. Root form in YDN pana *fresh water, drinkable liquid*; DYI DM pana (palan) *fresh water*; 'Yiilima' BANNA *water* (Curt 1887:589).
2. Suffixed forms in WRN pana.ya, WLB pani.ya (Rex Granites, p.c.) *eye* ... (< 'moist') – cf NYA pani *eye* ...; YAU pana.y *lagoon*.
3. IS-grade form in NYA wana *quenched – after drinking* ('watered').
4. Suffixed IS-grade form in NYA W wana.yirti (sic), S warna.yiti (sic) *water*.

P73 PPN *paana+ Vintr come, arrive

Lgs: 30.

1. Root form in GAW PADNE+ *go, walk, travel*; PNK PADNA+ *go, be*; GID paana+ ... *arrive*.
2. Suffixed form in THL pana.karri+Y+ *to come – of rain*.
3. IS-grade form in RIT waani+ *go, come*.

P74 PPN *pAnga N stone, rock

Lgs: 30.

1. Suffixed forms in GUP banga.m *rock*; KLY PANGAD *stony* (no matching form attested in MIR).

P75 PPN *pAngal N transformation, (ex)change

Lgs: 30.

1. Root form in WJK BANG-AL₂ *retaliation; exchange of one thing for another*; conceivably KLY BANGAL N *another day, Adv in future* (not in MIR); DJA pangal, WEM pangoel *doctor, clever man* ('one who transforms').
2. Suffixed forms in NYA W panga.ra *shedding of skin, transformation*, NYA pangal.ka+NG+ Vintr *change in shape, be transformed*; PIN pangka.rla.ngu (with unclearly motivated -k-) *local spirits which inhabit waterholes... ('transformed beings')*; PNK PANGA.RRI+ *be ripe, ripen*; conceivably WIR pangu.nu *younger sibling ('to be exchanged in marriage')* and BAY POENGA.BULA *frog sp ('changeling')*.
3. Nasal-grade form conceivably in UMP malngal *shadow ('spirit')*. This may be a blend of reflexes of *pAngal and an Austronesian loan *malu *shade, shadow* (O'Grady and Tryon, above).

P76 PPN *pangka N skin

Lgs: 30.

1. Root form in PIN pangki ... *animal skin, bark*, denominal pangki+L+ *to peel – of bark of trees*; conceivably GUP bänggu *boiled bark* (with unaccountable vocalism, however).
2. Suffixed forms in MRN pingki.rli *skin*; PP *pangka.rr *skin, muscle* (> THY ngge.rr *flesh, muscle*, YIM pangka.rr *flesh, meat* (Rigsby 1976:73)). UMP awa.y *skin* meets the criteria for cognation except for having unexpected w for *ngk; note also MUL pangka.rr *skin*. YIM, YDN pangka.mu *potato* is apparently derived semantically from the fact that the tuber of this plant has a conspicuous outer covering.

P77 PPN *paangkam N rib, side; half, part

See at P47.

Lgs: 32.

1. Root form in NYA pangka W *half of carcass which has been cut lengthwise, S section, part*; WJK BANG-GA *part of, half ...*; DIY pangki *side, pangki.thirri ribs, rib bone*; ARB, WGK pangki *rib*. KLY BAG(A) *lower jaw, cheek* baaga *jaw* appears at first blush both phonologically and semantically as a further plausible reflex (cf PPN *mungka *anthill* > KLY /mugu/ muugu, and bear in mind the bipartite arrangement of upper and lower jaw). In fact, however, KLY baaga is most plausibly to be assigned as a Papuan loan – witness MIR BAG *cheek* and MWT BAGO *chin*, and note, e.g., NE jaw, NF joue – or NE chin, Latin gena.
2. Suffixed forms in NYA W pangka+pi+L+ *cut carcass down lengthwise*; possibly NYA S pangka.yala *hip* and PIN panga.rra ... *piece split off a long thin object; e.g., a spear* (with unexpected loss of *k); GAW PANGKA.RRA *district or tract of country belonging to an individual, which he inherits from his father*; NMA pangka.rl.pi+L+ Vtr *to split*; PK *pangku.rru *rib* (> BAY, THL pangku.rru), cited in Austin (1981:322); GUP banga.rdi, RIT bangi.rdi *name of a subsection* (with which compare the semantics of *palja; see *pangka, however, for an alternate possibility); conceivably GUP bang.dhu+N *sit or lie with legs apart*; Hale (1976b:26) reconstructs PP *paangka.l *shoulder* (note the metonymic relationship with *rib*) (> URA agha.w, MPA angka.l and possibly YIM pangka+L (with *aa > a?) *puff the chest, lift shoulders in pride*); WRG pangka.l *upper arm, shoulder*; possibly BNJ pangkim *temple, cheek* ('side of face').
3. Suffixed IS-grade form in JKY wangki.rr *rib*.
4. Suffixed ID-grade forms conceivably in PIN yangka.rl+pa *buttock area; meat cut*, yangki.rr+pa ... *broken piece of container ...*, yangki.rra.rl+pa *group of persons [as] ... part of a larger group*, and possibly in PIN yangku.ru *ear* ('side appendage?').

P78 PPN *paangka.rr N lizard sp

Lgs: 30.

1. Root form in WJK North BANG-A.R *very large sp lizard ...* (borrowed by western AE as bungarra); PP *paangka.rr(a) *blue-tongue lizard* (> UMP aangka.y, UMB aangka.rra, LML ka.rr, YY pa'a.rr, KBR poengké.rr (Alpher 1976b:92).
2. Suffixed form conceivably in THL pingku.lu *blue-tongue lizard*.
3. Suffixed IS-grade form in NYA, NMA wangka.rli *racehorse goanna*.

P79 PNY Y *pangku₁ N hollow and circular, wheel-shaped

Lgs: 30.

1. Suffixed forms in NYA pangku.rl *S hollow tree or log, W hollow in a tree, any such hollow*; PIN pangku.yi *head pad used by women for carrying heavy containers on the head, pangu+L+ carry objects on one's head*; GUP banggi.na *foot, footprint, wheel* (with which compare YIN

pangku.na *large wheel-shaped ceremonial headdress*); possibly RIT bangba.rla.ng (rarely bangga.rla.ng) *brain* (named after the hollow, round skull?).

P80 PPN *pangku₂ N wallaby sp

Lgs: 34.

1. Suffixed forms in NYA W pangka.rru *wallaby sp*; WJK BANG-GA.P *the Walloby* ... (sic); PP *pangku.l *wallaby* (> WMK pangk, MUM pangku, MPA ngku.l, LIN ngko.y;) conceivably KLY PAGAD *orange, brown* and PAGARA *sponge* (both < 'colour of wallaby?') – cf MIR sab *sponge*.

P81 PPN *pangu+ Vtr dig, scratch; spear

Lgs: 32.

1. Root form in WLB pangi+L+ *dig it – ground; scratch deeply*; possibly PNK PANI+ (in error for pangi+?) *dig, burrow, bury*; PP *panga+ *dig* (> URA anga+ ~ ange+); GID panga+ *kick, tread upon; arrive at*; BNJ pang+a *tread, tread on, trample*, pang+il+e *dance, stamp, kick*, pang+e *go, go away, tread*; MDI panga+tha *scratch – to relieve itch; dig ground very lightly, scrape soil*.
2. Suffixed form in WLB deverbal pangu+rnu *wooden scoop used in digging out a soak*.
3. Infix variant *pang.k.u+ in WAA pang.k.a *kick, stamp on*; WEM pang.k.a *dig* (see the YDN and DYI reflexes below).
4. Suffixed/infix forms in YDN pang.k.u.r *multi-prong fish spear*; DYI pang.k.a.y (palan) *spear*.
5. IS-grade form in NYA S wangu+R+ *hit, spank with the hand*, W wangu+R+...+a *hit, smack – as a wayward child*.
6. Suffixed IS-grade forms in UMP wangii.ji *scorpion*, WMK waanga.n *stingray with long tail* (< 'that which pierces, spears').

P82 PNY Y *panja₁ N rib, side

Perh ult rel to *paangkam.

Lgs: 33.

1. Root form in WLB panja *rib; side of wooden implement*; GAW PANTYI *side*, PANTYA+ *lie upon the side*; WIR panyji *rib*; PNG *pantha (> NMA, YIN pantha *creek bank* (< 'side'), NGL pantha *sandhill*, BLG pantha *red sandhill*); possibly YIN kanji *edge, border, drop-off*; (bound form) *nose*, kanyja+ *edge* (Wordick 1982; for the k-, see NMA kanyja.kurla.ngarri+Y+, below); GUP bindha *ribs* (with i perh influenced by binydji.tj, below).
2. Suffixed forms in NMA kanyja.kurla.ngarri+Y+ *lie on one's side* (with anticip assim of p to k); GUP, RIT binydji.tj *thin, fleshless* ('ribs showing').

P83 PPN *panja₂ N winged insect

Lgs: 32.

1. Root form in BNJ paany *march fly*.
2. Suffixed forms in WLB panji.rti *flying ant sp.*; GID panyja.laam *winged insect (generic)*; BNJ panji.lam *butterfly, moth, cockroach*; WAA panyja.laam *butterfly*.

P84 PPN *pankl.ny N grass sp (used for shelter, bedding)

Lgs: 30.

1. Root form in WLB panji *bed*; GID panki.ny *grass shelter*.
2. Suffixed forms in GUP binygu.rr *grass*, RIT binygu.rr *chenopod (plant)*, *Tecticornia australasica*.
3. Suffixed IS-grade form in WAA wanyji.ku.rr, BNJ wanyi.ku.rr *blanket*.
4. Suffixed ID-grade form possibly in PIN yanyja.ny.pu+NG+ *make a bundle for carrying* (<'swag, bedroll'?).

P85 PPN *+pany possible suff with LOC reference

Lgs: 30.

1. Basic form in NYA W .piny, in warta.rr.piny *flying fox* (cf NYA W warta.ji *dingo*, GUP wartu *dog* <PNYY *wartu *dog*); YDN +pany *in juxtaposition*; GID +piny in parraa.y+piny *tree-top* (parra.y *end, top of tree; not much, not very*).

P86 PPN *panya N, Vtr glowing, shining, glistening

Lgs: 34.

1. Root form in WJK BAN-YA *sweat, perspiration; to sweat, perspire* ('glisten').
2. Suffixed forms in YUL, WRN panya.l *moon*; PIN pinyi.ri (<*panya.ri by anticip assim) *fire at the red coal stage; hot coals ...*; GAW PANYI.WORTA *daybreak; morning* (WORTA ...*which is behind*); PNK PANYA.L.TI+ *be thirsty* (semantically, cf PPN *nyaru); BAN panha+L+ *shine – of the moon*; GUM panyaa.r *cicatrices ...* (<'shiny scar tissue'); conceivably DJA pani.p *bunyip ...*, the <NY> in the English form pointing to ancestral PPN *ny.

PPN *pa.nya. See at *pa₁.

P87 PPN *panyi+ Vtr – verb of impact

Lgs: 32.

1. Root form in YIN panyi+ *take a step, step on*; WRY panyi+ *step on, kick*; DYI panyi+L Vtr *to split (rotten log ...)*.
2. Reduplicated form in DIY panyi.panyi+ *to trot*.

P88 PPN *panyja₁ N root with pejorative reference

Lgs: 31.

1. Root form in NYA panyju S *hate, dislike*, W *averse to, not fond of* (with unexpected u); PIN panyja *rubbish, fatless meat, ... unwanted*, panyja+L+ *make bad, spoil*; KLY BADA *sore, ulcer* baadha *a sore*; DIY pantha+ *be odorous, smell*; possibly UMP panyja+Y+ *go bush*.
2. Suffixed forms in NYA S panyja.rr *jealous*, NYA W panyju.rta *tiny plant sp, poisonous for sheep*; KLY BODA.l *left*, boedha.y geth *left hand* (< 'bad/weak hand' – geth *hand* < *kaju).

PPN stem *panyja.rra, in YIN pantha.rra *jealous* and YDN panja.rrA *madness in head*.

3. Suffixed ID-grade form in PIN yanyja.rl.ka.ja *child ... of an unlawful union ...*.

P89 PEPN *panyja₂ Adj small

Lgs: 30.

1. Root form in YIM pantha (archaic) *short* (possible cognates also in PIN and KLY).
2. Suffixed form in MDI panthi.ngi *little, soft of voice; little (canoe), i.e. a small flat dish*.

P90 PDN *panyja₃ N bitter in taste

Lgs: 31.

1. Root form in NYA W panyja *chewing tobacco ready for use*; PNK PANTA *brackish, salt, bitter*, as in PANTA KAUI (appar pantha kawu) *fermented liquor ...* (in which KAUI reflects PPN *kaping *water*).
2. Suffixed form in PNK PANTA+PANTA+RRI+ *be thirsty*.
3. Suffixed ID-grade form in PIN yanyja.rl.ka *tea*.

P91 PPN *panyja₄ N deep, covered

Lgs: 30.

1. Root form in GID panyja+ *to cover*, WAA panyja *cover, block up*.
2. Suffixed forms in GUP bänhdha.rra *deep sea* (with unexpected ä for *a); YIM patha.l *deep (water, hole)* and YDN paja.ka.l *king tide* (with unexplained loss of *ny).

P92 PEPN *panyja₅ N lower leg

Lgs: 35.

1. Root form in YDN panja+R, DYI panja+L *follow* (< 'to leg it'); DIY doublet panyja *knee* (cf WEM pathi *knee*, and see WJK BONNI.T), and panyji+ *happen, become*.
2. Suffixed forms in JKY panyja.rr+ *follow* (Hale, p.c.); WAA panyja.rr *lower leg*; GIP panje.wan *boots*; WEM panjoe.wang *shoes* (loan); ARB panyja.arti *knee* (Hercus, p.c.).

P93 PPN *panyji+₁ Vintr wait, be patient

Lgs: 30.

1. Root form in YIM panyjii+ ... *wait for, care for*.
2. Suffixed forms in WJK BANJA.R *patient* and possibly DYI D panju.l *always*.
3. Denasal-grade form in PNK PATTi+ *be silent, wait, consider*.

P94 PPN *panyji+₂ Vintr burn

Lgs: 32.

1. Root form in PP *panyji+₂ *be burning, cooking* (> MUM panyji+, URA wanthi+, WMK penyj+, THY ndhi+).
2. Suffixed form in YIM panyji.l *dry* ('burnt, seared').
3. Nasal-grade form in NYA minyji+R+ *to light (a fire)*.

P95 PPN *panyji.l N woman, female

Lgs: 33.

1. Basic form in YGS, YGN nyanyji.l+pa, BAY nyanyji.l, JKY panyji.l *woman, female*; YIN pinhthi *HZ, woman's BW; woman's FZD, woman's MBD*. PIN nyanyji *eyelashes and eyebrow* is conceivably a further reflex.
2. IS-grade form in WMK wanyj *woman*.

P96 PEPN *panyjim N native cat

Lgs: 31.

1. Root form in GID, WAA panyjim *native cat*.
2. Suffixed forms in YIM panyjii.la *boar pig*; possibly GIP pinju.lang *tiger cat ... domestic cat* (with problematic vocalism) and DJA, WEM panji.l *Murray cod* (in which further semantic study is called for).

P97 PPN *panyju N tree sp

Lgs: 31.

1. Suffixed forms in MNN panyju.rn *tree*; YIM C panyjii.r *hard (to touch), strong, solid* (for the semantics, cf PPN *mankarr). Note also WJK BINDA *sp Dryandra tree*, and see P39 and P140.

P98 PPN *panyka+ Vintr creep up on, stalk

Lgs: 31.

1. Root form in PIN panyka+L+ *creep stealthily in an upright position*; GID panykaa+ *to stalk*; BNJ panykaa.l+e Vintr *stalk, crawl (man)*.

P99 PDN *panypura+Y+ Vtr ignore, belittle

Lgs: 30.

1. Root form in NYA W panypi+Y+ *take no notice of, not believe*, S panypa+Y+ *ignore* (with *r-deletion); PIN panypura+Y+ *belittle* ...
2. Compound form in PIN pany.pu+NG+ *refuse another's offer* (with root reanalysed as containing +pu+NG+ < PA *pu+M *hit*).

P100 PPN *panyu Adj fat, good to the tastePerh ult rel to *palya₁, q.v.

Lgs: 33.

1. Root form in THL panyu *good*; GYA panyu *posterior* ... (< 'fatty'); conceivably PIN panya *confident after being afraid* ... (< 'OK?').
2. Suffixed form in GID panya.rr.kan N *fat*, Adj *fat*, as metaphor *good-natured*.
3. Nasal-grade forms in YIN manyu *asking, begging; something good to eat* ...; DIY manyu *good*.

P101 PPN *papa₁ Quant everywhere, everyone

Lgs: 32.

1. Suffixed forms in PIN papu.rr.munu *very many, exceedingly great number* ...; GUP baba.la.mirri *all, every, any, everywhere* ...; KLY BABAB *completed, entirely, everywhere*; (not attested in MIR); GUM papa.taka *in line, in a row*.
2. Suffixed nasal-grade form in BNJ, WAA mapee.rr *many, all*.
3. Suffixed ID-grade forms in PIN yapu.warra, WIR yapa.rtu *all*.

P102 PPN *papa₂ Adj deaf, heedless

Lgs: 30.

1. Root form in WJK BABBA Adj *weak; languid; wanting strength ...*; BAY paapa (O'G) paapaa (Aus) *deaf, drunk* (with expressive lengthening); YDN papa *deaf, half-witted*.
2. Suffixed forms in NYA W papa.rl.karri+Y+ *lose one's way, be lost*; BAY paapa+rri+Y+ *forget*; GUP baba.la ~ bawa.la *wrong, by accident, unintentional, mistakenly, baba.'.yu+N miss, make a mistake, behave in a stupid manner, stray from the path*.

P103 PPN *papang N young one, baby, pup

Lgs: 30.

1. Root form in NYA W papa *baby*; PIN papa *dog*; GAW PAPPA *youth who has undergone ... circumcision*; PNK PAPPA(LYA) *young one, pup, whelp*; WAA papang *light in weight*.
2. Suffixed forms in GAW PAUA.NE *name of the ninth child*; possibly PNK PAPPA.RN.KO, WJK BABBI.NG (Lyons), BABBI.N (Moore) *friend*; NAN apa.rla *baby* (which, however, could instead be linked etymologically to BAY, THL kapa.rla *dog!*); BAY papi.nyu *baby*, papi.murtu *puppy* (see *purtu₁); YIM papa.rr *little baby; child (affectionate term)*; DJA pupu.k, WEM pope.ny *baby* (with symbolically altered vocalism); possibly PIN papa.n.ji *marsupial mouse type*.

The etymological value of this root is lessened because of its child language associations. For an instance of comparable semantic evolution, however, see *kurta.

3. Suffixed ID-grade form in PIN yapa.rra.ny.ji *child, children*.

P104 PDN *paparr N hurry, haste

Lgs: 30.

1. Root form in NYA W paparr *hurry, haste*.
2. Compound prenasal-grade form in PIN pamparr.ngara+Y+ *to be hurrying ... preparing to go on a journey*.

P105 PPN/Tangkic *papi N father's mother

Lgs: 32.

1. Root form in LRD /papi/ pape, DYI papi(nyja) (payi/palan) *father's mother*; PP *papi (> UMP pa'i FM, URA api, LIN pi+ MF).
2. Suffixed form in UMP pa'i+ju *sister's son's son*.

P106 PNY Y *pApi N reptile sp (< 'slougher of skin'?)

See P107-108.

Lgs: 30.

1. Root form in NYA W papi *goanna sp.*, 'bungarra'; GUP, RIT bäpi *snake*, GUP bäpi+djäri *rainbow* (djäri *coloured light, rainbow*, cf NYA W jari+Y+ *to flow*).
2. Suffixed forms in NYA S papa.ra *python*; PIN papa.ngannga.rr+pa, NYU pip.tul *gecko*; NYU papi.ly, WJK BABI.L.GUN *bat*.
3. Suffixed prenasal-grade form in NYA W pampi.rta ~ pampi.rti *gecko*, S pampi.rta *small lizard*.

P107 PPN *paapl+₁ Vintr shed the skin – as a reptile

See P106, 108.

Lgs: 30.

1. Root form in GAW BABA+ *dry a skin by stretching it on the ground*; UMP aapa+ Vintr *peel off, shed (skin)*; DYI papi+L *slice, peel*.
2. Suffixed forms in NYA S papa.ly.pi+L+ *cut open*; possibly GAW PAPAL.TO *stump of tree*; GUP bäpa.ng *sp. oak, side scales of turtle, plank* (< 'split off'); KLY ABI.TIDI *wither* ('flake off'); conceivably UMP pa'a.mu *two* (< 'split in twain'? But cf WJK WARH-RANG, *infra*); YIM papaa.l *buttock* (< 'cloven'); possibly YIM papa.tha *tree sp. – bloodwood*.

P108 PPN *paapl+₂ Vintr ignite, burn

See P106-107, to which P108 is conceivably related as the POTENTIAL counterpart of ACTUAL blistering/shedding of the skin – as when a sleeping person rolls too close to a fire. PPN *paapi+₂ is possibly also ultimately related to *paawu+L, q.v.

Lgs: 30.

1. Root form in WLB papi+Y+ *catch on fire, ignite*; possibly UMP paa'i+TH+ *to stand*; GIP pap *light, flame* (Hercus 1969:381); NAR papa *fire*.
2. Suffixed forms in NYA W pipi.j.kirri *lightning*; WJK BABU.MBE.REE (Lyons), BABBA.NG.WIN (Moore) *lightning* (unless, since lightning is POTENTIALLY rain, these forms are properly to be assigned as reflexes of *pAypa, q.v.); BNJ papu.lu.ng *smoking pipe, tobacco pipe*.
3. Prenasal-grade form in KAT pampa+ ... *light a fire*
4. Suffixed prenasal-grade form in WEM pampa.nti.la *shine in many colours*.

P109 PDN *papirr N hand

Perh originally < 'standing out', 'extending', and thus a derivative of P108, with agent marker *+rr.

Lgs: 30.

1. Root form in GRJ papirr *hand*.

2. Nasal-grade form in WRN mapirr(+pa) *hand*.

P110 PPN *pApu N egg

Perh ult rel to *pAlmpu.

Lgs: 32.

1. Root form in ARB papu *egg*.
2. Suffixed forms in PNK PAPPULLU *reins, kidneys* ('egg-shaped', cf *muka); GUP baw.yu+N *burst, hatch*, RIT baw.u+ ~ baw'.wu+ Vitr (*flower*) to blossom, bloom; burst.
3. Nasal-grade form in GUP mapu, RIT mapu' *egg*.
4. Prenasal-grade form in GUP bambu.ru.ng.bu.ru.ng *brain*; DYI pampu, KAB BAM *egg*.

P111 PPN *paapu N father

Lgs: 34.

1. Root form in PNK PAPPI, BAY papu, GUP, RIT bāpa, GUM paapa *father*; KLY BABA! *father!*; PP *paapa (> UMP, KNJ paapa), MDI papi, DJA, WEM pap *mother* (Alpher, p.c.); WMK paap *breast*.
2. Suffixed forms in GRJ, MNN papa.rla, GRD papa.rtu, WLB papa.rdi *elder brother* (cf the semantics of *maamang); PNK PAPPI.RA.NYE, BAY papu.yarra *father and son*.

papula *one who teases*. PIN element of unknown etymology, possibly substratal).

P112 PNYY *para₁ N scar, scarred; skin of lighter colour – as from a burn

Prob ult rel to P113.

Lgs: 30.

1. Root form in WLB para *subincision*, YIN para *subincised (penis)* (both borrowed); NYA W para *subincision*.
2. Suffixed forms in WJK BARH-RAN (appar paran) *a scar; any mark of a wound*; PNK PARTALYE *scar*, WLB parta.ri *blonde – of hair* (both with unexplained rt).
3. Reduplicated suffixed form in GUP bara.rr.bara.rr+mirri *skin light colour after having been burnt*.

P113 PPN *para₂ N rays of light, dawn

See P112.

Lgs: 30.

1. Root form in GAW denominal PARRA+ *kindle, light; chew; marry*.
2. Suffixed forms in WLB para.rr *rainbow*; VAS BARRA.B *sky*; GUP bara.wun *rays of sunlight before sun rises*; RIT bar.u+N *to be(come) white or bright*, bari.k ~ bari.tj *white, bright, light-coloured; grey (hair)*.
3. Compound form in GID parra+ngayil *light orange colour (ngayil clay)*.

P114 PPN *para₃ N top part, summit, end, extension

Lgs: 31.

1. Root form in GAW PARRA *branch of a tree*; PNK PARRA *fork of a tree*; KLY poera *foreskin*; possibly YIM paari *chin* (< 'extension of face?').
2. Reduplicated form possibly in LRD /bara.bara/ bara.bar *shade house; nest upon which deceased is placed (facing east)*.
3. Suffixed forms in NYA pari.rr *hand, paw* (< 'extension of arm'); GUP bara.la *sandbank* ('part (of seabed) which extends upwards'); PP *para.n *head* (> LIN ara.n, UMP pa'a.n); GID parra.y *end, top of tree*.

P115 PPN *parla₁ N shin; 'all shins', i.e., thin

Lgs: 30.

1. Root form in PNK PARDLA *anle* (sic); YIM pala *skinny, poorly*; YDN pala *shin*; WAA pala *underneath, below*.
2. Suffixed reduplicated form in WLB pala.pala.jarri+Y+ *become tired – esp of body part*.
3. Reduplicated suffixed forms in GUP barla.rr.k.parla.rr.k *long, tall – of person, fish; great – of hunger* (old lg) and barla.mbi.rr.pi.rr.yu+N *sit cross-legged*.

P116 PPN *parla₂ Adj blunt, dull

Lgs: 32.

1. Root form in WRY parla *blunt, dull – of blade or point*; UMP pali *sharp* (with antonymic semantic change).
2. Suffixed form in YIM pali.n.ka *porcupine*.
3. Infix form *parl.p.a. in NMA purl.p.u. *blunt, dull* and YIN put.p.u. *axe blade* ... (referred in Wordick 1982:344 to BAN pul.p.u.rr); WMK pepa.n *sharp* (< pre-WMK *pal.p.a.n).

P117 PPN *parla₃ mud

For the semantics, cf P124.

Lgs: 30.

1. Root form in NYA S *parla mud containing tin*; YIN *parla hard dry mud*; PNK denominal PADLA+ *wash*; BAA *parla mud, wet clay*.
2. Infixated denominal in YIM pal.k.a+L *make; wash*.
3. Nasal-grade form in NYA W *marla anthill*.

P118 PNYY *parla₄ N secret

Lgs: 31.

1. Suffixed forms in WJK BALLA.R *secretly*, BALLA.R+JA+ *secrete, hide* (JA+ *put* < PPN *ngiirra+); RIT barl'.yu+N *hide, go into hiding*.

P119 PPN *paarla N woman, wife

Lgs: 32.

1. Root form in DIY *parla sexual arousal* (Austin, p.c.).
2. Suffixed forms in PNK PALLA.RA *woman*, PALLA.RRI ...*Pleiades*; GUP bärta.tha *stick used for wife beating*; GUM PAALI.EI+ *marry*.

P120 PNYY *parla+ Vtr ask for

Lgs: 30.

1. Root form in BAY pala+Y+ *ask for*.
2. Suffixed forms in PNK PALLA.NNI+ *produce, pronounce, name*; GUP barl'.yu+N *beg, cadge*.

P121 PPN *pArla+₁ Vtr leave, let be

Lgs: 30.

1. Root form in WJK BAL *leave it; let it alone ...*; GUP bay' Interj with gana+N *leave*; JKY paraa+ *leave, let be* (Hale, p.c.).
2. Suffixed forms in YUL *parla.ny not wishing for, averse to* (as in *parla.ny+pa+rna+ra I don't want it*; BAY *parla.karri+L+ Vtr leave, abandon* (vs. antonymous *parla.tharri+Y+ want, desire*); GUP bäy.pi'.yu+N *be left behind, stay behind*; RIT bay'.yu+N *leave (behind or aside), abandon*.

P122 PPN *pArla+₂ Vtr open, let loose

Lgs: 30.

1. Root form in YUL *paarla+L+ open one's eyes*; PNK PALLA+ *pull, draw, let loose, start*; KLY PALA.I *open, as in shape of V, without complete separation; split, divide*; YDN pala+N *open out, become wide*.

2. Suffixed forms in GRD kuru parla.rrri+Y+ *open one's eyes* (kuru eye < PPN *kurun); PIN parl.ya+N+ *open one's eyes after sleep*.

P123 PPN/Tangkic *parlang Loc behind, at the rear of

Lgs: 32.

1. Root form in UMP paala *behind, later*; GID paling *young*, WAA paling *young man*.
2. Suffixed forms in MNN parla.rr *back, spine*; GRY pala.lyi *formerly* and YIN pala.mu ~ pata.mu *long ago, ... a while back; previously, formerly; already, yet* (< PNG *pala); GUM BALA.MI *slow; soft (in speech)*; possibly RIT bala.nu *forever, for good*.
3. Nasal-grade forms in WRN marla *younger sibling* ('one born "behind", i.e. more recently'); PIN marla *behind, at the rear of*.
4. Suffixed nasal-grade forms in YUL marla.ju, PIN marla.ny+pa *younger sibling*; PIN marla.ku+rrri+Y+ *return, turn back*.
5. Cliticised IS-grade form in LRD +wala *first, just*.
6. Suffixed IS-grade forms in NYA W warla.ngka.rr Loc *in front*; LRD wala.ji *before*; GUM WALA.GIR *afterwards*, WALA.NGGA *behind, after, lastly, later*.

P124 PDN *parlju N soakage

For the semantics, cf P117.

Lgs: 30.

1. Root form in WLB parlju *mud, rainsoaked ground*, parlji+L+ *wash it*; PIN parlju *soakage water obtained by digging*, and denominal doublet parlji+L+ *wash (clothes or some object)*, parlju+L+ *dig for ground soakage water*. Note: borrowing is a possibility.

P125 PNY *parlku₁ N foot, track

Prob ult rel to P48.

Lgs: 30.

1. Root form in WJK BALGA+NG *to track; pursue on a track*; BAY PALGU *toe* (Davidson), parlku *foot, track* (O'Grady), *ankle* (Austin).
2. Suffixed form in PIN palka.rra *path of kangaroos and euros*.

P126 PPN *parlku₂ N wide clear space, plain

Lgs: 30.

1. Suffixed forms in PNY *parlka.rra *plain* (> NYA parlka.rra W *treeless plain; dry claypan S flat ground*; NMA parlka.rra *plain*, YIN parka.rra *grassy plain; valley*; BAY parlka.rra

plain, level country, palka.rra (sic) bald, palka.rra+ra plains kangaroo; NYA W *parlka.n clear place – e.g., clearing for camp; rift in clouds; baldness*; DYI *palku.n Adj naked, out of cover*; GUM BALGAA.R *wide, broad, spread out*.

P127 PPN *parlpa N Possible root, woomera

Lgs: 30.

1. Suffixed form conceivably in YIM *papaa.r hoe, spade; woomera* (with haplology due to the addition of .r?).
2. Suffixed IS-grade form in NYA *warlpa.rra woomera*.

P128 PPN/Tangkic *paarl(.pang) N flat, smooth

(cf *miil(.pa).

Lgs: 34.

1. Root form in NYA W *parl*, LRD /paal(.k)/ *paal*, GID, WAA *pal.pang flat*; PIN *pali+L+2 ...flatten ...*; NAR (ungga) *BARL.BA*, GAW *PAR.PA*, RMK ('Mt. Remarkable') *BERT.PA* (*appar part.pa*) *skin* (< 'smooth'); PNK *PALLA level, fertile*; YIN *par.paa+ massage* (< 'apply flat of hand to'); UMP *pata flat, level; death adder*.
2. Suffixed reduplicated form in GUP *barl'.parl.yu+N pound (cycad) ... ('flatten')*.
3. Suffixed forms in NYA W *parl#karti palm of hand (#karti side; ALLATIVE < PPN *rika)*; *paL.pa.rra wide*; PNK *PAL.PANDA plain, even, smooth*; possibly DIY *parla.ra open country, outside*.
4. Reduplicated suffixed form in YIM *pal.aa.y.pal.aa.y flat, flattened*.

P129 PPN *parlpa ~ *parltu N slapping noise

Prob rel to *paarl(.pang) via 'clap palms together'.

Lgs: 30.

1. PNY root alternant *parlpa in PNG **parlpa slapping or thumping noise* (> NMA *parlpa*, YIN *parpa+*); NYA W reduplicated new-formation *parl+pa.rl clapping of hands; noise of large drops of rain on iron roof*.
2. PPN root alternant *parltu in PNK *PALTU sound, noise*; GAW *PALTA+ to knock ...*; PNK *PALTA+ to knock, thrust, beget*.
3. Suffixed forms in PIN *purltu.ly+pa thud ...*, *purltu.rr.wangka+Y+ to thud* (with V₁ as u conceivably through sound symbolism).
4. Suffixed prenasal-grade form in UMP *palnta.l tha'i+L+ clap the hands* (*tha'i+L+ hit*).

P130 PPN *paarpa+ V to roll, turn, revolve

Lgs: 30.

1. Root form in DYI palpa+L Vtr, WRG paarpa *to roll*.
2. ID-grade form in PNK YALBA+ v.a. *to roll*.
3. Suffixed form *paarpa+rr *sky* (< 'that which turns, revolves', with PPN *+rr AGENT marker), in NYA parpa.rr, PNG *paarpa.rr (> NMA parpa.rr, YIN parpa.rr), BNJ palwa.rr *sky*.

P131 PNY *parltu+ Vtr to stretch, straighten

Lgs: 31.

1. Suffixed form in NMA parpi.ra+ Vtr *straighten* (with lag assimilation).
2. Suffixed reduplicated form in GAW PALTA.PALTA.RE+ *to stretch one's self*, PALTA.PALTA.RI.TTI *stretching*.
3. PDN IS-grade form *wartu+ in NYA W wartu+R+, WLB wardi+L+, PIN wartu+L+ Vtr *stretch, straighten*.
4. Suffixed IS-grade forms in NYA W wartu+R+...+rni.nyi, YUL wartu+L+...+nyi.nta Vrefl *stretch one's limbs – as upon awakening*.
5. Suffixed ID-grade form in PNK YARTA.RRI+ *stretch one's limbs*.

P132 PPN *parlu N river; (stony) bank of river

Lgs: 30.

1. Root form in NYU pirl *gully, creek*; WJK BILO *stream, river*; PNG *parlu (> NMA parlu *cliff*, YIN parlu *riverbank*, MRD, NUW parla *stone*; WRY parlu *stone*.
2. Suffixed forms in NYA W paLu.pu.ja+R+ *to cave in – as sand into a well*, paLu.pu.ja+R+...+rni.nyi Vrefl *to break – of a wave*; GUP barla.ngaw'.yu+N *smother, overwhelm, cover, surround*; YIM palu.y (little known form) *stone piece used for grinding ...*; GID palu.n *river, creek*, WAA palu.n *river, Milky Way*; MDI palu.rru *white crane, egret* (< 'river (dweller)'). Note also GID paluum *shallow – of water*.

P133 PPN *pArlu₁ Adj winding, zigzag, snaky

Perh rel to P132.

Lgs: 30.

1. Root form in YIN parli *bend, bent*.
2. Reduplicated form *pArlu.pArlu in PNG *parli.parli (> BAN parli.n.parli.n+pa *winding, zigzag*, YIN parli.warli *crooked, snaky*); GUP bärl.barl.yu+N *be bent over*; KLY BAL.BAL *crooked, bent, bal.bal winding* (caveat: MIR BARBAR *crooked, semicircular*).

3. Suffixed forms in GUP *barl.ga.p.thu+N* *be bent over, crouch*; YDN *palu.r* *curved woomera*.

P134 PPN *pArlu₂ Adj *full, sated*

Perh rel to P132.

Lgs: 31.

1. Root form in NYA *pirlu* *S fat, plump, W guts, viscera*; YIN *parla* *very; [e.g., hit] hard; loud* (< 'fully'); possibly MDI, DJA, WEM *pili* (GIP *pule.n.je.ti*) *stomach*.
2. Suffixed forms in NYA *W pirlu+rr* *inside part – e.g., doughy interior of loaf of bread*; PIN *parlu.jarra* *pregnant ...*; BAY, WRY *parlu.ra* *sated, full*; BAY *parlu.ra+rri+Y+* *get drowned, parlu.nyu* *stomach*.
3. Infixes in WLB, PIN *parl.j.a* *sated, satisfied, full*; PIN *parl.j.a+L+* *feed (another)*; JKY *pal.k.u.r* *sated, filled with food*.
4. Infixes in NYA *W marl.k.a* *sated, full*.
5. Cliticised form in YIN *+parlu* *very*.

P135 PPN *pArlu₃ N *louse*

Lgs: 31.

1. Suffixed forms in NYA *parlu.l* *W louse, S head louse*; GYA *pala.rr* *human body flea (louse?)*.

P136 PPN *pArnka₁ N *honey*

Lgs: 31.

1. Root form in JKY *panka* *honey drippings*.
2. Suffixed form in RIT *barnggi.tj* *honey bee (Trigona sp)*. PIN *parnka.ra+N+* *... prepare food ...* may be a further reflex.

P137 PPN *pArnka₂ Adj *big*

Lgs: 31.

1. Root form in BAY *parnka* *big*.
2. Suffixed form in JKY *pangka.l* *big* (loan from northern source? cf *rnk in PPN *marnku, reflected in BAY, etc *marnku.rr* *three*, UMP *mangku* *four*).

P138 PDN *parnngV N narcotic sp

Lgs: 31.

1. Suffixed form in NYA W panngu.rra *toadstool sp.* With this form compare, for its phonology at least, YIN panngu (respect lg counterpart of munti *really, truly*); and for its semantics, cf GUM paaka.rram *mushroom*.
2. Suffixed IS-grade form in PIN warnnga.rti ~ warrnga.rti *sp chewing tobacco plant – grows in hill country*.

P139 PNY Y *parnta N stone

Lgs: 34.

1. Root form in GAW PARNDA *limestone; lime*; WIR parnta, GLB (Galbu) barnda (Capell, p.c.) *stone*.
2. Suffixed form in MRN purnta.ngu *stone* (cf *maamang *father* > MRN muma.rlu).
3. Nasal-grade form in YIN marnta, DIY marda *stone*.

P140 PPN *parntl+ Vtr smell, sniff

Lgs: 30.

1. Root form in NYA W parnti+R+, PIN, BAY parnti+L+ Vtr *smell, sniff*; PIN deverbal parnti *a smell*; NYA W, WLB parnti+Y+ Vtr *to smell, give off an odour*; WJK BINDA.NG *to smell* (see P39, P97); GID panti+ *to sniff*, WAA panti *to smell*.
2. Suffixed forms in NYA W parnti+ly N *lizard sp, ca 8 cm – gives off strong odour*; WLB parnti+nya+NG+ *to smell, perceive odour*.

P141 PPN *parntung Quant all

Lgs: 32. See O'Grady (1990).

P142 PPN *parrany N pain

Lgs: 30.

1. Reduplicated form in NYA parra.parra W *pain, S ache*.
2. Suffixed form in GID parraany *pain, soreness*, WAA parraany *painful, stinging*; conceivably also GUP barra.ri+rri [*be*] *frightened*.

P143 PPN *parri+ V look for, seek; find

(related as POTENTIAL and ACTUAL)

Lgs: 31.

1. Root form in PIN parri+L+ *search, seek*.
2. IS-grade form in GAW WARRE+ *look for; seek*.
3. Palatal-grade form in NYW (Nyawaygi) paji+L+ *find* (cf , e.g., PPN *karra+ *tie* > PP *kaja+).

Further cognation with PP *paarri+/*paaji+ *cry* is conceivable.

P144 PPN *+parri Suff PROPRIETIVE, having

Prob ult derived from a nominal, *parrung, q.v.

Lgs: 31.

1. Basic form in NYU pati *no*, WJK +BART(U), KGS +PORT *NEGATIVE*; YGS, YGN, GRJ +parri, BGU +parri ~ +payi, GUM +karri *PROPR* (for NGI examples parallel to the presumed labial-to-velar shift in GUM, see Donaldson (1980:18, 30)); BAN, BLG +pati *PRIVATIVE*, lacking (with antonymous referent switch, as also in PPN *+kurlu *PRIV* > WLB +kurlu *PROPR*).
2. Augmented (suffixed) forms in YIN +parri.marta ~ +warri.marta and BAY, THL +pirri.tha *PRIV*.
3. Nasal-grade form in GUP, RIT +mirri *PROPR*.

P145 PPN *parrja+ Vtr look at, watch

Lgs: 31.

1. Root form in NYA W parrja+R+ *look at, look after, mind*; BNJ parrji.l+e *look on at, watch (as spectator)*.

P146 PPN *parrka₁ N thin, light in weight

Lgs: 32.

1. Root form in NYA parrka W *leaf, foliage; tea, S leaf*; PIN, WIR parrka *leaf*; PNG *parrka (> NMA, NYL parrka, KUR parra *leaf*, YIN parra *ingestible leaf* ...).
2. Suffixed forms in NYA W parrka.lyi *bush sp (used medicinally)*, S Parrka.lyi.nya *Whim Creek* (called Parrka.pi.nya in NMA); MRN haplogised form parra.l.ka *light in weight*; WJK BARGA.R *light; thin; as a covering* (sic); BAY parrka.ra *shoulder blade*; PNG *parrka.ra *point of shoulder* (> NMA parrka.ra, YIN parra.a); GUP barrwa.rn *skin, bark, pound note*, barrk.parrk.punu+(ma) *unfold, open out, spread out*; possibly RIT barrtja.ra.y (with *k > tj?) *paperbark tree sp.*; GID treblett parrkaa.n *thin, underweight* (metaph mean, hardhearted),

parrkee.n *lung*, parrka.n *boomerang* (< 'lightweight (artifact)'); WAA parrka.n *returning boomerang*; conceivably also GID barrku.l *bark* and DIY parrki.lya (sic) *parakeelia plant type* ... (Austin, p.c.).

For the connection between *leaf* and *lungs*, cf BAN walha.rn *leaf*, NMA walha.rn *lungs*, KUR watha.rn *leaf, lungs* (< PNG *walha.rn < PNY *walya *leaf*).

The semantic association between *boomerang* and *light (weight)*, *ethereal* is amply attested elsewhere in the Pama-Nyungan speech-area: PPN *wanga.l *light in weight* > NYA wanga.l *wind, air* (cf NYA W wanga.rr *light, flimsy* and wanga.wanga *lungs*), but LRD /wanga.l.k/ wanga.l, YDN, etc wanga.l *boomerang*. Note further that the name of the Wangaaybuwan/Wongaibon people of New South Wales (Donaldson 1980:1) contains a further relevant element – wangaa.y, the referent range of which would have originally included '*light*' (*manner of phonating*) as well as *light (weight)*. As a negative particle, NGI wangaa.y arose as the end result in this line of development due to the common eastern Pama-Nyungan practice of naming languages after a word for *no*.

Further corroboration comes from a PPN root *pura *hot dry wind*, whose referents include NYA W pura.ngu *hot south-east wind*, WLM, etc pura.ngu *sun*, YDN pura.pura *dusty place* (< 'windy (and dry)') and, crucially, KAB BURAN *wind* and BORAN *boomerang*. These two KAB forms were, in fact, probably homophonous – Mathew (in Curr 1887:III:158, 197) would have reacted to them in terms of the English speaker's intuitions concerning contrasts among non-low back vowels.

P147 PPN *parrka₂ N *hot*

Lgs: 32.

1. Root form in NYA parrpa W *hot, humid*, S *warm*; NYA W parrpa+R+ Vtr *to heat*; GUP barrpa' *putrid, rotten*, RIT barrpa *rotten, stale (esp of meat)* ('affected adversely by hot, humid weather').
2. Suffixed forms in NYA parrpa+karra *hot*; WRN parrpa+karri+Y+ *be hot*; WMK karrka.n *hot*.
3. Prenasal-grade form in YDN payngka *hot stone used in cooking*.

P148 PPN *pArrngka N *praise; permissiveness*

Lgs: 30.

1. Root form in YDN parrngka+N *to praise*.
2. Suffixed forms in WLB pangka.la *permissive; let ...; it doesn't matter that ...*; conceivably GUP barrngi.rl *feet turned out when walking (correct way for men)* ('praiseworthy mode of walking?').

P149 PDN *parrparr N *bodily alarm response*

Lgs: 10.

1. Suffixed forms in NYA W parrparr.kurta+R+ *jump with fright, leap away in alarm – as from snake*; PIN parrparr.ma+N+ *to tremble*.

P150 PNY *parru N *flower*

Lgs: 10.

1. Suffixed form *parru.mpa in GAW PURRU.MBA *flower; blossom*; BAY parru.mpa *wattle*.
2. Reduplicated suffixed form conceivably in WLB purru.lyu.rru.lyu *new green leaves on tree; new shoots of plant*.

P151 PPN/Tangkic *parrung N *person (of), inhabitant, denizen*

See also at P144.

Lgs: 33.

1. Root form in WRN parra *I* ('person speaking'; cf MRD kartu *you SG* < *kartu *man*, and YY (p)am orto *you SG*, involving a reflex of PP *pama < PPN *mapang); PNK PARRA *thing, something* ('person's (possession)'); YIN parri *zombie (animate dead body), devil; Lucifer*; KLY PARU *forehead, face; front* /paru/ paaru *face* ('person'); UMP parra *person of European descent* (diffused item?); DYI parri (pala) *stone tomahawk*; GID parrung *killing boomerang* (cf NYA S, WRN parra.lyi); WEM parra *red kangaroo* ('personal (totem)'); GIP prra (sic) *man, person*.
2. Reduplicated form in NYA W parru.parru *net*.
3. Suffixed forms in NYA S, WRN parra.lyi *boomerang*; WRN pronominals (cf parra, above) parra+ngku *you SG* ('your person', with +ng.ku < PPN *nyun+ku *your*), parra+kujarra *we two*, parra+ngku+kujarra *you two*, etc; WLB parra.ja *coolamon, winnowing dish*; PIN parri.nya *that one previously referred to* ('that person'); NYU para.nga *one's totem* (*rr > r); YIN parri+mirnti *sea serpent*; PKA *parra.rta *humpy* (> BAY, THL parra.rta, BRD parra.rda); BAY PARU.WA *hearth* (Davidson); GUP barra.m.barra *cloth, clothes*; LRD /barra.m.barra/ barra.m.barr *hairstring* ... (the identical shapes of the GUP and LRD forms point to possible diffusion across the Gulf of Carpentaria); LRD /barr/ in /barr duwu/ barra.rdu *buttocks*, in which /barr/ provides [+human] specification (/duwu/ duwa otherwise has the referent *butt – as of spear*); UMP parru.tha *gun*; WEM parroe.mp(+uk) (*his*) *ancestor, ancestral being, totem* (cf NYU para.nga, above).
4. Cliticised forms in YDN +parra *something or someone pertaining to or belonging to ---*; DYI +parra *a person or animal who is concerned with ---* See also *+parri.

The semantic associations implied in the above are borne out in the descent of several different roots:

- a) PPN *mapang *old man, doctor*, whose reflexes include NYA pama.rr *humpy* (and WLM pama.rr *stone*, from '(rock) shelter', PP *pama *person* and GID mapaang *old man*).
- b) PNY *karnku, descending in WIR karnku *wurley*, PNK KARNKO *hut, house*, and NYA IS-grade form warnku *stone*.
- c) PPN *kAnyā (original referent unclear) > PNK KANYA, NUG katnya, ADN atnya *stone*; GAW KANYA.PPA *small var rock-crystal*; PIN kanya.rla, WLB kanya.rla ~ kanya.la *hills kangaroo, euro* (< 'dweller in stony country' – cf NYA W warnku.karri.ngu *red kangaroo* with warnku, above); BAY, THL kanya.ra *person, man* (< 'of the humpy'); GUP ganyu *star* ('camp of sky-dwellers'); KAT kanya *camp* (whence Australian English *gunyah*); and IOR GONYI *hut*.
- d) PPN *payung *shelter, protection*. See P170.
- e) PPN *ngarrka > WLB ngarrka *man – fully initiated man*; YUL, PIN, WIR ngarrka *chest*, NMA ngarrka *face*; NGARKA.T – name of former people of Lameroo area in South Australia.
- f) As synchronic evidence, note PIN martu *initiated man* vs martu.purra *one's own personal property ...*. (These forms appear to be alterations of a root *kartu *man* which developed k-/m- symbolism; cf NYA W kurlu.rr ~ murlu.rr *testicles*, from PPN *karlu.)

P152 PPN *parti N semen, i.e. POTENTIAL child; ACTUAL child

Lgs: 11.

1. Root form in NYA W parti *semen*; GAW BARTI, PARTI *witchetty grub* (containing semen in one Dyirbal traditional tale – Dixon, p.c.); BAA parti *egg ... of bird or insect ..., testicle*.
2. Suffixed form in NYA W parta.ny *child*.

Substantiation of these semantic associations stems from the following:

- a) PPN *jarlpa, reflected in PIN jarlpa.rr+pa *young one ...*, UMP thal'a.l *semen*, MKU thalpa *copulate*.
- b) PNY *jiji, descending in YUL, PIN jiji *child*, WJK DJIDJI *semen*.
- c) Yuulngu JUDU yothu *semen* is 'what children are called' (Berndt and Berndt 1964:121).

P153 PNY *pati Adj blunt

Lgs: 10.

1. Root form in WLB pati *hard ground; blunt spear*; PIN pati *blunt – of spears and other instruments; closed – of young dog's eyes*.
2. Suffixed form in WJK BATTI.RI *rough; hard; like an unprepared kangaroo skin*.

Further cognation with GUP bäti *short two-edged knife* and/or barti *barbed spear* is conceivable.

P154 PPN *pawu₁ N spine, ridge

Lgs: 30.

1. Root form in YDN pawuu *backbone*.
2. Suffixed form conceivably in GID, WAA pawu.rr *head*.
3. Suffixed nasal-grade form in NYA W mawu.lu *long, low hill or rise*.

P155 PNY *pawu₂ Interj hey!

cf *payi₃.

Lgs: 30.

1. Root form in PNK PAU *call, hallo, cooee*; YIN pau *hey!*

P156 PPN *paawu N fur, feathers, feathered

Lgs: 30.

1. Root form in WLB pawu *fur – of animal*.
2. Suffixed forms in NYA W pawu.l.ka *little or lesser egret*; NMA payu.la.rrī, YIN pau.la.rrī *night heron*; BAY pawu.ka *grebe* (Austin); possibly UMP aawu.ku *cinnamon quail-thrush*.
3. Suffixed nasal-grade forms in WLB mawu.lya.rrī *woman's necklace or pubic tassel*; PIN mawu.lya.rrī *hair, neck ornament ...; small dress ...from cat or fox hair*.

P157 PPN *paawu+L Vtr cook, roast

Lgs: 31.

1. Root form in PIN pawu+L+ ~ paa+L+ *cook ... raking coals over the animal*; GAW BAUO+ *put wood to the fire, or to trim it ...*; KLY BAU ~ BAWA *stones on which the cooking shell is supported* (not attested in MIR); YIM paawa+L *to light, burn, cook, roast*; DJA pawa *to cook*; WEM pawa *to cook in ashes*. Note also GUM paakii+ *to cook*, DJA pake.n *cooked* and WEM paka *he cooks*, with unexpected k for *w.
2. Suffixed forms in PNK BAU-U.RRU *pot; kettle; any large sized vessel* ('container for cooking/boiling in'); possibly GUP bāwa.ŋ *vegetable food, potatoes* (< 'cooked?').
3. ID-grade form in NYA yawu W *hot sand – as used in cooking*, S *hot sand, hot ashes*.

P158 PEPN *pawV N wallaby

Lgs: 31.

1. Root form in GIP paui *common wallaby*.
2. Suffixed form in YIM pawu.rr *rock wallaby*.

P159 PEPN *paya N swamp, swamp growth

Lgs: 30.

1. Suffixed forms in WAA paya.ka.n *bulrushes*; WEM paya.l *swamp*.

P160 PNY *payi₁ N wind, air; light in weight

Lgs: 30.

1. Root form in WLB payi *wind, air in motion*; NYU pay *buttocks*, WJK BYI *posteriors* (< 'where wind is released'). Also conceivably cognate is KLY BAI bay *grass* (< 'waving in the wind'? But cf MUR(alag) BARI *grass*, which points to a *pari prototype).
2. Suffixed forms in PIN payi.rr.pu+NG+ *winnow*; WJK BYA.NG.BANG (appar payangpang) *light; not heavy* (for the semantics, cf *wanga.l); YIN pau.ny *wind grass*; possibly BAY paya.tha+L+ *throw* (relating semantically via 'winnow?') and GUP baya.paya *rope attached to sail to manipulate*.

P161 PPN *payi₂ Quant none

Cf paayji+.

Lgs: 30.

1. Suffixed forms in PIN pawu.ly+pa *dim-eyed person* (with dissim due to ly?); PIN paa.nga ... *blind*; GUP bäy.ŋu *none, no ... negative*; UMP payi.na+ *die away – of wind; be calm – of water* (for the semantics, cf NYA W rawi.n *calm, windless* < *rawa). Note also YIM patha+L *be finished*.
2. Reduplicated suffixed form in NYA W paya.rr.paya.rr *shortsighted*.

P162 PPN *payi₃ Interj hey!Cf *pawu₂.

Lgs: 30.

1. Root form in NYA payi! *hey!* (Wordick 1982).
2. IS-grade form in UMP way! *interj to attract attention from afar*.

P163 PNY *payi₄ Interr Part

Lgs: 31.

1. Root form in RIT bay' *Interrogative particle*, and possibly also in WLB payi+L+ *ask* and PIN payi+L+ *scold* (but see *payi+, below).
2. IS-grade form in NYA W wayi *Interr Particle*.

P164 PPN *payi+ V look for, seek

Lgs: 32.

1. Root form in GAW PAIE+ ~ PAIE+RE+ *seek, look for, examine, be thinking*; GUM BAIJI:+ payii+ *to seek*.
2. Suffixed forms in BAY paya.nti+Y+ *look for*; RIT baya.w'.wu+N *collect (objects)*.

P165 PPN *payjl N lower arm; extension of lower arm – e.g., dilly bag

Lgs: 32.

1. Root form in NYA W paji *split stick – as used in making fire* (cf NYA W mara *fire saw* < *marang *hand*); PNG *paji (> NYL, BAN paji *lower arm*, YIN payi *specifically the radius (bone), but loosely the forearm* (Wordick 1982:336); lower arm); GUP bathi *basket, bag, box, dilly bag*; YIM payji *large dilly bag*; YDN paji *canoe* (< 'container').
2. Suffixed forms in NYA W paji#mili *fire saw* (#mili GENITIVE < *mila *hip*); GUP batji.ka.li *pannikin*; RIT bithi.'.yu+N *to carry – in dillybag hung around shoulder*; YIM pathi.pay ~ pathi.pi *bone*; MDI pathi.ki *tomahawk*; DJA paji.k *stone tomahawk*.
3. Nasal-grade form in NYA W panyi(.marra) *wrist, forearm*.
4. Suffixed nasal-grade form in YIM panyii.n *kind of dilly bag*.

P166 PPN *paayjl+ Vintr miss out, be without it

Perh ult re. to *payi₂.

Lgs: 30.

1. Root form in GUP bäythi+rri *miss out on something*; UMP paaji+TH+ *miss out, not get it, be without*.

P167 PEPN *paayju N motion downhill

Lgs: 31.

1. Suffixed form in DYI Dyalnguy payju.pil *Vintr motion downhill*.
2. Nasal-grade form in UMP maaya *steep ascent*.

P168 PPN *pAyka+ Vintr arise, arrive; grow taller

Lgs: 30.

1. Root form in YUL, PIN paka+L+ *arise, arrive*; MDI payka+ *get up, rise ...*; DJA payka+ *fly, rise up in flight*; WEM payka+ *get up, rise in flight, fly*.
2. Suffixed form in NYA S paka.rli.karra N *young male red kangaroo just beginning to colour on arms and legs ('growing up')*.

3. Suffixed ID-grade form in PIN *yaka.rl+pa immature young emu*.

P169 PPN *pAypa N water

Lgs: 31.

1. Root form in NYU (Moora) *papa water* (loan from northern source?); PNG **papa water* (> NMA *papa*, YIN *pawa*); YDN *paypa spring (of water)*. But note PPN **ngApu*.
2. Suffixed forms in WLB *pawa.ni flood* (with unexpected *w* for **-p-*); WJK BABBA.LY *Apudenda puellulae*; YIN *pawa+j.pirti watery, juicy* (*j* < **ly* – cf PIN *yapa.ly.pu+NG+*, below).
3. Suffixed IS-grade forms in GUP *wapa.ngi mud*, *wapu.rnu water rat*.
4. Suffixed ID-grade forms in PIN *yapa.ly.pu+NG+ plaster mud on the body to keep cool*; WMK *apa.lech clean water*.

P170 PPN *payung N shelter, protection

Probable early Austronesian loan (O'Grady and Tryon, above).

Lgs: 34.

1. Root form in BAY BAIA *deep wooden baby tray* (Davidson); DYI *paya (pala) belongings, things*; GID *payuung sling for carrying child*.
2. Suffixed forms in BAY Payu.ngu *Bayungu (language or people)* (< 'housed, sheltered'); YIM *paya.n house, shelter, humpy*; YDN (Dyalnguy) *paya.pay person*; DYI (Dyalnguy) *paya.pay man*; GID *paya.wa+ rock back and forth*; MDI denominal *paya.ngka.tha look after, take care of*.
3. Suffixed/infixed form in GID *pay.k.a.l man ...*, WAA *pay.k.a.l (Aboriginal) man*.
4. Nasal-grade forms in NYU *may(a) house, hut, camp, shelter*; WJK MY-A *a house; the bark of the tea-tree ...* (widely diffused to the north, as in NYA *maya house, building*; cf also Australian English *mia-mia*); conceivably also YIN *mayu quiet, calm, peaceful, tame* and BAY *mayu(.ngu) baby, small child* ('protected').
5. Suffixed nasal-grade form in YGN *may.a.ji man*.
6. Metathesised nasal-grade form in WLB *yama shade, ... shady place*.
7. Suffixed metathesised nasal-grade form in WJI *yama.ji person ...* (for the semantics, cf **kAny* and **mapang*. Note also Spanish *pueblo* in its sense of *dwelling, village*, from Latin *pōpulus people*).

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ABBREVIATIONS USED IN THE BIBLIOGRAPHY:

AIAS	Australian Institute of Aboriginal Studies, Canberra (now AIATSIS: Australian Institute of Aboriginal and Torres Strait Islander Studies)
ANU	Australian National University
AUMLA	Australasian Universities Languages and Literature Association
CUP	Cambridge University Press
MIT	Massachusetts Institute of Technology
NLA	National Library of Australia, Canberra
OU	Oxford University Press
PL	Pacific Linguistics

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- ARN Arandic lgs xviii, 84, 91, 98, 127, 128, 133, 140, 141, 199, 231
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