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*

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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 *sling 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 V_2 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 *payung
PAN *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: *one's own (part of oneself)*
Pintupi (PIN)	m a rl p a	*friend, relative*
Yidiny	j a t u	N: *shade*
Pintupi	j a rt a	*thickly standing bush or grass*
Yidiny	j a k u jaku	Adj: *can't do some task...*
Pintupi	j a k a jaka	N: *tiredness in upper leg muscles*

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 rn t a	*stone*
Galbu (GLB)	b a rn d a	*stone* (Capell, p.c.)
Yindjibarndi (YIN)	m a rn t a	*stone*
Gawurna (GAW)	P I K I	*moon*
Wadjuk (WJK)	M I K I	*moon*
Pintupi (PIN)	p u rt u	*[in vain]*
Wadjuk (WJK)	M U RD O	*in vain*
Bayungu (BAY)	p u ny j a+	*lick, kiss*
Nyangumarta (NYA)	m u ny j a+	*kiss*
Bayungu (BAY)	p u nh th u	*blunt, dull (of a point)*
Wik Mungkan (WMK)	m u nh th	*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 ny u	*good*
Diyari (DIY)	m a ny u	*good*

V_2 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 V_2 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 V_2 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

[1]Spelled 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			*ear*
Pintupi	p	i	n		a				*ear*
Mayi-Kulan (MKU)	p	i	n		a		rr		*ear*
PNPN	*p	a	rl		a	ng			*behind, at the rear of*
Pintupi	m	a	rl		a				*behind*
Northern Mangarla (MNN)	p	a	rl		a		rr		*back, spine*
PNPN	*j	a	rl	p	a+				*copulate*
Mayi-Kulan	th	a	l	p	a				*copulate*
Umpila	th	a	l	'	a	l			*semen*
Pintupi	j	a	rl	p	a		rr	+ p a	*young one...*

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-ali[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 MALWI (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 PNPN *payung, is apparently inhibited in this case by the intervening liquid.

Reflexes of PNPN *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 PNPN *malung. Consider, for example, Mota malo *middle of the night*.

4. PNPN *punga *shade, shadow, spirit, darkness*
PAN *bEng[l], POC *mpongl *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. V_1 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.

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[1]Spelled wuŋuḻi.

5. PNPN *ngAlu *wave, swell, current*
PAN *alun, *qalun, POC *(ng)alu, PPN_2 (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 V_2 to V_3 in NYA W and PIN.
3. Possible V_1 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 yaakarrma+ *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 V_2, 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. V_1 lengthening in GUP.

8. Assimilation of V_2 to V_1 in GUP.
9. Voicing of PNPN *-k- in KLY.

Reflexes of PNPN *jAku in the above daughter languages may be summarised as follows:

	PNPN *jAku POC *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 *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. PNPN *pula feather, hair
POC *pulu hair, feather

The PNPN form *pula *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 PNPN *-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.

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[1]Spelled yäkarrman.

Reflexes of PNPN *pula in the daughter languages are summarised in the following table:

	PNPN *pula POC *pulu					
	WMK	BAK	YIM	WLB	PIN	GUP
POC *-u> PNPN *-a	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 PNPN *jAku, above. It seems quite likely that POC *pulu could have been adopted in connection with innovative head-dress styles.

8. PNPN *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;* Mirniny (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 PNPN *mAya in these languages are summarised as follows:

[1]Spelled bulka.

		PNPN		*mAya	
		PAN(C), POCGR(OC)		*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.