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PREFACE

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The research work underlying the papers by E.F. Aguas and D.T. Tryon which constitute *Papers in Australian Linguistics No.3, Pacific Linguistics, Series A, 14* (1968) has also taken place under the auspices of the Australian Institute of Aboriginal Studies. The editors wish to express their apologies to the Institute for the fact that, as a result of a collating and binding error, the sheet expressing the authors' recognition of the support given to them by the Institute was omitted from the number. They, and the authors, wish to prevail themselves of this opportunity to express their gratitude to the Institute for their support of the work undertaken by E.F. Aguas and D.T. Tryon.

The Editors

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PRELIMINARY GRAMMAR OF GUNBALANG

JOY KINSLOW HARRIS

0. INTRODUCTION

0.1. Language

Gunbalang is the language spoken by approximately 125 Aborigines whose traditional country is located at the mouth of the Liverpool River in northern Arnhem Land, Australia. The majority of the language group follow a semi-nomadic existence based at Maningrida on the Liverpool River, and at Oenpelli Mission southwest of Maningrida. A small group has settled on Goulburn Island. There are three dialects delineated by the speakers, each dialect associated with a geographical locality in the traditional country.

Gunbalang is related to Gunwinggu, the majority of whose speakers reside at Oenpelli Mission, with others living at Maningrida, Goulburn Island and Bamyili. These languages are classified by Capell as multiple-classifying species of the prefixing genus. Capell has published the only other descriptive material on Gunbalang, in "Languages of Arnhem Land, North Australia".[1]

The language corpus for this analysis was collected at Oenpelli Mission in July 1965, Maningrida Settlement in November 1965 and at Goulburn Island in July 1966. The data includes several short texts and a 500 item list[2] from non-English speakers, and paradigms based on this material and elicited from an informant with an understanding of basic English. All but the paradigms are recorded both on tape and in writing.

0.2. Descriptive Method

The following description of Gunbalang is based on the structural model set forth by Longacre in his *Grammar Discovery Procedures.*[3] The tagmemic theory basic to this model proposes that language consists of three semi-autonomous, interlocking hierarchies: phonological, lexical and grammatical.[4] Each hierarchy consists of graduating levels of

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significantly distinct structures, or patterns, which are in turn made up of series of constituents,[5] or pattern points.[6] Two structures are significantly distinct if "(1) they exhibit at least two structural differences relative to each other, and (2) if these differences are relevant either to both obligatory and optional tagmemes in the two strings, or to more than one obligatory tagmeme. Among the structural differences serving to establish hypertagmemic distinctions is transform potential."[7] In the grammatical hierarchy, with which this paper is concerned, the significantly distinct structures are referred to as syntagmemes, the constituents as tagmemes. A tagmeme represents both the functional point in the language pattern and the exponent or manifestation of that function, sometimes termed the "slot" and its "filler". A syntagmeme on a lower level may manifest a tagmeme on a higher level, exemplifying the model of graduating levels.

For simplicity and clarity, each structure is written symbolically as a formula. Each formula is a summary of a learned language pattern and, when used in conjunction with a phonological statement and lexicon, produces terminal sentences when processed by the following 3 operations: R (reading), P (permutation), E (exponents).

The operation R produces a particular formula by: (1) retaining all symbols outside parentheses, (2) either retaining or not retaining symbols inside parentheses in any given reading, (3) superscript^2 allowing one or two occurrences of the symbol in a given reading, and superscript^n allowing (theoretically) unlimited occurrences in a given reading, (4) finally, removing the signs and superscripts to leave a reading of the formula containing only symbols for tagmemes.

The operation P on a particular reading produces a reading of the symbols in an order other than the original.

The operation E on a particular reading replaces each of its symbols with the symbol then formula of one of its manifestations.

The three operations are carried out on the resultant reading until only functional morphemes and labels for major stem classes remain. A grammar which thus incorporates these three operations is both taxonomic and generative.[8]

0.3. Abbreviations and Symbols

The formula for a significantly distinct structure is written as follows:

Syntagmeme → Tagmeme:filler (+Tag:<fill>)

The arrow is interpreted "to be read as..."; a capital letter signifies a slot or functional point, and a non-capital signifies a manifestation or filler on the lower levels of the hierarchy while higher levels are

represented by capitals; presence of parentheses indicates optional occurrence of the enclosed structure and absence of parentheses indicates obligatory occurrence; the colon reads "is manifested by..."; the angle brackets < > enclose a representative member of the designated manifestation; the + is a concatenation sign; a subscript delineates significant internal structure; the comma reads "or..." and the diagonal represents "and/or...".

A	axis
Ac	accompaniment
AI	alternative
C	comment
'C'	consonant
CH	chronological
Cj	conjunction
Cl	clause
ClB	clause base
Conn	connector
Cp	comparative
CS	cause
D	descriptive
De	declarative
Di	ditransitive
DQ	direct quote
E	emphatic
EF	effect
H	head
I	item
IC	item-comment
Id	introducer
Ig	interrogative
Im(p)	imperative
In	instrument
Int	intransitive
IO	indirect object
L	location
M	manner
N	noun phrase
Neg	negative
NV	non-verbal
O	object
P	predicate
PA	parallel
PB	particle base
Pe	peripheral
Ph	phrase
Pos	positive
PP	prepositional phrase
Pr	pronoun phrase
PS	parallel sequence
Q	question
QF	quote focal
QU	quote
R	relator
RB	repeated base
RE	retrospective
Ref	reflexive
S	subject
SA	simultaneous
SE	sequence
SN	sentence
SP	simple
ST	statement
T	time
Tr	transitive
V	verbal
'V'	vowel
Vo	vocative
aj	adjective
ajs	adject. stem
as	aspect
av	adverb
avs	adverb stem
ben	benefactive
c	concord
con	continuous
cp	comparative
de	derivational
dem	demonstrative
des	descriptive
du	dual
fem	feminine
g	gender
int	intransitive
inton	intonation
io	indirect obj.
l	location
masc	masculine
n	noun
neg	negative
ns	noun stem
nu	nucleus
num	numerical
o	object
pa	past
pl	plural
pos	positive
poss	possessive
pres	present
q	qualifier
ref	reflexive
ri	rising
s	subject
sg	singular
t	tense
ti	time
tr	transitive
v	verb
vs	verb stem

1. WORD LEVEL CONSTRUCTIONS

1.1. The Verb

Gunbalang is a predicate-centered language, for within the verbal manifestation of its predicate tagmeme are bound forms which express not only the subject of the action but also the seeds of an expanded clause. This feature of the verb sets it out as the nuclear tagmeme of a verbal clause, thus designating it as a minimal clause. The two formulas below graphically show how the meaning contained in the bound forms of the verbal manifestation of the predicate is amplified by the satellite or peripheral tagmemes on the clause level.

Formal Statement

$v_{tr\text{-}pos} \rightarrow s\ (+t_{pres})\ +o\ +nu\ (+t_{pa})\ (+as)$

TrClPos → (T) (+S) (+O) +P (+M)

Citation

$v_{tr\text{-}pos}$ → ka -pun -yon -portolji -ng -ki
s:*he* -o:*it-ankle* -nu:*twist* -t_{pa}:*did* -as:*probably*
'he probably twisted his ankle'

TrClPos → palkime ngayi kikakiyn nga-kiyne kunmak
T:*today* S:*I* O:*meat* P:*I-cook* M:*well*
'today I am cooking the meat well'

The verbal manifestation of the Predicate tagmeme may be classified in three quite different ways: (1) by the concord shown in the occurrence of affixes, i.e. the presence of an object requires a subject different from that which occurs when there is no object in the verb; (2) by the internal structure of the verb nucleus; (3) by the formation of the past tense.

Formal Statement

1. $v_{tr\text{-}pos} \rightarrow s_{tr\text{-}pos}\ (+t_{pres})\ +o\ +nu_{tr}\ (+t_{pa})\ (+as)$
2. $v_{int\text{-}pos} \rightarrow s_{int\text{-}pos}\ (+t_{pres})\ +nu_{int}\ (+t_{pa})\ (+as)$
3. $v_{di*\text{-}pos} \rightarrow s_{tr\text{-}pos}\ (+t_{pres})\ +o\ +io\ +nu_{tr}\ (+t_{pa})\ (+as)$
4. $v_{ref} \rightarrow s_{tr}\ +nu\ +ref$
5. $v_{neg} \rightarrow s_{neg}\ +nu\ +neg$

---

* di to be read as 'ditransitive'.

Statement of Exponents

1. $s_{tr\text{-}pos}$:<jita->, <ngutu->
2. t_{pres}:<yn->
3. t_{pa}:<-ng>
4. o:<parra->, <purru->
5. nu_{tr}:vs_{tr}
6. as:<-ki>
7. $s_{int\text{-}pos}$:<nga->
8. nu_{int}:vs_{int}
9. io:<marnayn->
10. ref:<-yi>
11. s_{neg}:<ngarra->
12. neg:<-ni>

The $s_{tr\text{-}pos}$ and o exponents are chosen according to the verb's being in the present or past tense. The following rules apply to this context-sensitive occurrence:[9]

1. $s_{tr\text{-}pos}$ +x +y + $\begin{bmatrix}\text{<yn->}\\\text{<-ng>}\end{bmatrix}$ => $\begin{bmatrix}\text{<jita->}\\\text{<ngutu->}\end{bmatrix}$ +x +y + $\begin{bmatrix}\text{<yn->}\\\text{<-ng>}\end{bmatrix}$
2. <jita-> +x +y +<yn-> => <jita-> +<yn-> +x +y
3. o +x +y + $\begin{bmatrix}\text{<yn->}\\\text{<-ng>}\end{bmatrix}$ => $\begin{bmatrix}\text{<parra->}\\\text{<purru->}\end{bmatrix}$ +x +y + $\begin{bmatrix}\text{<yn->}\\\text{<-ng>}\end{bmatrix}$
4. <parra-> +x +y +<yn-> => <parra-> +<yn-> +x +y

where x and y are any units in the syntagmeme, the square brackets enclose items which are read across in line with each other, and the => reads "is rewritten as...".

Reading of Formulas

The transitive positive verb syntagmeme is read as an obligatory occurrence of the transitive positive subject tagmeme manifested by a member of the affix class <jitaθ> optionally followed by a tense tagmeme manifested by affix <yn->, obligatorily followed by an object tagmeme manifested by affix class <an-> or <pun-> and/or <yon->, followed by the

obligatory nuclear tagmeme which is manifested by the verb stem, optionally followed by a tense tagmeme manifested by affix <-ng>, and finally followed by the optional occurrence of the aspect tagmeme which is manifested by affix class <-ki>. Only one of the optional tagmemes may occur at a time.

The intransitive positive verb syntagmeme differs from the above in three instances associated with obligatory tagmemes and in one instance with an optional tagmeme. According to Longacre's criteria,[10] these differences are sufficient to separate the syntagmemes, since there are at least two structural differences, one of which involves the nuclear and/or obligatory tagmemes. The manifestation of the intransitive positive subject tagmeme by affix class <nga-> corresponds with the obligatory absence of the object tagmeme. Only one optional tagmeme may occur at a time.

The two structural differences which separate the negative verb from its positive counterparts are the manifestation of the negative subject tagmeme by affix class <ngarra-> and the presence of an obligatory negative tagmeme manifested by affix class <-ni>.

Although the Gunbalang tagmemic order[11] is open to permutation on the phrase, clause and sentence levels, it is stable on the word level in the grammatical hierarchy. The verb manifests the predicate function on the clause level.

Internal Structure

1. Simple roots
   -ka *'to go'*; -nayn *'to see'*; -puyn *'to hit'*; -woyn *'to return'*.

2. Compound stems
   -mijpuyn *'to meet'*; -ngaynka *'to come'*; -ngaynwoyn *'to come back'*; -yakpuyn *'to pour'*.

3. Reduplicative stems
   a. Partial reduplication: -wowokja *'to whisper'*
   b. Complete reduplication: -kulkkulk *'to run'*

In some of the compound and reduplicative stems, each morpheme is semantically identifiable, i.e. ngayn- has the meaning *'action towards speaker'* and -ka has the meaning *'to go'* so that in combination -ngaynka means *'to come'*. However, the majority of these stems are a combination of a non-productive[12] morpheme in unique occurrence with a morpheme which may occur elsewhere as a simple root, i.e. -puyn *'to hit'* is a simple root which may occur with the non-productive morpheme -mij giving the combined meaning -mijpuyn *'to meet'*.

Tense Formation

Since the irregular verb stem endings can be described but not predicted through morphophonemic rules, they are more simply handled as verb stem allomorphs, the past tense affix occurring on the allomorph.

1. Past tense formed by addition of [ng]

   a. Irregular verbs

STEM, PRESENT TENSE		ALLOMORPH	PAST
-lukluwa	*'to frighten'*	-luklu	-luklung
-laka	*'to spear'*	-lakwa	-lakwang
-jiyn	*'to eat'*	-jarra	-jarrang
-kali	*'to pick up'*	-kalu	-kalung
-kiyne	*'to cook'*	-kiyna	-kiynang
-pe	*'to bite'*	-peya	-peyang
-maje	*'to pierce'*	-maji	-majing
-ngunje	*'to tell'*	-ngunji	-ngunjing
-pulume	*'to break'*	-pulumu	-pulumung

   b. Regular verbs, [yn] replaced by [ng]

-lokwayn	*'to jump'*	-lokwang
-yawayn	*'to search for'*	-yawang

2. Past tense formed by addition of [yn]

   a. Irregular verbs

STEM, PRESENT TENSE		ALLOMORPH	PAST
-ka	*'to go'*	-kita	-kitayn
-pungu	*'to swim'*	-punga	-pungayn

   b. Regular verbs

-kelkkuyi	*'to work'*	-kelkkuylyn
-warrmi	*'to be ill'*	-warrmlyn

3. Past tense formed by [yn] being replaced by [m]

-puyn	*'to hit'*	-pum
-woyn	*'to turn'*	-wom

4. Past tense formed by [yn] being replaced by [y]

-nayn	*'to see'*	-nay
-nuyn	*'to give'*	-nuy

5. Past tense formed by [yn] being replaced by [ngin]

-kayn	*'to bring'*	-kangin

Verbal Affixes

CLASS	DESCRIPTION		
<nga->	Intransitive positive pronoun subject, third order prefix[13]		
a.	nga-	1st sg	nga-pumngurr *'I washed'*
b.	ngata-	1st du/pl exc.	
	ngarrki-	1st du/pl inc.	ngarrki-yuwa *'we-sleep'*
c.	ki-	2nd sg	ki-yn-malakija *'you-are-laughing'*
d.	ngunji-	2nd du	ngunji-yurrpungu *'you 2-swim'*
	jita-	2nd pl	jita-yurrpungu *'you 3+-swim'*
e.	ka-	3rd sg	ka-yn-ka *'he-will-go'*
f.	ka...parra-[14]	3rd du	ka-yn-parrayurrpungu *'they-will-2-swim'*
g.	ka...pata-	3rd pl	ka-yn-patayurrpungu *'they-will-3-swim'*
<marnayn->	Indirect object pronoun, first order prefix		
	marnayn-	*to/with another*	ka-putu-marnayn-purrjuwa *'he-them-for-tells a story'*
<jita->	Transitive positive pronoun subject, fifth order prefix		
a.	See chart.	subject, present tense	<jita->
b.		subject, past tense	<ngutu->
<parra->	Transitive positive pronoun object, fourth order prefix		
a.	See chart.	object, present tense	<parra->
b.		object, past tense	<purru->
<pun->	Transitive positive noun object, second order prefix		
	pun-	*it*	ka-pun-portolji-ng *'he-it twist-ed (his arm)'*
<yon->	Transitive positive noun object designated, first order prefix		
a.	janga-	*foot*	ka-pun-janga-portolji-ng *'he-it-his foot-twist-ed'*
b.	karlmu-	*ear*	ka-karlmu-portolji-ng *'...his ear'*
c.	mapul-	*neck*	ka-mapul-portolji-ng *'...his neck'*
d.	mil-	*nose*	ka-mil-portolji-ng *'...his nose'*
e.	mirr-	*hair*	ka-mirr-portolji-ng *'...his hair'*
f.	ngurntu-	*arm*	ka-pun-ngurntu-portolji-ng *'...his arm'*

CLASS DESCRIPTION

g. pirri- *hand* ka-pun-pirri-portolji-ng *'...his hand'*

h. yon- *ankle* ka-pun-yon-portolji-ng *'...his ankle'*

<yn-> Tense, positive, present, future, first order prefix to intransitive verb stems; third order to transitive verb stems

This tense morpheme occurs following the first syllable of the subject prefix, which in the case of plural subjects causes a discontinuous morpheme, i.e. kaynka *'he will go'* but kaynparraka *'they 2 will go'*. Its further occurrences may be seen on Chart I.

<-ng> Tense, positive, past, first order suffix

a. -ng Verb stems ending in -yn preceded by wa replace the -yn with -ng for past tense:
-lokwa-yn *'to jump'* + past → -lokwa-ng *'jumped'*.
Those irregular verbs which add -ng to their stem allomorph to form the past tense are listed above on page 7.

b. -yn Verb stems ending in -i add -yn to form the past tense:
-kelkkuyi *'to work'* + past → -kelkkuyi-yn *'worked'*.
The irregular verbs occurring with this tense marker are also listed on page 7.

c. -y Verb stems ending in yn- whose initial consonant is a nasal, replace the -yn with -y:
-na-yn *'to see'* + past → -na-y *'saw'*.

d. -m Other verb stems ending in -yn replace this ending with -m:
-wo-yn *'to turn'* + past → -wo-m *'turned'*.

e. -ngin One exception to the preceding rule is -ka-yn *'to bring'* which forms the past tense by replacing -yn with -ngin: -ka-ngin *'brought'*.

<-ki> Aspect, second order suffix to positive stems
Reflexive

a. -yi Verb stems ending in a vowel add -yi:
-ngeme *'to paint'* + Ref → -ngeme-yi *'to paint oneself'*.

CHART I: SUBJECT, PRESENT, AFFIX CLASS <jlta->

	O B J E C T									
S U B J E C T	S \ O	him	me	you 1	you 2	them 2	you & I 2	you & I 3	you 3	them 3
	he	kayn*	kayn	kayn	kayn	kayn	kayn	kayn	kayn	kayn
	I	ngayn		ngayn	ngayn	ngayn			ngayn	ngayn
	you 1	klyn	yn			klyn	yn	yn		klyn
	you 2	nguynjl	nguynjl			jlrra	ynarr	ynarr		jlrra
	they 2	kaynparra	kaynparra	kaynparra	kaynparra		kaynparra	kaynparra	kaynparra	
	you & I	ngarrkl**		ngaynjl	ngaynjlrr	ngaynjlrr			ngaynjlrr	ngaynjlrr
	you 3	jlta	jlta			jlrra	ynarr	ynarr		jlrra
	they 3	kaynparra	kaynparra	kaynparra	kaynparra		kaynparra	kaynparra	kaynparra	

CHART II: SUBJECT, PAST, AFFIX CLASS <ngutu->

	O B J E C T									
S U B J E C T	S \ O	him	me	you 1	you 2	them 2	you & I 2	you & I 3	you 3	them 3
	he	ka	ka	ka	ka	ka	ka	ka	ka	ka
	I	nga		nga	nga	nga			nga	nga
	you 1	kl	kl			kl	kl	kl		kl
	you 2	ngunu	ngunu			ngurru	ngarr	ngarra		ngurru
	they 2	kaparra	kaparra	kaparra	kaparra		kaparra	kapurru	kapurru	
	you & I	ngarrk**		ngarrk	ngarrk	ngarrk			ngarrk	ngarrk
	you 3	ngutu	ngutu			ngurru	ngarr	ngarr		ngurru
	they 3	kata	kata	kata	kaparra		kata	kata	kapurru	

Charts I-IV show person and number of subject and object prefixes occurring with present and past verbs.

* yn 'pres tense morpheme'

** ngata- *'we excluding you'*

CHART III: OBJECT, PRESENT, AFFIX CLASS <parra->

		OBJECT								
	S \ O	him	me	you 1	you 2	them 2	you & I 2	you & I 3	you 3	them 3
SUBJECT	he	pun	an	ngun	nungun	parra	ngarrku	ngarrku	ngutu	putu
	I	Ø		ngun	nungun	purrun			ngutu	putu
	you 1	Ø	an			purru	anu	atu		putu
	you 2	Ø	n			pun	un	un		pun
	they 2	Ø	n	ngun	kun		kun	kun	kun	
	you & I	Ø		ngun	kun	pun			kun	pun
	you 3	Ø	n			pun	un	un		pun
	they 3	Ø	n	ngun	kun		kun	kun	kun	

CHART IV: OBJECT, PAST, AFFIX CLASS <purru->

		OBJECT								
	S \ O	him	me	you 1	you 2	them 2	you & I 2	you & I 3	you 3	them 3
SUBJECT	he	pun	an	ngun	nungun	purru	ngarrkun	ngarrkun	ngutu	putu
	I	Ø		ngun	nungun	purrun			ngutu	putu
	you 1	Ø	an			purrun	nganun	ngatu		putu
	you 2	Ø	n			pun	un	kun		kun
	they 2	Ø	n	ngun	kun		kun	n	n	
	you & I	Ø		ngun	kun	kun			kun	kun
	you 3	Ø	n			pun	un	un		kun
	they 3	Ø	n	ngun	kun		kun	kun	n	

\ : symbolizes Reflexive

Ø " zero morpheme

CLASS DESCRIPTION

<-ki> Aspect: Reflexive (cont'd)

Most stems ending in a nasal consonant preceded by u, drop the nasal and replace u with i before adding -yi: -pidlkpum *'to scratch'* + Ref → -pidlkpi-yi *'to scratch oneself'*; -yakpun *'to pour'* + Ref → -yakpi-yi *'to flow (waterfall)'*. Exception: -pippun *'to fill'* + Ref → -pippu-yi *'to become full'*.

One stem ending in a nasal consonant, retains the 'C' and adds -iyi: -tam *'to lie down'* + Ref → -tam-iyi *'to lay oneself down'*.

b. -ji Reflexive emphatic, occurs in correspondence with the emphatic tagmeme in the pronoun phrase 3 E: poyn piju *'oneself'*:-pipimpuyn *'to draw'* + Ref E → -pipimpu-ji *'to draw on oneself himself'*.

Affix <-ng> b. forms the past tense of the reflexive aspect, for both <-yi> a. and b. end in i: -tam-iyi *'to lay oneself down'* + past → -tam-iyi-yn *'to have laid oneself down'*; -pipimpu-ji *'to draw on oneself-emphatic'* + past → -pipimpu-ji-yn *'to have drawn on oneself himself'*.

c. Continuous

-ki -ngakping *'he is lapping'* + con → -ngakping-ki *'he continues lapping'*; -majiyn *'to pierce (shoot)'* + con → -majiyn-ki *'to continue shooting'*.

<ngarra-> Negative subject,

occurs as first order prefix to intransitive verb stems, and second order prefix to transitive. The 1st sg affix has an allomorph which occurs with past tense; the other affixes occur with both present and past tense.

a. ngarra-/ngayi- 1st sg ngarra-tenpulum-e *'I cannot-break it-pres'*; ngayi-pu-ni *'I-hit it-didn't'*.

b. ki- 2nd/3rd sg ki-rriwo *'you won't-return'*; ki-ngaynwo *'he isn't-coming back'*.

c. ngarrak- 1st du/pl ngarrak-nikirrirrk *'we cannot-dress him'*.

d. ngunu-[15] 2nd du ngunu-nikirrirrk *'you two cannot-dress him'*.

e. ngutu- 2nd pl ngutu-nikirrirrk *'you three...'*

CLASS DESCRIPTION

<ngarra-> (cont'd)

f. kiparra- 3rd du kiparra-nikirrirrk *'they two...'*

g. kita- 3rd pl kita-nikirrirrk *'they three...'*

<-ni> Negative, third order suffix

a. Present tense. The majority are formed from the present positive stem and the few which are not will be designated.

(1) Verb stems ending in yn which is dropped to form the negative present: -puyn *'to hit'* + neg → -pu *'not to hit'*. Exception: -jiyn *'to eat'* + neg → -ja-ng *'not to eat'*.

(2) Verb stems which remain the same[16] -

i. formed from present positive: -ngayi *'to hear'* + neg → -ngayi *'not to hear'*; -na *'to sit'* + neg → -na *'not to sit'*; -rram *'to bark'* + neg → -rram *'not to bark'*.

ii. formed from past positive: -wokji-ng *'to have talk-ed'* + pres neg → -wokjing *'not to talk'*; -purrju-ng *'t relat-ed (story)'* + pres neg → -purrjung *'not to relate'*.

(3) Verb stems whose past positive ends in ng which is dropped to form the present negative: -lakwa-ng *'to have spear-ed'* + pres neg → -lakwa *'not to spear'*.

b. Past tense formed from past positive stem -

(1) Verb stems ending in a nasal consonant other than m add -ni, with the articulation of the final 'C' conforming to the n: -wa-ng *'to have turn-ed it'* + pa neg → -wa-ni *'did-not turn it'*. Exception: -portolji-ng + pa neg → -portolji-ngl *'did-not twist'*.

(2) Verb stems ending in m add -a: -rram *'to bark'* + pa neg → -rram-a *'did-not bark'*.

(3) Verb stems ending in 'V' add -ll to present positive stem: -warrmi *'to be ill'* + pa neg → -warrmi-ll *'was-not ill'*; -pulum-e *'to break-pres'* + pa neg → -pulume-ll *'did-not break'*.

Rewrite Operations on Formula of Gunbalang Verb

1. Formula of Gunbalang transitive-positive verb:

$$s_{tr\text{-}pos}\ (+t)\ +o\ +nu\ (+t)\ (+as)$$

2. $R = s_{tr\text{-}pos}$:<jita-> t:<yn-> o:<an-> nu:vs_{tr}

3. E = <jita-> <yn-> <an-> vs_{tr}

4. R = ki- yn-Ø- -portolje

5. R = kiynportolje *'you twist it'*

Numbers 4 and 5 are carried out with reference to lexical items given in the above text. Ideally one would refer to a cross reference dictionary of the language for lexical substitutions in carrying out rewrite operations.

1.2. The Noun

The structural feature of Gunbalang referred to by Capell when he termed it a "classifying" language, is the occurrence of four major and one minor group or class of nouns. Each group is identified by its occurrence with one of the following demonstrative adjectives: manta, ninta, nginta, ngonto and kenta; and by the correspondence between these demonstratives and the prefix on descriptive adjectives: manta corresponds to ma-/man-, ninta to na-, nginta to ki-/kin-, ngonto to ku-/kun-, and kenta occurs with some nouns from the ngonto group when there is no descriptive adjective.

The nouns may also be classified according to their internal structure and, in a limited number of instances, according to gender prefixes.[17] Although three of the gender prefixes are homophonous with the above adjectival prefixes, there is no restriction of occurrence of ma- on a noun with ma- on an adjective.

Nouns manifest the H (head) tagmeme of the noun phrase syntagmeme described later in the paper.

Formula: n → (g:<na->) +nu:ns

The noun construction is read as an optional gender tagmeme manifested by an affix from class <na-> followed by the obligatory nuclear tagmeme filled by a noun stem.

Concordance Classes

1. Those nouns which occur with the demonstrative manta in concord with ma-/man- on descriptive adjectives:

Example: manta poko mankukarlyung
dem:*this* n:*point* aj:*long*
'this long spear-point'

poko *'point'*
jakukkuj *'beard'*
jem *'lily root'*
jitu *'native cat'*
julurl *'fog'*
karlmu *'ear'*
kojpurr *'sinew'*
kuntulk *'fighting stick'*

kurtuk *'excrement'*
lawuk *'spear butt'*
lurlpi *'tree bark'*
mapuj *'yam'*
marlolorr *'spear shaft'*
mawortort *'leaf'*
maynon *'vein'*
merre *'hair'*
mirlak *'grass'*
murlupiyn *'blood'*
murrkarn *'fighting stick'*
neyang *'food'*
pirrikala *'boomerang'*
pulwek *'grass seed'*
weleyn *'path'*
wirtij *'fire'*
wurrkurtu *'rope'*

2. nginta in concord with ki-/kin-

Example: nginta parramimpayn kinkukarlyung
dem:*this* n:*woman* aj:*tall*
'this tall woman'

parramimpayn *'woman'*
jitperltperlt *'rosella'*
kalturrk *'kookaburra'*
kanak *'sun'*
kiwayuk *'shadow'*
malangampepek *'centipede'*
marntep *'emu'*
parrawijwij *'children'*
pilitpilit *'magpie'*
porlken *'black cockatoo'*
powarta *'turkey'*

3. ninta in concord with na-

Example: ninta manjawak nakukarlyung
dem:*this* n:*knife* aj:*long*
'this long knife'

manjawak *'knife'*
jak *'red ant'*
jaway *'dingo'*
jitawurr *'crow'*
kapikkapik *'paddle'*
kekkek *'bone'*
kipejek *'wing'*
kornopolo *'wallaby'*
kunpalim *'fat'*
kurrana *'full moon'*
mangarangat *'sting ray'*
mapurru *'throat'*
marrapakarta *'goanna'*
marrawuti *'hawk'*
mayuwalmu *'blue tongue lizard'*
mulirrk *'shoulder'*
ngalelek *'cockatoo'*
nawulam *'whirlwind'*
parntok *'woomera; thigh'*
plylmu *'barramundi'*
pullkang *'cow'*
purrpurrkang *'dilly bag'*
wam *'sugar bag'*
warlampa *'head band'*
yuk *'bandicoot'*

4. ngonto in concord with ku-/kun-

Example: ngonto ngak kunmak
dem:*this* n:*tongue* aj:*good*
'this good tongue'

ngak *'tongue'*
japirrk *'basket'*
julungpuj *'dust'*
kapartina jurrpu *'fresh water'*
karramalk *'stone axe'*
keyang *'tooth'*
kijirrkijirr *'summer'*
kojparre *'windbreak'*
kunmolo *'tail'*
kunparntangan *'sea'*
kunpit *'hand'*
kunterpat *'kidney'*
kupartu *'sore'*
kuwalak *'stone'*
kuyunu *'cloud'*
lakay *'cave'*
lorre *'earth'*
mantulum *'mountain'*
munpurrji *'bundle'*
nangarnpal *'cheek'*
parnkapurrk *'thigh'*
pitjal *'finger nail'*

4a. kenta except when followed by an aj, then these nouns occur in class 4:

Example: kenta janga
dem:*this* n:*foot*
'this foot'

ngonto janga kunmak
dem:*this* n:*foot* aj:*good*
'this good foo

janga *'foot'*
kiwij *'skin'*
kunkerlmet *'butt'*
kunkemejen *'elbow'*
kunpotme *'back'*
manpalo *'urine'*
mantimtay *'ankle'*
mapu *'chest'*
marrkarli *'backbone'*
marturturt *'heart'*
muynurr *'navel'*
ngukmarnti *'palm'*
perla *'calf of leg'*

Internal Structure Classes

1. Simple roots
jem *'lily root'*; malk *'digging stick*; muk *'fly'*; kuyn *'kangaroo'*; wayn *'armpit'*; yuk *'bandicoot'*.

2. Compound stems
ngukmarnti *'palm of hand'* where nguk = *belly*
mayuwalmu *'blue tongue lizard'* walmu = *forehead*
karramalk *'stone axe'* malk = *digging stick*
karlmununggu *'horned animal'* karlmu = *ear.*

3. Reduplicative stems[18]
a. Complete reduplication: wilitwilit *'galah'*; palmatpalmat *'wet season'*; kekkek *'bone'*; kijirrkkijirrk *'summer'*; kapikkapik *'paddle'*.

b. Partial reduplication of initial or final syllable: purrpurrkang *'dilly bag'*; parrawijwij *'children'*; jitperltperlt *'rosella'*.

c. Complete reduplication of stem following gender prefix:
kunjorlokjorlok *'soak hole'* where kunjorlok = *creek*
marturturt *'heart'*
mawortwort *'leaf'*.

Gender Classes

1. na- masc
   napuk *'male person'*
   nawalak *'male baby'*
   nawayuk *'male shadow'*
   nawulam *'whirlwind, spirit'*

2. ngal- fem
   ngalpuk *'female person'*
   ngalwalak *'female baby'*
   ngalwayuk *'shadow'*
   ngalwulam *'female spirit'*

3. ma-
   mawayuk *'shadow'*

4. ku-
   kuwalak *'small stone'*

As was mentioned in the introduction, there are some words whose initial syllable is the same as the gender prefixes, but whose remaining stem does not occur elsewhere in such a form to prove that the prefix is a designation of gender. Some such words are:

nawortoworteken *'lightning'*	nangarnpal *'cheek'*
ngalparrana *'oyster'*	mawortwort *'leaf'*
mapuj *'yam'*	mapu *'chest'*
kujung *'anteater'*	kumele *'face'*
kunmolo *'tail'*	kupartu *'sore'*

Noun Affixes

CLASS	DESCRIPTION		
<na->	Gender, first order prefix		
a.	na-	masc	nawalak *'male baby'*; nawayuk *'male shadow'*
b.	ngal-	fem	ngalwalak *'fem.baby'*; ngalpuk *'fem.person'*
c.	ma-/man-	neuter	

ma- occurs before retroflexed 'C' and before 'C' followed by

CLASS DESCRIPTION

u, o, also before w, y. man- occurs elsewhere, the n conforming to initial nasal 'C' of stem.
mawayuk *'shadow'*; mantulum *'mountain'*.

d. ku-/kun- neuter
Occurrence same as above except that the n is often retained preceding a noun stem with an initial nasal 'C'.
kunmolo *'tail'*; kuwalak *'stone, small'*.

1.3. The Adjective

The classification of the adjectives may be made on two independent criteria: internal structure and order of occurrence. They manifest the Descriptive tagmeme in Noun phrases, the Comment tagmeme in Item Comment clauses and the Object and/or Subject tagmemes of Verbal clauses.

Formula: aj → (c:<ma->,<ngi->) +nu:ajs,avs

The adjective construction is read as an optional concord tagmeme manifested by an affix from class <ma-> or <ngi-> followed by an obligatory nuclear tagmeme manifested by either an adjective stem or an adverb stem.

Order of Occurrence

1. -nta/-nto *'this'*

-nto occurs with the prefix ngo-, evidencing vowel harmony; -nta occurs elsewhere.

The demonstrative occurs contiguous to the noun when there is more than one adjective and precedes a descriptive adjective. It usually follows a numerical adjective. The demonstrative is a bound form which takes affix class <ngi->.

Examples:

ma -nta	jem	ni -nta	pung
<ngi->-de:*this*	n:*lily root*	<ngi->-de:*this*	n:*black ant*
'this lily root'		*'this black ant'*	
ngo -nto	tukulu	ngi -nta	porlken
<ngi->-de:*this*	n:*wind*	<ngi->-de:*this*	n:*cockatoo*
'this wind'		*'this cockatoo'*	
ke -nta	mapu		
<ngi->-de:*this*	n:*chest*		
'this chest'			

2. In a noun phrase the descriptive adjective, if occurring with a demonstrative, will follow the noun; otherwise, if it is the only aj, the general rule of non-stable word order applies. The bound forms take affix class <ma->, and affix class <ngarra-> when manifesting the C tagmeme of an IC clause.

a. Bound forms

-kuji *'one'*
-mak *'good'*
-wayntak *'small'*
-kukarlyung *'long'*
-marru *'clever'*
-ngana *'large'*
-rayek *'live one'*

b. Free forms jaku *'left one'*

manta jem mankukarlyung
this lilyroot long
'this long lily root'

ninta pung namak
this black ant good
'this good black ant'

kunpit jaku
hand left one
'left hand'

ngonto kunpit jaku
this hand left one
'this left hand'

3. Numerical adjectives are free forms which most often occur before the demonstrative and descriptive.

ngop *'all'*
ngop ninta kuwalak kungana
num:*all* de:*this* n:*stone* des:*big*
'all these mountains'

kapurrk *'two'*
kapurrk kirrimarrk
num:*two* n:*man*
'two men'

Adjectival Affixes

CLASS	DESCRIPTION
<ma->	A gender prefix which is in concord with the noun classes and occurs in first order.
a.	ma-, man- ma- occurs before retroflexed 'C': marlengpinpin *'large (fire)'*; man- occurs elsewhere: mankukarlyung *'long (stick)'*.
b.	ku-, kun- Distribution as above: kurlengpinpin *'large (stone)'*; kunkukarlyung *'long (tongue)'*.
	-Ø- In a few instances, the ajs is suffixed directly to the noun: guyunu-lengpinpin *cloud- large* *'large cloud'*.

CLASS		DESCRIPTION	
c.	na-	masc	nakukarlyung *'tall (man)'*.
d.	ki-, kin-	fem	ki- occurs before nasal 'C': kingana *'large (sun)'*; kin- elsewhere: kinkukarlyung *'tall (woman)'*.

<ngi-> The following occur with the dem ajs -nta in concord with the preceding affixes.

a.	ma-	in concord with affix <ma->a.: manta mankukarlyung *'this long (one)'*.
b.	ngo-, ke-	ngo- occurs in concord with affix <ma->b.: ngonto kurlengpinpin *'this large (one)'*; ke- occurs when the dem aj is the only modifier of certain nouns in this class (mostly body parts): kenta janga *'this foot'*.
c.	ni-	in concord with affix <ma->c.: ninta nakukarlyung *'this long (one)'*.
d.	ngi-	in concord with affix <ma->d.: nginta kingana *'this big (one)'*.

Internal Structure Classes

1. Simple roots
   a. Free form: ngop *'all'*; jaku *'left one'*
   b. Bound form: -leng *'group'*; -mak *'good'*.
2. Compound stems, bound form: -lengpinpin *'extra large group'*.
3. Reduplicative stems, bound forms:
   a. Complete reduplication: -poynpoyn *'same'*
   b. Partial reduplication: -lengpinpin *'extra large group'*.
4. Derived stems. Words which function as adverbs in their free form, function as adjectives with addition of the adjective gender prefix.

Adverb	Adjective
wayntak *'little bit, slightly'*	nawayntak *'small (thing)'*
poynpoyn *'yet, still'*	napoynpoyn *'same (thing)'*

1.4. The Adverb

As the manifestation of the Modifier tagmeme on the clause level, the adverb always occurs contiguous to the Predicate tagmeme.[19] Their internal structure divides the adverbs into three classes.

Formula: av → nu:avs,[n +de:-ke]

The adverb syntagmeme is read as an obligatory nuclear tagmeme manifested by an adverb stem, or by a noun with the derivational suffix -ke.

Internal Structure Classes

1. Simple roots: lorr *'properly'*; jirniyn *'very well'*.
2. Reduplicative stems: poynpoyn *'yet, still'*; morremorrek *'softly'*.
3. Derivational stems: kunmim *'eye'* +-ke → kunmimke *'with eyes closed'*.

1.5. The Pronoun

There are four classes of pronouns, grouped according to their distribution in higher grammatical levels. Differences in internal structure coincide with the various distributions so that there is only one major classification.

1. Free form, manifest S and O tagmemes on the clause level.

ngayi	1st sg	nganangka	1st du
		ngarrka	1st pl
nguta	2nd sg	nungutpe	2nd pl
nuka	3rd sg masc	penangka	3rd du
kika	3rd sg fem		

Other plurals than those shown are formed by juxtaposition of these forms, or of these forms with numerical aj's:

nguta ngayi *'we two'*

2. Portmanteau free form, occur pre-predicate in a clause and manifest S + O tagmeme.

ynanun	*you* (S) + *me* (O)
kiynputu	*you* (S) + *them* (O)

3. Affixes, occurring as S, O and IO bound to verbs. These are listed in the section on Gunbalang verbs under classes: <nga->, <marnayn->, <jita->, <an->, <pun->, <ngarra->.

4. Bound forms requiring affix classes <pi->, occurring in the D slot of N_3 phrase.

-naypu	1st sg	-narrku	1st du
		-narrkununu	1st pl
-nungku	2nd sg	-nungunungka	2nd du
		-nukutpe	2nd pl

-nungu	3rd sg masc	-punungka	3rd du
-naju	3rd sg fem	-putpe	3rd pl

Pronominal Affix

CLASS	DESCRIPTION
<pi->	Occur as first order prefix with pronouns of class 4.

a. pi- benefactive; pinungku *'for you'*
b. ki- possessive; kinungku *'yours'*.

1.6. Temporal

These time words occur in the T slot of clauses.

penpe *'yesterday'*	lakamurrung *'evening'*
palkime *'today'*	kilapenpe *'dinnertime'*
malayi *'tomorrow'*	mulammulam *'dawn'*
wularrut *'long before'*	yiwaynpik *'later'*

1.7. Locational

Location words manifest the L tagmeme of clauses and Locational phrases, as well as the R of Prepositional phrases (and one instance of occurrence as filler of A slot of PP).

yirrk *'inside'*	korro *'there'*	kentam *'down'*
katum *'top'*	ngorro *'yonder'*	

1.8. Interrogative

These manifest the Ig slot of the interrogative transform.

parta *'what, why'*	parta kikarrme *'what do you have?'*
pirliyn *'how many, when'*	pirliyn kangunje kangaynwoyn *'when is he returning?'*

1.9. Negative

1. merrek, wurnung *'negative action'*. Fill the Neg slot of Cl; occur with v_{neg}; may occur with karlu.
2. ngunta *'negation'*. Fills Neg slot of Cl; occurs with v_{neg}; never occurs with karlu.
3. kaynuwa *'negative action'*. Fills the Neg slot of Cl; occurs with v_{pos}; only occurs with 2nd sg subject on verb (merrek may occur with the 2nd sg subject without a change in meaning).

4. karlu *'no, nothing'*. Acts as a noun, also fills the Pe slot of sentences.

1.10. Connective

la *'and, or, but, because, so'*. Coordinates parallel constructions: verb and verb; locational and locational; noun and noun; and maintains either the subject or the action or both.

verb and verb, subject maintained

ka-jungjanga-yn la ka-kalng lama
he-bend-s down and he-picks spear
'he bends down and picks up the spear'

noun and noun, action maintained

parramimpayn kiyun la nawalak
woman out and baby
'the woman took the baby outside'

locational and locational, subject and action maintained

kenta karlu la konta
there no but here
'don't (sit) there, but here'

1.11. Relators

1. Locative

korro, kuyi *'direction: to, under, near'*. Fills R_1 slot of Prep phrase.

korro kunpit	kuyi kongong
in hand	*into milk*
'(he held it) in his hand'	*'(he put it) into the milk'*

2. Comparative

yimarna *'resembling'*. Fills R_{cp} slot of Prep phrase.

yimarna karlmunungu	yimarna turtuk
resemble horned animal	*resemble dog*
'(he looks) like a goat'	*'(he looks) like a dog'*

2. PHRASE LEVEL CONSTRUCTIONS

The level above the word in the Gunbalang grammatical hierarchy is the phrase. The structure of the phrase distinguishes it from the next higher level, the clause, and from the previous level, the word. The difference between word and phrase is obvious, for the word is made up of bound forms or of free forms (simple roots) bound together as a

phonological word, i.e. with the same stress as a simple root; whereas, a phrase consists of one or more tagmemes, none of which is manifested by a bound form. The relationship between tagmemes distinguishes the phrase level from the clause level. Phrase level relationships are modification, linkage, and relator; while clause level relationships are predication, subject or object of predication, and scene.[20] The phrase manifests tagmemes on the clause level, and on the phrase level in a nesting construction.[21]

2.1. The Noun Phrase

Noun phrases are separated into three types according to the complement of tagmemes and their exponents. The conjunctive noun phrase is composed of two head tagmemes joined by a conjunction, while the descriptive and personalised noun phrases each contain only one head. The descriptive phrase further has an optional descriptive tagmeme which may occur twice and is expounded by an adjective; whereas, the personalised phrase has one obligatory descriptive tagmeme expounded by a possessive or benefactive form.

Noun phrases occur as manifestations of the Axis tagmeme of Prepositional and Locative Phrases, and of the Subject, Object, Indirect Object and Instrument tagmemes of clauses.

Formal Statement of Tagmemes[22]

1. H_d, H_p, H_c, H_c'
2. D_d, D_p
3. Cj

Formal Statement of Exponents

1. H_d: N, pr
2. H_p, H_c, H_c': N
3. D_d:aj
4. D_p: poss, ben
5. Cj: la, rising intonation.

Formula:

1. $N_d \rightarrow (D_d^2) + H_d$

In the descriptive noun phrase, the optional $descriptive_d$ tagmeme may occur once or twice and is manifested by an adjective. The following obligatory $head_d$ tagmeme is manifested by a noun phrase[23] or a pronoun.

The order D_d H_d as shown is the most common occurrence, but the reader will recall that above the word level of the grammatical hierarchy the word order is not stable so that a stylistic permutation of H_d D_d often occurs.

Citation

ngop ninta ku-walak ku-ngana
D:*all* D:*this* H:*it-stone it-big*
'all these mountains'

kapurrk kirrimarrk
D:*two* H:*men*
'two men'

Permutation

narno napareng
H:*snake* D:*poisonous*

Formula:

2. $N_p \rightarrow D_p + H_p$

The personalised noun phrase is read as a descriptive tagmeme followed by a head$_p$ tagmeme, both of which are obligatory. The D_p is manifested by a possessive or benefactive form, the H_p tagmeme is manifested by a noun phrase.

Citation

nguta ki-nungku turtuk
D:*you you*-possessive H:*dog*
'your dog'

Permutation

turtuk pi-ngaypu
H:*dog* D:*me*-benefactive
'dog of mine'

Formula:

3. $N_c \rightarrow H_c + Cj + H_c'$

The conjunctive noun phrase is read as an obligatory head$_c$ slot filled by a noun phrase, followed by an obligatory conjunction slot filled by the function word la or rising intonation over the final syllable of the preceding word. Following the conjunction tagmeme is an obligatory head$_c$ prime tagmeme manifested by a noun phrase.

Citation

ngal-puk la na-walak
H:fem-*person* Cj:*and* H:masc-*little*
'woman and baby boy'

ngarrken yika parpung yika ngalpartana
H:*animals* Cj:ri inton H:*(some fish* Cj:ri inton H:*some oysters)*
'animals, some fish and oysters'

2.2. The Pronoun Phrase

The complement of tagmemes separates the pronoun phrases into three types: the descriptive, conjunctive and emphatic. The descriptive syntagmeme has an optional descriptive tagmeme and one obligatory head; while the conjunctive has only an obligatory head which may occur twice. The emphatic pronoun phrase is composed of obligatory head and emphatic tagmemes. Pronoun phrases manifest the subject tagmeme on the clause level.

Formal Statement of Tagmemes

1. H_d, H_c, H_e
2. D
3. E

Formal Statement of Exponents

1. H_d, H_c: pr
2. H_e: pr, N
3. D:aj_3
4. E:poyn/piju

Formula:

1. $Ph_d \rightarrow H_d$ (+D)

The descriptive pronoun phrase is read as an obligatory $head_d$ tagmeme manifested by a pronoun followed by an optional descriptive tagmeme manifested by an adjective of group 3.

Citation

nguta kapurrk
H:*you* D:*two*
'you two'

Formula:

2. $Ph_c \rightarrow H_c^2$

The conjunctive pronoun phrase is read as an obligatory conjunctive head tagmeme which may occur twice, and is manifested by a pronoun.

Citation

nguta ngayi
H:*you* H:*I*
'you and I'

Formula:

3. $Ph_e \rightarrow H_e + E$

The emphatic pronoun phrase consists of an emphatic head tagmeme which is obligatory and manifested by a pronoun or noun phrase, followed by the obligatory emphatic tagmeme which is manifested by the emphatic pronouns poyn piju or piju.

Citation

na-puk poyn piju
H:masc-*person* E:*own self*
'the man his own self'

nguta poyn piju
H:*you* E:*own self*
'you, your own self'

turtuk piju
H:*dog* E:*self*
'the dog himself'

2.3. The Locative Phrase

The locative phrase is also a relator-axis construction with a location word functioning as relator. As the name implies, this phrase manifests the locative tagmeme of a clause.

Formula:

LPh → H + L

Exponents: H:N L:location

The lead in a locative phrase is manifested by a noun phrase and is an obligatory tagmeme followed by an obligatory locative tagmeme manifested by a location word.

Citation

martimpirrk katum
H:*coals* L:*top*
'on top of the coals'

2.4. The Prepositional Phrase

The prepositional phrase is a relator-axis construction. Unlike the previous phrase structures whose nuclear tagmemes are manifested by open class units, i.e. a class of units containing many mutually substitutable forms, the prepositional phrase has in its composition an obligatory tagmeme manifested by closed class[24] units, i.e. a class with very limited substitution. These closed class units (which are words in this instance) have the structural meaning of relator, gaining their lexical meaning from the larger context in which the phrase occurs.[25] korro may translate as *'in, into, to, on, near'*, but always relates an axis tagmeme as location in a higher level.

The exponents of the relator tagmemes and the distribution of the phrase type distinguishes two prepositional phrase syntagmemes, the locative and comparative. The relator locative is expounded by a location word and this syntagmeme manifests the locative tagmeme of a clause. The relator comparative is expounded by a comparative word and the phrase manifests the comparative tagmeme of a clause.

Formal Statement of Tagmemes

1. R_1, R_{cp}
2. A_1, A_{cp}

Formal Statement of Exponents

1. R_1: korro, kuyi
2. R_{cp}: yimarna
3. A_1; A_{cp}: N

Formula:

1. $PP_1 \rightarrow R_1 + A_1$

The locative prepositional phrase is read as an obligatory relator$_1$ tagmeme followed by an obligatory axis$_1$ tagmeme.

Citation

korro kunpit	kuyi kongong	korro kojparre
R:*in* A:*hand*	R:*into* A:*milk*	R:*to* A:*house*
'in the hand'	*'into the milk'*	*'to the house'*

Formula:

2. $PP_{cp} \rightarrow R_{cp} + A_{cp}$

The comparative prepositional phrase is read as obligatory relator$_{cp}$ and axis$_{cp}$ tagmemes.

Citation

yimarna karlmunungu
R:*like* A:*horned animal*
'like a goat'

yimarna turtuk
R:*like* A:*dog*
'like a dog'

3. CLAUSE LEVEL CONSTRUCTIONS

There are two major clause types, verbal and non-verbal, distinguished by the presence or absence of an obligatory predicate tagmeme. The verbal clauses are subgrouped, according to the internal structure of the verb manifesting the Predicate tagmeme and according to the complement of nuclear tagmemes, into the declarative and imperative moods of the intransitive, transitive, ditransitive and reflexive clause subtypes. The non-verbal clauses are -

(1) Item-Comment where the distinctive function is carried by the Comment tagmeme, and

(2) the Comparative clause which is identified by the obligatory occurrence of a Comparison tagmeme.

The nuclear tagmemes of clauses are all those which are obligatory,[26] those which relate to the predicate and those which distinguish between the clause types. All other tagmemes are peripheral, occurring as clause expansions. In Gunbalang the peripheral tagmemes are (T) (M) (ACC) (L). They never occur in isolation on the clause level and may occur in any combination as expansions of the verbal clause. Only the (T) and (L) may occur as expansions of the non-verbal clauses. The nuclear tagmemes of the clauses are given in the following chart.

CHART V: CLAUSE TYPES

		DECLARATIVE	IMPERATIVE
VERBAL	Int	(S) (+Neg) +P	(Neg) +P
	Tr	(S) (+Neg) +P (+O) (+In)	(Neg) +P (+O) (+In)
	Di	(S) (+Neg) +P (+IO) (+O)	(Neg) +P +IO
	Ref	(S) (+Neg) +P	(Neg) +P (+S)
NON-VERBAL		ITEM-COMMENT	COMPARATIVE
		(Neg) (+I) +C	(Neg) +O (+P) +Cp

Clauses function as Base tagmemes on the sentence level of the grammatical hierarchy and in nesting or embedding constructions when manifesting a tagmeme on the clause level.

3.1. The Verbal Construction

Nuclear tagmemes form a kernel construction which may be expanded by addition of any combination of the peripheral tagmemes. Each tagmeme in the kernel of a verbal clause relates to the predicate through a reference affix within the predicate and/or by manifesting a distinctive feature of the clause type. For example, the transitive declarative clause has, manifesting its predicate function, a verb whose prefixes designate the subject and object of its action. The kernel of this clause includes a tagmeme which relates to each of these functions: (S) (+Neg) +P (+O) (+In). Although the (In) tagmeme is not predicted in the verb, it is a nuclear tagmeme because it presupposes a transitive verb and is, therefore, a distinctive feature of the transitive clause.[27]

Formal Statement of Nuclear Tagmeme Exponents

1. S: N, Pr, aj
2. O: N, aj, karlu
3. IO: N, Pr
4. IN: N
5. P: V_{int}, V_{tr}, V_{di}, V_{neg}
6. Neg: kaynuwa, merrek, wurnung, ngunta

Peripheral Tagmeme Exponents

1. T: ti
2. M: av
3. ACC: Pr
4. L: Prep, l, N

Formula:

1. V Int De Cl → (S) (+Neg) +P

The verbal intransitive declarative clause kernel is read as an optional subject tagmeme followed by an optional negation and by an obligatory predicate.

Citation

na-kuji ka-ngaynkirtayn
S:*male-one* P:*he-returned*
'the man returned'

ngal-puk ka-yuwa
S:*female-person* P:*she-is sleeping*
'the woman is asleep'

Expansions

ngayi nga-yn-ka ku-walak ku-ngana
S:*I* P:*I*-pres-*go* L:*it-stone it-large*
'I am going to the mountain(s)'

nguta ki-yn-aynka ngayi
S:*you* P:*you*-pres-*return* ACC:*I*
'you return with me'

ku-nak-kuji ngarrki-woyn
M:*it-one-good* P:*we-turn around*
'we had better turn back'

Permutations

ka-yn-aynka na-kuji palanta
P:*he*-pres-*returns* S:*male-one white man*
'the white man is returning'

Formula:

2. V Int Imp Cl → (Neg) +P

The imperative clause never occurs with a free pronoun, and the nuclear tagmemes are an obligatory predicate preceded by an optional negation tagmeme.

Citation

ki-yn-ka
P:*you*-pres-*go*
'go!'

ki-woyn
P:*you-turn*
'turn around!'

Expansions

palkime ki-yn-ka
T:*now* P:*you*-pres-*go*
'go now!'

ki-mangarninja jirniyn
P:*you-sing* M:*very*
'sing loudly!'

Formula:

3. V Tr De Cl → (S) (+Neg) +P (+O) (+In)

The transitive differs from the intransitive in the number of *dramatis personae*[28], one in the intransitive and two in the transitive. As will be noted later, there are three in the ditransitive clause. These gradients of transitivity coupled with a different verbal manifestation

of each predicate tagmeme in the clause types define them as significantly distinct structures according to Longacre's criteria of two structural differences of which at least one affects a nuclear and/or obligatory tagmeme.

The transitive clause kernel is read as an optional subject followed by an optional negation tagmeme which is followed by an obligatory predicate, followed by the optional occurrence of an object and instrument tagmeme.

Citation

ngayi ngata-kiyne tapilana
S:*I* P:*I-cook* In:*billy can*
'I cook in a billy can'

ngayn-yilkpuyn kikakiyn man-jawak
P:*I-cut* O:*meat* In:neuter-*knife*
'I cut the meat with a knife'

Expansions

ngata-kiyne tapilana martimpirrk katum
P:*I-cook* In:*billy can* L:*coals* *top*
'I cook it in a billy can on top of the coals'

palkime ngayi nga-yn-jita-jiyn na-kerrku
T:*now* S:*I* P:*I*-pres-*you-eat* O:*male-buffalo*
'now-days all of us eat buffalo meat'

Permutations

ngatpe wularrut ngata-jarra-ng kikakiyn
S:*we* T:*before* P:*we-eat*-past O:*meat*
'long ago we ate meat'

nga-yn-parti-kiyne wam malayi
PP:*I*-pres-*liquid oj-cook* O:*tea* T:*presently*
'presently, I'll be cooking tea'

Formula:

4. V Tr Imp Cl → (Neg) +P (+O) (+In)

The transitive imperative reads as an optional negation tagmeme followed by an obligatory predicate tagmeme followed by optional object and instrument tagmemes.

Citation

ki-yn-walkiwoyn
P:*you*-pres-*replace it*
'put it back!'

ki-nguluktompuyn
P:*you-extinguish it*
'put it out! (the fire)'

Expansions

ki-nguluktompuyn jirniyn
P:*you-extinguish it* M:*very*
'put it out, quick!'

Formula:

5. V Di De Cl → (S) (+Neg) +P (+IO) (+O)

The verbal ditransitive declarative clause kernel is read as an optional subject tagmeme followed by an optional negation tagmeme followed by an obligatory predicate and an optional indirect object and object tagmeme.

Citation

nga-yn-puynŋgurr pi-nungku man-purrpa
P:*I*-pres-*wash* IO:ben-*you* O:neuter-*clothes*
'I can do your washing'

Expansion

ngayi nga-pumngurr kun-mak
S:*I* P:*I-washed* M:neuter-*good*
'I did the washing very well'

Permutation

kirrimarrk na-kuji kapurrun kikiwayn ka-putu-marnayn-purrjuwa
S:*man* *male-one* IO:*they all* P:*he-them-for-tells story*
'a man is telling all of them a story'

Formula:

6. V Di Imp Cl → (Neg) +P (+IO)

The ditransitive imperative clause kernel has an optional indirect object following the obligatory predicate, preceded by an optional negation tagmeme.

Citation

ki-marnayn-ngunje
P:*you-for-talk*
'tell him!'

ki-nakirrirrk man-purrpa
P:*you-put it into* IO:neuter-*clothes*
'dress him! (in those clothes)'

Formula:

7. V Ref De Cl → (S) (+Neg) +P

The reflexive declarative clause kernel is read as an optional subject followed by an optional negation tagmeme which is followed by an obligatory predicate tagmeme.

Citation

ka-pilkpi-yi
P:*he-scratches*-ref pres
'he is scratching himself'

kapurrk ngana-papang-ngeme-yiyn
S:*two* P:*they-body-paint*-ref past
'they two painted themselves'

Expansions

ngorro ngarrki-kalpi-yi
L:*there* P:*we-meet*-ref pres
'we will meet each other there'

Permutation

ka-peye-jiyn na-puk poyn piju
P:*he-body-bites self* S:*male-person own self*
'the fellow is biting himself'

Formula:

8. V Ref Imp Cl → (Neg) +P (+S)

Unlike the other imperative clauses, the reflexive imperative is read as an optional subject following the usual obligatory predicate tagmeme, which is preceded by an optional negation tagmeme.

Citation

ki-yn-jiyn nguta poyn piju
P:*you*-pres-*feed(eat)* S:*you own self*
'you feed your own self!'

Negative Reading of the Verbal Construction

Each of the previous positive constructions may be read as negative by choosing the optional negative tagmeme and, in the instance of the declarative clauses, applying a simple transform rule:

$$V_{pos} \Rightarrow V_{neg}/Neg\ +P:\_\_.$$

There is no change in the verbal exponent of the predicate in negative imperative clauses. The negative transform of declarative clauses is read thus: the positive verb becomes a negative verb in the environment of the Negative tagmeme occurring with a predicate tagmeme which is expounded by a positive verb.

Formula:

1'. V Int De Cl → (S) (+Neg) +P

Citation

ngayi ngarra-kirta-ng
S:*I* P:*I* neg-*go*-past neg
'I didn't go'

Expansion

ngal-puk kenta merrek ki-rnini-ng
S:*female* L:*there* Neg:*negation* P:*she* neg-*sit*-neg
'the woman isn't there'

Permutations

merrek ki-lu na-wayntak
Neg:*negation* P:*he* neg-*cries* neg S:*male-baby*
'the baby isn't crying'

ngayi ngunta korro-kenta ngarra-kirta-ng
S:*I* Neg:*negation* L:*to-there* P:*I* neg-*go*-past neg
'I didn't go down there'

Formula:

2'. V Int Imp Cl → (Neg) +P

Citation

merrek ki-rriwo
Neg:*negation* P:*you-turn* neg
'don't you return!'

Formula:

3'. V Tr De Cl → (S) (+Neg) +P (+O) (+In)

Citation

ngayi merrek ngarra-tenpulumi-rli
S:*I* Neg:*negation* P:*I* neg-*break it*-past neg
'I didn't break it'

merrek ngarra-ngajpupoyn na-milduppe
Neg:*negation* P:*I* neg-*sharpen* O:*male-blunt*
'it's dull, I can't sharpen it'

Expansions

merrek ngayi-parti-kiyne-rli penpe
Neg:*negation* P:*I-liquid-cook*-past neg T:*yesterday*
'I didn't boil tea yesterday'

Permutations

ngunta wirtij ki-nguluktompu-ni
Neg:*negation* O:*fire* P:*you-extinguish it*-past neg
'you didn't put the fire out, you missed it'

ngarra-parti-kiyne merrek
P:*I* neg-*liquid-cook* past neg Neg:*negation*
'I don't boil the tea'

Formula:

4'. V Tr Imp Cl → (Neg) +P (+O) (+In)

Citation

kaynuwa ki-parti-karrme
Neg:*negation* P:*you-liquid-carry*
'don't take that water!'

Formula:

5'. V Di De Cl → (S) (+Neg) +P (+IO) (+O)

Citation

ngayi merrek ngarra-pungurr
S:*I* Neg:*negation* P:*I*-neg-*wash*
'I don't wash for anyone'

ngayi wurnung ngarra-purrjung
S:*I* Neg:*negation* P:*I* neg-*tell story*
'I'm not telling a story'

Formula:

6'. V Di Imp Cl → (Neg) +P (+IO)

Citation

kaynuwa ki-marnayn-ngunje
Neg:*negation* P:*you-tell him*
'don't tell him!'

kaynuwa ki-nakirrirrk
Neg:*negation* P:*you-dress him*
'don't dress him!'

Formula:

7'. V Ref De Cl → (S) (+Neg) +P

Citation

merrek kita-tamiyi
Neg:*negation* P:*they* neg-*put selves down*
'they aren't all lying down'

Permutation

merrek na-puk ki-pilkpiyi
Neg:*negation* S:*male-person* P:*he* neg-*scratches self*
'the fellow isn't scratching himself'

Formula:

8'. V Ref Imp Cl → (Neg) +P (+S)

Citation

kaynuwa ki-ynjiyn
Neg:*negation* P:*you-eat*
'don't eat it!' or 'don't put that in your mouth!'

3.2. The Non-Verbal Construction

Formal Statement of Tagmemes	*Formal Statement of Exponents*
1. C	1. C: aj_2
2. I	2. I: N, aj
3. O	3. O: N
4. Cp	4. Cp: PP_{cp}
5. P	5. P: kangunje
6. Neg	6. Neg: merrek
7. L	7. L: l
8. M	8. M: av

Formula:

1. NV IC Cl → (Neg) (+I) +C (+M) (+L)

The non-verbal item-comment clause is read as an optional negative tagmeme followed by the nuclear though optional item and nuclear obligatory comment tagmemes, followed by an optional manner and location tagmeme. Any adjective type 2 may occur as a minimal item-comment clause.

Citation

kun-jeng
C:*it-true*
'that's true'

kun-mak jirniyn
C:*it-good* M:*very*
'that's interesting'

kika kapurrk kiynparra-kukarlyung
I:*they two* C:*they - tall*
'they two are tall'

ki-ngelerrk jirniyn loperl
C:*it-noisy* M:*very* L:*outside*
'it's very noisy outside'

ngayi merrek ngarra-kukarlyung
I:*I* Neg:*not* C:*I-tall*
'I am not tall'

Formula:

2. NV Cp Cl → O (+P) +Cp

The non-verbal comparative clause is read as an obligatory object tagmeme, followed by an optional and non-nuclear predicate tagmeme, followed by an obligatory comparative tagmeme.

Citation

na-keyang karlyung yimarna turtuk
O:masc-*tooth long* Cp:*like dog*
'he has long teeth like a dog'

na-keyang karlyung ka-ngunje yimarna turtuk
O:masc-*teeth long* P:*he-says* Cp:*like dog*
'he has long teeth (it appears) like a dog'

3.3. The Interrogative Construction

There are two types of interrogative in Gunbalang, the one requiring an information answer and the other a yes/no answer. Any clause with the rising intonation pattern of a question elicits a yes/no answer. The interrogative transform of any clause which elicits an information answer is: X + Y => Ig +X +Y, where X and Y read as any elements in a

clause. The exponents of the interrogative tagmeme are: parta, pirllyn/-ngunje.

Citation

parta ki-yn-ngayi
Ig:*what* P:*you*-pres-*hear*
'what do you hear?'

parta ki-karrme korro kun-pit
Ig:*what* P:*you-hold* L:*in hand*
'what are you holding in your hand?'

parta ki-nungu ki-ngan-pum
Ig:*why* ben-*you* P:*you-me-hit*
'why did you hit me?'

parta merrek ki-putu-mulungkukarlangwa-ni
Ig:*why* Neg:*not* P:*you-them-follow-negative*
'why didn't you follow them?'

pirliyn ka-ngunje ka-ngaynwoyn
Ig:*when he-say* P:*he-returns*
'when is he returning?'

pirliyn ka-ngunje ngarrki-woyn
Ig:*when he-say* P:*we-turn back*
'when are we coming back?'

pirllyn kaynpata-ngunje nuka nga-ynngarnay narleng ka-ja nganaparru
Ig:*how many they-say* O:*this* P:*I-saw* O:*group he-stand buffalo*
'how many buffalo were there in that group I saw?'

pirliyn ka-ngunje parrawljwlj ki-putu-karrme
Ig:*how many he-say* O:*children* P:*you-them-have*
'how many children do you have?'

4. SENTENCE LEVEL CONSTRUCTIONS

The grammatical sentence differs from the clause in that sentence level tagmemes may be manifested by units from any level of the grammatical hierarchy[29], and the relationship between tagmemes is that of cause-and-effect, sequence or parallel action rather than such clause level relationships as predication and subject.

The internal structure of the syntagmeme divides the sentences of Gunbalang into (1) non-complex, those with one nuclear tagmeme; (2) complex, with two or more nuclear tagmemes joined by an obligatory connective; (3) compound sentences with two or more nuclear tagmemes grammat-

ically joined by their juxtaposition rather than by a connective. The compound sentence is distinguished from a series of two or more sentences by exhibiting the phonological features of a single sentence.[30]

The exponents of the nuclear tagmemes of the *non-complex* sentences separate them into the Simple Sentence and the Particle Sentence. The *complex* structure always exemplifies a cause-and-effect relationship between nuclear tagmemes. There are two types of sentence which have a *compound* structure, the Sequence and Parallel Sentences, which are separated as types of syntagmemes by the exponents of their nuclear tagmemes. Features of these exponents further subdivide each of these two types into four sub-types: Chronological, Simultaneous, Alternative and Direct Quote Sequence; Parallel, Retrospective, Comparative and Repetitive. The following notation paradigm sets out the sentence types, sub-types and their syntagmatic formulas.

CHART VI: SENTENCE TYPES

Non-Complex

Simple Sentence → (Pe) +ClB
Particle → (Pe) +PB

Complex

Cause-Effect → (Pe) +CS +Conn +EF

Compound

Sequence Sentence
- Chronological → (Pe) +SE +SE' (+SE")
- Simultaneous → (Pe) +SA +SA'
- Alternative → (Pe) +ST_1 +AL
- Direct Quote → (Pe) +QF + QU

Parallel Sentence
- Parallel → (Pe) +PS +PS'
- Retrospective → (Pe) +RE +RE'
- Comparative → (Pe) +ST_2 +CP
- Repetitive → (Pe) +RB^2

Formal Statement of the Exponents of Sentence Tagmemes

1. Pe: Id, Vo
2. ClB: any Cl
3. PB: any construction below the Cl
4. CS: any construction except Phrase

5. Conn: la, yimarna
6. EF: any clause, optionally repeating any unit from CS
7. SE, SE', SE", PS, PS', PS", RB: any Cl
8. SA: VCl_{con}
9. ST_1: any Cl_{neg}
10. QF: -ngunje
11. RE: any Cl_{pa}
12. RE': any Cl_{pres}, optionally repeating any unit from RE
13. AL,ST_2: any Cl_{pos}
14. CP: any Cl_{neg}, optionally repeating any unit from ST_2
15. QU: any construction

Formula:

1. SP SN → (Pe) +ClB

A simple sentence is read as an optional peripheral tagmeme followed by an obligatory clause base.

Citation

nga-yn-ka korro yalpi
ClB:*I*-pres-*go to camp*
'I am going home.'

ki-yn-ka korro yalpi
ClB:*you*-pres-*go to camp*
'Go home.'

Expansions

Jisalia ki-yn-ka korro yalpi
Pe:*Jisalia* ClB:*you*-pres-*go to camp*
'Jisalia, go home!'

Formula:

2. PA SN → (Pe) +PB

A particle sentence is read as an optional peripheral tagmeme followed by an obligatory particle base.

Citation

korro yalpi
PB:*to camp*
'Home.' Response to question such as *'Where are you going?'*

poyn
PB:*completed*
'Hurry and finish; I am finished.'

Expansion

kukangunje poyn
Pe:*okay* **PB:***completed*
'Okay, finish.'

Formula:

3. Cs-EF SN → (Pe) +CS + Conn +EF

The cause-and-effect sentence is read as an optional peripheral tagmeme followed by obligatory cause and effect tagmemes joined by an obligatory connector tagmeme.

Citation

kikakiyn-turrkwayn nga-jarrang la nga-warrmi
CS:*meat-rotten I-ate* **Conn EF:***I-am ill*
'Eating the rotten meat made me ill.'

Permutation

nuka manjang kingarrkun-pum yimarna parrawijwij ngarrk-purrun-
EF:*this crowd-us all of us-killed* **Conn EF:***children we-them*

karrmi
carry

'We'll all get killed carrying those children.'

narno ka-yuwa korro ku-jorlok la ka-wungmi
EF:*snake he-sleeps in it-hole* **Conn CS:***he-breath smokes*
'The snake is in his hole because it's winter-time (frosty breath).'

Formula:

4. CH SE SN → (Pe) +SE +SE' (+SE")

The chronological sequence sentence has obligatory sequence and sequence prime tagmemes followed by an optional sequence double-prime tagmeme, all preceded by an optional peripheral tagmeme.

Citation

ka-korro-pakjung nga-majiyn nga-warntadlkpun
SE:*he-there-sat* **SE':***I-shot* **SE":***I-missed*
'He alighted, I shot and missed.'

mulam mulam ngata-tolkayn ngata-ka kun-kuji
SE:*morning-time we-start* SE':*we-go it-good*
'It's best for us to get up in the morning and go.'

Expansion

kukangunje kata-ka kata-pu ngarrkin parranuk
PE:*it-appears* SE:*they-go* SE':*they-kill animals many*
'So they go and kill many animals.'

Formula:

5. SA SE SN → (Pe) +SA +SA'

The simultaneous sequence sentence is read as an optional peripheral tagmeme followed by obligatory simultaneous action and simultaneous action prime tagmemes.

Citation

kaparra-kat-pl kaparra-ka
SA:*they 2-hold*-con SA':*they 2-go*
'They two are walking with their arms around each other.'

ka-ngaynpl-ng ka-pun-karrme na-walak
SA:*she-come out*-con pa SA':*she-it-carries male-babe*
'She came out carrying the baby.'

Formula:

6. AL SE SN → (Pe) +ST_1 +AL

The alternative sequence sentence is read as obligatory statement type 1 and alternative tagmemes preceded by an optional peripheral tagmeme.

Citation

penpe merrek ngayl-pu-nl ngayl nga-kerlkkuyl
ST_1:*yesterday* neg *I not-hunt*-neg AL:*I I-work*
'I didn't hunt yesterday, I worked.'

Expansion

karlu merrek ngarra-yakpu kuyl kongong nyuynuk nga-yn-yakpuyn
Pe:*no* ST_1:neg *I not-pour* neg *in milk* AL:*water I*-pres-*pour*
'No, I'm not pouring in milk, I'm pouring water.'

Formula:

7. DQ SE SN → (Pe) +QF +QU

The direct quote sequence sentence is read as an optional peripheral

tagmeme followed by obligatory tagmemes of quote focus and quote.

Citation

ngana-kirtayn nga-marnayn-ngunta ki-yn-ka ngorro ngal-kan
Pe:*we-went* QF:*I-for-told* QU:*you*-pres-*go there* fem-*relative*

kiyn-marnayn-pinki
you-for-stay-con

'On the way, I told her, "Go over there and stay with your mother".'

Formula:

8. PA SN → (Pe) +PS +PS' (+PS")

The parallel sentence has two obligatory and one optional parallel sequence tagmeme introduced by an optional peripheral tagmeme. The concordance is manifested in the repeated *dramatis personae* and semantic equivalence in the nuclear tagmemes.

Citation

ka-jingaynpum ka-warrmi ka-yn-poynjek
PS:*he-sneezes* PS':*he-is ill* PS":*he*-pres-*is cold*
'He is ill with a cold and sneezing.'

kun-kuji nga-ngaynwarren nga-ngaynkangin
PS:*it-good I-came with it* PS':*I-brought it*
'I came and brought the good thing.'

parrawijwij ka-mankan yiwayn ka-ngan-munpum
PS:*child he-fell* PS':*that is he-me-fell on*
'The child fell, that is he fell on me.'

Formula:

9. RE PA SN → (Pe) +RE +RE'

The retrospective parallel sentence is read as an optional peripheral tagmeme followed by obligatory retrospective and retrospective prime tagmemes. The concordance between the nuclear tagmemes is manifested by the repetition in semantic equivalence of one or more units from each tagmeme.

Citation

ngatpe nuka ngata-majiyn nayim kuyn palkime ngorro karlmunungu
RE:*we then we - hunt those kangaroos* RE':*today there buffalo*
'We used to hunt kangaroos but today we hunt buffaloes.'

ngatpe wularrut ngata-jarrang kikakiyn palkime ngaynjita-jiyn
RE:*we previous we-ate meat* RE':*today all of us-eat*

nakerrku
bullock

'In the old times we (not you) ate wild meat, now all of us eat beef.'

Formula:

10. CP PA SN → (Pe) $+ST_2$ +CP

The comparative parallel sentence is read as an optional peripheral tagmeme followed by a statement type 2 obligatory tagmeme and an obligatory comparative tagmeme. The concordance between these tagmemes is shown in the repetition of the positive aspect as negative.

Citation

ka-ngarnta-laka kun-mak ngunta nakaypi kiparra-pirriyning
ST_2:*he-it-throws it-good* CP:neg *better they not-same not*
'He throws a spear better than they do.'

Formula:

11. RP PA SN → (Pe) $+RPB^n$

The repetitive parallel sentence is read as an optional peripheral tagmeme followed by an obligatory repeated base tagmeme whose possible infinite repetition is limited by the type of discourse and by the time span of the action. In conversation there are seldom more than three repetitions but in monologue there may be four to seven.

Citation

nga-kadlng nga-pakpel-pum ngemek nga-kadlng
RPB:*I-caught it up I-with hand-bashed it* RPB:*then I-caught it*

nga-pakpel-pum
I-bashed it

'I picked it up and bashed it down, picked it up and bashed it down.'

ngata-kirtayn kulkkulk ngata-kirtayn kulkkulk
RPB:*we-left running* RPB:*we-left running*
'We ran and ran fast!'

nga-rnay nga-rnay nga-rnay nga-rnay nga-rnay
RPB:*I-looked* RPB:*I-looked* RPB:*I-looked* RPB:*I-looked* RPB:*I-looked*
'I looked and looked and looked and looked and looked.'

NOTES

1. A. Capell, "Languages of North and Northwest Australia", *Oceania* vol. 10 (1940), pp.7, 8.
A. Capell, "Languages of Arnhem Land, North Australia", *Oceania* vol. 12 (1942), pp.364-92.

2. The list was completed through "situation elicitation", i.e. depending on a situation rather than on a spoken word to bring a response from the informant. The checking of material was carried out according to methods set out by Voegelin and Harris. C.F. Voegelin and Z.S. Harris, "Methods for Determining Intelligibility Among Dialects of Natural Languages", *Proceedings of the American Philosophical Society* vol. 95 (1951), pp.322-29.

3. Robert E. Longacre, *Grammar Discovery Procedures*, The Hague (1964), 162pp. Hereafter abbreviated to *GDP*.

4. ibid., p.7.

5. Robert E. Longacre, "String Constituent Analysis", *Language* vol. 36 (1960).

6. Robert E. Longacre, *GDP*, p.15.

7. Robert E. Longacre, "String Constituent Analysis", p.75.

8. Robert E. Longacre, *GDP*, pp.25-31.

9. Noam Chomsky, *Aspects of the Theory of Syntax*, M.I.T. Press (1965).
A. Koutsoudas, *Writing Transformational Grammars: an Introduction*, McGraw-Hill (1966), p.19.

10. Robert E. Longacre, *GDP*, p.47.

11. A common feature of the Australian Aboriginal languages is the lack of a stable order of occurrence of the tagmemes on phrase, clause and sentence levels. Capell equates this feature with the complex word structure, showing that the latter gives maximum information thus allowing freedom of occurrence to give stylistic variation in the language without significant change of meaning. In this article, the most frequently occurring order will be given as the descriptive formula, with variations shown as resulting from the stated P operation. The few instances where tagmeme sequence is a significant distinction between syntagmemes will be mentioned in the text.

A. Capell, *A New Approach to Australian Linguistics, Oceania Linguistic Monographs* No.1 (1956), 119pp.

A. Capell, *Some Linguistic Types in Australia, Oceania Linguistic Monographs* No.7 (1962), 185pp.

12. Eugene A. Nida, *Morphology, the Descriptive Analysis of Words*, University of Michigan Press, Ann Arbor (1949), p.82.

Benjamin Elson and Velma Pickett, *An Introduction to Morphology and Syntax*, Summer Institute of Linguistics, Santa Ana, California (1962), pp.50-52.

13. Affix order is stated in relation to the stem, e.g. a first-order affix is one occurring nearest the stem.

14. Leaders here indicate a discontinuous morpheme, the separating morpheme being the <yn-> **'present tense'** as shown in the example.

15. The **'2nd du/pl'** subject negative prefixes are homophonous with the subject of the past-intransitive verb.

16. The negative character of the predicate in this instance is carried in the negative subject prefix.

17. There are many nouns whose first syllable is the same as the gender prefixes but which do not come under the classification because the remainder of the word does not occur with any other prefix.

18. Where a meaning for a part of the word has been recorded, it is shown.

19. In predicate-centered languages, the predicate is a minimal clause. I have, therefore, analysed the Predicate tagmeme plus the

Modifier tagmeme as an expanded clause rather than as a verbal phrase. Robert E. Longacre, *GDP*, p.35ff.

20. ibid., pp.74, 75.

21. ibid, p.17.

22. The model for my format is taken from Lawrence Andrew Reid, *An Ivatan Syntax, Oceanic Linguistics* special publication No.2 (1966), University of Hawaii, 160pp.

23. An example of nesting or embedded constructions, for the H tagmeme is here manifested by a noun phrase.

24. Benjamin Elson and Velma Pickett, *An Introduction to Morphology and Syntax*, p.144.

25. Kenneth L. Pike, *Language*, Summer Institute of Linguistics, Santa Ana, California (1954), vols. I, II, III.
Relevant sections on structural meaning are on pp.116-121 in vol. I, p.95 in vol. III.

26. Robert E. Longacre, *GDP*, pp.48-50.

27. This tagmeme could logically occur with the ditransitive clause type as well, but there is no evidence of such an occurrence in my data.

28. Robert E. Longacre, "Transformational Parameters in Tagmemic Field Structures", *Report of the Sixteenth Annual Round Table Meeting on Linguistics and Language Studies*, Georgetown University Press, Washington D.C. (1965), pp.43-58.

29. Robert E. Longacre, "The Notion of Sentence" (mimeographed copy of pre-publication manuscript, 1968).

30. John O. Lind, "Clause and Sentence Level Syntagmemes in Sierra Popoluca", *IJAL* vol. 30, No. 4 (1964), pp.341-54.

31. Map 1 shows the main concentrations of the languages listed. There are other languages in the areas which are not mentioned here because they do not pertain to this study. Besides personal visits

and checking in these areas, I have checked the following sources for corroboration:

R.M. and C.H. Berndt, *The World of the First Australians*, Ure Smith, Sydney (1964), 509pp.

L.R. Hiatt, *Kinship and Conflict*, The Australian National University, Canberra (1965), 162pp.

K.J. Maddock, "Report to the Australian Institute of Aboriginal Studies", typewritten MS. (1965).

J.P.M. Long, "Population Movements, Maningrida", a Patrol Report to the NTA Welfare Branch, Darwin (1960).

32. Map 2 shows the traditional territories of the languages listed. These would be the territories which the speakers of the languages regard as their "country" and with which they have a totemic relationship. Although they have gradually migrated to government settlements, missions, cattle stations, etc., they will still go walkabout to their "country". The shadings show presence but not necessarily numbers of speakers. Other sources than Aboriginal informants for corroboration are:

Baldwin Spencer, *Wanderings in Wild Australia*, vol. II, MacMillan and Co., London (1928), 930pp.

R.M. and C.H. Berndt, op. cit. (1964).

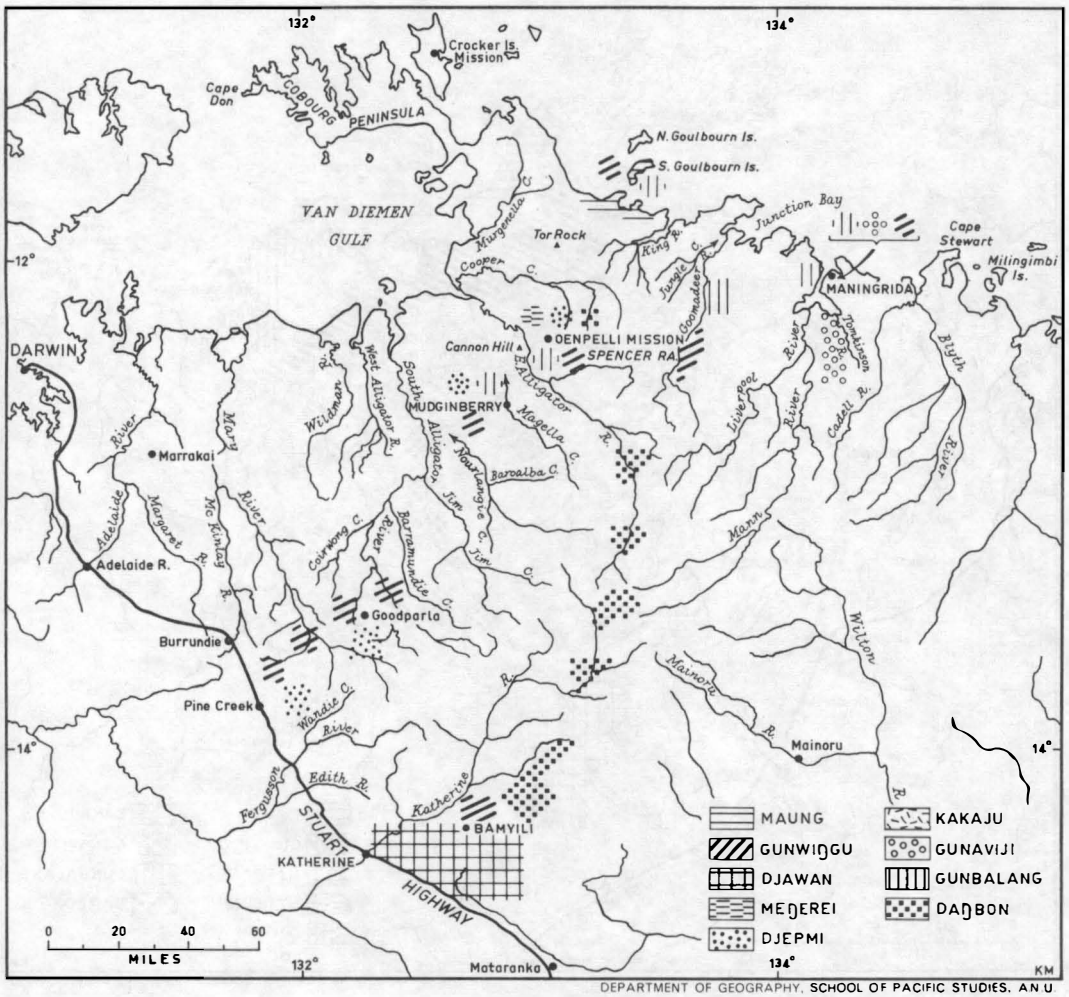
A. Capell, *Linguistic Survey of Australia*, Australian Institute of Aboriginal Studies, Canberra (1963).

Ludwig Leichhardt, *Journal of an Overland Expedition in Australia*, T & W Boone, London (1847), 537pp.

Neither Spencer nor Leichhardt gave much information on territorial boundaries, but the value of their observations rests in their recording words, movements and numbers of Aborigines they met.

MAP I

APPROXIMATE PRESENT DAY LANGUAGE TERRITORIES [31]



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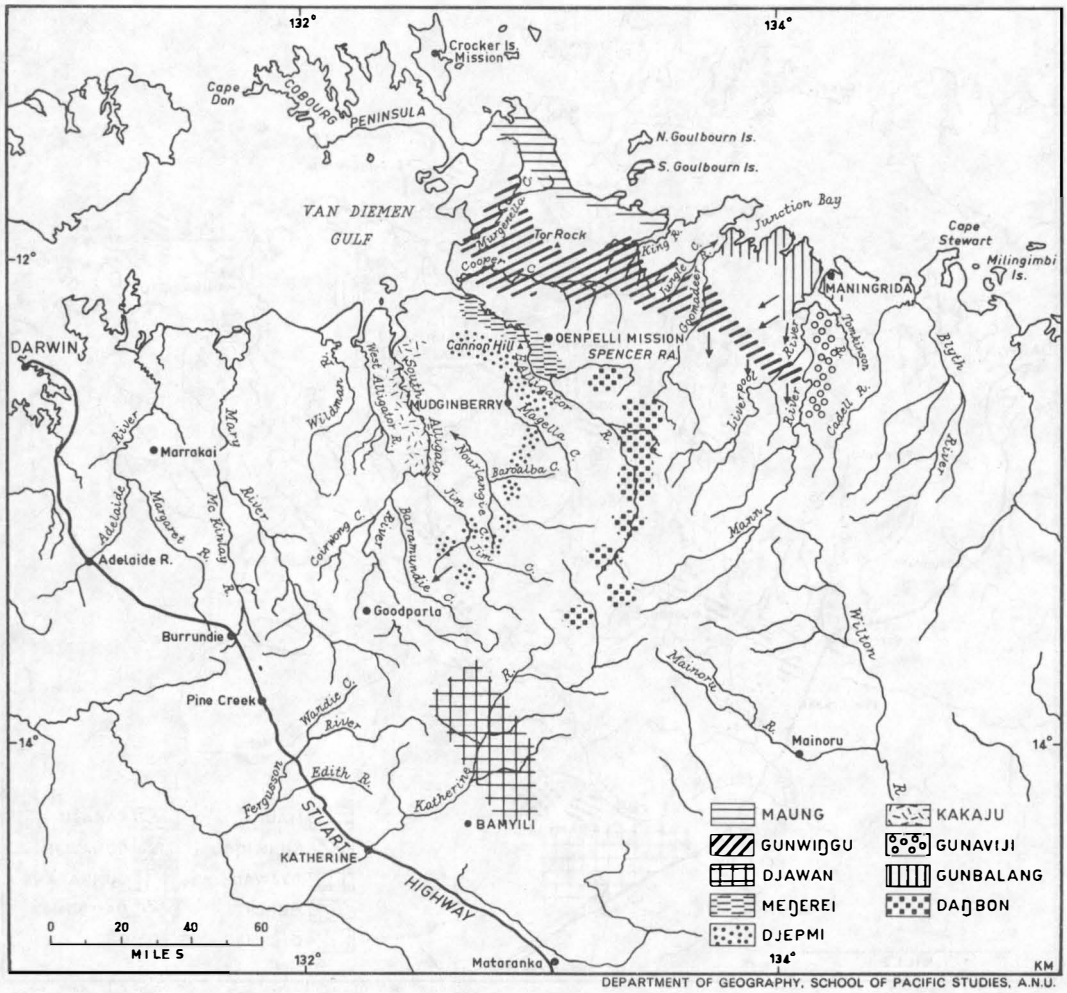
MAP II

APPROXIMATE TRADITIONAL LANGUAGE TERRITORIES [32]



Harris, J.K., Wurm, S.A. and Laycock, D. editors. *Papers in Australian Linguistics No. 4*.
A-17, vi + 105 pages. Pacific Linguistics, The Australian National University, 1969. DOI:*10.15144/PL-A17.1*

PERSON MARKER SEQUENCES IN AUSTRALIAN LANGUAGES *

S.A. WURM

1. SYMBOLS AND ABBREVIATIONS

1.1. *PHONETIC SYMBOLS*

The language materials given in this article are from a variety of sources, including the author's fieldnotes, and several different systems of notation are used in the originals. One of these systems has been adopted for the purpose of this paper, and for the sake of uniformity, all the materials presented have been transcribed into it. It is as follows:

Consonants

	labial	inter-dental	alveolar	palatal	retro-flexed	velar
Stops	b	d̪	d	dj	ḍ	g
Nasals	m	n̪	n	nj	ṇ	ŋ
Laterals		l̪	l	lj	ḷ	
Trills			r		ṛ	
Continuants	w		ṙ	j		

* The writing up of this article was completed under the auspices of the Pacific and Asian Linguistics Institute of the University of Hawaii.

Wurm, S.A. "Person Marker Sequences in Australian Languages". In Harris, J.K., Wurm, S.A. and Laycock, D. editors, *Papers in Australian Linguistics No. 4.* **A-17:51-70**. Pacific Linguistics, The Australian National University, 1969. DOI:*10.15144/PL-A17.51*

There is no need, for the purpose of this paper, to enter into discussions of a phonological nature. The only point worth mentioning is that the stops represented by the symbols given above are voiceless lenes. Also, it may be pointed out that the above chart is only a basic chart, and that several phonemes occur in Australian languages not referred to in this paper, which are not included in the chart. In fact, this basic chart contains several symbols which do not appear in any of the examples given here.

Vowels

i	u
e	
ə	o
a	

Again, vowel phonemes occur in some Australian languages not drawn upon in this paper, which have not been included in this chart. However, all the phonemes given in the above chart will be encountered in the examples.

Suprasegmentals

: length

1.2. ABBREVIATIONS

A	adjunct	**n**	negative
al	allative	**O**	object marker
b	bound	**P**	person marker
c	catalyst	**p**	past marker
cm	composite	**pl**	plural
d	dependent	**pr**	present tense marker
dl	dual	**psu**	possessive suffix
do	direct object suffix	**S**	subject marker
e	ergative	**s**	shortened
ex	exclusive	**sg**	singular
f	free	**t**	tense marker
fu	future marker	**V**	verb
I	interrogative	**X**	aspect or auxiliary
i	inclusive	**1**	first person
im	imperative	**2**	second person
iO	indirect object marker	**3**	third person
N	noun		

+ indicates the composing elements of portmanteau affixes; it is also used to link elements and affixes which are difficult to separate in the analysis without giving elaborate explanations which are irrelevant to the discussion.

- links connected elements or affixes which are easily separable in the analysis.

(i.e. empty space) separates free morphemes.

( ) in a formula: encloses the formula and separates it from the text;
in a translation: encloses the translation of elements in the native examples which are not expressed in an idiomatically correct free English translation.

[ ] in a formula: encloses elements in the analysis which are not overtly indicated in the native example;
in a translation: encloses words which are necessary in an idiomatically correct free English translation but have no direct equivalents in the native examples.

{ } denotes a formula part which is composed of sub-parts.

< derived from.

> changes into.

Remarks to the abbreviations:

The word "marker" has been added to items in the above list in those cases in which it would usually be said when reading out a formula aloud.

In the formulae, the individual abbreviations have not been separated from each other, e.g. by full stops, because no ambiguity can occur. Though the same letters are parts of different abbreviations, they cannot be mistaken for each other, because they occur in complementary distributions, e.g. p, pl, pr, psu (with p only appearing in isolation), or i and iO, im, with i = "inclusive" only appearing after dl or pl; etc.

2. CLASSIFYING AUSTRALIAN LANGUAGES, AND TYPOLOGICAL CONSIDERATIONS

One of the general results of early attempts at classifying the Australian languages as a whole - as far as they were known at the time at which such attempts were undertaken - was the assumption that the languages of the far north of Australia were quite different from, and unrelated to, those of the remainder of the continent which were

believed to be interrelated. Also, the northern languages were regarded as unrelated to each other.

The first large-scale study of this kind was that undertaken by P. Schmidt (1919a, 1919b). He was basing his findings predominantly on the lexical comparison of small corpora, by inspection only - this is especially true for the part of his work concerned with the northern part of Australia. A few factors of a typological and regional nature were taken into account in greater or less detail - more frequently for the south-east of Australia than for other parts. Schmidt's materials were in almost all cases greatly limited, inadequate, and information was totally lacking for large portions of the continent, especially in areas outside the south-east. He was also unaware of the fact that the languages of Arnhem Land and the Kimberleys which he included with his North Australian languages and in consequence, separated radically from the southern languages, were typologically strikingly different from those of the other parts of the continent in employing prefixes abundantly.

In his first attempt at establishing a typological classification of the Australian languages, Capell (1937) treated the languages of the Northern Kimberleys as constituting a separate group. It had, at that time, been definitely established that these languages were characterized by the frequent appearance and use of prefixes in addition to suffixes - the exclusive use of the latter had been found to be a feature of the other Australian languages which were typologically and structurally known at that time. The terms "prefixing languages" and "suffixing languages" were adopted by Capell to denote the two language types. The languages of the Southern Kimberleys and most of Arnhem Land were insufficiently known in their structures and typological features to permit their inclusion in the typological group constituted by the northern Kimberley languages - they were left typologically unclassified at that stage. Capell did however suspect that his northern Kimberley Group extended further westwards.

In spite of the pronounced typological contrast separating the languages of this group from the other then known Australian languages which was parallelled by a low degree of lexical similarity, Capell came to the conclusion that all Australian languages were of the same stock and could all be linked with each other. In this, he differed sharply from Schmidt. At the same time, no satisfactory explanation could be offered at that stage for the highly aberrant nature of these northern languages.

The results of further linguistic work carried out mostly by Capell himself in several parts of Australia and especially in the far north

in the years following the publication of his first typological classification, made it possible for him to determine the extent and composition of the entire group of prefixing languages which occupies the Kimberleys and most of Arnhem Land as well as the western part of the south coast and hinterland of the Gulf of Carpentaria. At the same time, the typological and structural features of languages in other parts of Australia became clearer as more details became available and the existence and characteristics of several new types of Australian languages became known.

The characteristic feature of the prefixing languages is the presence of bound person markers denoting the subject and the object which appear as prefixes in the verb complex in sequences whose internal order is not optionally alterable, and is rigidly determined by definite principles. At the same time, the person markers are usually subject to considerable morphophonemic changes upon being combined with each other. Other affixes in the verb complex, such as number, tense, aspect, mood, etc. markers are predominantly, though by no means exclusively, suffixal.

In addition to this general characteristic, it has been found that the majority of the prefixing languages have class-systems comprising two or more noun classes, with varying degrees of concord. This had, for a long time, been regarded as an exclusive feature of prefixing languages in Australia - only one suffixing language, Bandjalang in north-eastern New South Wales, was shown by Smythe (unpublished) to possess rudiments of a class system. However, a few years ago, Hale discovered the existence of a number of suffixing languages with class systems and concord in the Barkly Tablelands area, to the south-east of eastern Arnhem Land. Hale has not yet published his results, but a brief description of one of these languages was recently given by Chadwick (1968). A very interesting point about these particular classifying suffixing languages is the fact that the bound morphemes used to indicate the classes in them show great formal similarity to the prefixes which denote the classes in most of the multiple-classifying languages in Arnhem Land and in the Kimberleys (Capell 1961), though there is only little lexical affinity between these languages.

It may be mentioned in passing that another group of suffixing classifying languages has recently been established by Dixon (unpublished) in north-eastern Queensland.

3. PERSON MARKERS IN AUSTRALIAN LANGUAGES

It has been pointed out above that work continuing to date has yielded

considerable information about the structural and typological features of many Australian languages which has made it possible to distinguish a number of somewhat different language types. These differences affect various points of language structure - the one of interest to this paper is the indication of the person of the subject and object through free or bound person markers, and will be discussed briefly below.

Mention has been made above of the indication of the subject and object in prefixing languages through prefixal markers appearing in fixed subject-object or object-subject sequences usually displaying considerable morphophonemic changes.

The situation regarding the affixing and rigid sequences (accompanied by morphophonemic changes and fusion) of the subject and object markers is comparable in some of the languages of Victoria and southern coastal New South Wales, but there the markers are all suffixed, not prefixed.

The extreme opposite type is shown by some languages - e.g. in south eastern Queensland - in which the subject and object are denoted by free person markers, with great freedom in the order of the markers. In other comparable languages like some which are located in Central Queensland, certain preferred orders in the appearance of the free person markers are clearly observable.

Many other languages contain abbreviated person markers functioning as bound morphemes which are suffixed to the first word in the sentence - this is for instance the case in some of the languages of northern Western Australia, south of the Kimberleys. In some comparable languages,e.g. some located in the central west of the Northern Territory, the person markers are suffixed to special morphemes whose sole function is to carry these bound person markers. In some languages of these types, for instance in some in west-central and north-western Western Australia,the person markers can also appear suffixed to the verb base, and the choice between various possibilities including the indication of the person by free person markers appears to be optional and free in many cases and languages. Only in comparatively few languages are the person markers apparently always suffixed to the verb.

In some other languages, e.g. in some spoken in the extreme north of central New South Wales and in the adjacent areas in Queensland, the subject markers are always suffixed to the verb - whereas in such languages, the object is usually denoted by a free form person marker which generally follows the verb.

Transitional steps between these various possibilities occur - one of special interest is a language type in which the subject and object markers are bound forms, fused together in rigid sequences displaying morphophonemic changes, but in which the subject-object marker complex

itself constitutes a free form which can appear in various positions in an utterance. An example of this is the Waramungu language in the centre of the Northern Territory.

4. TYPOLOGICAL DEVELOPMENT OF AUSTRALIAN LANGUAGES: PERSON MARKERS

4.1. Taking into account typological diversities like those reviewed above, Capell established a theory explaining them as the manifestations of the steps in a typological development of Australian languages from the simple to the complex, or in the specific case of person markers, from free to bound forms (Capell 1956, 1961, 1967). In this, it was also taken into account that the person markers throughout most of the continent showed considerable formal similarity, irrespective of whether they were prefixed or suffixed to verbs, or found in other positions, and were evidently largely derived from a common set of proto-forms. Capell's theory can be outlined as follows:

4.2. The typologically original form is represented by languages characterised by a very free word order, and the absence of bound person markers. For instance, in Dungidjau, a language of the Waka-Kabic Group of south-eastern Queensland, *"you(sg) hit(past) me"* is ŋindu ŋanja bumi **(fS2sg fOlsg V+p)** or any of the other five possible sequences of these three words: **fS V fO, fO fS V, fO V fS, V fS fO, V fO fS** (author's fieldnotes). It seems that emphasis plays a part in the choice of a given word order, and the second word from the beginning of an utterance carries some emphasis - but this has not been studied in full yet.

Starting from this original type, a number of typological developments are observable in the indication of the person with verbs, leading to the emergence of bound person markers, and increasing rigidity in the order and sequence of elements.

4.3. The first step in this is the presence of a preferred order, either before or after the verb complex, of free person markers, which at the same time may show preferred subject-object or object-subject sequences in given cases. Capell (1961) quotes examples from Juwinbara, a member of the Pama-Maric Group and formerly located in east-central Queensland. In Juwinbara, a tendency is noticeable for the free person marker to be placed after the verb, and for the pronoun subject to stand at the end of an utterance, e.g. dago ŋagano: jindu **(A V+fu [zero=fOlsg] fS2sg)** = *"you(sg) will soon see [me]."* The situation is very similar in Gunggari of central Queensland which is a member of the same group (author's fieldnotes): gunilgu ŋana ŋindu **(V-fu fOlsg fS2sg)** = *"you(sg)*

will hit me".

4.4. The next step is the appearance of somewhat abbreviated or modified person markers which still predominantly - or at least to a considerable extent - function as free forms. The presence of the shortened forms is either predictably conditioned by a number of factors, or when their use is optional, they may be governed in their appearance or order of appearance by some limiting principles or tendencies. These forms constitute a transitory stage towards the emergence of bound person markers.

Good illustrations of this type are provided by Narrinyeri (or Jaralde) of the Narrinyeric Group in the Lower Murray area, and by Wiradjuri of the Wiradjuri Group in southern central New South Wales (Capell 1956, 1961 and author's fieldnotes).

4.4.1. In Narrinyeri, the free person markers denoting the subject have two forms, one appearing in clause initial and the other in non-initial position. The subject and object markers tend to occur together, with the subject preceding the object, and the preferred position of the subject-object marker sequence is before the verb. The object markers are derived from the non-initial, i.e. shortened, forms of the subject markers, though some forms are irregular. Examples: ŋadi jan lagin (fS1sg fO3sg V+p) = *"I speared him"* (sfS3sg: ll); miŋ indi an deminjuwil (I sfS2sg fO3pl V+p) = *"what [did] you(sg) (them) shoot(past)?"* (fS2sg: ŋindi, sfS3pl: ar).

Capell (1956) assumes that Narrinyeri represents the language type from which the prefixing language type may have developed, and points out that some of the subject and object markers in Narrinyeri show a strong formal resemblance to the corresponding markers in Yanyula, a prefixing language located in the western part of the Carpentaria Gulf country.

4.4.2. In Wiradjuri, two sets of person markers exist, one made up of full markers, and the other of abbreviated ones many of which function as suffixes and are therefore phonemically parts of the word to which they are added. In each set, separate subject and object forms are distinguished - there are also additional indirect object forms. Irrespective of whether the full or shortened forms are used - the choice between them appears to be optional - the person markers show a very strong tendency to occur together, and the two markers appear before or after the verb with approximately equal frequency. As regards the order within the subject and object marker sequence, it is in the first place determined by the fact that the shortened subject and indirect object

markers are all suffixal. In consequence, they appear either suffixed to the full or shortened person markers which are free forms, or to utterance-initial words like certain interrogatives which draw the person markers to themselves, or to the verb itself. With sequences of two full forms or a full and a non-suffixal shortened form (i.e. an object marker), the tendency is for the subject to precede the object, unless the subject is emphasised in which case it tends to follow the object. **Examples**: bumi ŋin-d̲u **(V+p sfO2sg-bS1sg)** = *"I hit(past) you(sg)"*, ŋadu-nu ŋuŋgiri **(fS1sg-biO2sg V+fu)** = *"I shall give you(sg)"*; nal-gu bumi **(sfO1sg-bS3sg V+p)** = *"he hit(past) me"*; wargu-ndu nal dalai buŋandira **(I-bS2sg sfO1sg cmV+pr)** = *"why [do] you(sg) anger me?"*; ŋindu jin jala **(fS2sg sfO3sg V+im)** = *"you(sg) tell him!"*; bumi ŋanal ŋindu **(V+p fO1sg fS2sg)** = *"you(sg) hit(past) me"*; ŋin jugu bumi **(sfO2sg fS3sg V+p)** = *"he hit(past) you(sg)"*; miri ŋuŋgiri-d̲u-nu **(N V+fu-bS1sg-biO2sg)** = *"I shall give you(sg) [a] dog"*.

4.5. A further step in the typological development manifests itself in the appearance of bound person markers which are either suffixed to the first word in the sentence or to special morphemes ("catalysts") functioning as carriers of the bound person markers, or to the verb itself, with no, or only very little, morphophonemic changes affecting the markers. The order of the markers is very predominantly determined by the principle of the first person markers preceding those of the second and third, and the second person markers those of the third. At the same time, the choice between two or several positional possibilities of the subject-object marker sequence is free in many of the languages showing this type, and the person of the subject and object can in some languages also be optionally indicated by free person markers only.

The greatest concentration of languages of this type for which Capell (personal communication to the present writer) suggests the name "Affix-Transferring Languages" is found in Western Australia and the adjacent parts of the Northern Territory and South Australia, south of the Kimberleys and Arnhem Land, except for the north-eastern corner of the latter. However, such languages are also met with in other parts of Australia, in northern Queensland, coastal and inland New South Wales, Victoria, and in other parts. **Examples**: Ngarinman (northern central Northern Territory, a member of the Southwest or Nyungic Group) (Capell 1967): djia-ṇa-ŋgu ba-ru **(N-bS1sg-bO2sg V-fu)** = *"I shall shoot [a] kangaroo [for] you(sg)"*; maŋari-ṇa-ŋgu bina-ŋgu **(N-bS1sg-bO2sg V-fu)** or bina-ŋgu-ṇa-ŋgu maŋari **(V-fu-bS1sg-bO2sg N)** = *"I shall give you(sg) food"*; Djaru (north-western central Northern Territory, a member of the Southwest Group) (Capell 1961): gula-ṇa-ŋgu ju-ŋgu **(n-bS1sg-bO2sg V-fu)** =

"I shall not give you(sg)"; Julbaridja (north-western Western Australia, Southwest Group) (O'Grady and Voegelins 1966): ŋajugudjara-lu-li-dju-djananjara jabaŋga-ŋanja **(fS1dl-e-bS1dl-ex-balO3pl V-fu)** or: jabaŋga-ŋanja-li-dju-djananjara ŋajugudjara-lu **(V-fu-bS1dl-ex-balO3pl fS1dl-e)** = *"we two(excl) will creep up on them"*; Wanman (north-western Western Australia, Southwest Group) (O'Grady and Voegelins 1966): bu-ŋgu-li-dja-nda **(V-fu-bS1dl-ex-bO2sg)** or: baralugudjara-li-dja-nda bu-ŋgu **(fS1dle-bS1dl-ex-bO2sg V-fu)** = *"we two(excl) will hit you(sg)"*; Wambaja (Barkly Tablelands area in the Northern Territory, Tjingili-Wambajan Family) (Capell 1961): madjbi-ŋu-nj-u **(V-bO2sg-bS1sg-fu)** = *"I shall hit you(sg)"*; Wudjawuru (southern central Victoria, Kulinic Group) (Capell 1956): erenbub-ma-ŋen **(V+pr-bO1sg-bS2sg)** = *"[do] you(sg) love me?"*; Malngin (north-western central Northern Territory, Southwest Group) (Capell 1967): maŋarl ŋu-ṇa-ŋgu djel-ŋgu **(N c-bS1sg-bO2sg V-fu)** = *"I shall give you(sg) food"*; Ngardi (western central Northern Territory, Southwest Group) (Capell 1967): djalaru gula ŋu-ṇa-la nja-ŋgu **(A n c-bS1sg-bO3sg V-fu)** = *"I shall not see him today"*; Mudbura (north-western Northern Territory, Southwest Group) (Capell 1967): gula ba-ṇa-ŋgu ŋarga ma-nlni **(n c-bS1sg-bO2sg cmV-pr)** = *"I do not understand you(sg)"*; ba-ŋanda-ṇ nja-ŋana **(c-bO1plex-bS2sg V-fu)** = *"you(sg) will see us"*; ba-l-wula nja-ŋana **(c-bO1sg-bS3dl V-fu)** = *"they two will see me"*; Warburton Dialect of the Western Desert Language (western central Western Australia, Southwest Group) (Douglas 1964): buŋu-ṇa-nda **(V+p-bS1sg-bO2sg)** or: ŋangulu njundunja buŋu **(fS1sg fO2sg V+p)** = *"I hit(past) you(sg)"*.

4.6. A somewhat special case of a step on a level comparable to that represented by the affix-transferring languages is constituted by languages in which bound subject markers always appear suffixed to the verb, whereas the person of the object is usually denoted by a free person marker, which generally follows the verb. Languages of this type are predominantly found in New South Wales, in the central north, the west, the central south and the south-east, but they occur also in Victoria, and a few scattered languages located in northern Queensland and in western Western Australia also show this type. Guamu, a member of the Pama-Maric Group and located in northern central New South Wales in the extreme south of the territory occupied by the Group, may be quoted as an example (author's fieldnotes) and the type called "Guamu type" after it: gunii-gu-nda ŋana **(V-fu-bS2sg fO1sg)** = *"you(sg) will hit me"*; gunii-gu-li ḏanana **(V-fu-bS1dl fO3pl)** = *"we two will beat them"*.

4.7. The final step in the typological development is constituted by

the rigid fixation of the bound person markers in regular and predictable, i.e. not optionally alterable, sequences in which they are mostly subject to strong morphophonemic changes, and in the fixation of these subject and object marker sequences before or after the verb complex in affixal, i.e. prefixal or suffixal, form. Capell maintains that these two possibilities of fixation, prefixal and suffixal, have lead to the emergence of the prefixing and suffixing language types in Australia. Examples of these final steps are provided by most of the prefixing languages of North Australia, and by some of the suffixing languages of Victoria and south-eastern coastal New South Wales.

4.7.1. Of the prefixing languages, Wardaman in southern central Arnhem Land which is a member of the Yangmanic Group of the Gunwingguan Family, shows the type clearly (Capell 1967). In this language, many of the bound person markers are recognizably derived from the free person markers, in spite of the morphophonemic changes. At the same time, the order of the bound person markers in Wardaman is as in most prefixing languages, determined by the same principle as that operating in most affix-transferring languages (see 4.5.) which for the sake of brevity, will be referred to as "principle of the hierarchy of persons" in this paper in some instances. The verb used in the examples given below is bu = *"hit"*, the suffix -n is the present tense marker, and the ligative prefix -n- ~ -ŋ- appears between the prefixed person markers and the verb stem if the person marker complex ends in a vowel (the alternate -ŋ- is limited to person marker combinations of **1sg+2sg** and to **S1sg+O3sg**): ŋa-ŋ-bu-n = *"I hit you(sg):* **fS1sg** = ŋajugu, **fO2sg** = jiŋgi. The same form ŋa-ŋ-bu-n also means *"you(sg) hit me"* and *"I hit him":* **fO1sg** = ŋanu, **fS2sg** = jinjaŋ, **fO3sg** = guŋa. In such cases, ambiguity is avoided by the appearance of one or both of the free markers in the utterance unless the context is clear. Further examples from Wardaman: ŋa-n-bu-n = *"he hits me":* **fO1sg** = ŋanu, **fS3sg** = jiŋgu; ŋa-ni-n-bu-n = *"you(pl) hit me":* **fO1sg** = ŋanu, **fS2pl** = nuru; ŋan-bur-bu-n = *"they hit me":* **fO1sg** = ŋanu, **fS3pl** = wuru; ju-nu-n-bu-n = *"we(excl) hit you(pl)":* **fS1plex** = jiru, **fO2pl** = nuru; ŋa-jiŋgu-n-bu-n = *"he hits us(incl)":* **fO1pli** = ŋaru, **fS3sg** = jiŋgu. Examples from other prefixing languages: Jiwadja (or Iwaidji) on the Cobourg Peninsula of Northern Arnhem Land (a member of the Iwaidjan Family) (Capell 1962): gun-bu-ŋ **(bS1sg+bO2sg-V-p)** = *"I hit(past) you(sg)"*; gunb-aja-ŋ **(bO2sg+bS3sg-V-p)** = *"he saw you(sg)"*; jan-aja-ŋ **(bO1sg+bS2sg-V-p)** = *"you(sg) saw me"*; Kakadu of north-western Arnhem Land (constituting the Kakadjuan family-type isolate) (Capell 1942): b-ore:gara **(bS1sg+bO2sg-V+pr)** = *"I see you(sg)"*; g-ore:gara **(bS1sg+bO3sg-V+pr)** = *"I see him"*; ŋun-ore:gara **(bO1sg+bS2sg-V+pr)** = *"you(sg) see me"*. In some

instances, the morphophonemic changes are quite weak, and the elements of the marker sequences clearly recognizable, e.g. Nunggubuju of south-eastern Arnhem Land (constituting the Nunggubujan family-type isolate) (Capell 1942): ŋa-ni-na-ni (bO1sg-bS3sg-V-p) = *"he saw me'*; ni-ni-na-ni (bO2sg-bS3sg-V-p) = *"he saw you(sg)"*; na-ni-na-ni (bO1dli-bS3sg-V-p) = *"he saw us two(incl)"*; nu-nu-na-ni (bO1dlex-bS3sg-V-P) = *"he saw us two(excl)"*; ŋa-mbi-na-ni (bO1sg-bS3pl-V-p) = *"they saw me"*; na-mbi-na-ni (bO1dli-bS3pl-V-p) = *"they saw us two(incl)"*. An even better example is provided by Mara of south-eastern Arnhem Land (a member of the Maran Family) in which the elements of the set of examples given below can be analysed functionally as follows: na- = bO1i, ni- = bO1ex, nu- = O2, wa- = O3, -n- ~ -ŋ- = Osg, -r- = Odl, -i- = Opl, -gu- = bS3sg, -mi- = ligative, -na- = *"see"*, -dja = pr: na-n-gu-mi-na-dja = *"he sees me"*; na-r-gu-mi-na-dja = *"he sees us two(incl)"*; na-i-gu-mi-na-dja = *"he sees us(incl)"*; ni-r-gu-mi-na-dja = *"he sees us two(excl)"*; ni-i-gu-mi-na-dja = *"he sees us(excl)"*; nu-ŋ-gu-mi-na-dja = *"he sees you(sg)"*; nu-r-gu-mi-na-dja = *"he sees you two"*; nu-i-gu-mi-na-dja = *"he sees you(pl)"*; wa-r-gu-mina-dja = *"he sees them two"*; wa-i-gu-mi-na-dja = *"he sees them"*. A morphophonemic change appears in *"he sees him"* which instead of *wa-n-gu-mi-na-dja is wa-mi-na-dja.

4.7.2. Examples of this final development among suffixing languages are, as has been pointed out, provided by some of the suffixing languages of Victoria and the south-eastern coastal and hinterland languages of New South Wales, e.g. Darawal (or Tharawal) on the central south coast of New South Wales (a member of the Yuin-Kuric Group) (Capell 1956). In this language, like apparently in all the Victorian and New South Wales languages of this type, the order of the bound person markers is always subject-object in contrast to the principle of the first person preceding the second and third, and the second the third, irrespective of their functioning as subject or object, which is characteristic of most of the prefixing and the affix-transferring languages (see above 4.7.1. and 4.5.). Examples: buima-i-a-d̂an (V-p-bS3sg-bO1sg) = *"he struck me"*, buima-i-awula-jan (V-p-bS3dl-bO1sg: note the morphophonemic change -d̂an > -jan) = *"they two struck me"*; buima-i-a-njiŋ (V-p-bS3sg-bO2sg) = *"he struck you(sg)"*; buima-i-agunj (V-p-bS1sg+bO2sg: strong morphophonemic change: bS1sg = -ŋai, bO2sg = -njiŋ) = *"I struck you(sg)"*. Other examples may be given from Djadjawurung in north-western central Victoria which is a dialect of the Kulin language of the Kulinic Group (Capell 1967): baŋ-a-ninj (V-bS3sg[+zero t = pr]-bO1sg) = *"he scratches me"*; baŋ-in-ŋalen (V-p[+zero P = S3sg]-bO1dli) = *"he scratched us two(incl)"*; baŋ-inj-a-ŋurinj (V-fu-bS3sg-bO1pli) = *"he will scratch us(incl)"*.

Djadjala of north-western Victoria which is another dialect of Kulin is a further good example, e.g. dag-a-ninj (V-bS3sg[+zero t = pr]-bOlsg) = *"he hits me"*; dag-a-nanu (V-bS3sg[+zero t = pr]-bO2sg) = *"he hits you(sg)"*; dag-inj-a-ŋurin (V-fu-bS3sg-bOlpli) = *"he will hit us(incl)"*.

However it appears that in Djadjala, the person of the object can at least in some instances be optionally indicated by a free person marker. Capell (1967) referring to Mathews' MSS., mentions that *"he hits me"* is given by Mathews both as dag-a-ninj (V-bS3sg[+zero t = pr]-bOlsg) and as njaneg dag-a (fOlsg V-bS3sg[+zero t = pr]). The latter is comparable to the language type mentioned in 4.6.

4.8. An important transitional step between languages representing the final developmental step discussed above in 4.7., and the steps reviewed earlier is constituted by languages in which the subject and object markers form an inseparable unit which itself is a free form normally appearing in juxtaposition to the verb, but optionally preceding or following it. The composing elements of this unit are usually subject to morphophonemic changes.

4.8.1. Languages of this type constitute a direct transitional type between that represented by languages like Narrinyeri and especially Wiradjuri (see 4.4.2.) (i.e. languages in which the person markers begin to show tendencies towards functioning as dependent and bound forms appearing together in positions before or after the verb) on the one hand and the languages with consistently prefixed or suffixed person marker combinations on the other. Languages in which bound subject and object markers appear suffixed to the first word in a sentence or to catalysts, i.e. affix-transferring languages (see 4.5.), differ from the transitional languages under discussion - which may be called the Waramunga type after their best-known representative - in the fully affixal nature of their person marker sequences which themselves cannot function as free forms. It seems difficult to envisage a typological development leading from the Wiradjuri type through the affix-transferring type to the rigid markers-prefixing type, because with person markers combinations which appear in affix-transferring languages in positions preceding the verb, the affixing function operates in the wrong direction, i.e. towards the morpheme preceding the person marker combination. This particular difficulty does not present itself with an envisaged development from the affix-transferring type to the rigid markers-suffixing type.

However, it is relatively easy to visualise a direct typological

development leading from the Wiradjuri type through the Waramunga type to both the rigid markers-prefixing and the markers-suffixing types, because in the Waramunga type languages, the person marker complexes tend to be juxtaposed to the verb, optionally preceding or following it, with their affinity to the verb not outweighed by other affinities. The development of the juxtaposition situation into an affixal one, with positional preferences hardening into pre- or suffixing, is easily conceivable. The two principles governing the order of the person markers in most Australian languages with bound person markers, i.e. a) subject precedes object, and b) the first person precedes the second and third, and the second the third, are fairly close to evenly distributed in the Waramunga type languages (see below 4.8.2. and 4.8.3.), with the first showing some prevalence over the second. The development of a definite preference for one of these two orders from a situation in which both are approximately evenly represented appears distinctly possible.

At the same time, a direct development from the Narrinyeri type (see 4.4.1.) to the markers-prefixing type can also be conceived, but one difficulty which presents itself in this is the fact that in the Narrinyeri type, the order of the person markers is generally that of the subject preceding the object, whereas in the markers-prefixing languages the order is usually determined by the hierarchy of the persons which, as has just been stated, is quite frequently though not predominantly also the case in the Waramunga type languages.

It can of course be argued that in the Narrinyeri type in which the markers are still free forms more elaborate tendencies governing the order of the person markers have not yet emerged - such tendencies are clearly observable in the Wiradjuri type in which some of the morphemes function as bound morphemes, and they are even more clearly in evidence in the Waramunga type languages which supports the assumption that the hardening of person markers ordering tendencies may be somehow directly proportional to the increasing presence of bound person markers.

The same difficulty as with the Narrinyeri type and the markers prefixing type exists with the assumption of a typological development of the rigid markers-suffixing type from the affix-transferring type. In markers-suffixing languages, the order of the person markers is persistently subject-object, irrespective of the persons involved, whereas in the affix-transferring type it is very predominantly governed by the principle of the hierarchy of the persons. It seems therefore that the typological development of the markers-suffixing type can be more easily visualised as having taken place from the Waramunga type in which the occurrence of the order subject-object somewhat outweighs that of the other order (see below 4.8.2.).

At the same time, it is quite conceivable that the markers-suffixing type has developed from the Guamu type in which the subject markers are suffixed to the verb, with the object indicated by a free form usually following the verb (see 4.6.). The change of the free form object marker to a suffixed bound form, sometimes subject to morphophonemic changes, is not difficult to think of.

This latter possibility has in its favour that in the markers-suffixing languages, the subject markers appear to be somewhat less affected by morphophonemic changes than the object markers. This is not the case in Waramunga type languages, and seems to be a plausible phenomenon in an assumed development of the markers-suffixing type from the Guamu type.

4.8.2. The best known language of this transitional Waramunga type is the Waramunga language (Capell 1953) in the central Northern Territory which constitutes the Waramungic group-type isolate in the Pama-Nyungan Family. Until recently, this type was, in addition to Waramunga, only known to be also represented, to some extent, by Awabakal of the Lake Macquarie-Newcastle area on the central coast of New South Wales (an extinct member of the Yuin-Kuric Group) (Capell 1956), though this language deviates from the Waramunga type in a few rare instances. However, recent work has demonstrated that this type is also present, though in a slightly different form, in Lamalama (or Gangganda) of the Princess Charlotte Bay area of central eastern Cape York Peninsula (a member of the Bay Pama Subgroup of the Pama-Maric Group) (D.C. Laycock, personal communication to the present writer), and a somewhat comparable phenomenon has also been observed in languages of the Daly Family of western Arnhem Land (D.T. Tryon, personal communication to the present writer). The now established widely scattered distribution of this general type shows it to be more representative than has been believed to be the case which enhances its significance as an important transitional type. Examples: Waramunga (Capell 1953): gunaba aŋgu bunju (N bO2sg+bS3sg V+p) = "[*the*] *dog bit you(sg)*" (fP2sg[1] = aŋi, fP3sg = ŋaia); gunaba ambugu bunju (N bO2dl+bS3sg V+p) = "[*the*] *dog bit you two*" (fP2dl = ambul, fP3sg = ŋaia); nanji aŋandu (V+p bS2sg+bOlsg) = "*you(sg) saw me*" (fP2sg = aŋi, fPlsg = aṇi); nanji adjirgi (V+p bOldlex+bS3pl) = "*they saw us two(excl)*" (fPldlex = adjila, fP3pl = adjul); nanji aṇaŋu (V+p bSlsg+bO2sg) = "*I saw you(sg)*" (fPlsg = aṇi, fP2sg = aŋi); jawiri adjuladji njinju (N bS3pl+bOlsg V+p) = "*they gave me* [*a*] *kangaroo*" (fP3pl = adjul, fPlsg = aṇi); gandi arguiaŋi djugundjira (N bS2pl+bOlpli

[1] In Waramunga, only the subject markers occur as free forms - there are no free form object markers. For this reason, fP = "free person marker" is used in the examples, instead of the fS = "free subject marker" and fO = "free object marker" as given elsewhere.

V+im) = *"you(pl) bring us(incl) food"* (fP2pl = argul, fPlpli = anjula).

Concerning the order of the elements in the fused person marker units in Waramunga, the following can be said:

Out of a total number of sixty observed instances in which the persons of the subject and object markers were non-identical, the order of the elements was determined by the principle of the hierarchy of the persons (i.e. of the first person markers preceding those of the second and third persons, and those of the second preceding those of the third) in *fourteen* instances, against the pressure of the principle of the subject preceding the object which was overridden. In *eighteen* cases out of the sixty, the order of the elements was determined by the principle of the subject preceding the object, against the pressure of the other principle which was overridden. In twenty-seven cases out of the sixty, the two principles were leading to identical results, and these cases could not be taken into account in determining the numerical distribution of the two principles. In one instance, the morphophonemic changes were so extensive that they made the identification of the subject and object markers impossible.

Out of eight observed cases in which the persons of the subject and object markers were both the third, the principle of the subject preceding the object marker was prevailing in five, and the principle of the hierarchy of the persons in two, with one instance being impossible to analyse because of too extensive morphophonemic changes.

This clearly shows the preponderance of the principle of the subject preceding the object over that of the hierarchy of persons in the determination of the order of the elements in the fused person markers in Waramunga. However, this preponderance is not great, and the principle of the hierarchy of persons is also strongly in evidence.

4.8.3. Examples from other languages: Awabakal: banuŋ bungula (bSlsg+bO2sg V+p) = *"I hit(past) you(sg)"* (fsSlsg = baŋ, fO2sg = bin); wamum-binun banuŋ (cmV+fu bSlsg+bO2sg) = *"I will let you(sg) go"* (fsSlsg = baŋ, fO2sg = bin); godæra bidia ŋuwa (N bS2sg-bOlsg V+im) = *"give (yousg) me [the] cudgel"* (fsS2sg = bi, fOlsg = dia); biluwa bungula (bO2sg+bS3sg V+p) = *"he hit(past) you(sg)"* (fO2sg = bin, fS3sg = nuwa); Lamalama (Gangganda): magam jenu (V[+zero = pr] bSlsg+bO2sg) = *"I see you(sg)"* (fPlsg = ja, fP2sg = dui, da). However, the possessive suffix 2sg is -nu, and it appears that the subject-object person marker units are analyzable into bS+psu, to which in most cases the suffix -n ~ -na is added - this is a very common direct object suffix in Australian languages. The addition of this suffix seems to be optional in some instances. Morphophonemic changes are considerable, and the principles

determining the order of the elements within the units seem to be in general comparable to those encountered in Waramunga. However, the picture is not really clear in those instances in which the principle of the hierarchy of persons seems to prevail, because in the observed cases the morphophonemic changes are too extensive to allow a completely unambiguous interpretation.

In the light of what has been said, the example given above is in fact analyzable as **V[+zero = pr] bS1sg+{bO2sg < psu2sg}**. Other examples: daŋan magam (**bS2sg+{bO3sg < psu3sg}-do V[+zero = pr]**) = *"you(sg) see him"* (**fP2sg** = dui, da; **fP3sg** = lui, la; **psu3sg** = -ŋu); magam danduna (**V[+zero = pr] bS2sg+{bO3pl < psu3pl}-do**) = *"[do] you(sg) see them?"* (**fP2sg** = dui, da; **fP3pl** = ndej; **psu3pl** = ndu); ŋajim nada (**V[+zero = pr] {bO1sg < psu1sg}+bS2sg**) or (**V[+zero = pr] bS2sg+{bO1sg < psu1sg}**) = *"you(sg) hear me"* (**fP1sg** = ja; **psu1sg** = daw; **fS2sg** = dui, da). As is shown by the formula, the unit nada in this last example can be analyzed in two different ways. The first possibility is {na- < -daw}-da, i.e. **psu1sg-bS2sg**, which would, at the same time, constitute an instance of the supremacy of the ordering principle of the hierarchy of persons over that of the subject preceding the object. What seems to militate against this analysis is the fact that **psu1sg** -taw is a suffix, and as such not likely to appear as the first element of a unit which constitutes a free form. Too little is known about the language as yet, though, to be able to be certain on this point. Also, more study of morphophonemic changes in the language in general may help to decide this question - though a change of t > n would have to be assumed in both possible analyses. The second possible analysis of nada is {na- < da}-{-da < -daw}, i.e. **bS2sg-psu1sg** which would be in the light of the ordering principle of the subject preceding the object. The difficulty with this interpretation is the loss of the final -w of **psu1sg** -daw without the addition of the apparently optional **do** -n ~ -na. Again, further study is needed to clarify this point.

Examples from Maranunggu, of the Brinken-Wogaity Group of the Daly Family: jære ŋawanja-nimbæ gur do: (**A bS1sg+fu+X-dO2sg V fu**) = *"tomorrow I shall hit you(sg)"*. In this language, the person marker unit consists of two parts which are clearly separable in analysis. The part containing the subject marker which always precedes the second part, is analyzable into **bS+t+X** appearing in various orders within the part except that **X** is usually last - and they are subject to morphophonemic changes. The second part is the free person marker which enters into a dependence relation to the first part and is positionally inseparable from it, though it is phonologically separate. The entire person markers unit is a positionally free form in the utterance, e.g. djaldjara gæŋe-

nimbæ wud je bug (A bSlsg+p+X-dO2sg V p N) or: djaldjara wud gæŋe-nimbæ je bug (A V bSlsg+p+X-dO2sg p N) = *"yesterday I gave you(sg) [a] book"*.

5. SUMMARY OF CONCLUSIONS

5.1. To highlight the theory of a typological development in the indication of the persons of the subject and object in Australian languages through free and bound person markers as outlined above, the following summary conclusions can be given:

A) The point of origin is represented by languages which employ only free person markers and are characterised by a very free and optionally changeable word order. Example: Dungidjau. Type: free type.

B) The first step away from this is the appearance of a preferred order of the free person markers. Examples: Juwinbara, Gunggari. Type: preferred order free type.

C) The next step is the appearance of somewhat abbreviated or modified person markers which still function as free forms. Example: Narrinyeri. Type: Narrinyeri type.

D) This leads to a step in which a portion of these abbreviated or modified person markers functions as bound forms. They can appear affixed to each other, with a number of possibilities concerning their preferred order and sequence existing in parallel. Example: Wiradjuri. Type: Wiradjuri type.

E) From the Wiradjuri type (D), the development goes in three directions:

a) The person markers are all bound forms which are affixed to each other, usually showing morphophonemic changes. The fused unit constituted by them is however a free form which is juxtaposed to the verb and optionally precedes or follows it. The order of the elements within the fused unit is somewhat more frequently that of the subject preceding the object than that of the first person markers preceding those of the second and third, and the second person markers preceding those of the third. Example: Waramunga. Type: Waramunga type.

b) The person markers are bound morphemes which are usually joined together without fusing or displaying morphophonemic changes, and which are either suffixed to the first word in the sentence, or to special morphemes functioning as carriers of the bound person markers, or to the verb itself. The ordering principle within the subject-object markers sequence is very predominantly that of the first person markers preceding those of the second and third, and the second person markers preceding those of the third. The choice between at least two positional

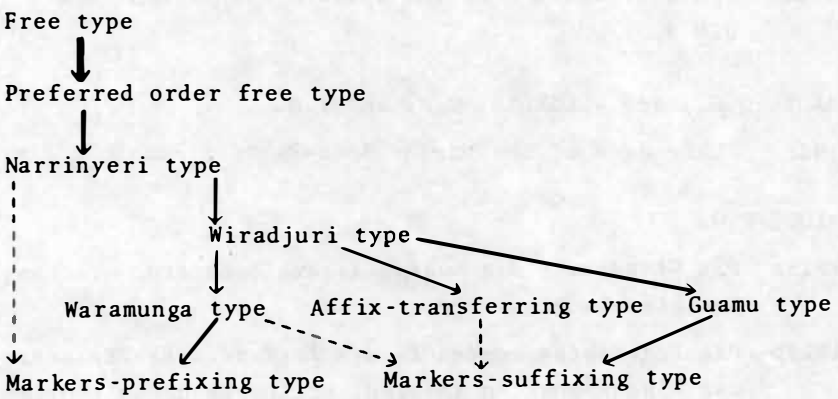
possibilities of the subject-object markers sequence itself is frequently optional, and the alternative use of free person markers can also be optionally present. Examples: Nagarinman, Wanman, Julbaridja, Warburton dialect of the Western Desert language. Type: affix-transferring type.

c) The subject markers are bound morphemes suffixed to the verb, and the object markers are free forms which generally follow the verb. Example: Guamu. Type: Guamu type.

F) From the Waramunga type (Ea), a type is derived in which the fused person marker unit is persistently prefixed to the verb. The order of the elements within this unit is mostly determined by the same principle of the hierarchy of the persons which is greatly predominant in the affix-transferring type (Eb). The development of this type is, though less easily, also conceivable directly from the Narrinyeri type (C). Examples: Wardaman, Jiwadja, Kakadu. Type: markers-prefixing type.

G) From the Guamu type (Ec) or from the Waramunga type (Ea) - perhaps more probably from the former - a type is derived in which a sometimes fused person marker unit is consistently suffixed to the verb with morphophonemic changes generally affecting the always suffixed object markers somewhat more than the subject markers. The development of this type is perhaps also conceivable from the affix-transferring type, but there are some difficulties. Example: Darawal. Type: markers-suffixing type.

5.2. The steps in the development highlighted above can be shown in a developmental chart as follows:



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THREE LAMALAMIC LANGUAGES OF NORTH QUEENSLAND

DON LAYCOCK

The three languages here grouped as "Lamalamic" are called "Bay Paman" by O'Grady and Voegelin (1966), a name that is rejected here on the grounds that these languages apparently show a very low cognate density with Paman languages, if the Proto-Paman reconstructions by Hale (published in Sommer 1969) are any criterion. The boundaries of the group, as of the individual languages comprising the group, are now difficult to determine, but it seems that virtually all languages spoken in the area between the coast and the Great Dividing Range from Nesbit River in the north to about Laura in the south are - or were, since the group can be regarded as virtually extinct - Lamalamic (see map).[1]

At least five languages make up the Lamalamic group. Three of these - here called Lamalama (L), Parimankutinma (P), and Umbuykamu (U) were recorded by the author in the course of six weeks' fieldwork - not all of which was spent on Lamalamic languages - in Cape York (Palm Island, Coen, and Lockhart River Mission) in 1964. Two of the languages (L and U) are listed by Capell (1963) as Lamalama (Y78) and Umbuigamu (Y113); P is probably subsumed under Wurangung (Y136), here regarded as a distinct language.

In establishing the Lamalamic group, some other unpublished material on Lamalamic languages has been examined. This consists of:

1. Wordlist of language [yeˈyʌ] (=Umbuykamu), recorded by a member of the Summer Institute of Linguistics (Australian Aborigines Branch) at Bamaga, 21 May 1964; informant Rosie Liddie.
2. Wordlist of language [ɪʌmʌ ɪʌmʌ] (=Lamalama), recorded by a member of SIL(AAB) at Bamaga, 26 May 1964; informant Minnie Kulla Kulla (=Kalakala).
3. Wordlist of language [ʊmˈʊr̃a] (probably = Umbindhamu), recorded by a member of SIL(AAB) at Bamaga, 21 May 1964; informant Harry Liddie.
4. Wordlist of Umbuykamu, recorded by Dr Lamont West, unknown date and

Laycock, D. "Three Lamalamic Languages of North Queensland". In Harris, J.K., Wurm, S.A. and Laycock, D. editors, *Papers in Australian Linguistics No. 4.* **A-17:71-97**. Pacific Linguistics, The Australian National University, 1969. DOI:*10.15144/PL-A17.71*

place; informant Jimmie Kalakala.

5. Wordlist of Umbuykamu, recorded by Dr Lamont West, unknown date and place; informant Nellie Frank (Nellie Salt).
6. Wordlist in Lamalama, recorded by Dr Lamont West, unknown date and place; informant Tommy Kangaroo.
7. Wordlist in Lamalama, recorded by Dr Lamont West, unknown date and place; informants Larry Backsaddle and Tommy Tableland.
8. Wordlist in Wurangung, recorded by Dr Lamont West, unknown date and place; informant Frank Curr.
9. Cape York Genealogies and notes on Lamalama languages, with map, copied by the author from notes of Dr Lamont West.[2]

This data supports the distinctiveness of the three languages discussed here, and adds two more Lamalamic languages, Wurangung (Capell 1963:Y136) and Umbindhamu (Capell Y112). The three known subgroups of Lamalamic appear to be as follows:

1. Umbuykamu subgroup - Umbuykamu and Umbindhamu;
2. Wurangung subgroup - Wurangung and Parimankutinma;
3. Lamalama subgroup - Lamalama and as yet unrecorded and undescribed languages or dialects. Possibly includes Baganambia (Capell Y18) and Bindaga (Y25).

The names given to Lamalamic languages are no better than those usually assigned to Australian aboriginal languages, but they are no worse. The name [lamalama] was used by informants for L, P and U as a general name for all three languages, and probably for the rest of the Lamalamic group; it is sometimes misapplied, by aboriginals south of the Lamalamic area, to other languages such as Umbila (Capell Y111) which are not part of the group. It is here applied, as usual in the literature, to one of these languages only. The name Umbuykamu was not known to my informants, but the Umbuykamu informant KA used a word [umbuywa] (meaning uncertain; translated only as 'bilong bora') to refer to his tribal group; the language name is probably derived from this. The name [parimankutinma] was used by the P informant WK to refer to her language. Other names recorded were [kankanda] and [kuku-warəkat^{y}i], used by the L informant TK to refer to his own (coastal) and his mother's (inland) dialects respectively, and [kankaða], used by KA as equivalent to the broad use of "Lamalama". The usage of TK is followed here - i.e., coastal Lamalama is called Kankanda, and inland Lamalama Kuku-Warkatyi.

A word may be added here on the acquisition of language in the Lamalamic area. According to statements made several times by different informants, and confirmed by the language affiliations indicated in Table I, children learn the language of both parents, but use only that

of the father. As husband and wife are usually or always of different linguistic backgrounds, it appears that the languages (or dialects) divide along moiety lines. The moiety divisions follow the subgroupings; thus speakers of Kankanda, Umbuykamu, and (less certain) Wurangung, belong to one moiety, and speakers of Kuku-Warkatyi, Parimangutima and (less certain) Umbindhamu, belong to the other. Unfortunately, the names of the moieties in Lamalamic languages were not recorded.

None of the Lamalamic languages can be said to be viable. Most of the speakers are old, and for the most part interrelated (see Table I). Many have not used the languages for many years, owing to their fairly wide dispersal throughout the Cape York area. Since the material presented here was elicited in 1964, it is likely that several potential informants, including perhaps two from whom this data was obtained, have since died. This is a pity, since the unusual features of these languages, and their largely non-Paman lexicon, make them a puzzling group within the field of Australian comparative linguistics.

It is only because these languages are so little known that the details of these languages are printed here, for no one is more aware than the author of the shortcomings of his material. Male informants were old, often toothless, and impossible to hold to straight translation in either direction; female informants were shy, often lacking in knowledge of lexical material that could be obtained from males, and suffered from the same inabilities with regard to translation. Recordings were made for the most part outside, and suffer from distortion caused by weak batteries, wind, dogs, and children. Full details of data and informants are as follows:

Lamalama (L)

Coastal dialect (Kankanda):

Tommy Kangaroo (Thomas Kangaroo Wilson) (TK) (tribal name kusyaranu), born 1892 at Laura. Recorded at Palm Island October 1964; 3 hours on tape, mostly vocabulary and short sentences, with much repetition.

Inland dialect (Kuku-Warkatyi?):

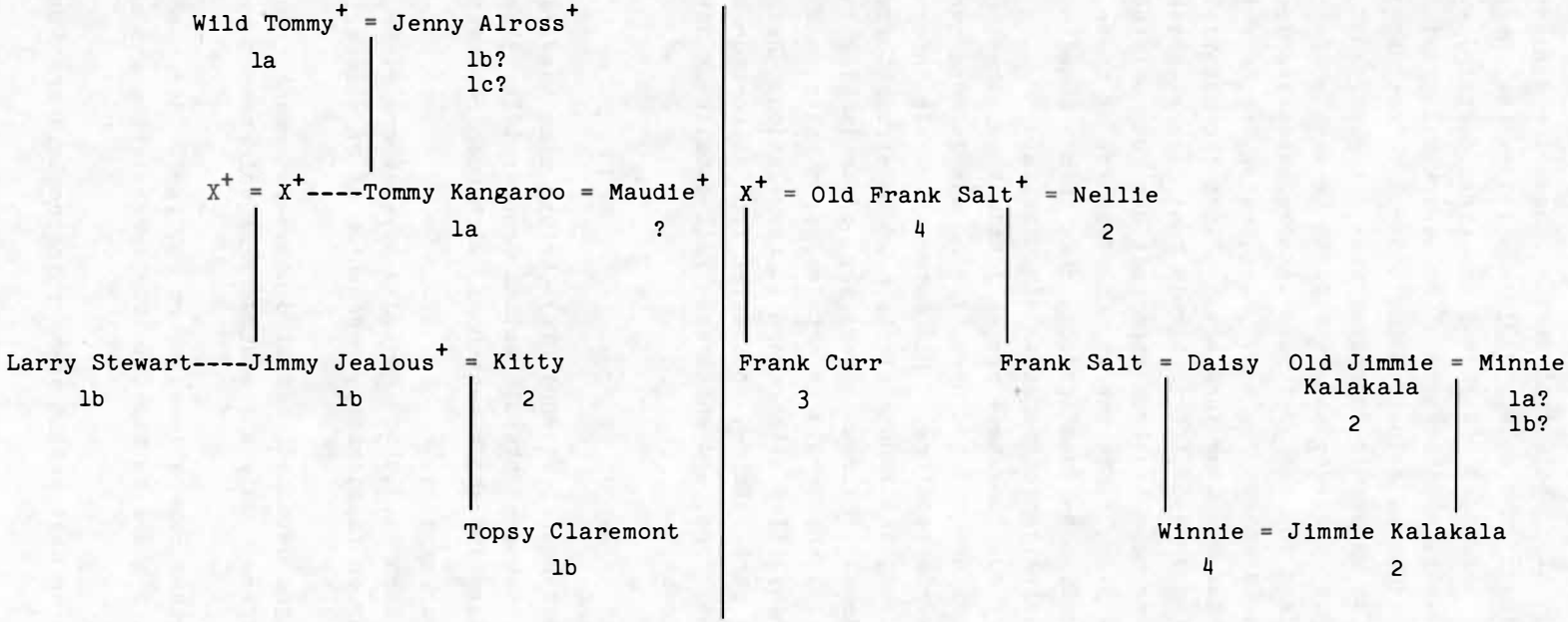
Topsy Claremont (TC), born ca. 1940. Recorded at Lockhart River, November 1964; 1 hour on tape, mostly repetition of TK's material for comparison.

George Claremont (GC) [no details], assisted above informant, though his own language differs. Only a few words were volunteered by this informant.

Larry Stewart (LS) (tribal name aṟinam), born ca. 1892. Recorded at Coen, November 1964; 2 hours on tape, mostly vocabularies and short sentences.

Other informants known or believed to speak this language are Albert

TABLE I: RELATIONSHIPS OF LAMALAMA INFORMANTS, WITH LANGUAGE AFFILIATIONS



---- indicates classificatory or adoptive relationship

\+ deceased

Languages and dialects:

la - Lamalama, coastal dialect (Kankanda)
lb - " , inland dialect (Kuku-Warkatyi)
lc - " (Tableland Lamalama)
2 - Umbuykamu
3 - Wurangung
4 - Parimangutinma

Leslie, Larry Backsaddle, Johnny Tableland, Tommy Tableland, and Norman Tableland.

Umbuykamu (U)

King Armstrong (KA), born ca. 1900. Recorded at Coen, November 1964: 1 hour on tape, mostly vocabulary and short sentences, only imperfectly translated.

Other informants known or believed to speak this language are Bob Bassini, Possum Douglas, and most members of the Kalakala and Liddie families.

Parimankutinma (P)

Winnie Kalakala (WK), born ca. 1940. Recorded at Coen, November 1964: 2 hours on tape, mostly vocabulary and short sentences.

Other informants known or believed to speak this language or Wurangung are Frank Salt, Frank Curr, Echo, Oscar Graham, and members of the Frank family.

PHONOLOGY

Because of the poor quality of the recordings, a definitive phonology of Lamalamic languages is not possible here. Accordingly, I have chosen to over-differentiate rather than to under-differentiate. The allophones of the established phonemes, and the problem areas, are discussed below.

The maximal phonology is given by the following chart:

CONSONANTS					VOWELS					
p	t͡	t	k	ʔ	a	e	i	o	u	ə
b	d͡	d	g		vowel length not phonemic					
m	n͡	n	ŋ							
f	ð	s	h							
		l								
		r								
		ɾ̃								
		ʀ								
w		y								

Consonants. The skewing of the consonantal pattern is hardly rectified when the individual languages are considered. P lacks, essentially, /f/ and /s/, though both occur in a few words, probably loans from other

dialects; L lacks /ð/. The remaining phones occur in all three languages, though /ʔ/ and /d̪/ are rare. The voiced (prenasalised) series is perhaps foreign to U, though it occurs occasionally; however, the normal U reflexes of L /b d̪ d g/ are the sequences /pm t̪n tn kŋ/. L and P appear to lack /n̪/, except insofar as this phone is subsumed, in this orthography, under /d̪/.

A special problem is caused by /ð/ in P and U. In the former language, it appears to be the normal reflex of L /s/, and would be written as /s/ if the latter phoneme did not also occur. In some P words, however, /ð/ alternates with /l/, and there appear to be at least some instances where it corresponds to L /l/, /ʀ/ or /y/. In U, where /s/ occurs freely, /ð/ appears to correspond to a number of L consonant clusters, and also to /d/, as in the language name L kankada /U kankaða. There is a possibility that in U /ð/ is an allophone of /t̪/, though in some words (hayer/haðer *'good'*) it alternates with /y/.

The series of voiced prenasalised stops /b d̪ d g/ are written, "New Guinea fashion", without the nasal element preceding, except in citation forms of the language names. Not only do they pattern in the same way as the "plain" stops - which may be voiced or voiceless - but also they lose their nasal element in phrase-initial positions and in some consonant clusters, a fact which gives rise to minimal pairs based only on sonority - thus L nomte *'do you sleep?'* / nomdey [nomdey] or [nom^{ə}ndey] *'they sleep'*. In phrase-initial position, it is not always easy to decide whether an occurrence of [b], for example, should be assigned to /p/ (as an optional voiced variant), or to /b/ (as a variant lacking prenasalisation); however, other occurrences of the word in question are usually decisive.

Voicing of the series of plain stops was more marked with male informants than with female informants; this accords with the sex distinctions in speech reproted by de Zwaan (1969) for Gogo-Yimidjir. Similarly, where palatalisation in L is optional (before /i/), palatalisation was more common in the speech of male informants than in that of the female informant.

It will have struck the reader familiar with Australian aboriginal languages that no palatal series of consonants is posited for the Lamalamic group. This is because virtually *all* consonant phonemes, except /y/ itself, can be followed by /y/; the palatal stops [t^{y}] and [^{ñ}d^{y}], and the palatal nasal [ñ], are therefore treated here as the sequences /ty/, /dy/, and /ny/. Other sequences with /y/ often yield unit phones also; thus /sy/ is [š], and /hy/ (rare) is [ç]. (Elsewhere, /h/ is [x].)

In a similar way, most[3] consonants except /w/ can be followed by /w/. After /f/ ([ɸ]), /w/ alternates freely with its absence, and is not

written in this position.

Three r phones are distinguishable in all three Lamalamic languages; probably only two phonemes are represented, but it has not proved possible to determine which is the odd man out, so this study recognises /ʀ/ (fricative), /r̃/ (trill) and /r/ (flap). The first two are almost always voiceless initially; /r̃/ is usually voiceless following consonants, and is often voiceless intervocalically, in which position /ʀ/ is usually voiced; /r/ is never voiceless. In word-final position, where /r̃/ seems never to occur, it is very difficult to distinguish /ʀ/ from /r/ and /ɨ/, and some errors of identification may be expected here.

In all three languages discussed here, allophone [s] of /s/ varies freely with [θ]; this latter allophone is however recognisably distinct from /t̪/ and /ð/.

In P, some words were recorded as alternating between initial prenasalised stop and initial nasal; thus bal/mal *'leg'*, do/no *'thou'*, gar/ŋar *'white'*; compare also Dr West's recording of Wurangung ŋo *'water'* with P kol and U gu.

In U, phonetically geminate consonants occur with almost suspicious frequency; it is possible that this is merely a conditioned effect of the very heavy stress on the following syllable, though some occurrences seem to have arisen by assimilation.

Morphophonemics in Lamalamic languages usually involves the loss of certain consonants in clusters; thus in L -rn- reduces to -n-, and -nɨ- to -n- or -ɨ-: ka[r]-na-ɨapal *'we go'*; kara-n-[ɨ]ada *'we go'*; mu[n]ɨə-ye *'I eat food'*; tuw[n]-ɨ *'in a tree'*.

Vowels. The occurrence of six vowels, instead of the more usual Australian three, is unusual, and almost certainly posits at least one vowel too many; nevertheless, it has not been possible to assign the phone [ə], in all its occurrences, to one of the other five vowels; and the remaining five vowels appear phonemic in at least some environments.

All unstressed vowels in Lamalamic languages tend towards [ə]; some of these occurrences have been assigned to the vowels /a e ɨ o u/ when other recordings of the word, with clearer articulation or different stressing, have made the vowel quality clear, so that in unstressed positions /ə/ is written only when no such evidence is available. A light unstressed [ə] occurring in some consonant clusters is treated as nonphonemic and is not written; thus kuku-warkatɨ (language name) is [kuku-waɾ̆^{ə}kat^{y}ɨ]. The real problem is with the stressed occurrences of [ə], especially in L, where they tend to correspond with occurrences of in P. There is thus a likelihood that the occurrences of stressed [ə] are occurrences of /e/, just as occurrences of the not always distinguishable [ɨ] are occurrences of /ɨ/, but the evidence for this is slight at

present.

The allophone [ɨ] of /i/ occurs after /t̪/ and /ɖ̪/, preceding or following /ʀ/, and sporadically elsewhere, in alternation with the more usual allophones [i] and [yɪ] - the last allophone being responsible for the "optional palatalisation" mentioned above. (Similarly, /u/ has allophones [u] and [wʊ]; the latter is not regarded as being a sequence /wu/.)

The contrast between /a/ and /e/ appears to be neutralised before or after /y/, as that of /a/ and /o/ appears to be before or after /w/; but /a e o/ contrast in other environments. The contrast between /ɪ/ and /e/, and between /o/ and /u/, is not consistently maintained in all environments, but enough contrastive occurrences are found to maintain all these phonemes.

Stress is probably phonemic, if the evidence of P ɪ́bal *'quickly'*/ipáy *'south'* is trustworthy. Nevertheless, by far the most common stress placement is on the first syllable beginning with a consonant; accordingly, stress is marked only when this is not the case.

MORPHOLOGY

Nouns. The three Lamalamic languages show traces of noun-classification, in the use of prefixes dividing the nouns into various classes. A comparative table of these prefixes is as follows:

TABLE II: CLASS MARKERS

	L	P	U
meat food	nya-	nya[ɪ] ~ ny-	n-
starch food	mun-	tya[ɪ] ~ ty-	mun-
body parts/nature	ar-		ar-
animals	ku-, kur-		
trees	ᵏur-, ku-	kwo-	
human	b[a]-		
genital	kun-		

The system is more fully maintained in L than in the other two languages. The same root may occur with different prefixes: L nyapar *'goanna'*/kurpar *'gumtree'*; kuwon *'kangaroo (living animal)'*/nyawon *'kangaroo (as game)'*. The categories of animals and trees may not be distinct. The final two categories of L are attested by only a few examples: barar/arar *'girl'*, barawin/arawin *'shadow'*; kunarpal *'pubic hair'*, kunputa *'vulva'*,

kunartwol *'testicles'*. In giving English translations of some words, both TK and LS used the common Paman root maya (*mayi) as equivalent to mun-; thus, *'maya-lily'* as the LS translation of mun-arəm *'lily-root'*, and *'maya-bulguru'* (TK) for kar (P mun-iʀal) *'bulguru nut'*. Where roots may occur without the prefix, this is indicated in the wordlist by bracketing the optional element, in the same way that all optional elements are bracketed.

Possession is indicated with nouns by suffixes, for a list of which (almost complete for L, all three dialects, and fragmentary for P and U) see Table III.

TABLE III: BOUND POSSESSION MARKERS

		L	P	U
Sg.	1	-t̪aw	-t̪um	-t̪al
	2	-nu	-nəm	-nal
	3	-ŋu	-ŋom	-ŋal
Du.	Ii	?	-tatəm	?
	Ie	-luŋu	-leŋəm	?
	2	-poru	-pam	?
	3	?	?	?
Pl.	Ii	-lapalu	?	?
	Ie	-ludu	?	?
	2	-r̃ow	-r̃am	?
	3	-du	?	?

Otherwise, very little noun morphology was recorded, with the exception of common suffixes (in L) {-l ~ -la} (ergative/locative?), {-m} (locative/instrumental?), and {-ru} (motion towards?). However, the recorded Lamalamic material does not show a wide range of sentence types, and I suspect also a certain amount of "pidginisation" on the part of the informants, to the extent of suppressing some of the morphology, as is a common habit of aboriginal informants with unwary linguists.

Some examples of the use of these noun-suffixes are: L nya-l fur-la (LS) *'meat stinks'*; aʀl-l nya-lata (TC) *'we sit in the camp'*; warina-m no-labal (LS) *'we sleep by the fire'*; warina-m teri-n-ye misi-m (LS) *'I cut firewood for the missus'*; nya-ru pa-lapa (TC) *'we go for meat'*; da-ru kara-ta (TC, LS, TK) *'where are you going?'*

Verbs. Verbs show more changes, though hardly greater complexity, except perhaps in U where the system, though apparently similar to that in L and P, is imperfectly understood. The pattern of all languages is

+ verb base + tense/aspect ± subject ± object (±directional?)

Subject markers are bound, but, with the exception of the singular forms and the 3rd pl., are identical with the free pronouns. If subject and object occur together, they form a single fused unit which may proceed the object instead of following it. Excluding any kind of reflexive combinations, there are, theoretically, 75 such fused units possible; only a small number of these were recorded, however. A list is provided for L and U of forms attested, and some deducible (Table IV); from these the remaining unattested forms can be deduced with fair certainty. Even less U forms were recorded, but those with singular subject and object are the same as L.

A list of the free and bound pronoun subjects is included as part of the lexicon.

TABLE IV

SUBJECT/OBJECT FUSED PRONOUN FORMS IN LAMALAMA AND PARIMANKUTINMA*

Subj/Obj	L	P	*Subj/Obj*	L	P
1sg/2sg	yanu[n]	tyonon	3sg/2pl	lařun	-
1sg/3sg	yaŋan	tyoŋon	3sg/3pl	(ladu)	-
1sg/2du	yapol	tyupanəm	1du incl/3sg	lataŋan	-
1sg/3du	yalu[n]	tyulam	2du/1sg	napol	-
1sg/2pl	yařun	tyuřam	3du/1sg	nalo	-
1sg/3pl	yadu	tyuten	3du/2sg	lonu	-
2sg/1sg	nata	dot̪əm	3du/3sg	loŋun	-
2sg/3sg	taŋan	doŋon	1pl excl/3sg	ladaŋu	-
2sg/1du excl	luŋuta	-	2pl/1sg	nařo	řat̪əm
2sg/3du	talu[n]	(dolam)	2pl/3sg	(řaŋan)	-
2sg/3pl	tadu	(doten)	3pl/1sg	nadey	tat̪əm
3sg/1sg	nala	lot̪əm	3pl/2sg	danu	-
3sg/2sg	lanu	-	3pl/3sg	daŋan	-
3sg/3sg	laŋan	-	3pl/3du	dalun	-
3sg/2du	(lapol)	-	3pl/3pl	(dadu)	-
3sg/3du	lalu[n]	-			

* Forms in parentheses hypothetical.

In L, the tense/aspect markers are: {-m- ~ -b- ~ -ma} present/past;

{-n- ~ -d- ~ -na} past/future; {-i- ~ -y-} future; {-ɨ-} imperative; and {-ø-} present/future? (does not occur with 2nd pers. subjects). The allomorphs are for the most part phonologically conditioned, but in many contexts alternate freely with each other; only the allomorphs {-ɨ-} and {-y-} are absolutely specifiable, the former occurring after consonants, and the latter after vowels. Note that, following {-m-} or {-n-}, the initial /ɨ-/ of 1st du. and pl. pronouns is lost.

Examples:

ɨada kara-n-ada tu aʀi-ɨ nya-ɨ (LS) *'we go, you stay in the camp';* da-ru kar-i-poɨ (LS) *'where are you two going?'*[4]*;* pata say no-y-ɨapaɨ (TC) *'we shall sleep halfway';* twor nɨ-n-ya-ŋan (TK) *'I struck the dog';* ra maka-b-ye-nu (or ra maka-m-ye-nu) (LS) *'I did not see you';* ba swor tə-ma (or ba swor tə-m-ɨo) (TK) *'two men are coming';* kar-ɨ-ř̆o *'you all go!';* tyertyer kar-ye (TK) (or tyartyar ka-na-ye (TC)) *'I shall go tomorrow';* ba fan tə-dey (TK) *'many men come';* ta-ŋan maka-m (TC) *'do you see him?'*

The same markers occur in P, except perhaps for {-n-}, which has not been clearly established; its place may be taken by {-daɨ-}, {-ydey-}, or {-ytəna-}, verbal markers otherwise unanalysed.

Examples:

poy ina-m (or ina-m-ɨo or ina-b-ɨo) *'he is sitting on a stone';* ina-m-da *'they are sitting';* ba do-y-ɨu *'lest he hit';* rə pa-y-ta-tem *'they don't see me';* arata-ɨ-do *'you sleep!';* wa-daɨ-do *'you go now?';* wa-ydey-ɨipaɨ (or wa-ɨipaɨ) *'we go';* wa-ytəna-ř̆a *'you all go now'.*

The verbs of U are even less clear, but the same basic markers are recognisable - but prefixed, in the case of {m-} and {n-}.

Examples:

maka-ye *'I see';* maka-ɨ-ta-ŋan *'look at him!';* kar-ɨ-poɨ *'you two go!';* aʀɨ-ɨ m-aka-ɨapaɨ *'we go to camp';* m-apa-ɨapaɨ (or n-apa-ɨapaɨ) *'we go walkabout now'.*

In P and L, markers have been observed following the bound subject markers; these are possibly directional/locational morphemes. For example: L say no-ɨ-poɨ-nu (TK) *'you two sleep (?here)!';* say no-ɨapaɨ-na (LS) *'we sleep (?here)';* P ɨna-ɨ-ř̆a-ku *'you all stay inside!'*

The negative marker (L ra, P re, U ra) precedes the verb complex, as in examples above. The same slot is also filled by ba (in all three languages), which is translatable as *'possibly'*, and which often has the force of a prohibitive negative (*'lest'*).

In one case, a possessive form of the personal pronoun was recorded in the slot normally filled by the object, with "benefactive" force; it is uncertain how far this pattern is generalisable. This was L twor ba

ni-ta-ṯaw (LS) *'don't hit my dog'* (for the expected twor-ṯaw ba ni-ta-ŋan).

Reduplication, partial or complete, was observed with a few verbs, but the exact function is obscure (possibly continuous action): L ba lə-lə-da (LS) *'the men are eating'*; ni-nya-b-ye (LS) *'I am sitting'*; P nyulan ga-ga-lipal *'we look round for the possum'*.

Few complex sentences were recorded, so little can be said on syntax. Word order, as in many Australian aboriginal languages, is relatively free, but there is a preference for the order **subject-object-verb.** As mentioned above, the fused subject/object marker may precede the verb, though the preferred position is following the verb. Adjectives follow the nouns they qualify, and in equative clauses may take verbal tense and subject markers.

Examples:

L arwar maka-m-ya-ŋan (TC) *'I see a kangaroo'*; na-ta makam (TC) *'do you see me?'*; mam giʀ-la (TK) *'house is bad'*; ba hanawor-ta? (LS) *'are you alone (one man)?;* tutulu-m-te (TK) *'are you black?'*

P ba aðer pam-tyu-lam *'I see two men'*.

U hayer-la *'it is good'*.

LEXICON

The evidence of the 208 lexical items presented, while not entirely "basic vocabulary"[5], supports the classifying of L, P and U as distinct languages, and the division of into coastal and inland dialects, the former being spoken by TK, and the latter by TC and LS. The cognate percentages on the published list are:[6]

	KA	WK	TK	LS
TC	52	36	71	83
LS	46	33	71	
TK	38	34		
WK	35			

It will be readily seen that the inland L dialects share much more vocabulary with U than the coastal dialect; otherwise, the figures are consistent with each other and with the geographical separation of the languages and dialects.

Sound-correspondences between the three languages have not been analysed, but simple inspection shows many discrepancies. The only clear pattern - and even that has many exceptions - is with regard to the L series /b ḏ d g/, which corresponds in U to the sequences /pm ṯn tn kŋ/. It is partly this fact which has given rise to the apparent phonetic "reversals" observable between L and U:

L	U	
giʀ	ʀikŋir	*bad*
ŋar	araŋ	*beach*
ba	apma	*man*
gu	okŋa	*water*

While this reversal effect is probably spurious, there does remain the possibility that some of the sound-changes observed in Lamalamic languages stem from deliberate human alteration of the language, in the manner of "pig-latins" and similar forms of so-called "linguistic play". The division of the languages along moiety lines makes this hypothesis somewhat more plausible.[7]

TK volunteered a short list of words from the language (or dialect) spoken by his deceased mother, Jenny Alross - the dialect called by him Kuku-Warkatyi, spoken on the western side of the N. Kennedy River. With only one real exception the words are identical with those given by TC and LS; this is not conclusive, but it seems likely that TC and LS speak the Kuku-Warkatyi dialect of Lamalama. The words are: gu *'water'*, ba *'man'*, tapa *'woman'*, aratam *'eye'*, arapam *'billycan'*, tapa lun *'moon'*. Only the last (*'female sun'* for *'moon'*) seems unusual, and probably stems from a linguistic taboo.

In the wordlist presented here, Proto-Paman reconstructions (taken from Sommer 1969) are given when there appears any likelihood that forms in any of the three Lamalamic languages could be derived from these reconstructions. A number of Proto-Paman roots may have been missed, especially where the meaning differs considerably from that in Lamalamic languages; nevertheless it is apparent that, even on the most optimistic count, the amount of Paman lexicon in Lamalamic languages is low - maximally about 18%, of which figure about 4% is accounted for by the personal pronouns. The Lamalamic group is probably, therefore, best regarded as a family distantly related to Paman, rather than as a subfamily of Paman; however, much more research, and more evidence of Paman sound-changes (extending that of Sommer 1969 and Hale 1964) is needed before the status of Lamalamic languages can be fully determined.

L E X I C O N

Personal Pronouns (free/bound)

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
Sg. 1	ya/-ye	ya/-ye	ya/-ye	tyu	aya/-ya	*ŋat^{y}a *ŋay(a/i/u)
2	tuy/-ta,-te	tuy/-ta,-te	tuy/-ta,-te	do	otta/-ta	*ñ(i/u)nt(a/i/u)
3	luy/-la	luy/-la	luy/-la	luy/-lo	olla/-la	*ñ(i/u)lu
Du. 1 incl.	lata/-lata	lata/-lata	lata/-lata	tata/-tata	?	-
1 excl.	lala/-lala	lala/-lala	lala/-lala	lala/-lala	?	-
2	pol/-pol	pol/-pol	pol/-pol	pal/-pal	upol/-pol	*nup(u/a)l(a) *ñlpul
3	lo/-lo	lo/-lo	lo/-lo	la/-la	?	*pula
Pl. 1 incl.	lapal/-lapal	lapal/-lapal	lapal/-lapal	lipal/-lipal	lapal/-lapal	*ŋali
1 excl.	lada/-lada	lada/-lada	lada/-lada	leda/-leda	lada/-lada	(*ŋana)
2	řo/-řo	řo/-řo	řo/-řo	řa/-řa	řo/-řo	*ñ(u/i)řa
3	dey/-da,-dey	dey/-da,-dey	dey/-da,-dey	? /-ta	?	*t^{y}ana

General Word List

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
ash	řan tir	alwan	arwon	dil alkan	awaʀ	-
ask	pəti-	pətl-	pətə-	-	-	-
bad	giʀ	giʀ	giʀ	ikuʀ	ʀikŋir	-
bark of tree	-	mapar arkənaw	[ku]ʔiʀ	kwo iṯin	arkinim	-
bat (flying fox)	karan	-	kur-karin	toʀ	-	-

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
beach	-	-	ŋar	ʀəkan	araŋ	-
belly	datər	doal	arkapa	buʀ	-	*kampu(l/r)
big	hanmay	hanmay	hanmay	malŋan	waramaðam	-
billycan	-	arapam	pulpam	kobol	erapam	-
bird	[nya]-tyam	netyem	tyam	idaʀaʀ	etar	-
bird sp. - cassowary, emu	tutun	ʀimidye	ku-ʀəmayu ku-ʀəmyuwi	uřəl	eʀer	*kuTini
bird sp. - crow	-	duŋalsan	kur-ṯal	eʀpalpal	oŋaŋar	-
bird sp. - duck,white	hanan	kur-murŋun	-	tapaŋar	akaŋalam	-
bird sp. - ibis	-	furnanən	kuʔulpan	-	olpan	-
bird sp. - parrot	ku-ti	-	ku-tye	iʀda	iðða	-
bird sp. - pelican	yalgun	-	[kur-]yalonma	-	ʀeser	-
bird sp. - scrub hen	-	-	-	ipaŋalpar ipaŋan	epilpəm urin	-
bite	ta- la-	ta-	ta-	ta-	aṯa-	*pot^{y}a-
black	ṯuṯulu	tutulu ṯul	tutulu	[al]meʀ	tanokŋanam	-
blind	nor-	nor-	nor-	papəlpa- ikwadəmə-	unyu	*kuruñt^{y}i
blood	tyetyar	ṯur	arřəta	uiaŋa	oðða	-
bone	tal	tal	arpun	kur	eppil	-
boomerang	ardyal	ardyal	argyel	-	-	*waŋal
breast	yuʀ	yuŋ	yum	tyoŋ	ayaŋ	-
breathe (pant)	-	ŋatur-	ŋatur-	-	aŋawʃnə-	-
bring, carry	ŋati-	ŋati-	ŋo-	bay- ari- lori-	-	-

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Pariman-kutinma (WK)	Umbuykamu (KA)	*Paman
burn (catch alight)	pu-	pu-	pu-	tə-	-	*pañt^{y}i-
burn (consume)	-	-	pwo-	kwu-	wa-	*paawa
bury, plant, cover up	puyi-	puli- rə-	puli-	wiŋa- ima-	ətənya-	-
bush, scrub	-	-	waru awar	gař	osa	-
camp, ground	arI	ari	ari	wur tan	ari	-
camp (v.)	-	-	ari-	ari- wu- ta-	-	-
chest	tořam	toaram	-	uṯayman	toerəm	-
child (baby)	dyal/yal	yal	yal	arkar	-	-
child (son,daughter)	-	lur	lur	luř	-	-
cloud	aledu	arŋayn-dur	ŋanapir	udarar	erhar	-
come	tə-	tə-	tə-	te-	ti-	-
cook	fu-	fu-	fo-	kur-	awa-	-
creek, river	lorka	lorka	lorka lworka	terku	-	-
crocodile (saltwater)	kudar	dar	kudar	dar	atnar	*kañař(a)
crocodile (freshwater)	-	kwoyl	kurkwoyi arkwoyl	kurmal	alkurme	-
cry	-	yarani- ninara-	yinara-	ðenlba-	nya-	-
current, tide	ŋulpanam	ŋulpaynam	tata	-	-	-
die, dead	tut-	tutu tur	tutu tur	bor	anyalpa-	*cut^{y}uma
dig	-	-	furfə ŋa-	ŋa-	ṯal	*paaŋa-

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
dog	towar twor	towar	twor	urtar	awar	-
dog, wild (dingo)	layinam	layĺnam	arkanam	temárakan	alinam	-
dugong	arputa	arpultam	alputa	uṯar	utuwar	-
ear	naburi	laba[ware]	laba	alař	itney	*walu
east	-	-	waŋar	gwal	apmano	*naka
eat	lə-	lə-	lə-	tya-	peler-	-
echidna	lapər	lamfəru	kulabəru	katəlwa	-	-
egg	ariyin	[ny]ariyin	[ny]ariyan	naduʀ	[n]etyen	-
eye	rata	araṯam	arputa	ikadoř	retyen	-
faeces	-	duwar	-	utan	kuna	-
fat	řəma	ariyal	armwon	ariʀ	umwon	-
father	yey	yey	yay	tyar	iye	-
feather	lal	lal	lal	arpol†	utwaran	-
fight	lala-	-	taym-	luwey-	nala-	-
find	ma-	ma-	-	-	-	-
fingernail	ladu wur	lam wur	ritya wur syeta wur	aʀŋuli řən	-	-
fire	řan	řan warina	řan	dil	asa	-
firestick	hapa	yuwar	yuwar	imal	aryuwar	*yuku
fish	ŋatyar	-	ŋatyar	-	inna	*ŋata
fish sp. - barramundi	arpol	arpol	kurpol nyapol	əʀpaʀ	upwol	-
fish sp. - catfish	arpyel	-	kurpyel[ma]	-	-	-
fish sp. - catfish	-	arnayi arrayi	kudó	uṯayna	artala	-

†See *'hair'*.

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
fish sp. - eel,large	-	ř umar	kuř umar	dol	itnar	-
fish sp. - eel,small	-	-	kudiR	teR	[n]ařalpar	-
fish sp. - shark	-	may	may	-	-	-
fish sp. - shark,gummy	durin	durin	-	matdyər	-	-
food	-	mun	mun	tye	oman	-
frog sp.	-	-	kurpolpan	alparpar	-	-
full	lutufan	tutufan	tutufan	ŋar-	-	-
girl	arar	[b]arar	[b]arar	parin	arar	-
give	yu-	yu-	yu-	ba-	open-	*wampa-
go	kar-	kar-	kar-	wa-	kar-	*kali-
go (walk)	pa-	pa-	kar-	wa-	apa-	-
good	hayi	hayi	hayi	ityaR	hayer	-
grandfather	biya	pəbuy babuy	pəbuy pəbəŋi pəyi	piR	yepmey	*papi
grandmother	maye	ta[pa]buy pulu	tabuy tapayi	kapatiR	pepay	*kampul/*puula
grass	lar	hare	arkay	uRkan	uwon	-
guts	-	tomway	-	ţanakaR	oka	-
hair (head)	[tir]arpal	rapal	tin	paḍər	werpal	-
hair (body)	arpal	arpal	tin	RuR[pol]	emeðem	-
hair (grey)	tin	-	tin	-	-	-
hair (fur)	ŋaltam	arpal	arpal	arpol	awar	-
halfway	pata	pata	pata	pilpa	-	-
hand (arm)	kul	kul	kul	řu	alam	*t^{y}aku/yuřu
hand (finger)	ladu	lemtwo	ritya/syəta	arŋuli	-	-
hand, left	kul Ruy	kul fuy	kul fi	rey kum	-	-

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
hand, right	kul hayi	kul hayi	kul hayi	rey ityaʀ	-	-
head	tirwana†	arpan	arpan	aʀbaʀ	awaʀ	-
hear	ŋayi-	ŋayi-	ŋa[ŋi]- ŋi-	ye-	-	*ŋami-
heart	pom	tyem	tyen	iṯam	-	-
hit, kill	ni- tu-	ni-	ni- tu-	do-	-	*kuni-
insect sp. - fly, stinging	ʀuwon	ryel	[ar]ryen arren arbu	iřan	orwal	-
insect sp. - mosquito	uguru	gul	[ku]gul guru	gol	okŋal	-
insect sp. - sugarbag, large	-	wulnum	wufulu	tyalwor	[mun]alwar	-
insect sp. - sugarbag, small	arpur	arpur	kurpur	ukalda	terbilə	-
kangaroo sp. - red	kuwon	nyawon	kuwon	tyokon	-	-
kangaroo sp. - plains wallaby	arwar	nyawol urwol	-	alwor boʀ	urwar	-
knife	-	sutyu	syutyu	nyədəno	ayfar	-
laugh	lil kalmani-	lil [kal]ma-	lil ma-	aldarma-	alalma-	-
leaf	liʀ	liʀ	ku?un	alweʀ	aliʀ	-
leave	-	lupa-	lupa-	ba-	-	-
leg (thigh)	da	da	ara[y]	irtiʀ	eral	*t^{y}ařa
leg (foot)	-	bal	-	bal	apmal	*t^{y}amal
light (burning)	-	arman	arman	-	araŋan	-
lightning	arpala	-	arututu	ulkar dor	-	-

†arpan (GC).

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
liver	loan	lwon	loan	tiŋa	aṯna	-
lizard sp. - goanna	arpar	kurpar nyapar	kurpar	aRpaR nyalpal	aRam	-
lizard sp. - bluetongue	-	-	kukar	nyagar	akar	-
long	tarfan	tulu	taypəfan	borbor	lowan	-
long way, distant	arpiR	arpiR	RiRpiR	boru	iðawána	-
make (fire)	-	warin fal-	ñan tyera-	gwamabal	asa wal- asa pəl-	-
man	ba	ba	ba	bwa	apma	*pama
man, old	apuri	apuri	apuri	nyaltuŋ	etyino	-
man, young	mabuy	ba furin	ba furi	eRbwan	-	-
many	fan peru	fan	fan	alpar	ipiru	-
moon	arkulan	arkulan	arkulan kurkulan	rityal	aruwár	-
morning, tomorrow	titirar	arayene	tyartyar	wurpam ikurur	apimim	-
mother	may	may	may	may maR	amay	*ŋama
mountain	armyen	armyen	armyen	-	ityalpar	-
mouth	warkun	warkun	ŋulbapa	gukwol	wakuneðal	-
mud	hurum	naka gu for	furam arpudi	kwo tikoti	ohar matan	-
nephew†	lwona	-	-	eðar	lwəðəR	-
new	Romin	Romin	Romin	-	Ruman	-
night	arpemi	arpyemi	arpemi	iguR	pimarpar	-
no (negative)	ra	ra	ra	rə	ra	-

†Cf. *'child'*.

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
nose	wuta	wuṯa	wurman	kobər	minata	*kuwu
nose mucus	wufər	wurfər wurpun	wurfər	kobəwer	maréran	-
old	tuŋu	wuram	nyemyam	gegur	oṯaram	-
one	hanawor	hanawor	hanawor	pwon	opar	*ñupun
path, road, track	talam	balʀu	lami	workan pipaʀ	apmal	-
penis	fir†	kunaṯor	funpyer	alnor	uṯa	-
pig	-	kurpanam nyapanam arpanam	kurtoŋnyu	-	-	-
possum	nyaloan lwon	-	[ku]lwon	[ny]ulan	-	*kulan
quickly	piye	piye	piyel	ɨbal	ipal	-
rain	artan alin alan	arṯal	arŋan	ulkaʀ	uṯwal	-
rise (sun)	-	setə-	setə-	ṯeta-	asama-	-
rope, vine	-	uwal	tay	-	ikər ihyər	-
saliva, spittle	waɾ̃ir	ɾ̃əmən	ɾ̃əmən	gu ɾ̃ər	dəwa	-
sand	for	lufor	for	əðan	aŋar piʀ	-
salt, salty	tan	ṯan	ṯan	ḏan	alan	-
see	maka-	maka-	maka-	pa-	maka-	-
shellfish sp. - bailer shell	-	kulabiyal	[kur]wanam	-	alwanam	-
shellfish sp. - oyster	nyaɾ̃in	ɾ̃yen	[ku]ma?ur	-	iɾ̃in	-
short	arpuyfan	arbuyfan	arbuyfan	ərtunakun	-	*kupan

†GC.

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
sibling - elder brother	-	oRuy	oruy	aRoR	aray	-
sibling - younger brother	aray	aray	ray	aRaR	áray	-
sibling - elder sister	pay	-	pata	paR	apay	-
sing	tani-	tanya-	-	tal-	ṯanya-	-
sit, stay, stop	nya-	nya-	nya-	ina-	anya-	*ñiina-/*ñ̂inka-
skin	tur	tur	barpa	iṯin	utna eṯel eδ̊al	*patin(a)
sleep	say no-	say no-	say no-	arata-	say no-	-
small	tilahayi	tilahayi arnhayi	tilahayi	tintyaR	tiyeren	-
smoke	argir	ardil	argil	artyuR	aŋəðəR	-
sore, sick (v.)	řal no-	řal no-	řal no-	řəmaro-	ukwor	-
south	uwa	-	tyal	kal ipay	-	*yipař
snake sp. - brown	kumar	[ku]maR	kumar	maR	armar	-
snake sp. - carpet snake	arinyi	rəlmyan	kurelmyan	əRpan	upirə	-
snake sp. - taipan	-	fulə	kubumartəl	əRmoR	ahuliR	-
snake sp. - tree snake	rarmun	kuřum	kumanakayi	-	awasan	*kalka
spear	la lla	la	la	alka	alla	-
spear (v.)	laŋa-	laŋa-	laŋa-	rə-	alla-	-
spearthrower	ĺnam	ĺnim	inam	iwil	oppan	-
star	piR	arpiR	Rətənam	-	erepwen	*t^{y}uupi
stone	pwon	twon	pilyeram	poy	oraR	-

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
sun	lun luny	lun	lun	arṯa	eða	-
sweat	artun	artun	artunfi	arbəl	oran	-
swim, wash	aʀumi-	paʀuṯi- rəba-	rumalaŋa- daw ʀa-	rəm- talan	yayi-	-
tail	ṯuy	ṯuy	ṯuwi	iwol	otsay	*t^{y}u(u)n+V
talk, tell	fur- pul-	fur- tul-	fur-	wa- wol-	-	-
testicles	artwan	kunáyi	artwol	do	uṯwol	-
three	awar	awar	awar	pa? pan	awar	-
throw out	řiŋa-	rimi- hapa-	raŋa- hapa-	wan-	awuʀ nyal	-
thunder	ŋanin	-	yerŋadin	ulkaʀ aðen	arii	-
tie	-	ṯalṯa-	-	ṯalṯa-		-
tongue	-	ṯayna	-	daʀ	aððar	*ŋañt^{y}ar
tooth	arrita	arreta	aryerman	liʀ	iriṯa	*muliř/*riřa
tree	artar	tuwn	tuwn	kwo	oṯan	*yuku
tree sp. - bluegum	par	kurpar arpar	kurpar	kuʀpaʀ	idika	-
turtle sp. - freshwater, long neck	-	-	kuparar	parař	aweðə	-
turtle sp. - freshwater	-	-	kuřinu	řoduṙ	uruwaða	-
turtle sp. - marine	-	wurpun	kuwar	řaytiʀ	awaʀ	-
two	swor	swor	swor	aðer	swor	-
uncle (father's brother)	-	-	uri	pwo	-	-
uncle (mother's brother)	-	uyta	utya	kwol	o?ay	-

English	Lamalama (TC)	Lamalama (LS)	Lamalama (TK)	Parimankutinma (WK)	Umbuykamu (KA)	*Paman
urine	ř a m	ř a m	ř a m	t o l ŋ a ə w i n	e ð e m	-
water	g u	g u	ř ə t ə	k w o l	o k ŋ a	* ŋ u k u
what	n i l a	-	n i l a	n i	-	-
when	k a	-	-	k a [n a]	-	-
where	d a [r u]	d a [r u]	d a [r u]	d a [r]	-	-
white	a r g ə r	a r g a r	g a r	g a r ŋ a r	a w a r	-
wind	y u r u y u n	w o l w u n	p o m	u g a ʀ	a ʔ u r u u t w a r a n	-
woman	t a p a	t a p a	t a p a t y a p a	t a b a	e p e r	-
yam	m u n a r a w	m u n a r a w	k u w u r i	t y a t u r u	m u n a p a ʔ	-
yam, short	-	-	k u p a	-	-	-
yam, long	-	-	k u w a k a y	-	-	-

NOTES

1. This map follows, substantially, a map of tribal boundaries drawn by Dr West, and copied by me in January 1965. It omits, however, two additional Lamalamic names given by Dr West: [koko-ʀaʀmul] and [kuku-taipan] - the second name being of course derived from English. The area of the first of these names is approximately that of the dialect called here 'inland Lamalama' (middle and upper North Kennedy River, to Tablelands), while that of the second takes in the Musgrave/Violet Vale area, and probably represents an inland dialect of Wurangung. These names have not been confirmed by my own research.

It is appropriate to acknowledge here the extensive assistance given me by Dr West, both while in the field (at Lockhart River mission), and subsequently, in making available wordlists and genealogies collected by him. However, my conclusions do not always agree with his, so his material has been used here primarily as source data, and as confirmation of my own findings. It is a pity that we shall perhaps never see the publication of Dr West's own interpretation of his extensive data on Cape York languages.

2. In these notes Dr West groups together Umbindhamu and Umbuykamu as dialects of a single language, as also Wurangung and Parimankutinma, but my impression is that the wordlists of these languages do not support his conclusion.

3. The following sequences with /w/ have been recorded: /pw t̪w tw kw bw gw nw lw sw/; for [Φ^{w}], see note to /f/, above.

4. The root translated as *'go'* appears in the alternating stem forms kar- and kara-.

5. The vocabulary presented gives the bulk of the data attested in at least two languages, with the addition of a few words included for reasons of unusual phonology, interesting reflexes, or evidence of semantic change.

6. Because not all items were recorded from all five informants, the number of comparisons made varies between 128 (TC-TK) and 174 (WK-TK); the sample is adequate to give an idea of lexical relationship, especially in view of the consistency of the results, but the percentage figures may differ somewhat on another list, with all sound-changes established. The pronouns are included in the count.

7. One even feels at times that the reconstructed Paman forms give better reflexes in Lamalamic if written backwards (e.g. *'eye'*: Paman *t^{y}iii, reversed *iiit^{y}, Umbuykamu ret^{y}en), but this fascinating if implausible line of speculation has not been pursued.

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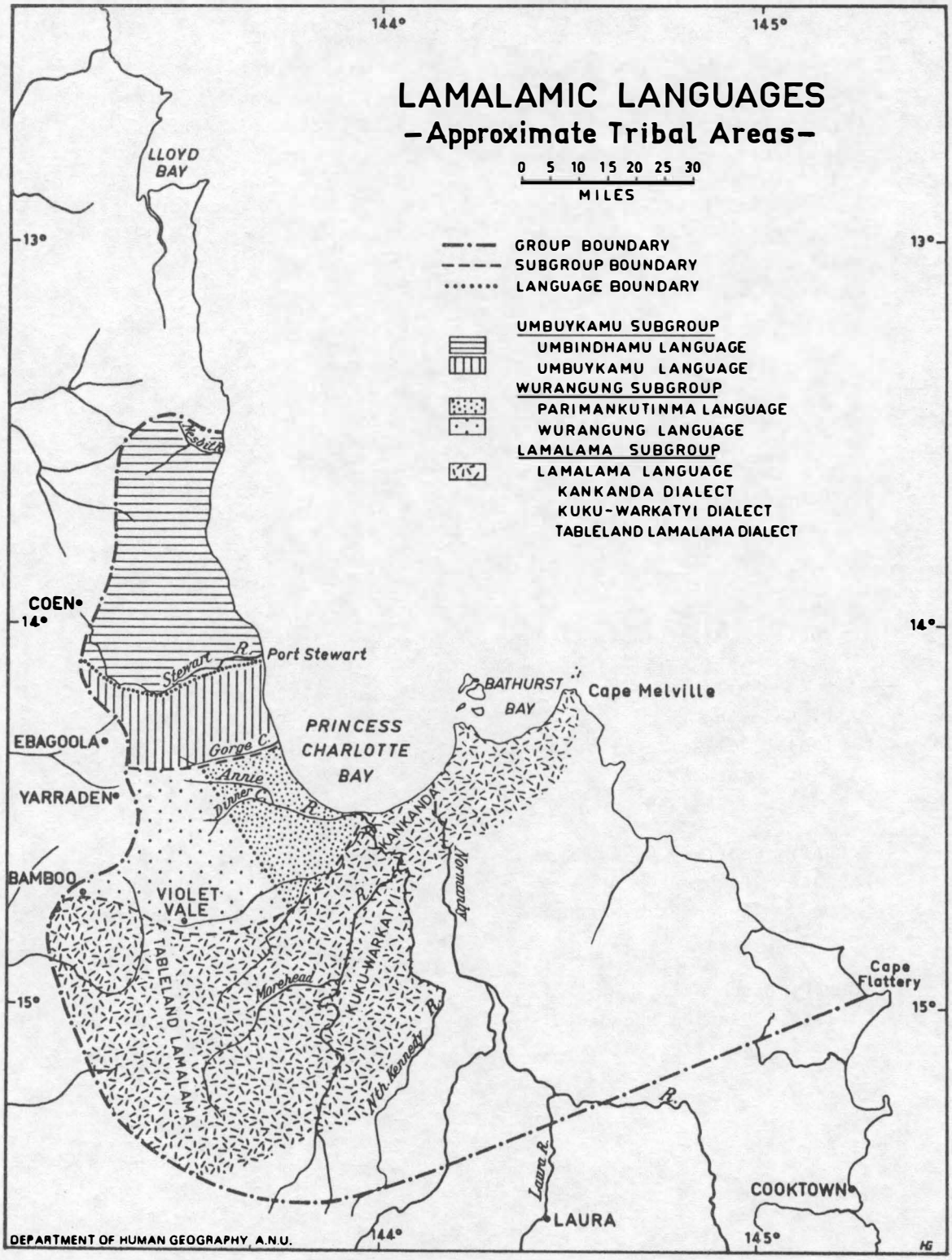
LAMALAMIC LANGUAGES
–Approximate Tribal Areas–
0 5 10 15 20 25 30
MILES
GROUP BOUNDARY
SUBGROUP BOUNDARY
LANGUAGE BOUNDARY
UMBUYKAMU SUBGROUP
UMBINDHAMU LANGUAGE
UMBUYKAMU LANGUAGE
WURANGUNG SUBGROUP
PARIMANKUTINMA LANGUAGE
WURANGUNG LANGUAGE
LAMALAMA SUBGROUP
LAMALAMA LANGUAGE
KANKANDA DIALECT
KUKU-WARKATYI DIALECT
TABLELAND LAMALAMA DIALECT
144°
145°
13°
14°
15°
LLOYD BAY
Kendall R.
COEN
Port Stewart
Stewart R.
EBAGOOLA
YARRADEN
Gorge C.
Annie R.
Dinner C.
PRINCESS CHARLOTTE BAY
BATHURST BAY
Cape Melville
KANKANDA
Normanby R.
BAMBOO
VIOLET VALE
TABLELAND LAMALAMA
Morehead R.
KUKU-WARKATYI
Nth. Kennedy R.
Cape Flattery
Laura R.
LAURA
COOKTOWN
DEPARTMENT OF HUMAN GEOGRAPHY, A.N.U.
HG

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