NUMBER AND TIME IN CENTRAL BUANG

Bruce A. Hooley
Summer Institute of Linguistics

1.   Introduction

The Buang people live in the Mumeng District of the Morobe
Province. In the mid fifties Françoise Girard of the Musée de
l'Homme in Paris spent several months in the village of Mapos in the
centre of the Snake River valley studying their life and culture.
Her observations have appeared in several different articles
including one 'Les Notions de Nombre et de Temps Chez les Buang de
Nouvelle-Guinée' (Girard 1968-9).

Girard's main purpose in her field trip was not a linguistic
one, however, and so she did not have an interest in making an
exhaustive study of the language. Some of her conclusions were
therefore tentative and incomplete, so it seemed well to provide
more accurate and complete linguistic data in the areas she dealt
with. The present paper is based on research carried out in the
village of Mapos over a number of years by the author and his wife.
It deals specifically with data relating to Girard's paper on
number and time.[1]

As already stated, Girard's work was anthropological rather
than linguistic, and she did not therefore complete an analysis of
the phonological system. Consequently her transcription is sometimes
inconsistent. In this paper I have chosen to write Buang forms in
the orthography presently employed for writing the language. The
development of this orthography and the reasons for its present form
are discussed elsewhere (Hooley 1976).

2.   The Counting System

The first major topic Girard covers is the counting system.
The traditional method of counting, as she points out, is a 5/20
system.[2] That is, there are five basic numbers which are repeated

until they make up a complete person or 'twenty'. Higher numbers are possible in terms of multiples of 'complete people' or parts thereof. In practice in traditional life, it was probably rare that numbers higher than 20 were ever used with any accuracy, and so there was no pressure to simplify the rather complex constructions. Once the European counting system was introduced, its forms were frequently borrowed to replace the more complicated indigenous constructions. Even then, the larger numbers were still not understood or used with any degree of accuracy by many people.

TABLE I

1	ti	one
2	luu	two
3	löö	three
4	luubeluu	four (two and two)
5	nemadvahi (buatov)	half our hands (thumb)
6	nemadvahi videk ti	five linked with one
7	nemadvahi videk luu	five linked with two
8	nemadvahi videk löö	five linked with three
9	nemadvahi videk luubeluu	five linked with four
10	nemadluho	ten (both our hands)
11	nemadluho videk ti	ten with one
12	nemadluho videk luu	ten with two
13	nemadluho videk löö	ten with three
14	nemadluho videk luubeluu	ten with four
15	nemadluho nemadvahi	ten and five
16	nemadluho nemadvahi videk ti	ten and five with one
17	nemadluho nemadvahi videk luu	ten and five with two
18	nemadluho nemadvahi videk löö	ten and five with three
19	nemadluho nemadvahi videk luubeluu	ten and five with four
20	mehödahis ti	one complete person
21	mehödahis ti beti rak nedo	a person and one on it
22	mehödahis ti beluu rak nedo	a person and two on it

23 mehödahis ti belöö rak nedo	a person and three on it
24 mehödahis ti beluubeluu rak nedo	a person and four on it
25 mehödahis ti benemadvahi rak nedo	a person and five on it
30 mehödahis ti benemadluho (rak nedo)	a person and both our hands (on it)
40 mehödahis luu	two complete people
50 mehödahis luu benemadluho	two people and both our hands
60 mehödahis löö	three complete people
70 mehödahis löö benemadluho	three people and both our hands
80 mehödahis luubeluu	four complete people
90 mehödahis luubeluu benemadluho	four people and both our hands
100 mehödahis nemadvahi	five complete people

Table I gives the counting system for Central Buang. The headwater system, and that for the lower, Mangga, end of the valley are equivalent except for vocabulary differences.

In the headwaters the discrete terms are

ti   'one'

lu   'two'

lal   'three'

The word for 'our hands' is <u>orod</u>, for 'half' is <u>valu</u>, and for <u>dahis</u> is <u>dalus</u>.

In the lower part of the valley Mangga Buang[3] uses

ti   'one'

yuuh 'two'

yaal 'three'

Their word for 'hand' is <u>namaa</u>, for 'half' is <u>vaalu</u>, and for <u>dahis</u> is <u>doo</u>.

The same general pattern of construction is followed, however, so all the details will not be included here.

There are several points of interest in the system. Firstly, the term <u>buatov</u> is an alternative form for five, which, as Girard points out, means 'thumb'. It is made up of <u>bu</u> 'grandparent', and <u>atov</u> 'big, adult, mature, old'.

154

The verb videk is used for linking or joining compound numerals. It does not occur frequently in other environments, but a common illustration of its usage speaks of a person standing with one foot in one tree and one in another, or one foot on each bank of a stream. Alternative forms to those shown in Table I used the conjunction b- 'and' with videk as in nemadvahi bevidek luu 'seven'. Some people seem to prefer to use the conjunction, and others not. No other explanation than personal preference has yet been found.

The forms for 'five', 'ten', and 'twenty' are made up as follows:

nema-d-vahi   'hand-our inclusive-half'
nema-d-luho   'hand-our inclusive-both'
mehö-dahis   'person/human-complete/closed off'

For numbers over twenty it is necessary to specify how many complete persons, or twenties, are intended and then to add on the additional parts. It is normal to use the full phrase:

be-ti (luu, etc.) rak nedo   'and-one (two, etc.)
                                     upon sitting'

rak is the verb 'to be on, over'; nedo means 'to sit, remain, be'.

For multiples of twenty, it is also common to use the extended phrase:

mehödahis rak neggëp alam nemadvahi 'twenties upon lying
                                      five people'

neggëp is the continuative mode of ggëp 'to lie, sleep'; alam means 'people'.

For very large numbers, special idioms are used. Two of the more common are:

mehömehö   - presumably based on twenty people or 400, but usually just indicating a large indeterminate number.

kele pu töksën 'tree leaves fallen' - presumably referring to the leaves that cover the ground in the bush.

In her paper Girard writes of stalks of grass called npumbe used for keeping track of gifts received. I have not been able to check with older men, but younger men asked were ignorant of the word. They could only suggest vong sesab rak 'to make sesab for/over' to

155

refer to the process of breaking short lengths of twig and keeping
them as a record. It may be that npumbe is used in a different
village, or is an older term. One other term which is used for
counting in relation to food distributions is ketup. This indicates
a bundle of three, and normally refers to yams, which are tied in
such bundles for carrying and giving as gifts.

.   One other point which is not clear in Girard's presentation is
the word mu 'only'. When used with ti 'one' it virtually becomes a
suffix. It is used to emphasise the uniqueness of the thing referred
to.

ti is, in fact, the singular marker in Buang. Plural is the
unmarked form of nouns, and the implication of a noun unmarked for
number is normally that more than one is being referred to. Adding
ti is a common and unequivocal way of making it singular.

    beggang   'houses, village'
    beggang ti   'a house'
In the example Girard gives she distinguishes
    venë ti   'a wife (implying one of several)'
    venë timu   'one wife only   (i.e. he has no more)'
    Another example she speaks of is the distinction between luu
'two' and luho which she defines as 'the two'. Perhaps the best way
to elucidate this area is to refer to the table of the pronouns
(Table II).

<div align="center">

TABLE II
Primary Pronouns

</div>

sa	I	hil	we inclusive
		he	we exclusive
hong	you	ham	you (pl)
yi	he/she/it	sir	they

<div align="center">

Secondary Pronouns

</div>

aluu	we two	alöö	we three
meluu	you two	melöö	you three
luho	they two	lööho	they three

<div align="center">

156

</div>

There are two series which I have referred to as primary and secondary. The primary are the basic forms, while the secondary are back formations based on the numbers. luho is the third person dual, and Girard is therefore right when she says that it refers to a whole consisting of two people rather than the individuals.

Mejeng lu venë. . .   'Mejeng and his wife....'

Mejeng luho venë....   'The couple consisting of Mejeng
                                   and his wife....'

Having identified the husband, the second expression is usually abbreviated to luho venë. Alternatively, if the wife has been identified by context, and the couple subsequently referred to, the expression is luho regga (regga = husband). The -ho suffix is difficult to define apart from this context, since it has been noted with only one other word apart from the dual and trial pronouns. This word is los 'with, and'.

Aberaham losho yi alam   'the group consisting of Abraham
                                   and his people'

It should be noted that luu is shortened to lu in luho and in phrase medial positions. This applies also to aluu and meluu in the subject position, but not the object. löö never shortens in this way.

3. Counting Money

When money was introduced to the Buangs and became a part of their way of life they devised a system of counting to handle it. This system is given in Table III.

TABLE III

kök ti	'a red'	a penny
peek ti	'a fragment'	sixpence
gahis ti	'a seed'	a shilling = 10¢ = 10 toea
ris ti	'a leaf'	a 10/- note = $1
dahis ti	'a complete one'	one pound = $2 = K2
kapiya ti	'a paper'	five pounds = $10 = K10
bëëk ti	'a bag'	one hundred pounds = $200 = K200
len töksën	'open hole'	one kina

157

The Buangs have seen several changes of currency in their contact history. First came the Germans with the Mark, and some of the older people still used mak ti to refer to a shilling up until recent years. This was similar to Tok Pisin, of course, and was a direct borrowing. After the Germans came the Australians with the system based on the pound, and it was during this period that the system shown in Table III developed. Next came the Australian dollar, and finally, with independence, the kina. The system seems to have been firmly ensconced until recently, and terms like gahis ti and dahis ti were successfully transferred to refer to ten cents and two dollars respectively, and then to ten toea and two kina. Whether they will persist or be replaced by the national system remains to be seen. There is confusion because the old unit equals two of the new (i.e. one pound = two dollars = two kina). This confusion comes especially with the term bëëk which is used less frequently than the others. Originally it meant one hundred pounds, and it is still used that way by some, that is, it is used to refer to K200. With others, however, it is being used to refer to K100, and it is necessary to be careful to clarify.

4.   Family Position

The terms associated with birth order have been described elsewhere (Hooley 1972) and no further comment is necessary here, except to mention that there is an eighth term for each sex not recorded by Girard. This is not surprising since the terms are rarely heard and are now not known by the younger people. A blanket term kele ris 'tree leaves' is used for any children of either sex beyond eight, but naturally is not often needed. For completeness the list of terms is given in Table IV.

TABLE IV

	Male	Female
1	aguu	mewing
2	amon	anii
3	gwee	velek
4	see	dabi
5	guu	sëj
6	bewë	tamu
7	meggi	pahoov
8	dahisoong	len
	kele ris	kele ris

5. Time

The Buang method for handling time grammatically is similar to that employed by many Austronesian languages in Melanesia. It uses two aspects, rather than tenses, and I have called these 'actual' and 'potential'. In addition to these two aspects there is a continuous mode n- which indicates an enduring action or condition. A fuller description of these affixes appears in Hooley (1970), so the details will not be repeated here. Concerning time, Girard says, "Les récits d'événements, les légendes et les mythes sont ponctués par des mots qui réapparaissent périodiquement et rythment le discours' (p. 164).

The words which she says, "....reappear periodically to punctuate and lend rhythm to discourse" are sequential conjunctions used to link clauses together and to indicate the relationships between them. These sequential conjunctions fall into two subsets or parallel series and they are in such common use that it is difficult to give them precise meanings. They are listed in Table V with the general significance of each.

TABLE V

m-	lom	close knit sequence
b-	lob	general sequence
g-	log	simultaneous events
k-	lok	unexpected sequence

The forms in combination with lo mark a more significant or major
break than those without. The status of lom is questionable. It
has been accepted by people from Mapos village, but questioned by
people from Humek and Lomalom who assert that it really should be
lob. It could be therefore that lom is a rapid speech variant of
lob caused by the dropping of the oral part of the stop in this very
common word. If this is the case, we are observing a unit of the
language in the process of change. Both shorter forms m- and b- are
clearly present, however, suggesting that both longer forms are also
to be expected. A more likely explanation is therefore that the
absence of lom in Humek and Lomalom is a minor dialectal variant.

The particle lo itself is very common with a number of
different functions. It has been described in part elsewhere
(Hooley 1970: 181), but still needs further research to define
adequately. In some occurrences it functions as a verbal comma, and
this may be the way its association with the conjunctions developed.
The conjunction k- is of rather infrequent occurrence without lo,
but it occurs often in association with the particle rë 'first,
prior, beforehand' to give rëk which could be described almost as an
incipient future tense marker, e.g. rëk nam 'after pot.come', 'he will
come'.

Girard mentions the sequence ggovek ya, and she is right that
it indicates completion. It is made up of the verbs ggovek 'enough,
adequate, complete' and ya 'go' and is used as a discourse structure
marker by some speakers, occurring at the end of a story, or
sometimes at a major break in the narrative. It may also be used
with the verb of the preceding clause to indicate the completion of
one action and the beginning of a new phase of the story. This
appears to be the case in the example she cites on page 165 of her
paper:

newong	negnuar	mbei	negnuar	besi	mbar	besi	gowok	ia
faire	feu	puis	feu	cuir	porc	cuir	c'est	terminé

	gelai		gowok ia
voir (que le porc est cuit)		c'est terminé	

Without the context it is difficult to be sure of the exact
construction but two possibilities follow:

Nevong	nengwah	in bĕ	nengwah	besi	bŏŏk.
doing	fire	in.order.that	fire	will.roast	pig

Vesi	ggovek	ya	gelĕ	ggovek	ya.
roasted	enough	went	and.saw	enough	went

'He made a fire to cook the pig. He finished cooking it.
He saw that it was finished.'

Nevong	nengwah	benengwah	vesi	bŏŏk.	Vesi	ggovek
doing	fire	and.fire	roasted	pig	roasted	enough

ya	gelĕ	ggovek	ya.
went	and.saw	enough	went

'He made a fire and the fire cooked the pig. It
finished cooking and he saw that it was finished.'

6.   Other Time Words

As Girard indicates, there are several words which are used when
it is necessary to locate actions more precisely in time. These are
given in Table VI.

<div align="center">TABLE VI</div>

wirek	long ago
ngöp	day before yesterday
veseveng	yesterday
gwĕbeng	earlier today
gwĕbengko	a moment ago
pehi	later today
neheng	tomorrow
duu	day after tomorrow
najeeng	long in the future

The verb ggovek does not properly belong in this list, so is
excluded. It has already been explained above. The terms are
somewhat relative in nature, and vary in meaning slightly with context.
For example, veseveng is used to refer to

<div align="center">161</div>

yesterday, but in the appropriate contextual time frame it may be used to refer to something that happened last week, or last year. It is similar to the English use of 'yesterday' in this respect. gwëbeng is sometimes used in the sense of 'now', or 'in these days' in contrast to the past or future. It is also used with the suffix ko to mean 'very recently, just a moment ago'. Occasionally this suffix is also found with pehi in pehiko meaning 'very shortly, in a moment', but this is apparently marginal usage and is usually cause for amusement. The intensifier rot 'very' may be used with most of these terms also, as Girard points out, as for example wirek rot 'long, long ago', pehi rot 'much later today'.

I have found it difficult to identify the forms which are transcribed on page 165 as iakr, lakr. It may be that they represent the form rëk mentioned above, but this is not certain.

The day itself is also divided into different parts by the Buang, and these are listed in Table VII.

TABLE VII

monbuk	morning
nyëg vuheng	midday
sehuk (sën)	afternoon, evening
raggita	late evening
buk	night
buk vuheng	the middle of the night
kökrëëh su naba wan	(rooster cry first time) cockcrow - usually about 3 a.m.
nyëg heng	(place light) dawn or just before
rangah	light, daylight
malakenu	(face dark) darkness

I have used the term nyëg for sun in the table since that is the word used in Mapos. nyëg also means 'place, village', and this is its basic meaning. In Mapos it has fallen together with the meaning 'sun', and the term hes 'sun', used in other villages, has dropped out of use. This probably arises originally because of name taboos (see Hooley 1972).

162

In Mapos, nyëg occurs in its usage for 'place' in such expressions as

nyëg gebus   'haunted place, place of the spirits'
nyëg meris   'empty or uninhabited place' (See Girard
                                                        p. 167)

In its usage for 'sun' it occurs in

nyëg (mala) verup   'sunrise'
nyëg vuheng (atov)   'midday'
nyëg luk ya   'the sun has gone down'

Girard also gives the example (p. 167) nyëg(mala) verup or rak 'sunrise'. But in saying the second means 'cut', she is confusing two verbs rak 'up' and rah 'cut', the potential forms of which are jak and gerah respectively.

On page 166 Girard discusses the use of the term kenu for darkness and relates it to fear of the dead. It is not necessary to go to these lengths to explain the different ways the word is used and in my experience native speakers do not link the concepts. kenu, which occurs in expressions such as (nyëg/hes) mala kenu lok 'it has become dark', has a wide range of meaning. It includes such areas as 'shadow', 'shade', 'image', 'map', 'photo', 'personal spirit', 'ancestors beyond great grandparents'. Its meaning in expressions like malakenu is that of 'darkness' or 'shadow' and, if anything, refers to the fact that the sun, nyëg mala, is in shadow or darkness.

For counting the passage of time, two words are used for day:
buk   . 'night'
huk   'work, garden'
e.g. buk luu   'two days'
     huk ti   'one day'

There were no original terms for the days of the week. After contact with western civilization, Buangs became familiar with the seven day cycle, and began to identify the individual days. The first method of doing this is given in Table VIII.

163

TABLE VIII

huk ti	Monday
huk luu	Tuesday
huk löö	Wednesday
huk luubeluu	Thursday
buatov	Friday
teveng perurek	Saturday (work one-only)
soda	Sunday

That is, the days were counted in terms of the work days in the week followed by Sunday. Saturday had a special term, because by the time they reached that day there was only one day left to count before Sunday, and that is what it was called. This reflects the fact that the idea of measuring time in terms of weeks was introduced by the Lutheran Mission evangelists and teachers from the coast. It also reflects the fact that the mission established its first post at the village of Wij[4], and the term used for work or garden in that village is teveng. This word was preserved in the term for Saturday, although it did not persist in the other days of the week. The term for Saturday is rarely heard these days, and in fact it is becoming more and more common to use the English names for most days of the week.

Mission influence is also reflected in the use of the terms soda for 'week' as well as for 'Sunday'. This is sometimes abbreviated to da when referring to 'week'.

soda luu	'two weeks'
da ti	'one week'

The Buang did have terms for longer periods of natural time. kwev 'moon' is used for month, as might be expected, and ta is used for 'year'. In the upper villages ngebek is used for 'year' instead of ta, and this is an alternative form heard often in Mapos also. ta or ngebek presumably meant a complete annual cycle of planting and harvesting. The times for such activities were judged by certain recurrent annual events such as the movements of the sun and moon with

with respect to one another and to Mount Sengol on the west side of the valley.

There were certain times of the year recognized as being 'right' for different purposes, and the older leaders could tell where the sun and moon would be with respect to the mountain at these times.

The most important crop traditionally has been the yam, and its cultivation was surrounded by considerable ritual and tradition. The time of harvesting the yam was associated with the yam leaves turning yellow and the crying of the purpur, a small migratory bird which reappears each year about March. As Girard points out, the Central Buang area lies just about on the border where the break in the different seasons falls, so although the normal weather pattern is the same as for Lae, with the wet season from June to August, it is not quite as clearcut as in some parts of the country. Quite a bit of rain, usually in the form of thunderstorms, often falls in the December-March period also. The Mapos climate contrasts with that of Mumeng, the sub-provincial headquarters only 15 miles away to the southwest.

7.   Life Cycles and Kinship

Girard says (p. 169) that the periods of life are classified according to the person's growth stages and she lists some of these periods. A fuller listing follows in Table IX.

hurmahen is the general word for 'child, children' with mahen meaning 'small'. The term hur is used today for servants or workers employed by someone else (e.g. bebuum yi hur 'white man's employees'). It relates to the traditional social order, where junior members of the family (or society) had obligations to work for and help their seniors. In turn they were dependent on these senior members for help in time of need - if they were attacked, had to find the resources to pay for a bride, and so on.

TABLE IX

hurmahen nikŏk	a newborn baby
hurmahen	child
(hur) magëm	unmarried youth
avëh avŏ	unmarried girl
maluh	man
avëh	woman
maluh bu	older unmarried man
avëh bu	older unmarried woman
mehŏ hib/atov	adult or older male
avëh hib/atov	adult or older female
mehŏ bŏp	big (important) man
avëh bŏp	big (important) woman
ggev	leader

The term <u>hurmahen nikŏk</u> refers to a newborn or young baby -
certainly to one still unable to walk. <u>nikŏk</u> might be glossed as
'appearance, red/blood'. Since <u>kŏk</u> is used for both 'blood' and 'red',
it could refer either to the blood covering a newborn infant, or to
the fact that babies are pale or pink (red) when they are born.

The term <u>magëm</u> and <u>avŏ</u> are used for young men and women after
puberty, and usually up to the time of the birth of their first
offspring.

<u>hib</u> and <u>atov</u> are used somewhat interchangeably, the distinction
being that <u>hib</u> seems to connote greater wisdom or importance, and
<u>atov</u> is the more general term for old age; but there do not appear to
be any firm rules.

Girard also relates time to kin relations. She says (p. 169)
"The Buang places all the living or dead people of his group in
generations set out one above the other; and places them in
relationship to himself." Again on the same page she says, "To locate
an event in the distant past, it is put for example in the period of
the <u>taba</u> or of the <u>mbu</u>, which obviously does not permit a precise
dating but does have the advantage of being independent of the
hazards to which indivudal lives are subject." She gives a limited

166

listing of kin terms on page 170 but a fuller treatment appears below in Table X.

The Buang use an extended family system composed of degwa (see Sankoff (1972) for a description of the nature and significance of degwa). Siblings have different terms depending on whether they are the same or opposite sex but the common differentiation in many Papua New Guinea languages for older and younger sibling is not used. The function of this is admirably cared for by the family position naming system referred to above.

TABLE X

nalu	child	
ama	father	
ata	mother	
bu	grandparent/grandchild	(Girard mbu)
tava	greatgrandparent/greatgrandchild	(Girard taba)
kenu	spirit, shade, shadow, image, ancestors beyond tava	
degwa	base, ancestor, clan	
dobahë	(ground stomach), original ancestor	
keriing	rock paintings, legends, culture heroes	
ari	sibling - same sex	
maluhnö	sibling - opposite sex (of female)	
avëhno	sibling - opposite sex (of male)	

(The affinal relationships are listed in Table XI.)

All paternal uncles and aunts and maternal aunts are referred to as 'fathers' and 'mothers' respectively, while their offspring are called 'brothers' and 'sisters'. The maternal uncles were in a special relationship taking considerable responsibility for training. The term for the maternal uncle is mewa and the mewa's wife is gwenö, while his children are referred to as gadë. This latter term is now often used in a broader sense to denote a looser relationship, as indeed is ari 'brother', e.g. hil gadëd veroo 'our white cousins'. Another term nipapu is used for relatives in distant villages whose kin relationship is attenuated but still recognized. Children of

167

brothers and also of <u>gadë</u> all become <u>nalu</u> again.

As in most Papua New Guinea societies, the in-law relationship
is a special one and people in this category are not allowed to use
the 'ground' name (see Hooley 1972) of their in-laws. A person will
sometimes refer to his mother-in-law as <u>savëh böp</u> or <u>savëh atov</u> 'my
big woman', which is intended as a term of respect.

TABLE XI

regga	husband
venë	wife
ggen	father-in-law/son-in-law
ggen (avëh)/ avëh böp/avëh atov	mother-in-law/daughter-in-law
ves	wife's brother/brother's wife (of female) husband's sister/sister's husband (of male)
ari avëh	brother's wife/wife's sister
ari maluh	sister's husband/husband's brother
ala ngwë	husband's brother's wife/wife's sister's husband

8.   Conclusion

I do not want to discuss in any detail the conclusions and
implications which Girard draws from her data, except to say that
some of her observations seem to be rather speculative, unless
considerable changes have occurred through contact with western
civilization since her visit. My purpose in writing the paper has
been rather to draw together the data which she presented in part in
order to give a fuller and more accurate description than she was
able to do because of her limited field trip.

In one or two places in her paper she does seem to hint that
the Buang language shows a paucity of vocabulary and is rather
primitive in structure. For example, she says, (p. 165), "In this
oral language, the words which are made up of the unrolling sounds
by which ideas are expressed are usually only simple roots, carrying
no indication of number, gender, or tense. They suggest rather than
describe." And again on p. 173, "One of the very striking

168

characteristics which the poverty of vocabulary in this domain
foreshadows is the difficulty of envisaging the future." It is true
that the Buang culture never found it necessary to measure long
periods of time, past or future, with any degree of accuracy; but the
language is nevertheless perfectly well developed and capable of
dealing with anything which falls within the area of interest or
concern of the society or its members. I have found no difficulty
in talking with Buangs about any necessary subject, and the language
is perfectly capable of presenting a well ordered argument. It is
certainly not primitive or lacking in structure. It is capable of
borrowing or making up new forms to cover vocabulary items and
processes introduced into the culture, in the same way that English
or any other language does.

NOTES

1. Translations from the French of Girard's paper into English have been made by the present writer.

2. It might be more accurate to call it a 3/20 system, because only the first three numerals are discrete, unanalysable terms.

3. Data for Mangga Buang was supplied by my colleagues, Joan Healey and Roma Hardwick, and is in the orthography they are using.

4. Or Dawong as it was called by the colonial administration.

REFERENCES

Girard, F. 1968-9. 'Les Notions de Nombre et de Temps Chez les Buang de Nouvelle-Guinée', L'Ethnographie. Revue da la Société d'Ethnographie de Paris, 160-178.

Hooley, B.A. 1970. Mapos Buang - Territory of New Guinea. Ph.D. Thesis. University of Pennsylvania.

_____. 1972. 'The Buang Naming System', Journal of the Polynesian Society 81:500-506.

_____. 1976. 'Orthography Problems in Central Buang', Kivung 7:82-90.

Sankoff, G. 1972. 'Cognative Variability and New Guinea Social Organization: The Buang Dgwa', American Anthropologist 74, 3:555-566.