BORROWING IN AUSTRONESIAN AND NON-AUSTRONESIAN LANGUAGES OF COASTAL SOUTH-EAST MAINLAND PAPUA NEW GUINEA

Tom Dutton

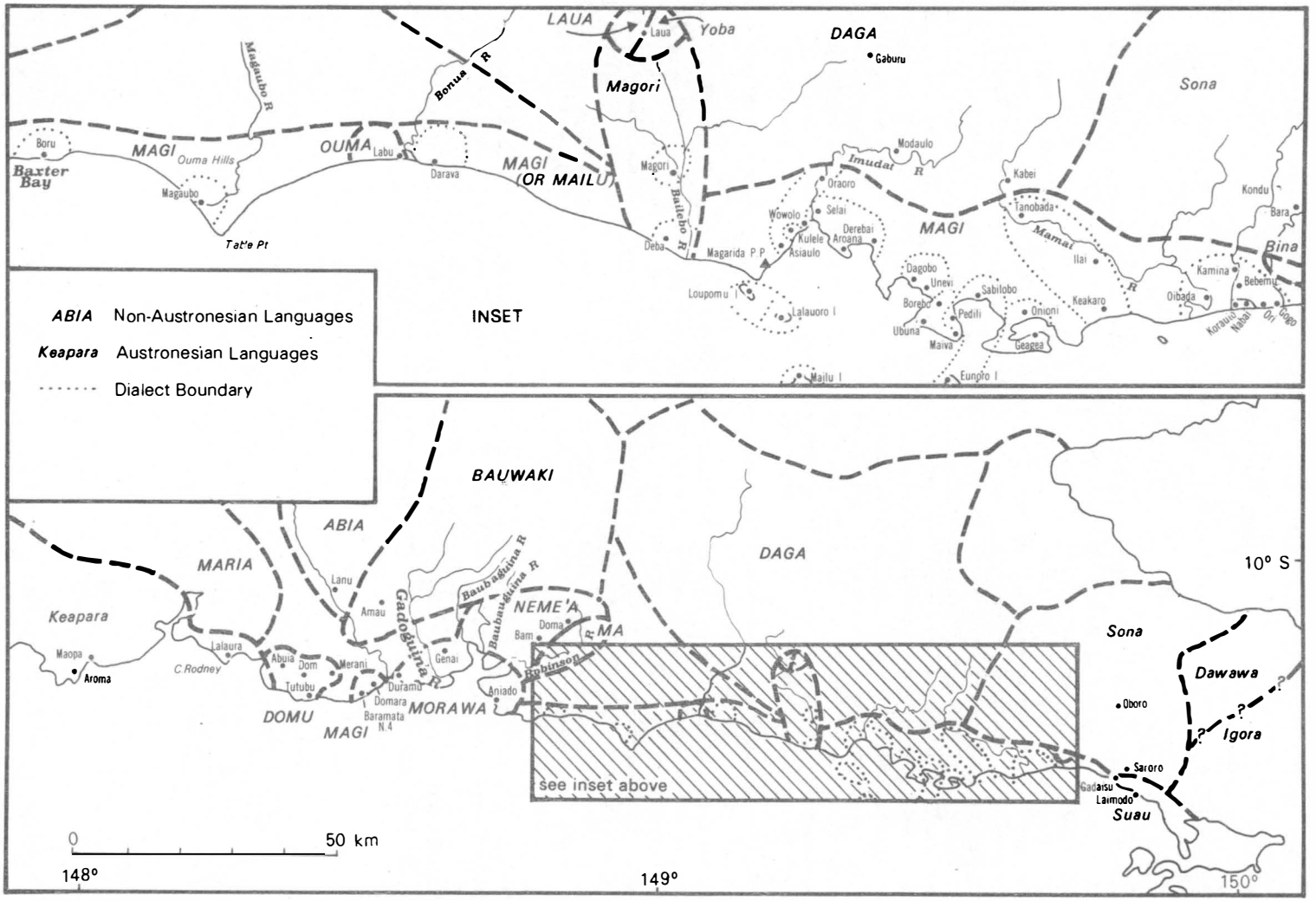
1. INTRODUCTION

The coastal area of the mainland of south-east Papua New Guinea is inhabited by different groups of people speaking one or more of two distinct language types, Austronesian (AN) and non-Austronesian (NAN). The NAN languages that we are interested in in this paper belong to one family, the Mailuan Family, whose speakers occupy the coastal area between Cape Rodney in the west and Gadaisu in Orangerie Bay in the east and inland of Cloudy Bay as far as the Keveri Valley — see Map 1. These people are in contact with speakers of the AN Keapara language on their western boundary, with those of the AN Suau language on their eastern boundary, and in betwixt these two points with the few remaining speakers of several scattered AN languages, Ouma, Yoba, Magori and Bina. In addition one group of speakers of one of the member languages of the Mailuan Family, notably the Mailu Islanders, were, at the time of first European contact, and still are active and aggressive long-distance traders whose principal points of contact were and still are with Aroma and Maopa dialect speakers of the Keapara language on the west and with Suau and other AN speakers of the present-day Milne Bay Province of Papua New Guinea farther east.

Little wonder then that many of these languages contain borrowings from one another's languages. Indeed several of them contain so much basic vocabulary in common that early observers can hardly be blamed for classifying one in particular, Magori, as an aberrant form of another, Magi, when in reality they are genetically quite unrelated (Dutton 1976c). However, although the nature, distribution and use of these languages is now better understood and preliminary studies have shown that the loaning and borrowing is confined, for the most part, to the Mailuan Family languages and Ouma, Bina, Yoba and Magori (Dutton 1971b; 1976c) the question of who borrowed what from whom precisely, and when, has not been investigated seriously, although it has long been proposed (Thomson 1975a:44,51).

It is the purpose of this paper to rectify this situation and to begin such an investigation by focussing on Ouma and Magori, two of the four Oumic languages which belong to different subgroups of those languages and for which the best materials are available. The results of this investigation will then be considered briefly to see what implications they have for the prehistory of the area.

Amran Halim, Lois Carrington and S.A. Wurm, eds *Papers from the Third International Conference on Austronesian Linguistics,* vol.1: *Currents in Oceanic*, 109-177. *Pacific Linguistics,* C-74, 1982.



Map 1: Sketch map of languages of coastal south-east mainland Papua New Guinea

2. THE PRESENT-DAY LINGUISTIC SCENE IN MORE DETAIL

2.1. The Mailuan family

The Mailuan Family consists of six or seven languages depending on whether two different sets of communalects in one area are regarded as rather divergent dialects of a single language or as separate languages. In this study the latter position is adopted so that the family will be taken as consisting of the following seven languages whose numbers of speakers are approximately as shown:[1,2]

1.	Domu	500
2.	Morawa	800
3.	Ma	600
4.	Neme'a	200
5.	Bauwaki	400
6.	Magi (or Mailu)	5,500
7.	Laua	1?

Village lists and old names used to refer to parts or wholes of these languages are given in Dutton (1973) and Thomson (1975a), and present-day villages are shown on Map 1.

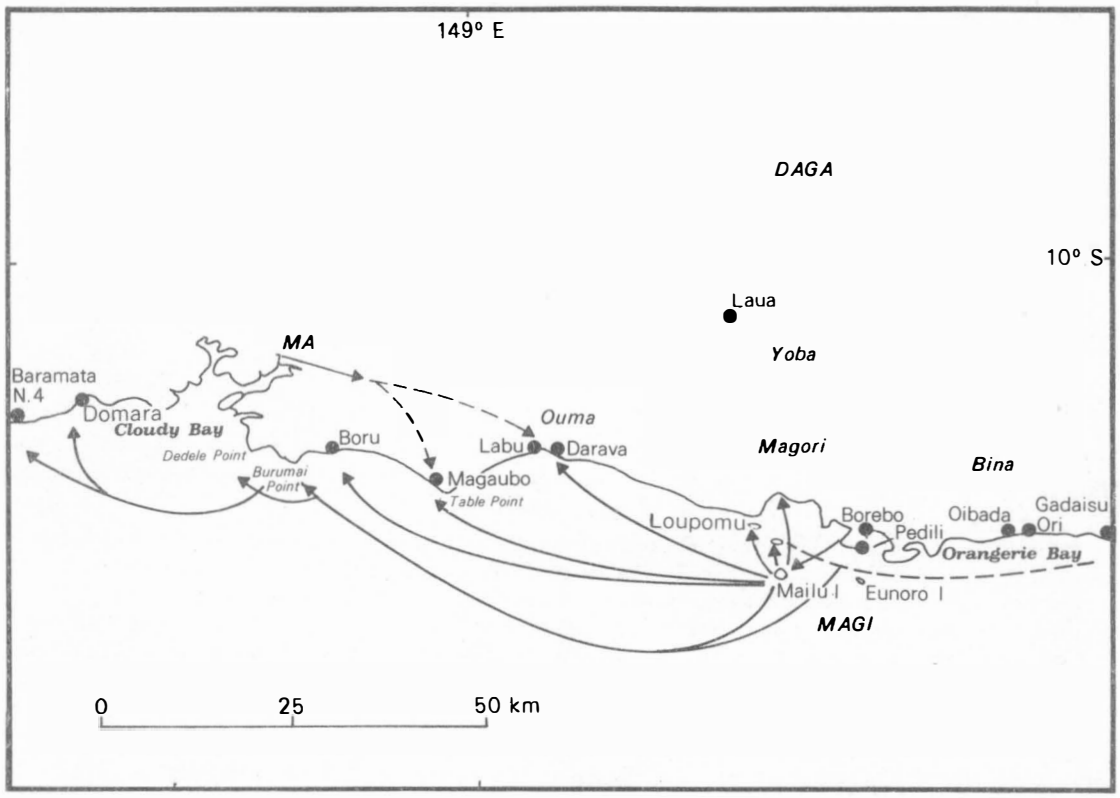
These languages share between approximately 50% and 60% basic vocabulary with each other, with the higher percentages occurring between neighbouring languages. However these figures cannot be regarded as indicating the 'true' relationship between these languages as the calculations used to arrive at those percentages are based on numbers of apparent cognates which include many borrowings from different sources. A better picture can only be obtained after the results of this paper are taken into account.

Magi (or Mailu as it is sometimes called) is the largest and most prestigious language of the family and is the only one which has been studied in any detail, and so is the only one for which there is anything other than basic vocabulary lists available. As already indicated it is spoken by about 5,500 people who inhabit some 120 kilometres of coastline between Sandbank Bay in the west and Orangerie Bay in the east. It consists of the following nine dialects (from west to east) which are defined and discussed by Thomson (1975a):

1.	Domara	900
2.	Darava	276
3.	Island	1,985
4.	Asiaoro	382
5.	Delebai	379
6.	Borebo	758
7.	Geagea	173
8.	Ilai	185
9.	Baibara	233

These dialects are all similar to each other and differ most in basic vocabulary chiefly "as the result of a greater degree of borrowing from AN languages" (Thomson 1975a:56). There are some minor grammatical differences between them, however, which group them into two sets: those east of Amazon Bay and including the last four listed above, which are often referred to as the Varo or Maisi dialects, and the remainder, as shown on the accompanying Map 1.

The Island dialect is the largest and most prestigious and is the source of those spoken on the nearby islands of Laluoro and Loupomu and on the mainland opposite and to the west, as well as at Gadaisu and Laimodo in Orangerie Bay where there has been intermarriage between Magi speakers and Suau speakers (Thomson 1975a:43) as Island dialect speakers moved out to found new colonies in the past few centuries. See Map 2. From the point of view of this paper the Island dialect



Map 2: Recent known prehistorical movements of Magi and other speakers

is also the most important as it is the one that has been best recorded as well as being the one spoken by Mailu Islanders, who are the potters and long-distance traders of the area.

2.2. The AN languages Ouma, Magori, Yoba and Bina

As already noted Ouma, Magori, Yoba and Bina are the scattered remnants of what were apparently formerly much larger AN language speaking groups.

Ouma was formerly the language spoken in villages of the same name reported by early Government officers and missionaries as being several miles inland up the Bonua River that flows into Table Bay but now represented by only four speakers living in the small village of Labu (51) on the coast near the mouth of that river. Nearby was, and still is, Magori, spoken in the two villages of Magori (124) and Deba (39) situated inland and on the coast beside the lower reaches of the Bailebo River at the eastern end of Table Bay. Inland of Magori was Yoba formerly spoken along the middle reaches of the Bailebo River just mentioned but now only remembered by two speakers, a man, Aruba Inabe, and his mother, Bo'odi, at present living in Laua village (31) in the same area. Much farther east was Bina inland of the western end of Orangerie Bay. Today the only surviving speakers of this language are an old man, Tobi Koakoa, married into and living at Nabai (49), and his sister living at Gogosiba (56), both Magi villages in Orangerie Bay.

Speakers of all four languages are also fluent in Magi, the dominant (socially and economically) language in the area. Many also know and use other languages such as Laua and Daga spoken in the same villages and inland.

These languages, together with other AN languages of what is now called the Central Province of Papua New Guinea, belong to a single closed subgroup of Oceanic and derive from a single common ancestor, which was originally called Proto-Central District (Pawley 1975), but which has since become better known as Proto-Central Papuan (PCP). There is some disagreement amongst linguists interested in this subgroup, however, as to whether the four Oumic languages form a separate subgroup within this family and as to just what their relationships are with other members of the family (Dutton 1976c; Lynch 1978; Ross 1979a). We do not need to pursue this debate here, however, as all we need to know for present purposes is what the phonological correspondences between the separate languages are, and/or how established, or suggested, reconstructed proto-sounds are reflected in these languages. For present purposes also we will assume as Ross (1979a) and I (Dutton 1976) have argued elsewhere, that Ouma and Magori belong to different lower-order subgroups within an Oumic subgroup, and have therefore had separate histories for the past few hundred years.

3. METHODS AND MATERIALS

3.1. Data

The following study is based on data obtained from the following varied, and for the most part unpublished, sources:

(a) short basic vocabulary lists of usually fewer than 150 items collected by early government officers and published in the *Annual reports* for British New Guinea or Papua. See for example Grist (1926), Strong (1911; 1919a,b,c,d). Some of these were later reproduced in Ray (1938) and also used in Capell (1943);

(b) longer basic vocabulary lists of usually between 200 and 300 items collected more recently by missionaries and/or others. Many of these are still only available in manuscript form and are of limited distribution. These include Abel (1980), Dutton (1968, 1969, 1980), Saville (1935a,b) and Thomson (1971). Some of these, or parts of them, have been published, or exist in mimeographed form, notably Cooper (1975), Dutton (1970; 1976c), Pawley (1975), Ross (1979a,b), Saville (1935a,b), and Thomson (1975a);

(c) fuller vocabularies in the AN languages Motu, Sinagoro (Balawaia dialect), and Keapara (Hula dialect) which are to be found in Kolia (1975), Short (1939), and Lister-Turner and Clark (n.d.).

These data are of varying reliability and value. The early materials are naturally the most valuable historically as they were collected before the sociolinguistic situation of the immediate precontact period was disturbed by the relocation (and often combination) of communities to suit the administrative needs of the Australian colonial period, and before Police Motu, the lingua franca of Papua, had spread into every village. There is always the problem with these materials, however, of not knowing what exactly they represent and whether they were accurately recorded as no information is supplied about speakers from whom they were obtained nor about the manner of collection. In these circumstances we have to assume they are representative of the speech communities nominated by the collectors and reliably recorded except where it is possible to detect errors by comparison with later materials.[3]

The later materials were collected using Magi and/or Police Motu as the eliciting language. Besides being from a later period they suffer from other defects.

As far as the Oumic languages are concerned Bina, Yoba and Ouma are the least reliably recorded (and in that order) because they are moribund and will be dead when the few remaining speakers pass on. Because these languages are no longer functional and their speakers are bilingual in Magi and use that language (or more particularly, that dialect of it in which they live) for everyday living, the reliability of the materials from these sources is decreased. Ouma is the most reliable of the set but here too we have to expect that contact with modern Magi may well be, and is most likely, interfering with, or has already interfered with, earlier borrowings, either by replacing old Ouma items, or by modifying old Magi forms. Magori is better off but there too the speakers are fluent in Magi (Island dialect) and this is interfering with the phonology of the language, so that, for example, it is not yet clear whether glottal stop is a phoneme in Magori or not.

On the NAN side the Magi materials are the most reliable, because the language has been well studied and recorded, Laua the least, and the others somewhere in between. In the Magi case we do have to remember, however, that because of name avoidance and word taboo associated with kinship relationships the distribution of words (inherited and borrowed) within dialects of Magi may be disturbed (Thomson 1975a:43).[4]

The Laua materials are the least reliable because at the time of collection the only speaker of it for whom it was his first language was not available and so the data were collected from two others for whom it was, in one case, that person's second or third language, and in the other that person's fourth or fifth language. The data from the other Mailuan languages are as reliable as survey data usually are.

Thus it is impossible to be sure that the data available and used for this study reflect the historical events accurately, or perhaps better, that we will be able to interpret them correctly. Given that they are the best we have available, however, and provided they are approached cautiously, they can probably be used to indicate historical trends if nothing better.

3.1. Assumptions and general principles

Apart from the assumptions and general principles that underly comparative and historical linguistics generally the following particular ones underly this study:

1) items of similar form and meaning occurring in Oumic and Mailuan languages must, by virtue of the designation or definition of these languages as AN and NAN respectively, be borrowings. Consequently when we find such items the task becomes one of determining the origin, and hence, direction of borrowing, of them. In practice items are determined as being either AN or NAN in origin according to whether they reflect established or suggested reconstructions in these two domains;

2) initially a borrowing language will only maintain the distinctions in sounds of the language borrowed from as long as they coincide with its own: those that do not will be modified to suit the borrower's own sound system.[5] Over time, however, and particularly if borrowing continues on a large scale the borrowing language may develop new sounds to incorporate borrowed ones. In this case sounds (and therefore words in which they occur) may only be suspected of being borrowed if there is something unusual about their distribution in words in individual languages. In practice the sound systems of relevant languages are compared in order to determine which sounds are diagnostic in identifying (recent) borrowings in the different languages. This is done herein in Chart 1 which is derived from the descriptions in Appendices 2 and 3. By studying this chart it will be noted that all the languages have similar ranges of sounds and that the only diagnostic sounds for detecting borrowings are those which correspond to absence (marked #) in other

Chart 1: Summary display of synchronic sound of Mailuan and Oumic languages

Language	p/f	t/s	k	'	b	d	g	h	m	n	l/r	v/w	y	i	e	a	o	u
Magi	+	+	+	+	+	+	+	#	+	+	+	+	+	+	+	+	+	+
Domu	+	+	+*	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Morawa	+	+	+*	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ma	+	+	+*	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Neme'a	+	+	+*	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Bauwaki	+	+	+*	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Laua	+	+	#	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Magori	+	+	+	+	+	+	+	#	+	+	+	+	#	+	+	+	+	+
Ouma	+	+	+	+	+	+	+	+	+	+	+	+	#	+	+	+	+	+

*Not medially

Chart 2: Diagnostic reflexes of proto-sounds in Mailuan and Oumic languages

Mailuan								Oumic				
PMF	MGI	DOM	MOR	MA	NEM	BAU	LAU	POC/PCP	OUM	MAG	YOB	BIN
*t	t	h	s	s	h	s	h	*t	t(h)	t	t	t
*r	r	n	n	r	r	r	r	*s,ns/D	r	k	'	'
*k	k	k	k	k	k	k	k	*l,y/R	ø/(y)	y	y	y
	'	'	'	'	'	'	g	*#/k	ø,k	k	k	k
	ø	ø	ø	ø	ø	ø	ø	*k,q/q	ø	k	'	'
							(h)	*#/kw	ø	ø	k	k
*w	v	w	w	w	w	w	h,v?					
*y	?	y	n,l	y	y	y	?					

languages, notably, h in Magi and Magori, k in Laua, medial k in all languages except Magi, and perhaps y in Ouma and Magori. Clearly there are not many and those few uncertain. This does not mean that we have little hope of detecting borrowings for we need to remember that just because these languages have similar sound systems they do not reflect proto-forms in the same way and therefore it is possible to identify sources by looking at the sounds in the various forms of apparent cognates available. Thus, for example, Morawa and Domu reflect PMF *r as n medially and not r as other languages do so that if two cognates occur in the Oumic languages one with r and one with n the one with n most probably comes from one of the two languages Morawa and Domu in which n occurs in inherited words. The proto-sounds and reflexes that are relevant in this regard in the two sets of languages can be obtained from Appendices 1 and 2 but which are set out again in Chart 2 for convenience;

3) in attempting to identify sources we can only work from what is available in the data (at least initially, and until we begin to build up a picture of the borrowing pattern). That is, where there is identity in form across the Oumic-Mailuan boundary we have to assume that the form on one side was borrowed directly from the language with the same form on the other. We do not assume that both borrowed the form from a third party for which there is no evidence, even though, of course, there is always that possibility, since any form can obviously be replaced in the right circumstances. On the other hand where there is non-identity in form then we have to allow for the possibility, and probability, that one of these has come from a language where no present-day cognate exists (i.e. which may have had that form but it has been replaced). Take, for example, words like the following for *'garden'*. In Magi this is madava while in Magori it is mado. Assuming these two are cognate, it is clear that since we have only one form in the Mailuan languages which is not identical to the Magori form, and since we have no other comparative evidence to go on, we are forced, in cases like these, to allow that the Magori form (assuming that the cognates are NAN in origin) may well have come from a source other than Magi. The alternative is to claim that there has been an idiosyncratic sound change in Magori, which is of about the same probability as claiming that it came from another source. Without additional evidence these cases are not useful for historical reconstruction.

Finally, note also in this regard that where there are no data available in a particular language we have to allow of the possibility that the languages so indicated may be a source, since negative evidence is not evidence that that language was not a source, even though on other evidence it is not very probable. See for example, *'joke'* in section 4. below;

4) languages change through time and no situation is static. We should expect therefore that the evidence will be stratified and that all the vocabulary (since that is what we have to work with at this point) will not necessarily have been borrowed at the same time. There is no way of predicting in advance to what historical level a particular item belongs, or even necessarily of spotting it, except in particular cases where sound changes may have intervened;

5) 'inherited' is a relative term. If borrowings are old it may not be possible to detect them because if an item was borrowed before the present-day daughter languages split off from their ancestors then that word will undergo sound changes like any other inherited one and will go undetected as a borrowing;

6) people borrow from one another according to the advantages (prestige, economic, power) that they see in knowing and using parts, or all, of the language of those they borrow from. Thus if A borrows from B he does so with some purpose in mind (though not necessarily consciously expressed). So if we know what A borrows from B we can reconstruct with varying degrees of confidence, what it was that B had that A was interested in or did not have. We must be careful, however, not to assume that negative evidence is taken as evidence of an event. If something does

not occur it may be either because A was not interested in it or that the vocabulary item A used to refer to it at the time he borrowed it has since been replaced. In short we have to keep in mind that we will never be able to say we have reconstructed the full story because we can never be sure that we have all the necessary evidence.

3.2.2. Application of assumptions and general principles

The process of analysing and interpreting the available data (or that portion of it that can be used) is a cyclic one, requiring a number of passes over the data refining the results with the object of developing a hypothesis that accounts for as much of the data as simply as possible. The following description sets out the steps by which the results upon which the hypothesis presented later is established.

STEP 1

Initially the available materials were searched for apparent cognates in the relevant languages. These were arrayed on sheets of the kind shown in section 4. with only one set of apparent cognates per sheet, together with a marking system devised to show the range and type of data available. When doublets or triplets occur these are identified by using subscripts on the English reference head word, e.g. *'father*$_1$*'* and *'father*$_2$*'*, *'hot*$_1$*'* and *'hot*$_2$*'*.

STEP 2

The sets established in step 1 above were then scanned and all but the most promising-looking cases (that is, those with the most complete evidence)[6] and within those in which the Ouma and Magori forms were different or showed some variation in form[7] were put aside for later consideration and interpretation in the light of the results obtained by taking the best cases first. Altogether, all but about 75 cases out of over 400 were excluded in this way. The remaining 75 cases were then studied in some detail and divided into two sets: those containing items (sets of cognate forms) which on inspection looked as if they were AN in origin and those which were not. In doing this decisions about the AN-ness or otherwise of the items were made by appealing to the various sets of reconstructions that have been suggested or established for AN languages in general (Wurm & Wilson 1975) and those of Central Papua in particular (Ross 1979a,b), and to the derivational sound laws for languages of Central Papuan AN languages as tentatively established and discussed in Pawley (1975), Lynch (1978), and Ross (1979a,b), and represented by the chart given in Appendix 1.[8]

In presenting the results of these decisions later I cite Proto-Central Papuan (PCP) and Proto-Oceanic (POC) (or reconstructions that have been suggested for specific subgroups of Oceanic if available) in preference to Proto-Eastern Oceanic (PEO) ones, in preference to Proto-Austronesian (PAN) ones, as this order reflects the ascending order of subgroups which include the relevant AN languages in question.

Where no appropriate reconstruction appears to have been suggested to date[9] decisions about the AN-ness of a form were made on the following basis:

> If a form in Oumic languages has cognates of the right form (i.e. in accord with established sound laws) in other AN languages of Central Papua and/or in Suau (in dialects other than, or as well as that containing Gadaisu and Laimodo communalects)[10] it is regarded as AN, and a reconstruction suggested and double starred.

On the other hand if a form for which no reconstruction is available has cognates only in Oumic languages (e.g. and perhaps in Suau dialect incorporating Gadaisu and Laimodo) then it is regarded as NAN in origin. Indeed it was further assumed, given results of earlier studies which show that Mailuan languages have borrowed very little from other NAN languages except in the border areas between this family and the Yareban one to the north and west,[11] that all words of (probable) NAN origin are

of Mailuan origin (and until it can be shown by comparison farther afield that they should not be so regarded), and a reconstruction, based on the sound correspondences for Mailuan languages set out in Appendix 2, suggested.

In a few cases (e.g. *'garden', 'sweat', 'sweet potato'*) where the evidence is limited to one cognate in one of each of the Oumic and Mailuan languages, or where there is unpredictable variation between apparent cognates the source of the item is more in doubt than usual. In these cases the source is assigned according to the principles already outlined but question marked, and in one case (*'hair'*) no decision was made at all and the source was left indefinite. These cases are not discarded as useless, however, even though their probable origin cannot be assigned with as much confidence as others. They obviously still have value for showing contact between two specific groups of speakers irrespective of which way the borrowing has gone. That is, we distinguish between those cases which show source and direction of borrowing and those which only show contact, the latter being a restricted and less informative case of the former.

STEP 3

Once the items had been roughly sourced in the manner described in step 2 they were studied in more detail and expected reflexes compared with actual forms. In some cases earlier decisions about the status of the forms had to be revised. In others hypotheses of origin could be more clearly stated. For example, where there is no present-day cognate given in either Ouma or Magori but a form appearing in one of the Mailuan languages contains a reflex that could only have come from one of them, and not the other, the origin of that form can be assigned with confidence to the Oumic language with that reflex (e.g. *'jaw/chin', 'sun$_1$', 'sweat'*). A few other cases were put aside as not being sufficiently clear or useful to warrant inclusion in the final set of 'best' cases.

During this step it was also found that in a few cases there were different reflexes of the same proto-form in Oumic languages which according to the derivational and borrowing sound laws used must have come from different sources within the language groups being considered (e.g. *'woman's clothes', 'navel', 'old',* etc). In these cases both sources are listed and discussed although the reflexes themselves are not counted as separate items. These are not counted as in the listing given in section 4., as distinct from doublets which are.

STEP 4

The sixty 'best' cases remaining after the completion of step 3 were then studied in detail with a view to making hypotheses about the origin and direction of borrowing and/or in those few cases where sourcing was not possible, about the contact between the languages concerned. These hypotheses, together with accompanying justifications are recorded on the data sheets presented in the next section.

4. RESULTS

In this section the comparative data and hypotheses regarding the origin and direction of borrowing of items between Oumic and Mailuan languages and vice versa are presented. These cases represent the 'best' or clearest cases that have been arrived at after the application of the methods of analysis described above. They are arranged in alphabetical order according to the English referent head words used for ease of reference. Each sheet is also marked in the top right-hand corner in a self-evident way so that it can be rearranged into language-specific sets involving either Ouma (OUM) or Magori (MAG) as necessary.

In setting out the data and working with it the following other more specific conventions are used in addition to those that have already been indicated more generally above:

1) Languages, dialects of interest, and references to reconstructions are coded in the following way:

POC	Proto-Oceanic
POCGR(OC) etc	Codes used in Wurm and Wilson (1975)
PCP	Proto-Central Papuan
PCP (Ross)	PCP as reconstructed by Ross (1979a,b)
POM	Proto-Oumic
PMF	Proto-Mailuan (Family)
MTU	Motu
SIN	Sinagoro
KEA	Keapara
KEA (H)	Hula dialect of Keapara
KEA (A)	Aroma dialect of Keapara
KEA (W)	Wanigela dialect of Keapara
OUM	Ouma
MAG	Magori
MAG (M)	Magore dialect of Magori
MAG (D)	Deba dialect of Magori
YOB	Yoba
BIN	Bina
SUA	Suau
SUA (G)	Gadaisu communalect of Suau
SUA (L)	Laimodo communalect of Suau
SUA (K)	Konemaiva communalect of Suau
SUA (S)	Savaia communalect of Suau
SUA (Is)	Suau Island communalect of Suau
MGI	Magi
MGI (Is)	Island dialect of Magi
MGI (O)	Dialects of Magi other than the Island one
DOM	Domu
MOR	Morawa
MA	Ma
NEM	Neme'a
BAU	Bauwaki
LAU	Laua
DAG	Daga

2) Data are presented as they occur in the available sources and no attempt has been made to phonemicise them in accordance with the descriptions given in Appendices 2 and 3. There is thus variation between phonemic, subphonemic and phonetic renditions. This is not too serious in this case, however, as the phonologies of all languages are not complex;

3) Only apparent cognates are shown and where a language does not contain a relevant form in the available materials but has some other form this is indicated by a dot (or period). Where there is no evidence available at all for a given language this is indicated by a question mark. That is, a question mark signifies that we do not know whether an apparent cognate exists or not in the given language as there was nothing recorded for the given English item in the available data;

4) On both sides of the sheet the column 'Expected Reflex' is for displaying what the form of the established or suggested proto-form we are interested in should be if that form were reflected in the present-day languages. Where such a proto-form is reflected its expected present-day form is obtained by applying the sound laws given in Appendix 2 to the proto-form. As has already been pointed out these expected forms are important for determining whether a given form in the data is of

AN origin or not, as well as for suggesting the source of borrowed forms where there is no present-day cognate in the source language(s);

5) The section 'Borrowing Hypothesis' sets out in schematic form conclusions reached as to the origin of a form in either the AN or NAN language, or languages, under review, as well as to the direction of borrowing of that form in the respective language or languages. Arrows across the data are an additional display of the conclusions reached although it is not always possible to include all the various aspects of the hypothesis proposed. Full line arrows indicate the most probable sources and direction of borrowing; broken line ones indicate less probable ones. Note here also that all sourcing is based on linguistic evidence only. Social and other evidence are not relevant at this point and will only be taken into account in interpreting the evidence later. That is, we work from the linguistic evidence to history (since that is what we are trying to illuminate) and not vice versa;

6) In the section 'Justification' the conclusions reached in the 'Borrowing Hypothesis' section are justified. In this the simplifying shorthand expression 'proto-AN' or 'AN in origin' is used to indicate that the form is derived from some established or suggested reconstruction and is therefore not necessarily equivalent to Proto-Austronesian (PAN);

7) In proposed PMF reconstructions (as in Proto-AN ones) symbols in round brackets or parentheses indicate that evidence as to the presence or absence of that symbol is inconclusive. Two symbols separated by a comma in parentheses indicate that one or the other phoneme is to be reconstructed, but the evidence does not show which. A symbol in square brackets indicates that there is evidence for the reconstruction both with and without the phoneme and two symbols separated by a comma in square brackets indicate that the evidence points to both alternatives.

The data follow:

ITEM: *'bathe, wash'*

SUMMARY CONCLUSION: (AN→) NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	opuopu		MTU	.	
(O)	opuopu		SIN	.	
DOM	.	3			
MOR	.	2	KEA (H)	.	
MA	.	?	(A)	.	
NEM	.	1	(W)	.	
BAU	.		OUM	ofu	repu
LAU	?		YOB	'epu	'epu
DAG	.		MAG (M)	kebu	kepu
			(D)	?	
			BIN	'epu	'epu
			SUA (G)	yepuyepu	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

POM **Depu *'bathe, wash'*

Borrowing Hypothesis:

?AN in origin. Complex borrowing with sequence:

1. Oumic language → MF lg;
2. Sound change in MF lg;
3. MGI → OUM.

Justification:

The origin of these forms is unclear. However, given the variety of forms in Oumic languages which reflect (except for OUM) a suggested POM form **Depu, then the OUM form represents a reborrowing from MGI where the form presumably represents a changed form of an earlier borrowing from the Oumic languages. The alternative hypothesis that the Oumic forms all derive from MGI is much more elaborate and therefore less likely in that it involves unexplained sound changes in three of the Oumic languages. A third possibility is that MGI borrowed directly from OUM where ofu is unexplained. Irrespective of the 'true' origin of opuopu in MGI or ofu in OUM the correspondence between these two forms shows contact between MGI and OUM.

ITEM: *'betelnut'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.	oa(k,',ɸ)e	MTU	.	
(O)	.		SIN	.	
DOM	wa'e	wa(k,',ɸ)e			
MOR	wa'e	oa(k,',ɸ)e	KEA (H)	.	
MA	wa'e	oa(k,',ɸ)e	(A)	.	
NEM	wa'e	wa(k,',ɸ)e	(W)	.	
BAU	oake	oa(k,',ɸ)e	OUM	ua'e	
LAU	?	oahe	YOB	.	
DAG	?		MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *oake *'betelnut'*

Established Reconstruction(s):

No obvious ones.

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. DOM, MOR, MA, NEM, LAU? → OUM

Justification:

OUM ua'e is not the expected reflex of any suggested or established proto-AN reconstruction and because it does not have any apparent cognates in any other AN language, although it does with NAN MF languages, it must be a borrowing from one of those languages. The most likely source is one of DOM, MOR, MA, NEM and possibly LAU for which there is no evidence, because the OUM form corresponds best with the forms in those languages. BAU is excluded as the most probable source because of the k in oakɛ. The MF forms appear to derive from a proto-form *oake *'betelnut'*.

ITEM: *'buttocks'*

SUMMARY CONCLUSION: AN(Mag) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	boto		MTU	.	
(O)	boto		SIN	.	
DOM	(gon)poi		KEA (H)	.	
MOR	.		(A)	.	
MA	bo'i(na)		(W)	.	
NEM	.		OUM	.	buto
BAU	bore		YOB	.	buto
LAU	boto		MAG (M)	boto	buto
DAG	.		(D)	boto	buto
			BIN	.	buto
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

POCGR(OM,EB) *mputo *'anus'*

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

AN in origin. MAG → {MGI / LAU (or MAG → MGI → LAU)

Justification:

The MF language forms in MGI and LAU are obviously most similar to MAG boto and since the MAG form is a reflex of a proto-AN form the MF language ones must be AN in origin. The most probable source is MAG as OUM has another form, vea, which has no cognates elsewhere and is presumed to be an innovation or a replacement from some other source. It is not clear if MGI and LAU borrowed directly and independently from MAG or one from the other.

ITEM: *'(men's) clothes, perineal band, sihi'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	ivari	(k,',ø)evari	MTU	.	
(O)			SIN	.	
DOM	ɛwan	(k,',ø)ewani	KEA (H)	.	
MOR	ɛvan	(k,',ø)ewani	(A)	.	
MA	ɛwai	(k,',ø)ewari	(W)	.	
NEM	gɛwai	(k,',ø)ewari	OUM	.	
BAU	ɛvari	(k,',ø)ewari	YOB	ivari	
LAU	?	(k,g,ø)ehari	MAG (M)	uvari	
DAG			(D)	uvari	
			BIN	ivari	
			SUA (G)	ifari	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	?	

Proposed Reconstruction:

PMF *kevari *'perineal band, sihi'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI, MA, BAU, LAU? → MAG

Justification:

The MAG form uvari is not a reflex of any proto-AN form so must be a borrowing from MF languages. Although the initial vowel is unexplained in Maori the most likely source is one of MGI, MA, BAU and/or perhaps LAU. DOM and MOR are excluded as sources because of the medial n and NEM is excluded because of the initial g.

ITEM: *'(woman's) clothes, skirt, petticoat'*

SUMMARY CONCLUSION: { NAN → AN(Oum) / NAN → AN(Mag) }

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	barowo (Saville 1935) / baroa	baro[v](o,a)	MTU	.	
(O)	barowo	baro[v](o,a)	SIN	.	
DOM	.	bano[w](o,a)			
MOR	bora	bano[w](o,a)	KEA (H)	.	
MA	boro'o	baro[w](o,a)	(A)	.	
NEM	.	baro[w](o,a)	(W)	.	
BAU	.	baro[w](o,a)	OUM	baroa	
LAU	baroa	baro[h,v](o,a)	YOB	.	
DAG	.		MAG (M)	barowo	
			(D)	barowo	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	?	
			(Is)	.	

Proposed Reconstruction:

PMF *baro[v](o,a) *'(woman's) clothes, skirt, petticoat'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. Complex borrowing pattern.

1. MGI, LAU → OUM
2. MGI, MOR?, MA → MAG

Justification:

Assuming that these forms are not AN in origin then we are forced to assume that the OUM form is borrowed from either MGI or LAU and the MAG form is borrowed from one of the remaining MF languages, most probably MGI.

ITEM: *'cloud, sky'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	nogara	nogara	MTU	.	
(O)	.		SIN	.	
DOM	.	nogana			
MOR	.	nogana	KEA (H)	.	
MA	.	nogara	(A)	.	
NEM	.	nogara	(W)	.	
BAU	.	nogara	OUM	.	
LAU	nogara	nogara	YOB	.	
DAG	.		MAG (M)	nogara	
			(D)	nogara	
			BIN	nogara	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *nogara *'cloud'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI, LAU → MAG

Justification:

As the Magori forms are not reflexes of so far suggested or established proto-AN forms, they must be borrowed from MGI or LAU, the only candidates.

ITEM: *'coconut'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	'ama	(k,',ø)ama	MTU	.	
(O)			SIN	.	
DOM	.	(k,',ø)ama			
MOR	.	(k,',ø)ama	KEA (H)	.	
MA	?	(k,',ø)ama	(A)	.	
NEM	?	(k,',ø)ama	(W)	.	
BAU	?	(k,',ø)ama	OUM	.	
LAU	.	(k,g,ø)ama	YOB	?	
DAG	.		MAG (M)	ama	
			(D)	.	
			BIN	?	
			SUA (G)	?	
			(L)	?	
			(K)	?	
			(S)	?	
			(Is)	.	

Proposed Reconstruction:

PMF *kama *'coconut'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI, MA?, NEM?, BAU? → MAG

Justification:

As the MAG form is not a reflex of any so far suggested or established proto-AN one, it must be a borrowing from MGI, the only candidate, unless it is from one of MA, NEM, BAU for which there is no available evidence.

ITEM: *'cold (of a thing)'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	memea	meme(k,',ø)a	MTU	.	
(O)	meme'a	meme(k,',ø)a	SIN	.	
DOM	.	meme(k,',ø)			
MOR	.	meme(k,',ø)	KEA (H)	.	
MA	.	meme(k,',ø)	(A)	.	
NEM	.	meme(k,',ø)	(W)	.	
BAU	.	meme(k,',ø)	OUM	.	
LAU	.	memeha	YOB	.	
DAG	.		MAG (M)	memea	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *memeka *'cold'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI → MAG

Justification:

As the MAG form is not a reflex of a so far suggested or established proto-AN form, it must be a borrowing from MGI, the only candidate.

ITEM: *'cook, boil'*

SUMMARY CONCLUSION: (AN+) NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	daridari		MTU	.	
(O)			SIN	dari	dari
DOM	.				
MOR	dan		KEA (H)	.	
MA	dari		(A)	.	
NEM	dari		(W)	.	
BAU	.		OUM	dani	dari
LAU	?		YOB	daridari	dari
DAG	.		MAG (M)	dari	dari
			(D)	?	
			BIN	.	dari
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

PCP **dari *'cook'*

Borrowing Hypothesis:

AN in origin. Complex, old borrowing:

1. MAG, OUM? → MF lgs.
2. Sound change in MOR and then MOR → OUM.

Justification:

Given that the AN forms are derived from a PCP **dari *'cook'* (and the occurrence of dari in SIN suggests this) then the MF form must be AN in origin and borrowed most probably from one or more of the Oumic languages. However, this borrowing must have been some time ago as the MOR form has undergone the -r->-n- sound change of inherited words. Subsequently OUM borrowed dani from MOR replacing in the process the expected form dari or some other form that it must have had.

ITEM: *'cough'*

SUMMARY CONCLUSION: NAN → AN(Oum) / NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	oko	o(k,',ø)oro	MTU	.	
(O)			SIN	.	
DOM	oro	o(k,',ø)ono			
MOR	olo	o(k,',ø)ono	KEA (H)	.	
MA	oro	o(k,',ø)oro	(A)	.	
NEM	ero	o(k,',ø)oro	(W)	.	
BAU	ɛkoro	o(k,',ø)oro	OUM	oro	
LAU	horo	ohoro	YOB	.	
DAG	?		MAG (M)	oko	
			(D)	?	
			BIN	oko	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *okoro *'cough'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin.

1. DOM, MOR, MA, LAU? → OUM
2. MGI → MAG

Justification:

Given that these forms are NAN in origin then the present distribution of forms indicates complex borrowing patterns both within the Mailuan family and between it and OUM and MAG. Relevant to understanding this are the following facts:

(a) the DOM and MOR forms are not the expected reflexes of PMF *okoro; they should contain medial n, not medial r/l;

(b) LAU horo should be borrowed as horo also in OUM but the OUM form may be misrecorded. If it is horo and not oro as shown then LAU would be the most probable source.

ITEM: *'crooked'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	kiokio	(k,',ø)io²	MTU	.	
(O)	'io'io	(k,',ø)io²	SIN	.	
DOM	.	(k,',ø)io²			
MOR	'io'io	(k,',ø)io²	KEA (H)	.	
MA	.	(k,',ø)io²	(A)	.	
NEM	.	(k,',ø)io²	(W)	.	
BAU	.	(k,',ø)io²	OUM	kiokio'ai	
LAU	.	(k,g,ø)io²	YOB	kiokio	
DAG	?		MAG (M)	.	
			(D)	?	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)		

Proposed Reconstruction:

PMF *kiokio *'crooked'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MAG(Is) → OUM

Justification:

The OUM form can only be derived from MGI(Is) because of the k's in that form and since kiokio('ai) does not appear to be a reflex of any proto-AN form.

ITEM: *'cut (with knife)'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	pomupomu	pomu	MTU	.	
(O)	.	pomu	SIN	.	
DOM	pomu				
MOR	.	pomu	KEA (H)	.	
MA	.	pomu	(A)	.	
NEM	.	pomu	(W)	.	
BAU	.	pomu	OUM	.	
LAU	?	pomu	YOB	?	
DAG	.		MAG (M)	(giri)pomu	
			(D)	?	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *pomu *'cut'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI(Is), DOM, LAU? → MAG

Justification:

As the MAG form is not a reflex of a so far suggested or established proto-AN form, it must be a borrowing from either MGI(Is), DOM or LAU the only possible candidates.

ITEM: *'dog'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.	da(k,',ø)ari	MTU	.	
(O)	dari	da(k,',ø)ari	SIN	.	
DOM	.	da(k,',ø)ani			
MOR	.	da(k,',ø)ani	KEA (H)	.	
MA	da'al	da(k,',ø)ari	(A)	.	
NEM	.	da(k,',ø)ari	(W)	.	
BAU	.	da(k,',ø)ari	OUM	da'ari, dahari	
LAU	dahari	dahari	YOB	.	
DAG	.		MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *dakari *'dog'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI(O), MA, LAU → OUM

Justification:

As the OUM form is not a reflex of any so far suggested or established proto-AN form it must be a borrowing from one of MGI(O), MA, or LAU, with the latter two the most probable.

ITEM: *'elbow'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	igutu	igutu	MTU	.	
(O)	.		SIN	.	
DOM	.	iguhu			
MOR	.	igusu	KEA (H)	..	
MA	iguhu	igusu	(A)	.	
NEM	.	iguhu	(W)	.	
BAU	.	igu(s,k)u	OUM	.	
LAU	igisihi	iguhu	YOB	.	
DAG	?		MAG (M)	igutu	
			(D)	igutu	
			BIN	igutu	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *igutu *'elbow'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI → MAG

Justification:

As the MAG form is not a reflex of any so far suggested or established proto-AN form it must have been borrowed from some MF language where similar, if not identical forms exist. On this evidence MGI is the most likely candidate with the -i- in the MAG form being explained as an unexplained subsequent sound change judging by the BIN form which must have been borrowed from the same source.

ITEM: *'eye'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	ini	ini	MTU	.	
(O)	ini	ini	SIN	.	
DOM	nigaba	ini			
MOR	nigiba	ini	KEA (H)	.	
MA	ini	ini	(A)	.	
NEM	ni		(W)	.	
BAU	ni'aba	ini	OUM	.	
LAU	ini		YOB	.	
DAG	.		MAG (M)	ini	
			(D)	ini	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *ini(kaba) *'eye (ball)'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI, MA, LAU → MAG

Justification:

As the MAG form is not a reflex of any so far suggested or established proto-AN form it must be a borrowing from some MF language where identical and other similar forms occur. MGI, MA and LAU are the most probable candidates.

ITEM: *'father$_1$'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	abai	baba(k,',ɸ)i	MTU	.	
(O)			SIN	.	
DOM	baba, babai'i	baba(k,',ɸ)i			
MOR	aba'ai, abai'i	baba(k,',ɸ)i	KEA (H)	.	
MA	bo'i	baba(k,',ɸ)i	(A)	.	
NEM	babo	baba(k,',ɸ)i	(W)	.	
BAU	baba'e	baba(k,',ɸ)i	OUM	.	
LAU	.	baba(k,g,ɸ)i	YOB	.	
DAG	amboi		MAG (M)	abai	
			(D)	abai	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *babaki *'father'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. NGI, MOR → MAG

Justification:

As the MAG form is not derived from any so far suggested or established proto-AN form it must be a borrowing from some MF language where cognates are to be found. The most likely candidates are MGI and MOR although MGI is the strongest because its forms are identical with those in MAG.

ITEM: *'father$_2$'* SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is) (O)	abai	baba(k,',ø)i	MTU	.	
			SIN	.	
DOM	baba, babai'i	baba(k,',ø)i			
MOR	aba'ai, abai'i	baba(k,',ø)i	KEA (H)	.	
MA	bo'i	baba(k,',ø)i	(A)	.	
NEM	babo	baba(k,',ø)i	(W)	.	
BAU	baba'e	baba(k,',ø)i	OUM	baba	
LAU	.	baba(k,g,ø)i	YOB	.	
DAG	.		MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
PMF *babaki *'father'*

Established Reconstruction(s):
No obvious one(s).
Proposed Reconstruction:
Nil

Borrowing Hypothesis:
NAN in origin. {DOM, NEM, BAU} → OUM

Justification:
As OUM baba is not a reflex of any so far suggested or established proto-AN form it must be a borrowing from one of DOM, NEM, or BAU, with the first two as the most probable.

ITEM: *'fly(n)'* SUMMARY CONCLUSION: AN(Mag) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is) (O)	naga a		MTU	.	
			SIN	nagama	na(g,ǥ)ama
DOM	.				
MOR	.		KEA (H)	.	
MA	.		(A)	nakama	nakama
NEM	.		(W)	rakama	
BAU	.		OUM	.	nagama
LAU	nagama		YOB	.	nagama
DAG	.		MAG (M)	nagama	nagama
			(D)	nagama	
			BIN	.	nagama
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
Nil

Established Reconstruction(s):
PCP (Ross) *nagama *'fly(n)'*
Proposed Reconstruction:
Nil

Borrowing Hypothesis:
AN in origin. {MAG, SIN} → {MGI, LAU}

Justification:
Given that all these forms are AN in origin the most probable sources for the MGI and LAU forms are MAG and SIN. KEA is excluded as a source as medial k is not borrowed as g in MF languages.

ITEM: *'garden'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	madava	madava	MTU	.	
(O)			SIN	.	
DOM	.	madawa			
MOR	.	madawa	KEA (H)	.	
MA	.	madawa	(A)	.	
NEM	.	madawa	(W)	.	
BAU	.	madawa	OUM	.	
LAU	.	mada(h,v?)a	YOB	.	
DAG			MAG (M)	mado	
			(D)	mado	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *madava *'garden'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI → MAG (with subsequent unexplained sound change)

Justification:

As the MAG form is not a reflex of any so far suggested or established proto-AN form it is assumed to be a borrowing from some MF language where there is still at least one cognate. The only candidate at the moment is MGI but this involves an unexplained sound change in MAG. However, it is possible that the MAG form was borrowed from some other MF language in which the form once was mado. In the absence of additional evidence of this having happened, however, we assume that MGI is the source.

ITEM: *'hair'*

SUMMARY CONCLUSION: AN(Mag) $\overset{?}{\leftrightarrow}$ NA

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	limu'u[1]		MTU	.	
(O)	limu'u[2]		SIN	.	
DOM	.				
MOR	.		KEA (H)	.	
MA	.		(A)	.	
NEM	.		(W)	.	
BAU	.		OUM	.	ramu
LAU	.		YOB	.	ramu
DAG	.		MAG (M)	rimu[3]	ramu
			(D)	rimu[3]	ramu
			BIN	.	ramu
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

POCGR(OC) *Ramu *'root'*

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

Origin probably AN. If so MAG → MGI; if not origin uncertain and MGI → MAG.

Justification:

If MAG rimu is not an unexplained derivative of ramu, a reflex of POC *Ramu *'root'*, its origin is uncertain. The MGI and MAG forms are clearly related, however, and must indicate contact between these two groups irrespective of original source.

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[1] In MGI limu'u means *'hair, fur'*.

[2] This form only occurs in the Baibara dialect and means *'feather'*.

[3] rimu in MAG(M,D) means *'feather, fur'*.

ITEM: *'ground, land, earth'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.	doi	MTU	.	
(O)	.	doi	SIN	.	
DOM	.	doi			
MOR	doi	doi	KEA (H)	.	
MA	doi	doi	(A)	.	
NEM	doi	doi	(W)	.	
BAU	do'o	doi	OUM	doi	
LAU	doi	doi	YOB	.	
DAG	.		MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
PMF *doi *'land, ground earth'*

Established Reconstruction(s):
No obvious one(s).

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

NAN in origin. MOR, MA, NEM, LAU → OUM

Justification:

Given that there is as yet no suggested or established proto-AN form from which these forms can be derived it is assumed that the OUM form is aborrowing from one of MOR, MA, NEM, or LAU where identical forms occur.

ITEM: *'head'*

SUMMARY CONCLUSION: AN(Mag) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	uru		MTU	.	
(O)			SIN	.	
DOM	.				
MOR	.		KEA (H)	.	
MA	.		(A)	.	
NEM	.		(W)	.	
BAU	.		OUM	.	uyu
LAU	.		YOB	kuru	'uyu
DAG	.		MAG (M)	uru	kuyu
			(D)	uru	kuyu
			BIN	kulu	'uyu
			SUA (G)	kuru	kulu
			(L)	kuru	kulu
			(K)	kuru	kulu
			(S)	.	
			(Is)	*kuru	kulu

Proposed Reconstruction:
Nil

Established Reconstruction(s):
POCGR(OC) *qulu *'head'*

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

AN in origin but borrowing pattern complex:

1. SUA → { BIN, YOB }
2. SUA, BIN, YOB → MGI
3. Loss of k in MGI then MGI → MAG.

Justification:

The MAG forms are clearly AN in origin but the expected reflex is kuyu suggesting that the present-day form has been borrowed. Given that SUA still retains forms of the expected shape derived from POC *qulu it would appear that it is the most likely source of the kulu and kuru forms in BIN and YOB respectively and that the MAG form is to be explained as a borrowing from MGI where kuru had earlier been borrowed from either SUA, YOB or BIN and where it had lost the initial k as has happened in other cases — see Appendix 2. The reverse hypothesis that MGI borrowed from MAG after it had lost initial k after having itself borrowed kuru from SUA is less likely.

ITEM: *'hot$_1$'*

SUMMARY CONCLUSION: AN(Oum) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.		MTU	.	
(O)	(Domara) vavana		SIN	.	
DOM	..		KEA (H)	.	
MOR	wawana		(A)	.	
MA	wawana		(W)	.	
NEM	wawana		OUM	vovona(i'ahi)	vana
BAU	.		YOB	.	vana
LAU	.		MAG (M)	.	vana
DAG	?		(D)	.	
			BIN	.	vana
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

POCGR(OC) *pana *'hot'*

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

AN in origin. {OUM, MAG?, YOB?, BIN?} → {MOR, MA, NEM}

Justification:

Assuming that the OUM form is a reflex of POC *pana (although the vowel change is unexplained) then MOR, MA and NEM must have borrowed their form from one of the Oumic languages, most probably OUM, although we cannot be absolutely sure because YOB, BIN and MAG should have had similar reflexes of POC *pana to OUM originally, even though they now have other forms most probably borrowed from one of the other MF languages as is indicated in item *'hot$_2$'* following.

ITEM: *'hot$_2$'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	odaoda (except Domara)	vodavoda	MTU	.	
(O)			SIN	.	
DOM	.	wodawoda	KEA (H)	.	
MOR	.	wodawoda	(A)	.	
MA	.	wodawoda	(W)	.	
NEM	.	wodawoda	OUM	.	
BAU	vadada	wodawoda	YOB	wodawoda	
LAU	hodahoda	hodahoda	MAG (M)	vodavoda	
DAG	?		(D)	.	
			BIN	wodawoda	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *vodavoda *'hot'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI (except Domara) → MAG

Justification:

As these forms do not reflect any so far suggested or established Proto-AN form they are presumed to be NAN in origin. If so then the Oumic languages have borrowed from MF ones, most probably from MGI where the absence of initial v/w on the reduplicated parts is taken to represent a recent change if it does not represent a recording error.

ITEM: *'how many, how much'*

SUMMARY CONCLUSION: {AN(Oum) → NAN / NAN → AN(Oum)}

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	liva		MTU	.	
(O)	liva		SIN	.	
DOM	vila		KEA (H)	.	
MOR	liva		(A)	.	
MA	livaha		(W)	.	
NEM	.		OUM	livaha	vira
BAU	.		YOB	.	vi'a
LAU	?		MAG (M)	.	vika
DAG	?		(D)	?	
			BIN	.	vi'a
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
Nil

Established Reconstruction(s):
POCGR(OMB,OC,EB) *Pinsa *'how much, how many'*

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

AN in origin, but complex borrowing pattern.
1. OUM → DOM (and possibly others)
2. Methathesis in one of MGI, MOR, MA with borrowing in remainder
3. MA → OUM

Justification:

Given that all these forms are related (through metathesis) and are reflexes of POC *pinsa *'how much, how many'* the most economical explanation of the present-day distribution of different forms is that the expected OUM reflex vira of POC *pinsa did in fact occur and was borrowed by one or more of the MF languages, including MGI, DOM, MOR and MA. Subsequently this form was metathesised in one of these languages and borrowed by others, except DOM, which retained the original expected OUM form vila. OUM then borrowed livaha from MA replacing the earlier form vira.

ITEM: *'jaw, chin'*

SUMMARY CONCLUSION: AN(Oum) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	are(na)		MTU	ade *('chin')*	ade
(O)	are(na)		SIN	ŋare	are
DOM	.		KEA (H)	ŋare	are
MOR	.		(A)	ŋare	are
MA	are		(W)	gareka	are
NEM	.		OUM	ale	are
BAU	.		YOB	.	a'e
LAU	are(na)		MAG (M)	.	ake
DAG	.		(D)	.	ake
			BIN	.	a'e
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
Nil

Established Reconstruction(s):
POCGR(OMN) *anse *'jaw'*

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

AN in origin. {OUM, SIN, KEA(H,A)} → {MGI, MA, LAU}

Justification:

Given that these forms are AN in origin those in MGI, MA and LAU can only have been borrowed from OUM, KEA and SIN — MTU is excluded as a probable source because of the medial d in ade which should be borrowed as d by MF languages if/when borrowed. It is not clear from the available evidence, however, which of OUM, KEA or SIN is the most probable source for MGI, MA and LAU as both ŋare and ale will be borrowed as are by MF languages — see Appendix 4.

ITEM: *'joke'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	borere	borere	MTU	.	
(O)	?		SIN	.	
DOM	.	bonene			
MOR	?	bonene	KEA (H)	.	
MA	.	borere	(A)	.	
NEM	.	borere	(W)	.	
BAU	.	borere	OUM	.	
LAU	?		YOB	?	
DAG	?		MAG (M)	borere	
			(D)	?	
			BIN	?	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
PMF *borere *'joke'*

Established Reconstruction(s):
No obvious one(s).

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

NAN in origin. {MGI, LAU?} → MAG

Justification:

Given that borere does not reflect any so far suggested or established proto-AN form it is assumed to be NAN in origin. MAG borere must therefore be a borrowing from either MGI or LAU although the latter is only suspicious because there is no evidence available on which to base a judgement. It is also assumed that MOR is not a probable source even though there are no data available for it as, even if it did reflect PMF *borere, it would be of the wrong form.

ITEM: *'knee$_1$'*

SUMMARY CONCLUSION: AN(Mag?) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	turu(na)		MTU	.	
(O)	turu(na)		SIN	.	
DOM	.				
MOR	.		KEA (H)	.	
MA	.		(A)	.	
NEM	.		(W)	.	
BAU	.		OUM	.	turu
LAU	turu		YOB	turu	turu
DAG	.		MAG (M)	turu	turu
			(D)	turu	turu
			BIN	turu	turu
			SUA (G)	turi	
			(L)	turi	
			(K)	turi	
			(S)	turi	
			(Is)	?	

Proposed Reconstruction:
Nil

Established Reconstruction(s):
POCGR(OGC,EB) *turu *'knee'*

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

AN in origin. {MAG, BIN, YOB, OUM?} → {MGI, LAU}

Justification:

Given that the YOB, MAG and BIN forms are AN in origin the MGI and LAU ones must represent borrowings from the Oumic languages. Just which one of these is the source is not clear, however, as all are equally good, including OUM, assuming that it also had turu as expected (even though it now has a form giba'a which is a borrowing from DOM, MOR, MA or NEM as indicated in *'knee$_2$'*).

ITEM: *'knee$_2$'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.	gibo(k,',ø)a	MTU	.	
(O)	.		SIN	.	
DOM	gibo'a	gibo(k,',ø)a			
MOR	gibo'a	gibo(k,',ø)a	KEA (H)	.	
MA	gibo'a	gibo(k,',ø)a	(A)	.	
NEM	gibo'a	gibo(k,',ø)a	(W)	.	
BAU	['opo]	gibo(k,',ø)a	OUM	giba'a	
LAU	.	giboha	YOB	.	
DAG	.		MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	?	

Proposed Reconstruction:

PMF *giboka *'knee'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. DOM, MOR, MA, NEM → OUM

Justification:

Given that these forms do not reflect any so far suggested or established proto-AN form they are assumed to be NAN in origin. The OUM form must therefore be a borrowing from one of DOM, MOR, MA or NEM. It is not possible to distinguish between these as to the most probable source, however, given the identity of forms. BAU is excluded as a probable source because it lacks initial g.

ITEM: *'mother'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	adei	ade[k,',ø]i	MTU	.	
(O)	adei		SIN	.	
DOM	.	ade[k,',ø]i			
MOR	.	ade[k,',ø]i	KEA (H)	.	
MA	.	ade[k,',ø]i	(A)	.	
NEM	.	ade[k,',ø]i	(W)	.	
BAU	.	ade[k,',ø]i	OUM	.	
LAU	.	ade[h]i	YOB	.	
DAG	.		MAG (M)	ade'i	
			(D)	ade'i	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *ade[k]i *'mother'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI → MAG

Justification:

Although present-day informants give tina for *'mother'* in MAG (which is the expected reflex of POCGR(OMO(OC)) *tina *'mother'*) in 1917-18 they gave ade'i. And as ade'i is not a reflex of any so far suggested or established proto-AN form it is assumed to be NAN in origin. The MAG forms must therefore be borrowings from MGI, the only candidate.

ITEM: *'mouth'*

SUMMARY CONCLUSION: AN(Oum) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	ma'a *('tooth')*		MTU	.	
(O)	ma'a *('tooth')*		SIN	.	
DOM	.		KEA (H)	.	
MOR	ma'a		(A)	.	
MA	ma'a		(W)	.	
NEM	ma'a				
BAU	.		OUM	ma'a	ma(k?)a
LAU	.		YOB	.	ma(k?)a
DAG	.		MAG (M)	.	ma(k?)a
			(D)	.	
			BIN	.	ma(k?)a
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

POCGR(EG) *maŋa *'mouth'*

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

AN in origin. OUM → {MOR, MA, NEM}

Justification:

Assuming that the OUM form is a reflex of proto-AN *maŋa *'mouth'* forms in the MF languages must be AN in origin and borrowings from OUM, the only candidate. The MGI form is cognate with the other forms but now has a different, if allied, referent. It must therefore also be a borrowing although its immediate source is not clear.

ITEM: *'nape (of neck)'*

SUMMARY CONCLUSION: AN(Mag) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	gedu		MTU	.	gedu
(O)	gedu		SIN	geru	g/ŋeru
DOM	.		KEA (H)	.	keru
MOR	.		(A)	.	keru
MA	.		(W)	.	?
NEM	.				
BAU	.		OUM	.	gedu
LAU	gedu		YOB	gedu	gedu
DAG	.		MAG (M)	gedu	gedu
			(D)	gedu	gedu
			BIN	gedu	gedu
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	gedugedu	gedu
			(Is)	?	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

PCP(Ross) *ŋgedu *'nape (of neck)'*

POCGR(EB) *kesu *'nape'*

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

AN in origin. Unclear, but shows YOB, MAG and BIN in contact with MGI and LAU.

Justification:

Given that these forms are AN in origin the MGI and LAU forms must be borrowings from one or more of YOB, MAG, BIN and SUA(S), although the evidence does not point to a most probable source amongst them.

ITEM: *'navel'*

SUMMARY CONCLUSION: {NAN → AN(Oum); NAN → AN(Mag)}

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	inibo	iribu	MTU	.	
(O)	?		SIN	.	
DOM	inibu	inibu	KEA (H)	.	
MOR	inibu	inibu	(A)	.	
MA	iribu	iribu	(W)	.	
NEM	irip	iribu	OUM	inibu	
BAU	.		YOB	.	
LAU	iribu		MAG (M)	iribu	
DAG	?		(D)	iribu	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	?	

Proposed Reconstruction:
PMF *iribu *'navel'*

Established Reconstruction(s):
No obvious one(s).
Proposed Reconstruction:
Nil

Borrowing Hypothesis:

NAN in origin. Complex borrowing.

1. Either a) DOM, MOR → OUM, or b) DOM, MOR → MGI → OUM
2. MGI?, MA, NAM, LAU → MAG
3. DOM, MOR → MGI

Justification:

Given that these forms do not reflect any so far suggested or established proto-AN form they are assumed to be NAN in origin. In that case the OUM and MAG forms have different sources even if no most probable one can be distinguished in either case. Note, however, that the MGI form must also be a borrowing from either DOM or MOR as its expected reflex of PMF *iribu is iribu, not inibu. In that case MGI could have been a source for MAG (assuming it had the expected reflex iribu initially) and may also be one for OUM.

ITEM: *'old (house)'*

SUMMARY CONCLUSION: {NAN → AN(Mag); NAN → AN(Oum)}

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	boae	bovae	MTU	.	
(O)	?		SIN	.	
DOM	.	bowae	KEA (H)	.	
MOR	bovae	bowae	(A)	.	
MA	.	bowae	(W)	.	
NEM	.	bowae	OUM	boae, boa'i	
BAU	.	bowae	YOB	.	
LAU	bohae	boh(/v?)ae	MAG (M)	bobai	
DAG	?		(D)	?	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
PMF *bovae *'old'*

Established Reconstruction(s):
No obvious one(s).
Proposed Reconstruction:
Nil

Borrowing Hypothesis:

NAN in origin.

1. MGI → OUM
2. MOR, MGI? → MAG

Justification:

Given that there is no suitable as yet suggested or established proto-AN form that these forms reflect, and given the distribution of them in MF languages we assume they are NAN in origin. In that case OUM has borrowed its form from MGI where boae appears to be a late form of bovae, the expected reflex of PMF *bovae. LAU is excluded as a source for OUM boae, boa'i because medial h in LAU should be borrowed as medial h in OUM. The origin of the MAG form is not so clear because of the medial b which should come from b in the MF languages. Since the MOR and LAU forms are the expected reflex of PMF *bovae the MAG form must be either a recording error or an innovation after some form bovae was borrowed. On present evidence the post probable source is MOR, although if boae in MGI is a recent innovation MAG may have borrowed bovae from that source before the innovation occurred.

ITEM: *'path, road'*

SUMMARY CONCLUSION: AN(Oum) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	laea		MTU	dala	dala
(O)	.		SIN	dabara	raa
DOM	laea		KEA (H)	raopara	raa
MOR	laea		(A)	gara	rada
MA	lae		(W)	tara	?
NEM	.		OUM	laea	raya
BAU	.		YOB	! ?	'aya
LAU	.		MAG (M)	rae	kaya
DAG	.		(D)	rae	kaya
			BIN	.	'aya
			SUA (G)		
			(L)		
			(K)		
			(S)		
			(Is)		

Proposed Reconstruction:

Nil

Established Reconstruction(s):

PEOPAWA *nsala *'path, road'*
PEPPAW *dala *'path, road'*
PCP(Ross) *DaRa *'path, road'*

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

AN in origin.

1. OUM → {MGI, DOM, MOR, MA}

and either 2. MA → MAG, or

3. {OUM?, MGI?, DOM?, MOR?} → MAG (with subsequent loss of final a)

Justification:

Given that the AN forms reflect PCP *DaRa *'path, road'* then the MF forms must be borrowings from OUM, as there are no other candidates with the correct form to give the MF forms. In that case the MAG form is either an innovation, or a borrowing from MA, or a borrowing from OUM, MGI, DOM or MOR with subsequent loss of final a.

ITEM: *'pour out'*

SUMMARY CONCLUSION: AN(Mag) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	bobobobo		MTU	bubu	bubu
(O)	bu'ebu'e		SIN	.	bubu
DOM	bobo		KEA (H)	.	pupu
MOR	.		(A)	.	pupu
MA	bobo		(W)	.	?
NEM	.		OUM	.	bubu
BAU	.		YOB	(gini-)bobo	bubu
LAU	.		MAG (M)	bobo	bubu
DAG	.		(D)	?	
			BIN	.	bubu
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	?	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

PAND *bubu[h] *'pour out'*

Proposed Reconstruction:

PCP **bubu *'pour out'*

Borrowing Hypothesis:

AN in origin. {YOB, MAG, MTU} → {MGI(Is), DOM, MA}

Justification:

Although the YOB, MAG and MTU forms do not absolutely reflect PAND *bubu[h] — they should reflect as vuvu, vuvu, and huhu respectively — they may be assumed to be AN on distributional grounds, if local in origin, and to reflect a PCP form **bubu *'pour out'*. In that case the MF language forms are borrowings from either YOB, MAG or MTU. The evidence does not favour any one of these as the most probable source.

ITEM: *'sick'*

SUMMARY CONCLUSION: AN(Oum) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	marai		MTU	.	
(O)	marai		SIN	.	
DOM	.				
MOR	marai (*'sore (n.')*		KEA (H)	.	
MA	.		(A)	.	
NEM	.		(W)	.	
BAU	.		OUM	mara'i	marai
LAU	marahae		YOB	marahi	ma'a'i
DAG	.		MAG (M)	.	makaki
			(D)	.	makaki
			BIN	marai	ma'a'i
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

POCGR(EG,OC) *masaki(t) *'sick'*

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

AN in origin. OUM → {MGI, MOR}

Justification:

As the MF language forms are obviously AN in origin they must have been borrowed from either OUM or BIN. OUM is the most likely source as BIN has a form which differs from its expected reflex of POC *masaki(t) and so probably represents a borrowing from MF languages or from OUM.

ITEM: *'smoke$_1$ (of fire)'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	bautu	bautu	MTU	.	
(O)	bautu	bautu	SIN	.	
DOM	.	bauhu			
MOR	.	bausu	KEA (H)	.	
MA	.	bausu	(A)	.	
NEM	.	bauhu	(W)	.	
BAU	.	bauku	OUM	.	
LAU	bautu	bauhu	YOB	.	
DAG	.		MAG (M)	bautu	
			(D)	bautu	
			BIN	bautu	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *bautu *'smoke (of fire)'*
(cf. also PMF *pi[y]omu *'smoke$_2$ (of fire)')*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. {MGI, LAU} → {MAG, BIN}

Justification:

As the Magori and BIN forms are not derived from any so far suggested or established proto-AN ones they are assumed to be NAN in origin, in particular, borrowed from MGI or LAU where identical forms occur.

. ITEM: *'smoke$_2$ (of fire)'* SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.	pi[?]omu	MTU	.	
(O)	.	pi[?]omu	SIN	.	
DOM	[piam], piram	pi[y,l]omu			
MOR	[biou], bilo	pi[n,l]omu	KEA (H)	.	
MA	[fiom]	pi[y]omu	(A)	.	
NEM	.	pi[y]omu	(W)	.	
BAU	.	pi[y]omu	OUM	piomu	
LAU	[piomu]	pi[?]omu	YOB	piomo	
DAG	.		MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *pi[y]omu *'smoke (of fire)'* (cf. also PMF *bautu *'smoke$_1$ (of fire)'*)

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. DOM, MA, LAU, MOR? → {OUM, YOB}

Justification:

As these forms are not of AN origin they are assumed to be NAN in origin. The OUM and YOB forms must therefore be borrowed from one or more of DOM, MA, LAU and, less likely, MOR. It is not possible to say, however, which of these is the most probable source because no diagnostic sounds occur.

ITEM: *'snake'* SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	mio	mio(k,',ɔ)(o,ei	MTU	.	
(O)	mio		SIN	.	
DOM	.	mio(k,',ɔ)(o,ei			
MOR	mio'o	mio(k,',ɔ)(o,ei	KEA (H)	.	
MA	me'ei	mio(k,',ɔ)(o,ei	(A)	.	
NEM	me'ei	mio(k,',ɔ)(o,ei	(W)	.	
BAU	.	mio(k,',ɔ)(o,ei	OUM	mio	
LAU	mio	mioh(o,ei)	YOB	.	
DAG	.		MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMR *miok(o,ei) *'snake'*

Established Reconstruction(s):

No obvious one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI, MOR, LAU → OUM

Justification:

As these forms are not reflexes of any so far established or suggested proto-AN forms they are assumed to be NAN in origin. In that case the OUM form mio must be a borrowing from either MGI, MOR or LAU where the most similar combinations of sounds occur. There is no further evidence to suggest which is the most probable source amongst these, however.

ITEM: *'stand up, erect (v.tr.)'* SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	(va-)ida	ida(i,e)	MTU	.	
(O)	?	ida(i,e)	SIN	.	
DOM	idai	ida(i,e)			
MOR	idai	ida(i,e)	KEA (H)	.	
MA	(va-)idae	ida(i,e)	(A)	.	
NEM	(va-)idae	ida(i,e)	(W)	.	
BAU	(ma-)idae	ida(i,e)	OUM	.	
LAU	?	ida(i,e)	YOB	?	
DAG	?		MAG (M)	(va-)ida	
			(D)	?	
			BIN	(va-)ta(uolo) (coq?)	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

PMF *ida(i,e) *'stand up, erect (v.tr.)'*

Established Reconstruction(s):

No suitable one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. MGI → {MAG, BIN?}

Justification:

Given that these forms are not derived from any so far suggested or established proto-AN form they are assumed to be NAN in origin. In that case the MAG form is a borrowing most likely from MGI where an identical form occurs. Note, however, that the prefix va-, ma- 'causative' in MF languages is of AN origin, being derived from PANGR *pa- 'causative'.

ITEM: *'star'* SUMMARY CONCLUSION: AN(Mag) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	visiu		MTU	hisiu	vitiu
(O)	visiu		SIN	vitiuŋu	witiu
DOM	.				
MOR	.		KEA (H)	ŋivu	wiiu
MA	.		(A)	viu	wiiu
NEM	.		(W)	viu	?
BAU	.		OUM	.	vihiu
LAU	vitiu		YOB	.	vitiu
DAG	.		MAG (M)	vitiriu visi-u (1917-18)	vitiu
			(D)	vitiriu	
			BIN	.	vitiu
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

POCGR(OC,EB) *pituqu *'star'*

PCPPAW *viti(g)u *'star'*

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

AN in origin. {MAG, YOB?, BIN?} → {MGI, LAU}

Justification:

Given that all these forms are AN in origin the MGI and LAU forms must have been borrowed from one of MAG, YOB or BIN. SIN is excluded as a probable source because of the medial ŋ which, under normal circumstances, should have been borrowed as such by MF languages if/when borrowed. Note also that the MAG form has changed from visi-u (recorded in 1917-18) to vitiriu in the past fifty years.

ITEM: *'stone'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	baga[1]	baga	MTU	.	
(O)	.	baga	SIN	.	
DOM	.	baga			
MOR	.	baga	KEA (H)	.	
MA	baga	baga	(A)	.	
NEM	baga	baga	(W)	.	
BAU	.	baga	OUM	baga	
LAU	baga	baga	YOB	.	
DAG	.		MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
PMF *baga *'stone'*

Established Reconstruction(s):
No obvious one(s).

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

NAN in origin. MA, NEM, LAU, MGI? → OUM

Justification:

As these forms are not reflexes of any so far established or suggested proto-AN ones they are assumed to be NAN in origin. In that case the OUM form has been borrowed either from one of MA, NEM or LAU or from MGI before baga underwent semantic changes in that language. There is no evidence to suggest which one of these is the most likely source, however.

[1] In MGI baga means *'small stones, pebbles'* and in modern Papua New Guinea, *'coin, money'*.

ITEM: *'straight'*

SUMMARY CONCLUSION: AN(Oum) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	'oro'oroni		MTU	maoro	roriro
(O)			SIN	rorogoto	lolilo
DOM	.				
MOR	unan		KEA (H)	rorirori	lolilo
MA	'ora'oran		(A)	roiroi	lolilo
NEM	.		(W)	.	?
BAU	.		OUM	'oro'oro	roriro
LAU	?		YOB	.	roriro
DAG	.		MAG (M)	.	roriro
			(D)	?	roriro
			BIN	.	roriro
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
Nil

Established Reconstruction(s):
PCPPAW *roriro(r) *'straight'*

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

AN in origin. OUM → MF

Justification:

Given that the OUM and MF languages forms are AN in origin the MF languages must have borrowed from OUM where 'oro'oro represents an innovation. Note, however, that the borrowings in MF languages must be old, or at least old enough for the borrowing in MOR to have undergone the sound change -r->-n- as in inherited words.

ITEM: *'stump, base'*

SUMMARY CONCLUSION: AN(Mag) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.		MTU	dudu	tutu
(O)	tutu		SIN	tuguka(?)	tutu
DOM	.		KEA (H)	.	uu
MOR	.		(A)	.	uu
MA	.		(W)	.	?
NEM	.		OUM	.	tuhu
BAU	[kuku'a]		YOB	tutu'a	tutu
LAU	?		MAG (M)	tutu	tutu
DAG	?		(D)	?	tutu
			BIN	tutu	tutu
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

PANDYTV *tuquD *'stump'*

Proposed Reconstruction:

PCP **tutu *'stump'*

Borrowing Hypothesis:

AN in origin. YOB, MAG, BIN → MGI(O)

Justification:

Assuming that the Oumic forms are AN in origin (an assumption that seems justified by the occurrence of apparent cognates in MTU and SIN) then tutu in MGI(O) must have been borrowed from either YOB, MAG or BIN. OUM is excluded as a probable source because even if it had a reflex of PCP **tutu it would have been of the wrong shape. The BAU form suggests in addition that this was an old borrowing in MF languages, at least old enough for t > k as in inherited words in BAU.

ITEM: *'sun$_1$'*

SUMMARY CONCLUSION: AN(Oum) → NAN; NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	nina		MTU	dina	dina
(O)	nina		SIN	.	rina
DOM	lina		KEA (H)	.	rina
MOR	lina		(A)	.	rina
MA	lina		(W)	.	?
NEM	.		OUM	.	ri(n,?)a
BAU	.		YOB	.	'i(n,?)a
LAU	.		MAG (M)	nina	ki(n,?)a
DAG	.		(D)	nina	ki(n,?)a
			BIN	.	'i(n,?)a
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Nil

Established Reconstruction(s):

POCGR(OMB) *siŋa(R) *'sun'*

PCP(Ross) *DI(n,ŋ)a *'sun'*

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

1. AN in origin. OUM → DOM, MOR, MA

2. Sound change in MGI or MAG and then MGI ↔ MAG

Justification:

The MF language forms are clearly AN in origin. Not only that but the DOM, MOR and MA forms must have been borrowed from OUM which is the only Oumic language to have had the corresponding expected reflex. Since then OUM has borrowed a NAN form budiva from NEM (see item *'sun$_2$'* below). Meanwhile either MGI borrowed lina from someone and changed it to nina and the MAG borrowed it from them replacing whatever form they had, or vice versa. Whatever the true picture, however, the correspondences show contact between MAG and MGI.

ITEM: *'sun$_2$'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.	budiva	MTU	.	
(O)	.	budiva	SIN	.	
DOM	.	budiwa			
MOR	.	budiwa	KEA (H)	.	
MA	.	budiwa	(A)	.	
NEM	[butwa]	budiwa	(W)	.	
BAU	.	budiwa	OUM	budiva	
LAU	.	budiha	YOB	.	
DAG	.		MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
PMF *budiva *'sun'*

Established Reconstruction(s):
No obvious one(s).

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

NAN in origin. NEM → OUM.

Justification:

Given that these forms do not derive from any so far suggested or established proto-AN ones they are assumed to be NAN in origin. In that case OUM has borrowed its form from NEM, the only candidate. (But see also item *'sun$_1$'* above.)

ITEM: *'sweat (n)'*

SUMMARY CONCLUSION: AN(Oum) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.		MTU	varahu	vatara
(O)	.		SIN	.	watala
DOM	wahara				
MOR	.		KEA (H)	.	waala
MA	.		(A)	.	waala
NEM	.		(W)	.	?
BAU	.		OUM	ahara	wahara
LAU	.		YOB	wota'ara	vatara
DAG	.		MAG (M)	votara	vatara
			(D)	?	
			BIN	.	vatara
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
Nil

Established Reconstruction(s):
No obvious one(s).

Proposed Reconstruction:
PCP **vatara *'sweat (n)'*

Borrowing Hypothesis:

AN in origin. OUM → DOM

Justification:

Given that these forms are AN in origin the DOM form must be a borrowing from OUM which must have originally had the expected reflex wahara of PCP **vatara (if the present-day given form is not a recording error).

ITEM: *'sweet potato'* SUMMARY CONCLUSION: AN(Mag) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.		MTU	.	moter[i,e]
(O)	.		SIN	mote	motel[i,e]
DOM	more		KEA (H)	motea	moel[i,e]
MOR	.		(A)	?	moel[i,e]
MA	modele		(W)	?	?
NEM	.		OUM	.	moher[i,e]
BAU	.		YOB	.	moter[i,e]
LAU	.		MAG (M)	modeli (1917-18)	moter[i,e]
DAG	.		(D)	?	
			BIN	modele	moter[i,e]
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:

Established Reconstruction(s):
No suitable one(s).
Proposed Reconstruction:
PCP **moter[i,e] *'sweet potato'*

Borrowing Hypothesis:

AN? in origin. Unclear, but seems to involve contact between MAG and BIN, and MA most directly.

Justification:

Given the distribution of these apparent cognates in AN languages the recorded forms are probably reflexes of a PCP form. In that case the MA one is a borrowing either from MAG or BIN on present evidence. The origin of the DOM form is unclear but cannot be a borrowing of SIN mote because SIN -t- should be borrowed as -t- by DOM.

ITEM: *'(dog's) tail$_1$'* SUMMARY CONCLUSION: AN(Mag) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.		MTU	doru *('back')*	doru
(O)	doru		SIN	.	
DOM	.		KEA (H)	.	
MOR	.		(A)	.	
MA	.		(W)	.	
NEM	.		OUM	.	doru
BAU	.		YOB	.	doru
LAU	?		MAG (M)	doru	doru
DAG	.		(D)	doru	doru
			BIN	.	doru
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
Nil

Established Reconstruction(s):
No suitable one(s).
Proposed Reconstruction:
PCP **doru *'tail'*

Borrowing Hypothesis:

AN in origin. {MAG, MTU} → MGI(O)

Justification:

Given the distribution of doru in MTU and MAG we presume these reflect a PCP **doru *'tail'*. In that case the MGI(O) form must be a borrowing from either MAG or MTU.

ITEM: *'(dog's) tail$_2$'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	batuna	batuna	MTU	.	
(O)	.	batuna	SIN	.	
DOM	baruna	bahuna			
MOR	bahuna	basuna	KEA (H)	.	
MA	bahuna	basuna	(A)	.	
NEM	.	bahuna	(W)	.	
BAU	.	bakuna	OUM	bahuna	
LAU	?	bahuna	YOB	.	
DAG	?		MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
PMF *batuna *'tail'*

Established Reconstruction(s):
No suitable one(s).
Proposed Reconstruction:
Nil

Borrowing Hypothesis:

NAN in origin. Multiple borrowing.

Either 1) DOM, NEM, LAU → OUM

or 2) DOM, NEM, LAU → MA, MOR → OUM

Justification:

As these cognates do not reflect any proto-AN form they are assumed to be NAN in origin. In that case OUM bahuna must be a borrowing either from the set of languages whose expected reflex of PMF *batuna is bahuna, i.e., DOM, NEM and LAU, even though this form is no longer retained in those languages, or it must be a borrowing from the set of languages that have that form today, i.e. MOR and MA, even though that form must also be a borrowing in those languages (because their expected reflex of PMF *batuna is basuna).

ITEM: *'ten'*

SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	nanau omu	nanau [omu]	MTU	.	
(O)			SIN	.	
DOM	.	nanau [omu]			
MOR	.	nanau [omu]	KEA (H)	.	
MA	?	nanau [omu]	(A)	.	
NEM	?	nanau [omu]	(W)	.	
BAU	?	nanau [omu]	OUM	.	
LAU	.	nanau [omu]	YOB	?	
DAG	.		MAG (M)	nanau'ana	
			(D)	?	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
PMF *nanau [omu] *'ten'*

Established Reconstruction(s):
No suitable one(s).
Proposed Reconstruction:
Nil

Borrowing Hypothesis:

NAN in origin. MGI, MA?, NEM?, BAU? → MAG

Justification:

As these forms do not reflect any so far suggested or established proto-AN forms they are assumed to be NAN in origin. In that case the MAG form is most likely a borrowing from MGI, although MA, NEM, and BAU cannot be excluded as probable sources for lack of data.

ITEM: *'underneath$_1$'* SUMMARY CONCLUSION: NAN → AN(Mag)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	goda(na-de)	god(e,a)va	MTU	.	
(O)			SIN	.	
DOM	godewa(na-de)	god(e,a)wa	KEA (H)	.	
MOR	.	god(e,a)wa	(A)	.	
MA	.	god(e,a)wa	(W)	.	
NEM	.	god(e,a)wa	OUM	.	
BAU	.	god(e,a)wa	YOB	?	
LAU	?	god(e,a)ha	MAG (M)	godava(na)	
DAG	?		(D)	?	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	?	
			(S)	?	
			(Is)	?	

Proposed Reconstruction:
PMF *god(e,a)va *'underneath'*

Established Reconstruction(s):
No suitable one(s).

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

NAN in origin. DOM / MGI? → MAG

Justification:

Given the restricted distribution of this form in AN languages and that it does not reflect any so far suggested or established proto-AN form we assume this to be NAN in origin. In that case the MAG form is most likely a borrowing from DOM, although it may well have been from MGI if at some time it had the expected reflex god(e,a)va of the PMF form.

ITEM: *'underneath$_2$'* SUMMARY CONCLUSION: AN(Oum) → NAN

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.		MTU		
(O)	.		SIN	gabure-nai	g/gabule
DOM	.		KEA (H)	kapule-nai	kapule
MOR	gabila bohia		(A)		
MA	.		(W)		?
NEM	gable'una		OUM	gabila-i	gabure
BAU	.		YOB	?	gabure
LAU	?		MAG (M)	.	gabure
DAG	?		(D)	?	
			BIN	gabula-e	gabure
			SUA (G)	kai-gabi-na	
			(L)	kubu-na-nea	
			(K)	?	
			(S)	?	
			(Is)	?	

Proposed Reconstruction:
Nil

Established Reconstruction(s):
PCP(Ross) *gabule *'underneath'*

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

AN in origin. OUM → MOR / NEM

Justification:

Given that these forms are AN in origin the MOR and NEM forms are borrowings, most likely from OUM where the identical form occurs.

ITEM: *'village'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	mari	mari	MTU	.	
(O)	mari	mari	SIN	.	
DOM	mari dou	mari	KEA (H)	.	
MOR	mari	mani	(A)	.	
MA	.	mani	(W)	.	
NEM	.	mari	OUM	mari	
BAU	.	mari	YOB	.	
LAU	mari	mari	MAG (M)	.	
DAG	.		(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	., mari	
			(K)	.	
			(S)	?	
			(Is)	.	

Proposed Reconstruction:

PMF *mari *'village'*

Established Reconstruction(s):

No suitable one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. Either 1) {MGI, LAU} → OUM,
or, more lately 2) {DOM, MOR} → OUM

Justification:

As these forms are not reflexes of any so far suggested or established proto-AN form they are assumed to be NAN in origin. Consequently OUM mari must be a borrowing from MF languages. However, since mari in DOM and MOR is not the expected reflex of PMF *mari — the expected reflex is mani — then either:

a) OUM borrowed mari from MGI or LAU; or
b) OUM borrowed mari from DOM or MA after these had themselves borrowed mari from some other MF language which had or still has it.

ITEM: *'wallaby'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	.	marau	MTU	.	
(O)	.		SIN	.	
DOM	.	manau	KEA (H)	.	
MOR	.	manau	(A)	.	
MA	?	marau	(W)	.	
NEM	?	marau	ŌUM	marau	
BAU	?	marau	YOB	.	
LAU	marau	marau	MAG (M)	.	
DAG	.		(D)	?	
			BIN	?	
			SUA (G)	?	
			(L)	?	
			(K)	?	
			(S)	?	
			(Is)	.	

Proposed Reconstruction:

PMF *marau *'wallaby'*

Established Reconstruction(s):

No suitable one(s).

Proposed Reconstruction:

Nil

Borrowing Hypothesis:

NAN in origin. {LAU, MA?, NEM?, BAU?} → OUM

Justification:

Given that marau in OUM and LAU are cognates but that they do not reflect any established or suggested proto-AN reconstruction they are assumed to be NAN in origin. In that case the OUM form must be a borrowing from LAU or from one of MA, NEM or BAU where the expected reflex of PMF *marau is also marau but where necessary data are lacking.

ITEM: *'woman, wife'*

SUMMARY CONCLUSION: NAN → AN(Oum)

NAN Languages			AN Languages		
Language	Data	Expected Reflex	Language	Data	Expected Reflex
MGI (Is)	avesa	(t)aveta	MTU	.	
(O)	avesa	(t)aveta	SIN	.	
DOM	have	(h)avesa			
MOR	aveha	(s)awesa	KEA (H)	.	
MA	aveha	(s)awesa	(A)	.	
NEM	aveha	(h)aweha	(W)	.	
BAU	avaka	(s)aweka	OUM	aveha	
LAU	havet, avesa	(h)aheha	YOB	.	
DAG			MAG (M)	.	
			(D)	.	
			BIN	.	
			SUA (G)	.	
			(L)	.	
			(K)	.	
			(S)	.	
			(Is)	.	

Proposed Reconstruction:
PMF *(t)aveta *'woman, wife'*

Established Reconstruction(s):
No suitable one(s).

Proposed Reconstruction:
Nil

Borrowing Hypothesis:

NAN in origin. Either 1) NEM, DOM? → OUM,
or, more lately 2) MOR, MA → OUM

Justification:

Given that these forms are not reflexes of any so far suggested or established proto-AN forms they are assumed to be NAN in origin. In that case the OUM form is a borrowing. However, since the MOR and MA forms are not the expected reflexes of PMF *(t)aveta — the expected reflexes are *(s)awesa — then either:

a) OUM borrowed aveha from NEM or possibly DOM where have is a reduced form of the expected reflex (h)aweha which would correspond well with aveha if it occurred; or
b) OUM borrowed aveha from MOR or MA which had themselves borrowed that form from some other MF language.

5. DISCUSSION OF RESULTS

The salient features of the results of the analysis of the data presented in section 4. above are:

1) There are at least two different levels of borrowing, AN → NAN and NAN → AN, and a historical sequence of borrowing in which NAN speakers first borrowed AN words from Oumic language speakers and then AN speakers in turn borrowed NAN words from Mailuan language speakers, sometimes even borrowing back what were once their own words in a different form. These conclusions are based on two pieces of evidence:

(a) the present sociolinguistic situation in which AN languages are small in number, dying, scattered and bilingual in Magi, a result according to oral tradition of repeated attacks by NANs on the ancestors of the present-day populations within the recent prehistorical past. In this situation it is not likely (according to assumption 6 in section 3.2. above) that NAN speakers would have seen any advantage in borrowing anything from them;

(b) a few lexical items which show that they must have been borrowed before NAN languages diversified. That is, there are lexical items which could not have been borrowed from ANs recently as they would then have been of a different form. The best evidence of this is to be found in the items *'bathe/wash'*, *'cook/boil'* and *'head'*, *'how many/much'* where an AN form has been borrowed by one or more Mailuan language(s) where they have undergone a sound change and are then subsequently borrowed back again by Ouma and Magori respectively. Two other items *'path/road'* and *'sun$_1$'* are variations on the same theme, except that the former is less certain (in that it could have been borrowed from Ouma by Magori and undergone an idiosyncratic sound change) and the latter involves replacement by a NAN form in Ouma. These forms thus give some time depth to the history of contact between ANs and NANs in the area under consideration. Although there is no way of dating this depth, if some of these items and other simpler ones like *'straight'* for example are old enough to have undergone sound changes in Mailuan languages along with inherited words they must be of considerable antiquity, probably in excess of several centuries;

2) Ouma and Magori have remarkably different borrowing and loaning patterns: Ouma's contacts have been with a range of languages now found around and inland of Cloudy Bay to the west and along the coast and inland of Baxter and Table Bays, while Magori's have been predominantly with Magi, and less certainly with Laua. This is nicely illustrated by items such as *'smoke$_1$'* and *'smoke$_2$'* for example, where each has borrowed different NAN forms from different languages, but is confirmed by a simple lexicostatistical type analysis of the individual hypotheses proposed for each item in section 4. above such as are given in Charts 3 and 4 below.

Thus although we must be wary of taking these statistics too strictly since there are certain complications in them (e.g. some calculations include other languages as possible sources) it would seem to be reasonably clear from Chart 4 that Magori has had closest contact with Magi, both as a donor of AN vocabulary and as a borrower of NAN words. The position of Laua and Ma are less clear — Ma simply because its figure is low and Laua because, even though it scores quite high, it will be seen that whenever it scores it scores in association with Magi. It is not clear just what this means at the moment — on the one hand it could simply indicate that, because of the sociolinguistic situation obtaining in Laua at the present time with Laua moribund and informants using Magi as their everyday language, these results are unusable; on the other hand it could mean, as oral tradition has it, that Laua is an offshoot of Magi, and therefore can be expected to score more or less the same as Magi. Consequently, and for the time being and until some more detailed work can be done on Laua, we must be suspicious of the implications of the Laua figures. The other languages in Chart 4 score so low with Magori that they can be disregarded.

In Chart 3, in which Ouma figures are presented, a completely different picture from the Magori one emerges. Here we have a cluster of values that are all very similar. There are some differences between the AN-as-origin values and the NAN-as-origin ones but with no one language outstanding as in the Magori case. Note, however, that the Laua figures are suspicious for the same reasons as in the Magori case just described, and the Magi ones are inflated in some respects, and appear to reflect a recent borrowing pattern (rather than an earlier one) in others, e.g. *'bathe, (woman's) clothes, crooked, old'* and *'snake'*. Thus Ouma would appear to have had quite a different history of contact with Magi from Magori, and a rather chequered one elsewhere, having been in contact most with Morawa and Ma whilst a donor of AN forms, and with these same languages, and possibly Neme'a, Domu, and Laua in addition, as a borrower of NAN forms. Subsequently it has been borrowing NAN forms from Magi.

Apart from these facts Charts 3 and 4 also show that both Ouma and Magori have borrowed and loaned very much the same kind of vocabulary. Thus about half of the words in each are of AN origin and half of NAN origin, and both have a similar range of borrowed and loaned basic vocabulary, including some items such as *'(woman's) clothes, cough, how many/much, navel'* and *'old'* in common.

Chart 3: Analysis of items in which Ouma shows contact with one or more Mailuan languages

No	Item*	MGI	DOM	MOR	MA	NEM	BAU	LAU	Comments
1	*'bathe, wash'*	x							Recent borrowing
2	*'BETELNUT'*		x	x	x	x		?	
3	*'(women's) clothes'*	x						x	Recent borrowing(?)
4	*'cook, boil'*			x					
5	*'COUGH'*		x	x	x			?	
6	*'CROOKED'*	x							Recent borrowing(?)
7	*'DOG'*	x			x			x	MGI least probable
8	*'FATHER$_2$'*		x			x	x		
9	*'GROUND'*			x	x	x		x	
10	*'hot$_1$'*			x	x	x			Incl. YOB, BIN, MAG as possible sources
11	*'how many/much'*		x	?	x				
12	*'jaw, chin'*	x			x			x	Incl. SIN, KEA(H,A) as possible sources
13	*'KNEE$_2$'*		x	x	x	x			
14	*'mouth'*			x	x	x			
15	*'NAVEL'*		x	x					
16	*'OLD'*	x							Recent borrowing(?)
17	*'path, road'*	x	x	x	x				
18	*'sick'*	x		x					
19	*'SMOKE$_2$ (of fire)'*		x	?	x			x	
20	*'SNAKE'*	x		x				x	
21	*'STONE'*	?			x	x		x	
22	*'straight'*	x		x	x				Old form
23	*'sun$_1$'*		x	x	x				
24	*'sun$_2$'*					x			
25	*'sweat'*		x						
26	*'(dog's) TAIL$_2$'*		x	x	x	x		x	Either MOR-MA as a set or DOM-NEM-LAU as most probable source
27	*'underneath$_2$'*			x		x			
28	*'VILLAGE'*	x	x	x				x	Either MGI-LAU as a set or DOM-MOR as most probable source
29	*'wallaby'*				?	?	?	x	No evidence in MA, NEM, BAU
30	*'WOMAN, WIFE'*		?	?	?	x			
SUMMARY									
AN in origin (15)		6	4	9?	8?	5?	1?	3	
NAN in origin (15)		6?	9?	10?	9?	7	1	9?	
TOTALS (30)		12	13	19	17	12	2	12	

*In this chart the capitalised words are NAN in origin.

Chart 4: Analysis of items in which Magori shows contact with one or more Mailuan languages

No	Item*	MGI	DOM	MOR	MA	NEM	BAU	LAU	Comments
1	*'buttocks'*	x						x	
2	*'(men's) CLOTHES'*	x			x		x	?	No evidence in LAU
3	*'(women's) CLOTHES'*	x		?	x				
4	*'CLOUD, SKY'*	x						x	
5	*'COCONUT'*	x			?	?	?		No evidence in MA, NEM, BAU
6	*'COLD'*	x							
7	*'COUGH'*	x							
8	*'CUT'*	x	x					?	No evidence in LAU
9	*'ELBOW'*	x							
10	*'EYE'*	x			x			x	
11	*'FATHER$_1$'*	x		x					
12	*'fly* (n)*'*	x						x	
13	*'GARDEN'*	x							
14	*'hair'*	x							
15	*'head'*	x							
16	*'HEART'*	x						x	Incl. YOB, SUA (G, L)
17	*'HOT$_2$'*	x							
18	*'JOKE'*	x						?	No evidence in LAU
19	*'knee$_1$'*	x						x	Incl. OUM?, BIN, YOB
20	*'mother'*	x							
21	*'nape (of neck)'*	x						x	Incl. YOB, BIN
22	*'NAVEL'*	?			x	x		x	
23	*'OLD'*	?		x					
24	*'pour out'*	x	x		x				Incl. YOB, MTU
25	*'SMOKE$_1$ (of fire)'*	x						x	Incl. BIN
26	*'STAND UP'*	x							
27	*'star'*	x						x	Incl. YOB?, BIN?
28	*'stump, base'*	x							Incl. YOB, BIN
29	*'sun$_1$'*	x							
30	*'sweet potato'*				x				Incl. BIN
31	*'(dog's) tail$_1$'*	x							Incl. MTU
32	*'TEN'*	x			?	?	?		
33	*'UNDERNEATH$_1$'*	?	x						
SUMMARY									
AN in origin (13)		13	1	1	**2**	0	0	5	
NAN in origin (20)		19?	2	2?	6?	3?	3?	8?	
TOTALS (33)		32	3	3	8	3	3	13	

* In this chart the capitalised words are NAN in origin.

6. HISTORICAL IMPLICATIONS

Many historical conclusions can be drawn from the borrowing pattern described above and the present distribution and sociolinguistic situation of the remnants of the languages in question. We can be even more specific if facts provided by other disciplines and some additional linguistic analysis are taken into account, however. These additional facts are:

1) There was an expansion of the Magi language westwards about two hundred years or so ago when colonies were established by Mailu Islanders on the mainland coast between Amazon Bay in the east and Cloudy Bay in the west at the present-day villages of Kurere, Magaubo, Darava, Boru and Domara — see Map 2;[12]

2) Three at least of these colonies were formed by the amalgamation of mainland communities with incoming colonisers.[13] These three were Domara, Magaubo and Darava. "Domara was formed partly from the mainland, the people went first to Burumai Point, then Dedele, and lastly to their present site" (Thomson 1975a:57); Darava and Magaubo villages were formed by Island dialect speakers "amalgamating with Ma speakers further west, Darava first and Magaubo later" (Thomson 1975a:57);

3) Present-day Ouma speakers at Labu, an appendix to one of these colonies, Darava, claim that their 'homeland' (that is, the position they occupied as far back as tradition goes) was a set of two low hills about fifteen kilometres west of their present position and inland of Table Point and Magaubo village, another of the Mailu Island colonies mentioned above.[14] According to this tradition these hills were at that time islands.[15] The tradition also says that their forefathers traded with Gavuone, Paramana and Aroma (Keapara speakers west of Cloudy Bay) whence they went on sailing canoes[16] and on outrigger canoes to buy pigs. They used sago and nose bones (Motu: moki) and breast shells (Motu: mairi) as money for this purpose but not pots. The nose bones and mairi were later replaced by armshells (Motu: toea) made by the Mailu. They said they did not know the Aroma language well but only, as they say in Police Motu sisina sisina (lit. *'little little'*), or *'only a little bit'*. This was when the hills were islands. They made pots but only of the narrow necked, water carrying type that the Motu call hodu which were decorated

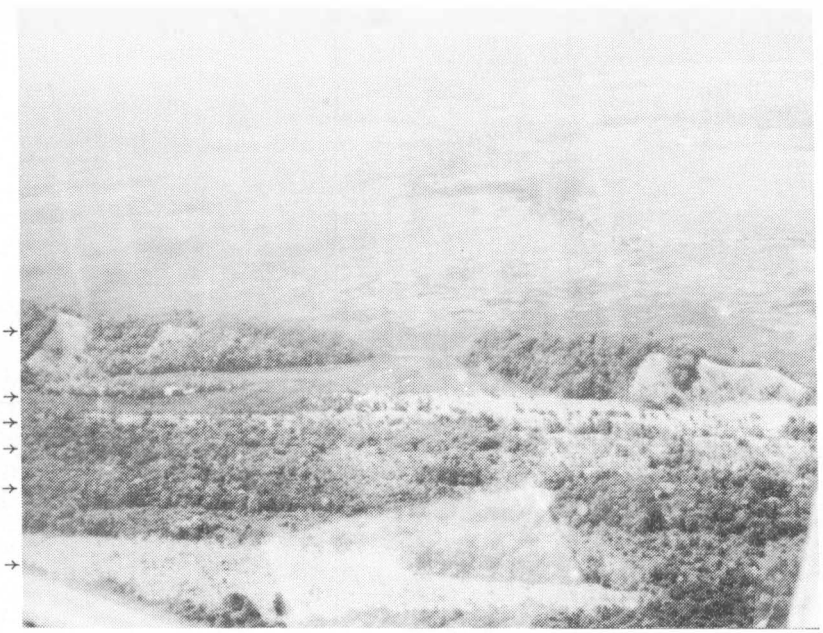


Plate 1: Ouma Hills

with simple square geometric patterns like this:  around the shoulder.[17] They say there are plenty of sherds of these on the beach and hills. These pots are different from the Mailu ones they say and the Mailu pattern is different too, as is their tattooing pattern on women.

Present-day informants also claim that at the time they lived on their homeland hills Mailu Islanders lived there with them, but subsequently moved to Mailu Island itself to which they later took some Ouma speakers as captives. These subsequently married into the island population and never returned. Their descendants still live on that island and belong to the Diadudu clan. The remaining Ouma speakers were forced off their hills by local warring over land and pigs[18] and had to flee from place to place in the swamps around the Bonua River until the process was interrupted by the arrival of the White Man;[19]

4) The Magori also have traditions of having been through somewhat the same experience as the Ouma (Dutton 1976c:589-590).[20] According to one account they have a tradition of coming from the west "from a site on a river named the Amini River, said to be close to Abau [=Cloudy Bay]" (Teasdale 1967:8-11).[21] According to another, related to me by Dr N.P. Thomson,[22] the Magori claim they used to live farther east over in the region of the Origuina River inland of the western end of Orangerie Bay. At the time of first European contact, however, the Magori were in a rather difficult social position and fighting for their lives at the hands of the so-called Velavelai from the interior, and the Magi along the coast. According to Saville (1926:308) they were close allies of the Maisi villages (Dagobo, Unevi and Borebo) and neighbouring ones in Mayri Bay and Millport Harbour to the east, and the true gara (from Magi gara *'spear, war'*) villages of the Mailu Islanders offshore. Saville (1926:208) says "It was among these people that the Mailu did their head-hunting". But the Magori also had allies in villages friendly with the Mailu, and even had "one sub-clan at Kurere [that] was related by marriage to Magori", though this did not necessarily protect Kurere from danger of attack by the Magori (Saville 1926:208). The Magori are also known to have been on a changing relationship with their nearest neighbours and relatives, Deba, whom they are known to have killed on occasions (Saville 1926:209). They also attacked Darava on the coast about ten miles west. They themselves were, however, regularly attacked, as already noted, by the Velavelai and the Magi. At time of contact they are known to have spoken Magi though few Magi know or knew Magori, claiming that (and Ouma like it) is too difficult.[23]

Culturally the Magori were similar to those surrounding them although it is not known whether they once knew how to make pots. Saville (1926:209) reports that "inland from the shores of Amazon Bay I have found bits of pottery bearing different patterns from those of the Mailu. And the Mailu man tells me that long ago there were people living there who were potters, but that he 'finished them off'."[24] At the time of contact cooking pots were obtained from the Mailu Islanders who were the great traders in this commodity (Irwin 1978);

5) One section of Mailu Island village contains the descendants of several Ouma speakers said to have been kidnapped and taken there several generations ago as already noted. This section is called Diadudu and, interestingly, has the same name as one of the Magori clans (Teasdale 1967). Unfortunately it is not known at this time what the Magori have to say about this correspondence but the Mailu Islanders I spoke to corroborated the Ouma story in spirit although not in detail [25]

6) According to archaeological research the Amazon Bay-Mailu Island portion of the area of interest has been inhabited by pottery making and using peoples for about the last 2000 years. These people "practised a generalised gardening and fishing economy and lived in villages which were distributed along the coast and on offshore islands. Villages were apparently functionally unspecialized", each catering for itself in food and pottery needs (Irwin 1978:407). This situation

continued for something like a thousand years. Then something happened to cause an abrupt break in the continuity of style, similar to what has been found by archaeologists in the Yule Island and Port Moresby areas. Subsequently there was increasingly rapid development towards standardisation (in the size and structure of pots) and central control of the pottery industry, and the Mailu Islanders emerged for various geographical, logistical, and other reasons as the specialist traders and pottery manufacturers along the whole coast. This latter development/achievement probably took place several centuries ago. The changes in pottery style and trade were accompanied by social changes around the Amazon Bay area. Villages formerly located on the lowland near the beach moved up on to local ridges, presumably for defence purposes, as the Mailu Islanders become increasingly dominant;

7) The first Oumic language speaking peoples to come into contact with Mailuan language speaking peoples must have been sailors and traders. An analysis of terms having to do with present-day trading activities of Mailu Islanders shows that a significant subset of them are of AN origin, in particular from Ouma and/or Magori. It is not yet possible to be as precise about the origin and direction of borrowing as with the basic vocabulary analysed in the rest of this paper. This is principally because no data is available from any Mailuan language except Magi. But it is clear that the following terms must have been an important part of the AN culture the Magi came in contact with:

1) Sailing technology

English	Magi	Source
'(outrigger) canoe'	wa'ona[26]	AN
'sail (n)*'*	laea	AN
'outrigger'	larima	AN
'steer'	'arisi[27]	AN
'sew'	suri(suri)	AN
'NW Monsoon'	avara	AN
'(canoe) pole (n)*'*	ivara	AN
'current (n)*'*	aruaru	AN
'salt water'	sari	AN
'coral'	lade	AN
'beach'	one	AN
'sorcery'	balau	AN (PCP)
'flag'	lagi	AN?

2) Trade items and contacts

'barter'	voivoi	AN
'how many/much'	liva	AN
'pig'	bora'a	AN
'salt'	sari	AN
'mat'	eba	AN
'sweet potato'	kanua[28]	AN
'chief'	vere	AN

Of these the word for *'sail'* is particularly important not only because it shows that the ANs were seafarers but also because the forms for this in Morawa and Domu (with -n- corresponding to -r- in other languages) suggest that it is of considerable antiquity.

But this is not the total picture because there are several other items of importance which come out as being of NAN origin and so appear as counterexamples to the above. These are the following:[29]

'(sailing) canoe'	orou	NAN
'cooking pot'	omu	unclear but assumed to be NAN[30]
'armshell'	oba	NAN
'sago'	odei	NAN

How do we explain the NAN origin of such basic modern trading terms as these? There is no obvious answer at the moment but presumably the only logical answer, given the above hypothesis about the age of the word *'sail'* and the complex of other sailing and trading terms is that these must be innovations, that is, not the objects (except perhaps *'armshell'*), but the terms used to refer to them;

8) The Magi have long been at home by the sea and had used it as a resource before the coming of the ANs. This is indicated by the analysis of another set of terms in Magi associated with knowledge of the sea, notably *'fish'* (orebe), *'fish net'* (arai), *'octopus'* (guiva), *'crayfish'* (avai), *'dugong'* (opi), *'crab'* (go(go)). This is so because all of these words are NAN in origin in Magi and it is most unlikely that if they had been introduced earlier by ANs all of them would have been replaced by NAN words. There are two others, however, which are AN in origin and which provide another perspective. These are *'fish hook'* (kauri), and *'crocodile'* (uaea). They indicate that line fishing must have been introduced by ANs and that the crocodile must have had some special significance for them which the NANs thought worth investing in. Presumably this was not because AN introduced crocodiles but rather it had something to do with sailing and the symbolic relationship between canoes and crocodiles.

When all of the above facts are taken into account, I think a clear picture emerges of what happened prehistorically between ANs and NANs in the Amazon Bay-Cloudy Bay area of coastal south-east Papua New Guinea. It is similar to what I suggested in Dutton (1978) on the basis of much less evidence. Briefly what I think happened was this:

The coastline between Amazon Bay and Cloudy Bay was once unoccupied before the coming of the ancestors of Oumic speaking peoples, except for Mailuan Family language speakers. The Mailuan speakers generally lived on the foothills of the main range and on the hills that come down towards the coast, in the Cloudy Bay area to the west and the Amazon Bay, Mayri Bay and Port Glasgow areas to the east. No one knows how long ago the Oumic speakers came or where they first settled. Presumably they were descended from the same group, or groups, of AN speakers who came to Central Papua and who are now represented by the larger languages farther west and to which they are most closely related, e.g. Motu, Sinagoro, Keapara. The fact that at least four languages still exist (although only just) clearly indicates that speakers of AN languages were once more widely distributed along the south-east coast of Papua than was thought before 1969 when they were first 'discovered' (Dutton 1971).[31] And even though it is not possible at this stage to reconstruct in detail the sequence of events that led to their present distribution and parlous state it would appear that given that they are most closely related to languages immediately to the west (as already indicated) they presumably:

(a) settled on the coast first, as AN speakers elsewhere seem to have done and then spread inland as other circumstances necessitated;

(b) came with similar cultural traits to their closest relatives, but specifically with a knowledge of pottery making, canoe building and sailing. But whether knowledge of sailing also implies long distance trading is not clear although it would seem to be suggested by the fact that sails were a prominent part of AN culture acquired by the NAN Magi. Given further that Ouma has had closest contact with Morawa, Ma and Neme'a (and possibly Laua) who now live in the Cloudy Bay area while Magori had closest contact with Magi (and possibly Laua) the Ouma probably first settled near where they claim their homeland to be, that is, at or near Baxter Bay. The Magori settled somewhere near the Magi, presumably around the Amazon Bay area as until a few centuries ago, the Magi appear to have been concentrated in the area between that bay, Mayri Bay, and adjacent Port Glasgow. Colonies were then established in Table, Baxter and Sandbank Bays to the west. The Magori also presumably settled on the offshore islands as their more distant relatives did in the Milne Bay area and elsewhere. The Yoba and Bina probably settled in the same area but east of the Magori.

Presumably the Ouma and Magori eventually, if not immediately, came into contact with the Magi and other Mailuan language speakers just mentioned who mainly lived inland from them. If the record of the Motu-Koita contact around Port Moresby is any guide as to what happened in such situations (Dutton 1969:26-36) both presumably entered into some kind of close symbiotic relationship with each other attracted probably by the ANs' superior technology and trading activities. Eventually, the NAN learned the crafts of their seafaring AN 'friends' even to the point of participating in joint trading ventures such as the Koita did with the Motu (Seligman 1910:45). In doing this the NANs borrowed many items of basic vocabulary, contrary to what is supposed to happen, according to some linguistic tenets.

How long ago this was and how long the NAN continued to borrow from their AN 'friends' is not known but it was apparently before the development of an -r- to -n- sound change in Morowa and Domu languages, presumably a considerable time ago. This situation did not last, however, and some time ago there was a complete reversal in the relationship between the two groups of people and ANs began borrowing basic vocabulary from their former NAN 'friends', even in some cases borrowing back their own AN words which had changed form in the meantime. That this happened on a wide scale is evident from the fact that both the Ouma and Magori speakers borrowed very much the same kind of basic vocabulary independently and from different sources. There is no indication in the linguistic record of what this 'something' was but given the present parlous and dependent state of the ANs, and that they were forced to flee from their former homes into swamps and/or up on to hills, the stimulus for this borrowing was presumably not superior technology but survival. More specifically, it would appear that this reversal is to be tied to the recent rapid rise of Mailu Islanders to the position of pottery and trading kings in the area as documented in the archaeological record, and as manifested in their colonial expansion to the west.[32] But how do we explain the fact that (present-day) Mailu Islanders are NAN language speakers, if, according to the linguistic evidence, it was the ANs who introduced them to sailing and trading and presumably also to pottery making?

The only possible explanation in my view that fits at all with the archaeological record of a continuous settlement on Mailu Island and of a continuous pottery sequence in the area going back two thousand years is that the present Mailu Island trading system represents a takeover of a former AN one by the NANs. In particular I think we are forced to conclude that Mailu Island was once occupied solely by AN speaking peoples, most probably the ancestors of present-day Magori, who were gradually joined on the island by Magi speakers from the mainland, specifically from the Amazon Bay area around Kurere and the present-day Government Patrol Post. Here the NANs learned the skills of the Magori and eventually became strong enough to take over their technology and trading system and to develop it to the position of eminence it was at the time of first contact.

And there we shall have to leave the reconstruction save to note that it is still possible that support for, or counterevidence against, the above conclusions may yet exist somewhere in the world in the form of as yet undiscovered vocabularies recorded by Franciscian priests or brothers on Torres' voyage through the Torres Straits in 1606, or some time afterwards. On that voyage Torres kidnapped fourteen children between the ages of six and ten years from Mailu Island (Stevens 1930:153) and took them to Manila "to make a better report" to the King (Stevens 1930:231). There they were "baptized to the honour and glory of God" and taught "the prayers of Pater Noster, Ave Maria, Credo and Salve Regina, and the commandments and articles of the catholic faith" (Stevens 1930:155). Although we do not know what eventually happened to these children it is likely that the Franciscan priests to whom they were entrusted during the voyage to Manila (Hilder 1980:14, 131), and presumably in Manila as well, recorded some of their vocabulary at some stage, especially as two of the captives' words, nina *'sun'* and puri *'moon'*, are given in the published accounts of Torres' voyage. If such vocabularies exist and are ever located, and

then if they are found to be AN (specifically Oumic) in origin, this would support the above hypothesis and show that the NAN 'takeover' occurred within the last three hundred years. On the other hand if such vocabularies are found to be NAN (specifically Mailuan) in content, that would not necessarily negate the above conclusions — it would merely indicate that the island was already occupied by NANs at the time of Torres' visit. Unfortunately the two words given above are not sufficient to either support or deny the above conclusions,[33] and as no other relevant vocabulary items have so far been located nothing more can be added to what has already been said at this stage.

7. CONCLUSION

It has long been known that certain languages of the south-east coast of the mainland of Papua New Guinea contain many borrowings from one another although no-one has actually ever attempted to source these in any detail. In this paper I have attempted to take up the challenge implied in this situation and have focussed on the borrowings in selected languages of the two groups of languages involved, notably the AN languages of Ouma and Magori, and their NAN Mailuan neighbours. A sourcing analysis of sixty of the clearest cases of borrowings showed that:

(a) these languages have borrowed from one another in a closed system (that is, there is negligible external borrowing);

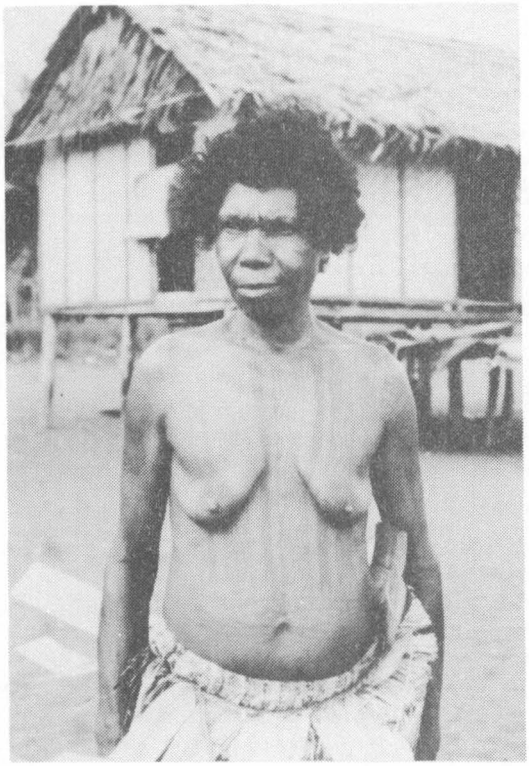
(b) Ouma and Magori have borrowed from different languages — Ouma from those presently located around and inland of Cloudy Bay and Magori from Magi now spoken along the whole coast and its offshore islands;

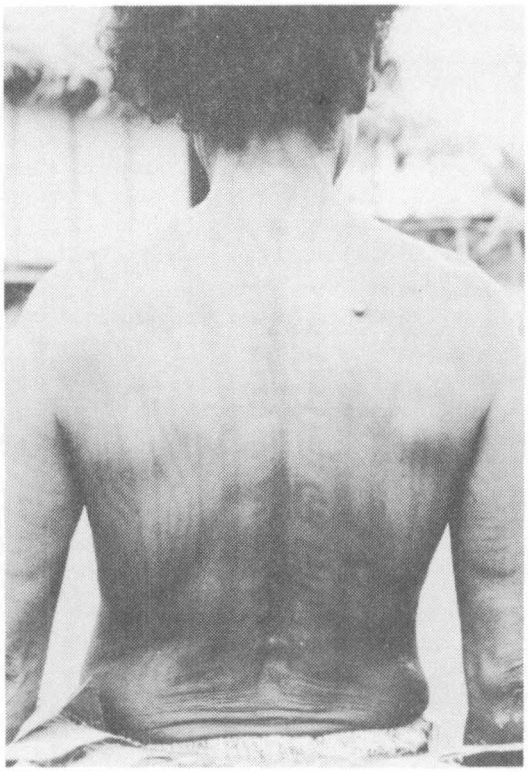
(c) the borrowing between these AN and NAN languages was intense and ranged over the whole vocabulary including basic vocabulary;

(d) there was a complete reversal in the borrowing pattern: firstly borrowing was from AN to NAN and then from NAN to AN.

Thus although much still remains to be done before the borrowing and loaning pattern in this and neighbouring areas can be said to have been well studied these were quite startling and unexpected results based as they are on the restricted data presently available. What is more they have profound implications for the prehistory of the area. In particular when taken together with other information that is presently available they suggest that there has been a complex and interesting interaction between the speakers of the two different types of languages presently found there. Thus it is clear from what has been said that after the arrival of ANs in the area NANs entered into a close relationship with them apparently attracted by their knowledge of sailing and trading. Some time later something happened to this relationship and the ANs were attacked and driven into the interior. Although it is not yet proven it would appear that the stimulus for this reversal in relations, if not a manifestation of it, was the rise to power of one group of NANs, notably the Mailu Islanders. They presumably learned the skills of the ANs *in situ* and somehow took over a system that the ANs had introduced to them and they developed it to the point of monopoly. As a result they could colonise areas left vacant by the now fugitive ANs and could expand their trade into new areas.

Although many questions are left unanswered I think the main outlines of what happened between ANs and NANs on the south-east coast of Papua New Guinea are now clear. How far linguistics can elucidate the picture further remains to be seen but I look forward to pursuing the problems raised herein further.





Ouma tattoo patterns (Labu Iduhu) on
Ogela Adau, Labu village (see p.155)

APPENDIX 1: MAIN REFLEXES OF POC AND OTHER CONSONANTS IN SELECTED CENTRAL PAPUAN LANGUAGES AND SUAU

The following chart, compiled from information contained in Pawley (1975) and Ross (1979a,b), serves as a convenient display of word-initial and word-medial correspondences in the principal Central Papuan AN languages referred to in this paper, as well as in Suau, the next AN language to the east. It is to be noted, however, that some of the correspondences listed for the Oumic languages are based on very slim evidence and can therefore only be taken as tentative until the results of this paper are taken into account.

In the listing conditioned variants are bracketed and two reflexes of the same proto-phoneme, the distribution of which is unexplained at the moment, are separated by a comma. Languages and dialects are symbolised as elsewhere in this paper except that POM (for Proto-Oumic) is an addition.

The chart follows:

POC	PCP					POM					SUAU
		MTU	SIN	KEA			OMA	YBA	MAG	BNA	SUA
				HUL	ARM						
#	*p	p	p	p	p	*p	p	p	p	p	p
*mp	*b	b	b	p	p	*b	b	b	b	b	b
*p	*p	h	v(ɣ)	v	v	*v	v	v	v	v	h(w/_o)
*m	*m	m	m	m	m	*m	m	m	m	m	m
*w	*w	v	w	w	w	*w	[w]	v	v	v,w	w
*t	*t	t(s)	t	ø	ø	*t	t(h)	t	t	t	t(s/_i)
*nt,nj	*d	d	d(r)	r	r	*d	d	d	d	d	d
*s,ns	*D	d	r	r	r	*D	r	'	k	'	s
*l,y	*R	l(ø/_($^{i}_{u}$)	ø	ø	ɗ	*y	ø(y)	y	y	y	{*l>l,n *y>y
*d,nd,R	*r	r	l	l	l	*r	r	r	r	r	l
*n,ñ	*n	n	n	n	n	*n	n	n	n	n	n
#	#k	k,ø	k	k	ø	*k	ø,k	k	k	k	#
*ŋk	*g	g	g,ɣ	k	k	*g	g	g	g	g	g
*k,q	*q	ɣ,ø	ɣ	ɣ,ø	ɣ,ø	*ø,q	ø	'	k	'	{*k>'(/V_V) *q>k
*ŋ	*ŋ	ø	ɣ	ɣ	ɣ	*[n]	?	?	?	?	n
#	*kw	kw	kw	kw	w	*kw	ø	k	ø	k	kw
*ŋm	*m	m	m	m	ø	ø	ø	ø	ø	ø	m

APPENDIX 2: MAILUAN PHONEMES AND THE RECONSTRUCTION OF PROTO-MAILUAN

In this Appendix I attempt to reconstruct the sound system of the language ancestral to all the Mailuan languages. In doing so, and until this can be revised in the light of the results of the present paper and further evidence, I treat all languages as of equal value in reconstructing forms and in attributing those to the proto-language, i.e. no subgrouping within the family is attempted and/or taken into account.

The reconstructions are based on tentative phonemic analyses of the individual languages, except for Magi, which has been well studied and whose phonemes are established and described by Thomson (1975b:602ff). The analyses are of necessity brief and unavoidably tentative since they are based on the limited lexical materials available and as described in section 2.1. They are, moreover, synchronic descriptions which, as far as it is possible to do so, have been made without comparing one language with another or without using the analysis of one language to guide that of another — comparison comes later when we attempt to make statements about the diachronic changes that have occurred in the individual languages. As they stand then these analyses include all sounds that occur in all words that are not obviously recent borrowings (e.g. masini *'machine'* from English, solu *'salt'* from Police Motu and/or English etc.) so that they probably include a number of sounds that have been borrowed at some other time but which may only become apparent when the languages are compared with one another as is done later in this appendix.

In general the synchronic phonologies of the languages are all very similar: they all have a set of five vowels i, e, a, o, u and a set of consonants which include the voiced stops b, d, g, nasals m and n, a voiceless stop t or fricative s depending on which allophone is taken as the norm to represent the phoneme, a liquid l or vibrant r, and voiced bilabial fricative v or semivowel w. They also contain a voiceless stop p or fricative f (=[ɸ]), a voiceless velar stop k, a voiceless uvular fricative h, and a palatal fricative y in different combinations, although there is some uncertainty about the status of these as phonemes since

(a) glottal stop appears sporadically word initially and in some cases word medially, a situation that undoubtedly reflects transcription uncertainty in the data;

(b) k is of very low frequency and does not appear medially in any word in any language other than in Magi and is therefore very suspicious. As will be seen below comparative evidence suggests that this is because k is an old phoneme in Mailuan languages and is being replaced by glottal stop which in turn is being replaced by h or being dropped altogether;

(c) y only appears in a few words and then only before a and o;

(d) h occurs sporadically in some languages and may merely represent non-phonemic onset to voicing in some of these.

All languages have open syllables and there are no consonant clusters, except for Neme'a where k occurs before wa word initially. All languages also drop final vowels word finally after nasals and, in some languages, after other sounds.[34] The following chart lists apparent synchronic phonemes of the languages as herein determined. In this a '+' at the intersection of a row and a column indicates the presence of the relevant phoneme in the language shown and a # indicates the absence of such a phoneme.

Language	p/f	t/s	k	'	b	d	g	h	m	n	l/r	v/w	y	i	e	a	o	u
Magi	+	+[35]	+	+	+	+	+	#	+	+	+	+	+	+	+	+	+	+
Domu	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Morawa	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ma	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Neme'a	+	+	+	+	+	+	+	+	+	+	+	+	+[36]	+	+	+	+	+[37]
Bauwaki	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Laua	+	+	#	+	+	+	+	+	+	+	+	+[38]	+	+	+	+	+	+

These phonemes correspond regularly (except for the cases to be discussed below) in apparent cognates in Mailuan languages as indicated on the following chart. In this chart blanks indicate that there is no regular correspondence in the available data and round brackets are used to mark off less regular correspondences, which, because of the distribution of some of the apparent cognates in which they occur, are assumed herein to indicate borrowings. Generalised reconstructions of Proto-Mailuan (PMF) sounds based on these correspondences are given at the head of each column:

PMF	*p	*t[39]	*k[40]
MGI	p,f-, -p,f-	t-,-t-	k,',ø-,-k,',ø-
DOM	p,f-, -p,f-	h-,-h-	k,',(g),ø-, -k,',ø-
MOR	p,f-, -p,f-	s-,-s(h)-	k,(g),ø-,-k,',ø-
MA	p,f-, -p,f-	s,(h)-,-s(h)-	k(g),ø,'-, -',ø-
NEM	p,f-, -p,f-	h-,-h-	k(g),ø,'-, -',ø,(s)-
BAU	p,f-, -p,f-	s(h)-,-k(s)-	k,',ø-, -',k-
LAU	p,f-, -p,f-	h(s)-,-h(s)-	k,g,ø-, -h,'-

PMF	*b	*d	*g	*m
MGI	b-,-b-	d-,	g-,-g-	m-,-m-
DOM	b-,-b-	d-,-d-	g-,	m-,-m-
MOR	b-,-b-	d-,-d-	g-,-g-	m-,-m-
MA	b-,-b-	d-,-d-	g-,-g-	m-,-m-
NEM	b-,-b-	d-,-d-	g-	m-,-m-
BAU	,-b-	d-	'(g)-,	m-,-m-
LAU	b-,-b-	d-,-d-	g-,-g-	,-m-

PMF	*n	*r	*v	*y	*i
MGI	n-,-n-	r-,-r-	v/w-,-v/w-	?[41]	i-,-i-,-i
DOM	n-,-n-	r-,-n(r)-	w-,-w(h)-	y-	i-,-i-,-i
MOR	n-,-n-	r-,-n-[42]	w-,-w-	n/l-	i-,-i-,-i
MA	n-,-n-	r-,-r-	w-,-w-	y-	i-,-i-,-i
NEM	n-,-n-	r-,-r-	w-,-w(h)-	y-	,-i-,-i
BAU	n-,-n-	(r-),-r-	w-,-v-	y-	i-,-i-,-i
LAU	n-,-n-	r(n,ø)-,-r-	w,h,v,p-,-v,h-	?	i-,-i-,-i

PMF	*e	*a	*o	*u
MGI	e('e)-,-e-,-e	a-,-a-,-a	o-,-o-,-o	u-,-u-,-u
DOM	e-,-e-	a-,-a-,-a	wa,o-,-a,o-,-o	u-,-u-,-u
MOR	e-,-e-,-e	a-,-a-,-a	o-,-o,a-,-o	(w)u--u-,-u
MA	e-,-e-,-e	a-,-a-,-a	o-,-o,a-,-o	u-,-u-,-u
NEM	e-,-e-,-e	a-,-a-,-a	wa(e)-,-a(o)-,-o	u-,-u-,-u
BAU	e-,-e-	a-,-a-,-a	wa-,-o-,-o	u-,-u-,-u
LAU	(h)e-,-e-,	a-,-a-,-a	(h)o-,o,a-,-o	(ḥ)u-,-u-,-u

From this data it is apparent that:

(1) Proto-Mailuan (PMF) seems to have had a sound system containing the following phonemes:

*p *t *k
*b *d *g
*m *n
*r
*v *y
*i *u
*e *o
*a

the consonants of which had the following reflexes in Mailuan languages:

Language	*p	*t	*k	*b	*d	*g	*m	*n	*r	*v	*y
MGI	p	t	k,',ø	b	d	g	m	n	r	v	?
DOM	p	h	k,',ø	b	d	g	m	n	r(n)	w	y,l
MOR	p	s	k,',ø	b	d	g	m	n	r(n)	w	n,l
MA	p	s	k,',ø	b	d	g	m	n	r	w	y
NEM	p	h	k,',ø	b	d	g	m	n	r	w	y
BAU	p	s(k)	k,',ø	b	d	g	m	n	r	w	y
LAU	p	h	k,g,ø,(-h-)	b	d	g	m	n	r	h,v?	?

(2) The following innovations have occurred since the separation of the present daughter languages:

a) *t > /h/ in DOM, NEM, LAU
   /s/ in MOR, MA, BAU
b) *r > /n/ medially in DOM, MOR
c) *y > /n,l/ initially in MOR
d) *o > /wa/ initially in DOM, NEM

In addition there is a sound change *k > k > ' > ø, h spreading throughout the Mailuan languages, and one r > n in Morawa;

(3) The Mailuan Family is either not very old or the languages have remained in contact with one another.

APPENDIX 3: OUMA AND MAGORI SOUND SYSTEMS[43]

These two languages have very similar sound systems in the number of phonemes they possess and in the nature and distribution of their allophones. Thus both have conventional five-vowel systems (i, e, a, o, u) and both have the following consonants in common:

p t k

b d g

m n

v r

Ouma has h in addition.

Their voiceless stop phonemes (excluding glottal) are usually aspirated and may be fricated so that /p/ may appear as [p, p^h, ɸ, f], /t/ as [t, ts, s], and /k/ as [k, x] or even [h] in Magori. /g/ in Magori is also sometimes fricated word medially. Glottal stop in both languages is a suspect sound as it occurs automatically between like vowel sounds (as it does in Magi) and has been noticed to occur in free variation with h word medially in Ouma. It has been recorded word initially in both languages but it is not certain whether it is functional there. /v/ in Magori is more a bilabial fricative but has the variant [w] before back vowels; in Ouma [w] is the more common sound although [ɓ] occurs unconditionally. Finally /r/ in Magori is usually [r] with [l] occurring word medially; in Ouma [l] seems to be the more common. In both [y] is an allophone of /i/ word initially when a vowel follows.

There are no consonant clusters in Ouma or Magori, and all syllables are open.

APPENDIX 4: SOME EVIDENCE OF HOW SOME ENGLISH SOUNDS ARE PRONOUNCED IN MAILUAN AND OUMIC LANGUAGES

In this chart I list all those words that appear in the data which indicate how some English sounds are pronounced in Mailuan and Oumic languages. The first two of these, *'salt'* and *'machine'* occurred spontaneously in basic vocabulary elicitation, the first with no English model, the second with the Police Motu model masini. The others were elicited deliberately mainly to see how speakers perceive and pronounce familiar and unfamiliar sounds, but mainly fricatives, in different positions with a view to helping to understand what speakers do with borrowings from nearby languages.

Language	1. *'salt'*	2. *'machine'*	3. *'matches'*	4. *'visit'*	5. *'heissen'*[44]
MGI					
Darava			[mækis]	[vilij]	[haisen]
Selai			[matsis]	[vizit]	[haisen]
DOM		[misini]			
MOR					
MA	[sol]	[misini]			
NEM	[solu]	[misin]			
BAU	[solu]	[misini]			
LAU					
MAG	[tsolu]				
OUM			[masisi]	[bisisi][45]	[haisen]

Language	6. *'piss'*	7. *'tag'*[44]	8. *'thacker'*[44]	9. *'pith'*	10. *'gona'*[44]
MGI					
Darava	[pis]	[ta]	[sæka]	[pit]	[o'ona]
Selai		[ta]	[saka]	[pis]	['ona]
DOM					
MOR					
MA					
NEM					
BAU					
LAU					
MAG					
OUM	[pis]				

An analysis of this chart shows that the consonants that occur in the test items are pronounced as follows:

1) Initial

ENG	MGI	DOM	MOR	MA	NEM	BAU	LAU	MAG	OUM	Examples
s				s	s	s		s		1
m	m	m		m	m	m			m	2, 3
v	v								v	4
h	h								h	5
p	p								p	6, 9
t	t									10
~~g~~	o','									7
th	s									8

2) Medial

ENG	MGI	DOM	MOR	MA	NEM	BAU	LAU	MAG	OUM	Examples
l(t)				l(u)	l(u)	l(u)		l(u)		1
sh		s		s	s	s				2
n	n	n		n	n	n				2, 7
tsh	k,ts								s	3
z	l,z								s	4
s	s								s	5
k	k									8

3) Final

ENG	MGI	DOM	MOR	MA	NEM	BAU	LAU	MAG	OUM	Examples
s	s								s	3, 6
t	j,t								s	4
n	n								n	5
~~g~~	ø/									10
th	t,s									9

That is, speakers have no difficulty with sounds that occur in their own languages (e.g. s, m, v, h, p, t, l, n, k) but interpret unusual sounds in terms of their 'nearest perceived' sound in their own language. Thus:

i) 'English' [~~g~~-,-~~g~~] becomes [ø-,-ø] and then the word is glottalised initially in Magi;
ii) English [th] in initial and final positions is reinterpreted as [s,t] in Magi;
iii) English [-tsh-] is pronounced as [-k-] or [-ts-] in Magi and as [-s-] in Ouma;
iv) English [-z] is pronounced as [-l] or [-z] in Magi depending on what the listener thinks the English speaker is trying to say. It becomes [-s] in Ouma;
v) English [-sh-] becomes [-s-] in Police Motu and then [-s-] in Mailuan and Oumic languages.

APPENDIX 5: ANALYSIS OF DIFFERENCES BETWEEN EARLY RECORDS AND MODERN ONES IN TWO MAILUAN LANGUAGES

If modern vocabulary lists in Morawa and Domu are compared with those of Strong (1919) they will be found to agree except in the following two respects:

1) where one sound has been substituted for another. Consider, for example:

a) *'two'* MOR sauna > hauna [Comment: [s] is the regular reflex of *t in MOR]

b) *'path'* MOR wage-z-iara > lara [Comment: All languages have cognates with [l-]]

c) *'stone'* MOR gaga > haga [Comment: gaga is evidently a transcription or typographical error as other languages have baga]

d) *'fish'* MOR onebe > orebe [Comment: Recent borrowing from Magi because -n- is the expected reflex of *r in Morawa]

2) where there is a substitution of a completely new form in the modern materials which is unrelated to the 1919 one. Some of these are probably due to misunderstandings in elicitation or to different referents used in elicitation. Consider, for example:

a) *'house'* MOR mari > wun
b) *'root'* DOM nagai'i > i'ini
MOR i-in > nagasae
c) *'sea'* DOM ia-u > sali'a
d) *'wife'* DOM inaha > have
e) *'wind'* DOM bode-a > yagi
MOR bode-a > ani
f) *'arrow'* DOM wadai-i-haro > puhi
MOR owana > bome
g) *'breast'* MOR lan > ama
h) *'bush'* DOM anahuhu > douba
MOR ana > ewo

Others probably either (i) represent recent borrowings, as for example:

a) *'yam'* MOR o-a > maho (< Police Motu maho)
b) *'ashes'* DOM au > maena (< ?)
MOR kau > konunu (< Magi konunu)
c) *'blood'* DOM nabu > yara (< ? Magi lala)
MOR nabu > nana (< ?)
d) *'bow'* DOM oifa > peva (< Police Motu peva)
MOR koipisolo > peva (< Police Motu peva)
e) *'butterfly'* DOM aune > wa'ihaguri (< ?)
MOR au-ope > orapepe (< ?)
f) *'finger'* MOR euda-ali > didiba (< ?)
g) *'five'* MOR aunapau > ima'omu (< Magi ima'omu)
h) *'ground'* DOM momo > hano (< ?. Police Motu is tano)
i) *'betelnut'* DOM adaubana > wa'e (< Ma, Neme'a wa'e)
MOR uwen > wa'e (< Ma, Neme'a wa'e)

or ii) are synonyms that occur because of word taboo:

a) *'egg'* DOM baha > baha, urim (< Morawa, Ma, Neme'a urim(i,u))

NOTES

1. These languages are Ma and Neme'a. On the basis of a preliminary lexico-statistical comparison I suggested (Dutton 1971b:21) that they were probably divergent dialects of a single language. Thomson (1975a) on the other hand using the same method but comparing two other communalects obtained lower percentages and so suggested that they were better regarded as separate languages. Diachronic phonological evidence presented in Appendix 2 of this paper also suggests that is how they are best regarded.
2. These figures are based on 1969 figures given in Dutton (1971a:20) and on those given in Thomson (1975a:37,41) and have been adjusted upwards and rounded off to the nearest hundred to allow for natural increases in the intervening years, except for Laua where there is believed to be still only one native speaker.
3. For a discussion of some of these see Appendix 5.
4. Name avoidance is also practised throughout the area although to what extent amongst other Mailuan languages is not known (Dr. Thomson, personal communication).
5. Although this is assumed to be generally true some additional support for the validity of such an assumption in this study is to be found in Appendix 4.
6. Some data were excluded because they (a) only involved Bina and Yoba and Mailuan languages; (b) did not discriminate between Ouma and Magori; (c) did not contain evidence from Keapara to the west; and (d) exhibited evidence from only one Mailuan language.
7. Sets with identical forms in Ouma and Magori are not usable as they do not discriminate between sources.
8. The sound laws for Oumic languages are still only tentative. With better reconstructions some of the doubtful statements in the following can probably be tightened up. Indeed, as I have already indicated, I hope this study will contribute to a better set of PCP reconstructions.
9. I have to say 'appears' because there may well be relevant ones available but not under the head words that I have searched through to date.
10. Gadaisu and Laimodo communalects are suspicious because, as already pointed out, Magi speakers have married into them.
11. Thus, for example, Bauwaki and Neme'a languages show contact with Abia, one of the Yareban languages, and the former community of O'oku (the whereabouts of whose members is not known) seems to have been originally a Yareban communalect with heavy borrowing from Laua and/or Magi (Dutton 1971).
12. Other Island dialect speakers moved to Gadaisu to live with Suau speakers as well but these are of little interest to us in this study.
13. The remaining two, Boru and Kurere, are "pure Mailu Island colonies" (Thomson 1975a:57).
14. The three high points (village sites?) on these hills are called (from left to right) OMOU'ORO, BAGA'ORO and SILO'ORO. See Plate 1, p.154.

15. There would seem to be some support for the claim that these hills were once islands in the fact that dune ridges can easily be seen from the air showing progressive prograding of the beach in this area (see Plate 1). However, even though beach prograding is a common feature of parts of coastal South-East Papua New Guinea (Loeffler 1977:114-18), rates of prograding vary according to local conditions of tide, wind, rainfall, etc. Consequently it is not possible at the moment to suggest a date at which the Ouma hills may have once been on, or very close to the beach. It may not have been all that long ago, however, as I am told by Dr Thomson (personal communication) that Urika Mission Station in the Gulf of Papua was originally built on the coast west of Orokolo about eighty years ago but the site is today almost a mile inland. Unfortunately I was not able to visit the Ouma hills at the time to make surface observations and to look for pottery sherds, stone artefacts and/or other clues to earlier habitation which the Ouma claim to be there.

16. Present-day informants said they went on lagatoi (the Motu name for trading canoe) but this could not have been their word for it, even if they did have similar vessels, by the sound rules used in this paper. Thus Motu lagatoi derives from a combination of POC *waŋka(ŋ) *'canoe'* and POC *tolu *'three'* the expected reflexes of which in Ouma are vaga and toyu.

17. I do not see any connection between this pattern and any of those unearthed by Irwin (1976) in his archaeological exploration of Mailu pottery.

18. Ouma enemies were said to be from the following villages: Ba'u (Bauwaki language), Doma (Neme'a language), Bamu (Neme'a language), Mada (Ma language), Velavelai (Bauwaki language), Oka'udi (Abia language), Dorivaida (Abia language), Oadeure (? language).

19. The following are the names of former villages given to me by present-day informants: U'ubi (or O'oubi), Obara, Godoa, Limu, Orimaguina, Ganema, Badana, Savaiaguina, Oviaguina, Darava, Ovesaguina, and Labu where the present informants (men of about their mid-50s) were born.

20. As have the other remnants of Oumic languages, Yoba and Bina, as well as those of the Laua language presently living in the village of the same name (Dutton 1976:588-92).

21. Acey Teasdale was an anthropologist who investigated land rights among the Magori for the Administration of Papua New Guinea in the late sixties.

22. Neil Thomson was a former medical superintendent of the Iruna Hospital at Amazon Bay.

23. This was the explanation given to me recently by Mailu Islanders (Dutton 1980) and expresses beautifully the relationship between these groups and supports assumption 6 used in interpreting the data for this paper. Clearly there is nothing to be gained by the Mailu from the Magori now although as the record shows this was not always the case. In marked contrast to this, however, they have learned to speak other AN languages such as Suau and Keapara, the languages of their trade partners (and similar in structure of Ouma and Magori).

24. Haddon (1932) subsequently compared this sherd with others of south-east Papua and found it to be distinctive.

25. My Mailu Island informants were two old men Igua Alabu and Vea Ogagama of the Diadudu clan. I have not had the opportunity of discussing this again with my Ouma informants.

26. This appears to derive from Ouma and literally means *'canoe*(wa-)*' 'one'* ('ona) or *'one-hulled canoe'*.

27. This form occurs in Darava and Selai (the only communalects I have information from). Mailu Island has mareva, although Dr Thomson informs me (personal communication) that they also have 'ari'ari *'(to) sail'*.

28. Note that this belongs to a different cognate set from that given for sweet potato in section 4. above.

29. There are also other items that come out as NAN in origin but these are all items that are local in origin and so provide no insight necessarily into sea trading. Take, for example, the following: *'SE wind'* (bodea), *'island'* (pomu), *'dog'* (wa'ai), *'tobacco* (native)*'* (lugu), *'knife* (native)*'* (bau), *'axe'* (gilo), *'(men's) clothes'* (ivari), *'(women's) clothes'* (baroa), *'string bag'* (oisa), *'spear'* (duabo), and *'beads'* (bore).

30. This is assumed to be NAN because it does not reflect any so far suggested or established Proto-AN reconstruction for *'pot'*. It may well, however, reflect POC *qumu *'(stone) oven'*, especially as the expected reflexes of this form are of similar shape in some Oumic languages. Thus consider OUM umu, YBA and BNA 'umu, MAG kumu, although it is not known what present-day forms occur in these languages.

31. There may well be other remnants around this area as I have not visited many villages to ask, nor have I checked through the old literature again to see what I may have missed in earlier searches.

32. Note here that the expansion and formation of colonies in association with Ma speakers is a very unusual situation. I have no idea what could have given rise to this but the Ouma who had been originally friendly with the Ma may have had something to do with it. But why were the Ouma forced to become fugitives then?

33. Nina *'sun'* is AN in origin and occurs in both present-day Magori and the Mailu Island dialect of Magi, although it is not clear whether the Mailu borrowed it from the Magori or vice versa (see item *'sun$_1$'* in section 4.). Puri *'moon'* does not appear to reflect any relevant Proto-AN form and does not occur in any present-day language of south-east Papua with the appropriate meaning. It is therefore of unknown origin. However, in the Mailu Island dialect of Magi, puri does occur with the meaning *'to grow, sprout'* and it may be that when the children were asked (in sign language) for the word for *'moon'* they used puri to refer to the phases of the moon either out of ignorance of what was being asked of them, or because *'moon'* was a taboo word at that time (see section 3.1.(c)).

34. The following chart shows the range of instances observed in the presently available data:

Language	m	n	b	d	g	l/r	t/s
Magi	+						
Domu	+	+					
Morawa	?	+					
Ma	+	+	+			+	
Neme'a	+	+	+	+	+	+	
Bauwaki	+	+					
Laua	+	+		+		+	+

In this note: a) concerning the Magi row, that although Thomson (1975b) does not mention final vowel dropping and Saville's (1935a,b) vocabularies do not contain any examples Dr Thomson assures me (personal communication) that final vowel dropping does occur after m;

b) concerning the '+'s in the intersection of the b, d, and g columns of the Neme'a row that the final consonants that remain after the vowels have been dropped in this language then become devoiced to [p, t, k];

c) concerning the '+'s in the intersection of the d and l/r column of the Laua row that in these cases vowels seem to be always dropped before the suffixes bau and ba'a, and only irregularly otherwise;

d) concerning the '+'s in the intersection of the t/s column of the Laua row that vowels are dropped after [t] only irregularly and this may indicate that [t]s are in fact devoiced [d]s.

35. Thomson (1975b:603) notes that "/t/ is heard nowadays as either [t] or [s] although [ts] was apparently once more normal (Malinowski 1915) but is seldom heard in the contemporary situation."

36. This sound approaches [ɗ].

37. These languages also have [ɔ] which occurs occasionally and which is taken to be an allophone of /o/.

38. [w] may manifest a separate phoneme.

39. Evidence for the reconstruction of this sound is weak and the present display suggests that internal borrowing has affected the picture.

40. Evidence for the reconstruction of this phoneme is very weak because there are very few occurrences of k in the presently available data. Not only that but k is apparently sometimes erroneously recorded as g and glottal stop is not in many cases where it probably should be. The rather diffused set of correspondences in this chart can only be explained as evidence of a sound change that is still in process; that is that k is an old sound in those words in which it now occurs. Support for this conclusion is to be found in (a) that k is of very low frequency in the modern languages and unevenly distributed; and (b) that the forms in the following loans in Oumic languages can only be explained by claiming that these were borrowed at a time when k was a much more functionally important sound in these Mai'luan languages:

1.	*'beach'*	YOB, SUA(L)	kone	: MF 'one
2.	*'cassowary'*	MAG	guiaga	: MF guia, guiae, guia'e, guiaha
3.	*'thigh'*	OUM, MAG	gobe	: MF 'obe, waba
4.	*'wallaby'*	MAG	magani	: MF man(i), hani
5.	*'left hand'*	YOB, BIN	kebe	: MR 'ebe, eban, hebe
6.	*'liver'*	BIN	kalame	: MF 'areme
7.	*'pot'*	MAG	akomu	: MF 'omu, hohomu
8.	*'head'*	YOB, BIN	kulu	: MF uru
9.	*'fish'*	YOB, BIN	korebe	: MF 'orebe, warebe, 'onebe

41. Evidence for the reconstruction of this sound is again weak but there are sufficient cases to justify keeping it for the moment at least. One problem is that no cases occur in which Magi y corresponds to anything in any other language because of the limited range of data presently available.

42. In Morawa n seems to be spreading to take over r. See Appendix 5.

43. This account is based on my own fieldwork.

44. These are nonsense words.

45. The informant said bisisi guri (lit. *'bisisi shell'*) thinking I was trying to say the Motu word bisisi *'shellfish'*.

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