A COMPARATIVE STUDY OF LUSI AND BARIAI

A COMPARATIVE STUDY OF LUSI AND BARIAI,

TWO AUSTRONESIAN LANGUAGES OF WEST NEW BRITAIN

By

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ABSTRACT

This thesis presents a detailed analysis of the sound correspondences of the Lusi and Bariai languages of West New Britain, and their development from Proto-Oceanic, and examines subgrouping classifications suggested by Friederici (1912, 1913), Chowning (1969, 1976), and Lincoln (1977, 1978). Verification and correction of certain data found in Friederici (1912) on the Bariai language, and in Counts (1969) on the Lusi language are also provided.

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LIST OF ABBREVIATIONS AND SYMBOLS

A	Anêm; data from Thurston (n.d.)
AN	Austronesian
B	Bariai
G	Gitua; data from Lincoln (1977)
K	Kove
Kd	Kilenge; data from Dark (1977)
Kf	Kilenge; data from Friederici (1912)
Kg	Kilenge; data from Grant (n.d.)
k.o.	kind of; species of
L	Lusi
M	Mandok; data from Freedman (n.d.)
NAN	Non-Austronesian
NGAN	New Guinea Austronesian; New Guinea Oceanic
OC	Oceanic
PAN	Proto-Austronesian
PCP	Proto-Central Pacific
POC	Proto-Oceanic
PPN	Proto-Polynesian
SOV	subject-object-verb word order
SVO	subject-verb-object word order
1sg	first person singular pronoun
1in	first person plural inclusive pronoun
1ex	first person plural exclusive pronoun

2sg	second person singular pronoun
2pl	second person plural pronoun
3sg	third person singular pronoun
3pl	third person plural pronoun

Ø	zero morpheme, zero phoneme
*	unattested or hypothetical form
?	uncertainty
...	form unavailable or non-existent
(...)	form available but irrelevant
-	morpheme boundary
/ˆ/	back unrounded vowel in Anêm; upper mid vowel in Yabêm
x : y	x corresponds to y
x ~ y	x alternates with y
x ≠ y	x contrasts with y
x → y	x becomes y

1. INTRODUCTION

The Lusi and Bariai languages are members of the extensive and diverse Austronesian (AN) language family. More specifically they are Oceanic languages, part of a subgroup within AN that includes the languages of Polynesia and most of the AN languages of Melanesia and Micronesia. Several authors including Milke (1965), Capell (1971), Chowning (1973), and Pawley (1978) have argued for a subdivision within Oceanic called New Guinea Austronesian (NGAN) or New Guinea Oceanic (NGOC), and Lusi and Bariai are considered to be members of this subgroup. The arguments of these linguists regarding the validity of a NGAN subdivision remain unsubstantiated, however, in part because work in this area is hampered by inadequate data on the languages of New Guinea and New Britain. Present hypotheses, based on syntactic and lexical iso-glosses, are tentative, pending the availability of "better grammars and dictionaries, and painstaking application of the comparative method" (Pawley 1978:11).

This thesis is a step in ameliorating the situation for West New Britain, by presenting a detailed comparison of the sound systems of two members of the lower order sub-grouping called the Bariai languages of West New Britain, namely Lusi and Bariai. Other related languages of West

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New Britain -Kove, Kilenge, and Maleu- are discussed in those cases where relevant material is available. Although some morphological and syntactic data are presented here, a detailed comparison of the grammars of Lusi and Bariai is beyond the scope of this work. In order to contrast expected reflexes with variation present in modern Lusi and/or Bariai, Proto-Oceanic (POC) reconstructions from Grace (1969) as presented in Wurm and Wilson (1975) are used to establish regular sound shifts. Sources other than Grace include Blust (1972a, 1972b, 1978) and Milke (1968). These are listed as they occur in the text. Occasionally Proto-Austronesian (PAN), Proto-Polynesian (PPN), Proto-Central Pacific (PCP), or Proto-Eastern Oceanic (PEO) forms are compared to cognate Lusi and Bariai words where the POC etymon is unavailable or is not related, suggesting that such forms be considered for POC. Sources for PAN, PPN, PCP, and PEO forms are listed as they occur.

The name 'Lusi' is given preference over 'Kaliai', as used in Counts (1969) and Chowning (1969, 1973, 1976, 1978a), for two reasons: first, Lusi speakers prefer the term 'Lusi', using 'Kaliai' as a historical reference to the villages of Ketenge, Kaliai, and Taveleai. The Lusi contrast these three villages on the one hand with Atiatu to the west, and on the other with Kandoka-Lauvore to the east. Slight dialectal differences distinguish these three divisions. Second, Kaliai refers to the census division of Kaliai, in which the Anêm and Lamogai languages (Aria-Toruai, Mouk, and

Lamogai proper) are also spoken. A similar reasoning would suggest that the census division name 'Bariai' be replaced by 'Kabana', another name used by the Bariai, who say that the name 'Bariai' was imposed on them as a single political entity by the Germans at the turn of the century. Since Amara is also spoken in the Bariai census division, the use of 'Kabana' seems preferable. This would lead to considerable confusion, however, as the term 'Bariai' is widely accepted in the literature as a result of Friederici's (19120, 1913) works. Furthermore, the Bariai themselves frequently use 'Bariai', and 'Kabana' is less common. Consequently Friederici's usage is retained here.

The Lusi and Bariai data used in this thesis are the result of fieldwork conducted in 1978 and in 1981 during which the material in Friederici (1912) and Counts (1969) was augmented and corrected when inaccurate. Kove material was also collected in 1978, but references to Chowning's (1973) wordlist are made when this is the source of data. Kilenge material comes from Friederici (1912), Dark (1977), and Grant (1977). Maleu data is from Hooley (1971), and all Gitua vocabulary comes from Lincoln (1977). Freedman (1967) provides some Mandok vocabulary, Thurston (n.d.) provides Mouk and Amara data, and other sources of language data are attributed as they appear.

Chapter Two provides an introduction to the New Britain languages involved in this study through a brief review of the literature that discusses them. Chapter

Three continues this background discussion with a presentation
of the data collection methodology and the sociolinguistic
setting of the languages. Chapters Four and Five discuss
the comparative data and establish the similarities and
differences to be found between Lusi and Bariai. The final
chapter summarizes the findings of the thesis.

2. HISTORY OF RESEARCH

2.1 Introduction

2.2 Descriptive Literature

2.3 Classificatory Studies

2.1 Introduction

This chapter offers a review of the linguistic literature relating to the various Siasi languages of West New Britain, that is, Lusi, Kove, Bariai, Kilenge, and Maleu. This literature falls for the most part into two categories. The first category is that material which focusses to some degree on one or more of these languages, in either a descriptive or comparative manner. The second category is that literature which merely mentions or only briefly discusses these languages, usually as regards their position within classificatory schemata.

2.2 Descriptive Literature

The authors who concentrate on one or more of the various Siasi languages of West New Britain are not numerous. In fact, no single language of this group has been subject to intense linguistic investigation by more than one author, and consequently the descriptions and wordlists currently available remain unverified as to accuracy, although they often form the basis for comparative analysis by linguists foreign to the area.

At present, data that are available on each language rarely extend beyond a basic wordlist.

Among the first to describe a West New Britain language was Friederici who produced both a grammatical sketch and a lexicon of Bariai (1912), and both are on the whole quite accurate.

Friederici was involved in two expeditions, first in 1908 along the north coast of West New Britain, then in 1909 along the south coast of West New Britain. His 1908 journey took him from Kilenge to Kove as part of an expedition of artefact collectors and labour recruiters. Although "in beiden Fällen war der Aufenhalt in den angelaufenen Plätzen durchweg ein ganz vorübergehender, beschränkte sich stets auf nur weniger Stunden" (1912:13), he managed in these brief visits to elicit short wordlists for Kilenge and Kove, as well as lexicons for Vitu and some Admiralty Island languages gleaned from informants found in Aitape, Sepik Province. He also presents six words, the numerals up to ten, and a short utterance ("give me!") of 'Loŋa', which he elicited second-hand from a Bariai man (ibid:220). 'Loŋa' is a Bariai word meaning 'interior' and it refers to the Amara people who live inland and speak an AN language quite unlike the neighbouring Bariai and Kilenge-Maleu languages.

The corpus that Friederici presents for Bariai is considerably larger than are the wordlists of the other languages he surveyed. Evidently his Bariai data was expanded

and verified "durch den Bárriai Kábui aus Kumartangtáng
[now Kokopo] erfolgen, der während nahezu der ganzen
'Natuna'-Fahrt, von Eitapé bis Singapore, in meinem persön-
lichen Dienst war" (ibid:14). The generic and species names
of plants, fish, reptiles, snails, etc. in Friederici's Bariai
lexicon were acquired when he and Kabui visited Raffles' Museum
in Singapore and the botanical gardens of Singapore and
Buitenzorg (now Bogor), Java (ibid:18).

In 1913, Friederici produced a second publication
on Bariai, demonstrating several sound shifts between Bariai,
Kove, and/or Kilenge, and then positing isoglosses linking
Bariai to some languages of western Indonesia. His sound
shifts are demonstrated in short tables (1913:11) and include
B /r/ : K /h/ : Kf /r/; loss of final /i/ and /u/ in Bariai;
B /d/ : K /r/ : Kf /r/; the retention of /k/ in certain
Kilenge words where Bariai has /∅/, and two instances of
Kf /o/ : B /a/.

Friederici is the first linguist to propose a Bariai
Group that includes Bariai, Kilenge, and Kove, and to suggest
that this group is related to some of the languages of the
north coast of the New Guinea mainland:

> Diese Sprachen von Jabim, Bukaua, Kelana
> [=Gitua], Rook, Siassi-Inseln und Tami
> fasse ich für diese Untersuchung in eine
> der Barriai-Gruppe angegliederte besondere
> Unter-Gruppe zusammen und nenne sie 'Neu-
> Guinea-Unter-Gruppe' (1913:12).

His conclusions regarding the membership of the Bariai Group
and its common history with the north coast remain

unchallenged[1], and the expansion of data, with the addition
of Lusi to the comparison, in the present study substantiates
his claims. However, Friederici's proposed isoglosses linking
Bariai with migrants from an area "die durch die Linie Süd-
Philippinen, Nordost Celebes, Molukken bezeichnet wird"
(ibid:12) are methodically rejected by Lafeber (1914) who
demonstrates that these isoglosses are more widespread than
Friederici supposed, or are subject to doubt in terms of
their status as cognates. This is frequently shown to be
the case with isoglosses as work in Austronesian languages
progresses and reveals the wide distribution of cognates.

The next study to focus on a Bariai language is Counts'
(1969) description of the phonology and grammar of Kaliai-
Kove, specifically Kandoka Lusi. Since material collected
earlier by missionaries was left unpublished and was sub-
sequently lost, this publication by Counts made available
the first Lusi lexicon, albeit a small one. Counts gives
a more extensive outline of Lusi morphology and syntax than
Friederici provides for Bariai, and on the whole it is
quite accurate, although incomplete.

That same year, 1969, Chowning produced the first
of a number of articles discussing the Bariai language group
-Kove in particular- and their relation to other New Britain

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1.   The specific north coast languages he studied, such
as Yabêm and Bukaua, are not, however, as closely related to
the Bariai languages as those on the Rai Coast, such as
Gitua (=Kelana) and Malalamai, for which Friederici had no data.

languages. In her 1969 article on the languages of New Britain, she devotes a section to the Bariai Family in which she reiterates Friederici's observation on the relationship of these languages to "those spoken on Umboi (Rooke) island, in the Siassi Islands, and on the neighbouring mainland of New Guinea" (1969:27). Here she says "it seems likely that the Bariai Family will turn out to belong to a larger language family which extends through the Siassi Islands to New Guinea" (ibid:28).

Chowning's later article on the Austronesian languages of New Britain (1976b) repeats her 1969 subgroupings, although she changes "Bariai Family" to "Siasi" as a result of the publication of Hooley's (1971) wordlists of the languages of Morobe Province which provide data confirming her 1969 suggestion. The Bariai languages are grouped into "three main divisions: Kove-Kaliai, Bariai proper, and Kilenge-Maleu" (1976b:368) and Chowning points out that the "dialects of Kove and Kaliai are more closely related to Bariai than any of these are to Kilenge-Maleu" (ibid:368). She does not provide evidence to support these statements, but as will be seen throughout the present work, her observation is sound.

Chowning's 1973 and 1978 articles continue the comparative focus. The former article concentrates on Kove and Lakalai (=Bileki), while the latter is a comparison of the grammars of five New Britain languages, including the Bariai group as represented by Kove. The Lakalai-Kove comparison comes in response to Milke's 1965 article (to be

discussed in Section 2.3) and provides a lexicon of 174 words in Kove and Lakalai.

Recently Thurston (in press) has produced a comparative study of Lusi and Anêm, the latter a non-Austronesian (NAN) language which has affected the development of Lusi to a considerable extent. Thurston's analysis sets out to show that a Siasi language underwent pidginization when immigrants to the north coast of West New Britain came into contact with Anêm speakers. Thurston establishes what he calls "Standard Austronesian" (SAN), then proceeds to demonstrate that Lusi deviates from SAN not only in the simplicity of its grammatical structure, but also in its close typological resemblance to Anêm. He then discusses levels of vocabulary in Lusi, convincingly showing that although Lusi basic vocabulary is Austronesian, much of its non-basic vocabulary derives from Anêm as a result of lexical expansion in the creolization process. Thurston's recent fieldwork on the Lamogai languages (Mouk, Aria-Toruai, and Lamogai proper), as well as the isolate Amara, will show the relationship of these languages to Anêm and Lusi and a monograph on the topic of their role in language change in the area is in preparation. Thurston provides a basic vocabulary list of both Lusi and Anêm.

Finally, Dark (1977) has written a small grammar and dictionary of Kilenge. Perhaps because of its lack of linguistic sophistication, Oceanic linguists have not taken much notice of it, and it has seldom been used as a source of data for comparative purposes, unlike the lexicons of

Friederici, Counts, and Chowning for Kilenge, Bariai, Lusi and Kove. These three authors have provided most of the lexical data used by later authors interested in placing these languages into higher level classifications.

2.3 Classificatory Studies

There has been a proliferation of literature in the past twenty years in which the Bariai languages are briefly discussed. The references to these languages prior to the 1960's are infrequent, and they concern themselves for the most part with establishing the locations of AN languages and their names. An example is Meyer (1932) who prepared a map of New Britain which includes Kove, Kilenge, and a language called Sahe. Friederici calls this language Sare. Chowning expresses doubt as its separate status (1969:27, 1976:368) and the present author's attempts to locate Sahe speakers in 1978 and 1981 failed, as Kilenge, Bariai, and Lusi speakers agree that no such group exists. They concluded that references to Sahe are in fact references to a group of Kove speakers who settled on the Sare River after an internal dispute on Nukakau Island. Subsequently they were forced to leave by their Maleu neighbours and settled on the Anêm island, Tamuniai. A later split resulted in the settlement of Arumigi Island. The confusion in the literature as to whether the name of this group is Sahe or Sare reflects the Kove use of /h/ for Bariai /r/.

In 1966 Laufer listed Kove, Kaliai, Bariai, Sahe,

and Kilenge with the names of Roman Catholic missionaries
(and others) who had done some linguistic work on these
languages prior to World War II. It seems, however, that
the Japanese destroyed almost all linguistic and ethno-
graphic manuscripts (Laufer 1966:117).

Capell has produced two surveys of the south-
western Pacific (1954, 1962a), as well as a survey of New
Guinea languages (1969). He lists Bariai, Sahe (Sake on
his map), Kove, Kaliai, and Kilenge (sometimes spelled
Kilengge) as Melanesian languages (1962a:90), and provides
the first line of the Lord's Prayer in Kove, Kilenge, and
Maleu (ibid:92). Like Meyer (1932) who also gives this text,
his Kove sentence is somewhat inaccurate. Beyond this, little
else is stated except his belief that "perhaps Bariai might
be suitable [as a lingua franca] for the west" (1962a:92).

Capell's 1969 survey provides little new information
on the Bariai languages. According to map 2, he classifies
the Bariai languages with the other AN languages of New
Britain in his AN_2 class, that is, those languages with
subject-verb-object (SVO) word order which are "event-
dominated" (1969:15). However, in his 1971 discussion of
the AN languages of New Guinea, Bariai is listed as an SOV
(subject-object-verb) type language (1971:244)[2]. This is
based on the use of postpositions in Bariai, a typological

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2.   Capell reverses his designations AN_1 and AN_2 between
his 1969 and 1971 papers, so that although Bariai is AN_2
in both, it is SVO in 1969 and SOV in 1971.

feature of SOV languages. Although Bariai is in fact an SVO language, Capell interprets the postpositions as relics of an earlier SOV order. The problem with his division is that Bariai is separated from the other languages of West New Britain such as Kove and Kilenge, as well as from the languages of the Rai coast such as Gitua. Such separation cannot be justified in terms of the lexical and grammatical similarities among these languages, especially since, as Capell apparently did not know, Kove, Kilenge, and Gitua also have postpositions, as well as prepositions. One must bear in mind that Capell was classifying languages on a typological basis, with the result that his classification using AN_1 and AN_2 does not necessarily represent genetic relationships.

Capell (1971) also includes a vocabulary of 24 words in New Britain languages, including Kove, Bariai, Kilenge, and Maleu. There are a number of errors in the Kove and Bariai data, and most likely also in the Kilenge and Maleu.

Grace (1955) was among the first after Friederici to place a northwestern New Britain language into a wider classification of Oceanic languages. His tentative grouping no. 12 includes "Southwest New Britain, Kobe, French Is., Siassi Is., and Kelana, Tami, Yabim, Bukaua, and Suam on the adjacent coast of New Guinea" (1955:339). What he means by "Southwest New Britain" is not clear, but if this designates Kilenge-Maleu which extends from the north coast to the south coast at the western tip of New Britain, then his grouping

is mostly accurate. It is clear now, however, that the French Islands (Mundua, Garove, and Unea islands, also known as the Bali-Vitu Islands) are not closely related to the Bariai and Siasi languages, but appear to be most closely affiliated with the languages of the Willaumez Peninsula and Lakalai in Chowning's Kimbe group (1976:367). Grace's grouping of Kove with the Siasi Islands and part of the mainland is quite accurate, considering the scant data available to him at that time.

In 1965 both Dyen and Milke produced classifications that include Siasi languages of West New Britain. Dyen examined Kilenge in his lexicostatistical classification of the Austronesian languages, but inadequate data prevented him from placing Kilenge any lower than at the "Austronesian Linkage" level, its highest cognate percentage being with Fijian at 18.0 (1965:47). This is not particularly informative in regard to the relationship of Kilenge to New Guinea or New Britain languages.

Milke (1965) was interested in establishing a sub-group of Oceanic which he calls the New Guinea Cluster, known to later authors as New Guinea Oceanic (NGOC) or New Guinea Austronesian (NGAN). This grouping includes almost all the AN languages of the New Guinea mainland and some AN languages spoken on adjacent islands, as well as on northwestern New Britain. One of his criteria for NGAN is based on the widespread distribution of the "preposed genitive" among these languages. The preposed genitive,

studied earlier by Friederici (1912, 1913), is a noun phrase

construction in which the possessor noun or pronoun precedes

the object of possession, as in the Lusi noun phrase

/tanta e-le luma/, 'the man's house', literally 'man his house'.

Milke examines some other grammatical features, such as the

distribution of the realis:irrealis opposition, and

classificatory prefixes on verbs, but he rests most of his

argument on "many isoglosses connecting Nakanai with the

languages of western-most New Britain and the mainland of

New Guinea" (1965:332). An inherent weakness of these

isoglosses, as pointed out in Pawley (1978), is that they

are based on Gedaged and Motu, geographically widely

separated languages for which Milke could find extensive

vocabularies, and that Milke was working "on the

assumption that if these two languages could be shown to

subgroup apart from non-New Guinea Oceanic languages, then

most or all of the intervening [his emphasis] New Guinea

languages could also be shown to fall into the same subgroup"

(Pawley 1978:13).

Chowning (1973), who is familiar with both Lakalai

and Kove, takes Milke to task on his suggestion that Lakalai

be included in a New Guinea subgroup, which implies that,

like Kove, Lakalai is related to the AN languages of the

mainland. In this she agrees with Capell (1971) who feels

that "the northeast New Britain languages [such as the

Kimbe languages, including Lakalai] are not of the same

immediate origins as the languages to the west of them"

(Capell 1971:318). Chowning methodically demonstrates the differences between Kove and Lakalai, in their phonologies and in their reflexes of Proto-Oceanic (POC) phonemes, as well as in their grammars. She suggests that "both languages are 'exemplary' [AN languages] in that it is relatively easy to recognize reflexes of PAN or POC protoforms" (1973:196) and that "this misled Milke, as it misled me, when I first studied Kove; 'typical' languages, comparatively rich in obvious cognates, simply tend to look alike" (ibid:193).

Chowning also argues that several of Milke's proposed isoglosses are suspect. Milke (1968) himself dismisses one item of his list after the discovery of external cognates (Pawley 1978:17), and both Chowning (1973) and Pawley (1978) provide external cognates for several others, reducing his original list of sixteen lexical isoglosses to eleven. Chowning also dismisses two cognate sets as semantically unrelated, and two more sets which require irregular phonological shifts, reducing Milke's number of isoglosses to seven, hardly a convincing corpus of shared innovations. Although Chowning concludes that Milke's evidence for a NGAN subgroup is flimsy, she feels it is possible "that there is evidence...for the unity of many, if not all, languages of New Guinea region... If [NGAN] does include all the languages of the north coast of New Guinea, then I should expect it to include Bariai as well" (1973:227).

At a lower level of classification, Hooley's 1971

article concerns itself with the relationships among the languages of the Morobe district, and he provides extensive cognate charts and vocabularies of various languages, including Maleu from a wordlist collected by Ray Nicholson (1971:146-148) which is problematic in a number of places. Hooley suggests that

> the assignment of Maleu to the Siasi Family is tentative. It is based only on the relationship of Maleu to Mutu and Tuam, and needs to be examined more closely before being considered as firmly established. Since Mutu and Tuam are physically the closest members of the Siasi Family to Maleu, the higher percentage here may be due to borrowing (1971:92).

Hooley places Tuam and Mutu in the Island Subfamily of the Siasi Family, which also includes Barim, Gedaged, Gitua, Lukep, Malasanga, Mangap, Nengaya, Roinji, Sio, and Tami (ibid:101). This grouping is supported by Chowning (1973:208) who, having established Kilenge-Maleu and Kove as members of single subgroup, presents cognate percentages based on 97 items on an available SIL wordlist linking Kove with Tuam-Mutu (52-54%), Barim (38-47%), Gitua (43-50%), and Gedaged (33-41%). She observes that "if Hooley had happened to use a word list for Bariai rather than Maleu, probably he would have been in no doubt about the affiliations with the Siasi Family" (ibid:208), and then suggests that Gitua on the part of the New Guinea mainland coast closest to New Britain could "represent a settlement from New Britain via the Siassi Islands, or directly from one of the islands" (ibid:208). According to Harding (1967:13fn), and Lincoln

(1978:143), the latter possibility is corroborated by a myth which describes the departure from Por Island of emigrants who land at Gitua and at Boŋa (Malalamai) where they settle.

Chowning also presents a number of "shared distinctive lexemes" (1973:209) that link Kove, Tuam-Mutu, Gitua, and Malalamai but not Gedaged, suggesting a division within Hooley's proposed Island subgroup. Lincoln (1977, 1978) supports this division. In his 1978 report of the Rai Coast languages, he goes one step further, setting up two subgroupings within the Island Subfamily: the Korap group, including Sel, Arop, Lukep, Barim, and Malasanga, and the Ŋero group, which includes Malalamai, Gitua, and Tuam-Mutu (1978:143). He suggests that the Ŋero subgroup is most closely connected to the West New Britain members of the Siasi Family, without explicitly including Bariai, Lusi, Kove, Maleu, and Kilenge in it (ibid:142).

Lincoln's 1977 paper challenges Capell's use of word order (SVO versus SOV) as a classificatory device. He shows that Capell's syntactic isogloss separates Rai Coast languages which are clearly related, and that this classification contradicts groupings proved to be well-founded on lexical grounds. After demonstrating that subject prefixes support the lexicostatistical basis for a Siasi Family (his Rai Group), and that they isolate the Rai Group from the surrounding AN languages (Sepik-Madang, and Huon Gulf areas), he sets out to produce evidence for a Sio subgroup (Sio, Mangap, Maleu, Kilenge, Sel, Lukep, Barim, and Malasanga)

and a Bariai subgroup with an eastern division (Bariai, Kove, Lusi) and a western division (Malalamai, Gitua, and Tuam-Mutu). These correspond to his 1978 Korap and Ŋero subgroups, but the position of the northwestern New Britain languages in the earlier paper is much more explicit. Of special import is the separation of Kilenge-Maleu from Bariai, Kove, and Lusi, based on lexical differences (1977:15). This is discussed further in the present work in Section 6.2.

Bradshaw (1978a) had reason to bring New Britain languages into his discussion of the Huon Gulf area languages since the Siasi Family extends into this region. His New Britain material is restricted to the cognate percentage (22-24%) between Gitua and Maleu, based on Hooley's 1971 revised 100 wordlist (1978a:52). There is also a footnote that the Kove word for 'blood', /siŋi/, is cognate with Gitua and Mutu /siŋ/, an isogloss among the languages being presented in the wordlist (ibid:74). Chowning (1973:209) and Lincoln (1977:15) both note the distribution of this word as well.

A summary of these lower level subgroupings is best presented in chart form, assuming a higher level grouping in accordance with Dempwolff (1934-38) and later authors as shown below:

```
            PAN
           /   \
      (non-OC)   OC
```
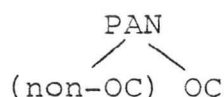
Milke (1965) suggests that OC be subdivided thus:

```
                    OC
                 ╱      ╲
         (non-NGAN)      NGAN
```
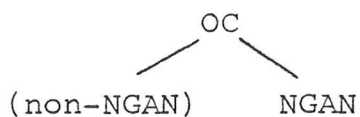
In his discussion of Morobe district languages, Hooley (1971)
presents this subgrouping within NGAN:

```
                    NGAN
                 ╱       ╲
        (non-Morobe    (Morobe district)
         district)            │
                ┌──────────┬───┴────┬──────────┐
              Buang    Adzera    Siasi    Hote/Yamap
                               ╱        ╲
                         Huon Gulf      Island
                         Subfamily      Subfamily
                          ┌───┴───┐         │
                      ⎡Jabem ⎤ ⎡Labu  ⎤  ⎡Barim      ⎤
                      ⎣Bukaua⎦ ⎢Kela  ⎥  ⎢Gedaged    ⎥
                               ⎢Sipoma?⎥ ⎢Gitua      ⎥
                               ⎣Kaiwa? ⎦ ⎢Lukep      ⎥
                                         ⎢Malasanga  ⎥
                                         ⎢Mangap     ⎥
                                         ⎢Maleu      ⎥
                                         ⎢Nengaya    ⎥
                                         ⎢Roinji     ⎥
                                         ⎢Sio        ⎥
                                         ⎢Tami       ⎥
                                         ⎣Tuam-Mutu  ⎦
```
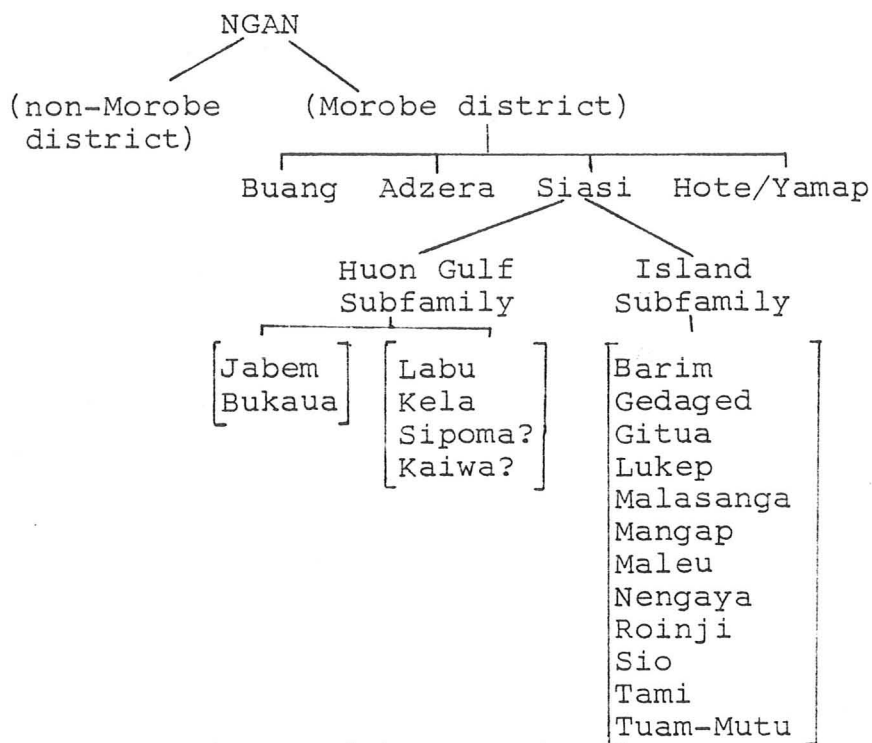
Chowning (1973) separates Gedaged from the other members
of the Island Subfamily. Lincoln (1978) subdivides the
languages of the Island Subfamily thus:

```
               Island Subfamily
                ╱           ╲
             Korap          Ŋero
               │             │
        ⎡Arop      ⎤   ⎡(Bariai)       ⎤
        ⎢Barim     ⎥   ⎢Gitua          ⎥
        ⎢Lukep     ⎥   ⎢(Kilenge-Maleu)⎥
        ⎢Malasanga ⎥   ⎢(Lusi-Kove)    ⎥
        ⎣Sel       ⎦   ⎢Malalamai      ⎥
                       ⎣Tuam-Mutu      ⎦
```
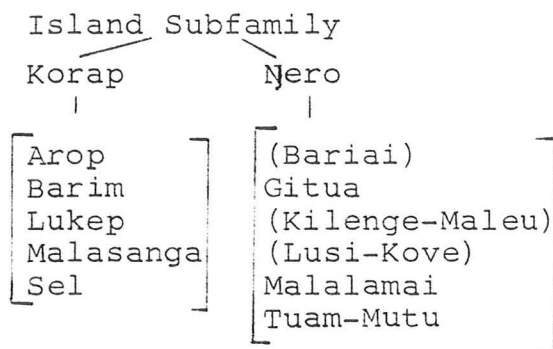
In his 1977 article, Lincoln calls the Island Subfamily the Rai Group, which he subdivides thus:

Rai Group

Sio Group   Bariai Group

Barim	western	eastern
Kilenge-Maleu	Gitua	Bariai
Lukep	Malalamai	Kove
Malasanga	Mutu	Lusi
Mangap		
Sel		
Sio		
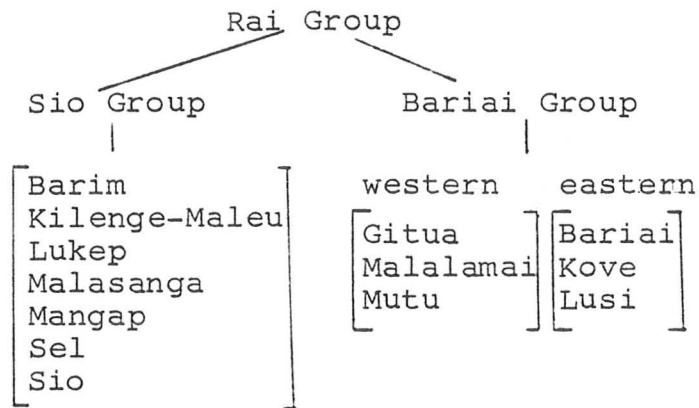
It is clear that as more data becomes available, the subdivisions appear more complex. In the following pages a detailed analysis of the Bariai and Lusi languages will show that Lincoln's "eastern division" of the Bariai Group is sound.

3. The Languages of West New Britain

    3.1 Data Collection

    3.2 Languages and Language Use

3.1 Data Collection

    The Lusi and Bariai data used in this dissertation
were gathered in two fieldtrips to West New Britain, the first
from May to November 1978, the second from June to September
1981. Since the focus of the 1978 trip was the collection
of Anêm material -Anêm is a non-Austronesian language spoken
by approximately 400 people in the Kaliai census division-
most of this period was spent in Karaiai village eliciting
lexical and grammatical data and texts from a large range of
Anêm men and women. It was, however, possible during this
time to gather Lusi lexical and grammatical information from
Lusi visitors to Karaiai, and less frequently to elicit Kove
language data from visitors from Tamuniai and Arumigi, two
off-shore islands in Anêm territory. Lusi is spoken in five
major villages in the Kaliai census division: from east to
west, Lauvore, Kandoka, Taveleai, Ketenge, and Atiatu. Kove
is spoken on a number of off-shore islands and in some coastal
settlements in the Kombe census division, as well as on Arumigi
and Tamuniai islands at the western end of Kaliai.

    Informant sessions relied mostly on the fortuitous

arrival of Lusi and Kove speakers to Karaiai. Initially a
project was undertaken to verify or correct the Lusi data
that Drs. D. and D. Counts had collected in 1969 and in 1975.
This task was soon accomplished and new material quickly
accumulated. The rapid growth of Lusi lexical and grammatical
information is attributed to the frequent visits of an Atiatu
man, Anis, married to an Anêm woman, Panau, as well as to
interaction with Benedict Solou and Jakob Mua, two bigmen
of Kandoka, during two brief visits to their village.

Anis, an intelligent and patient young man, and Panau,
who is bilingual in Anêm and Lusi, worked competently together
in translating Anêm words into Lusi and vice-versa. Another
Atiatu man, Josep Kaloga, whose Anêm mother married a Lusi
man, also demonstrated fluency in both languages and a
perspicacious ability to translate from one into the other.
In addition, these people were adept at explaining new words
and providing the context for their use and meaning. New
vocabulary acquired while in Karaiai was checked for accuracy
during the two stays in Kandoka, where Solou and Mua readily
took on the role of teacher and proved to be extremely
perceptive and helpful, often introducing new realms of
vocabulary that had been overlooked. In addition, they were
exacting in their concern that information be correct and
accurately recorded. Since Kove informants were less frequently
available, Kove material did not accumulate to the same degree
as the Lusi data.

In the two years prior to the 1981 fieldtrip, the
1978 material was organized and analyzed and a number of
questions and areas of investigation were formulated.
Between excursions in which surveys of the Lamogai and Amara
languages were conducted, stays in Kandoka provided the
opportunity to clear up problems in the Lusi corpus and to
confirm its accuracy. With the help of Solou the Lusi
lexicon was augmented, and two visits to Kokopo village in
Bariai established the verification and expansion of
Friederici's 1912 Bariai material. Since Bariai is closely
related to Lusi and Kove, familiarity with these two languages
greatly facilitated the collection of Bariai language data.
Although several Bariai speakers were enlisted to help in
this project, Paul Kalolo and Chris Aipuli in particular
demonstrated patience and keen linguistic insight.

For the most part, Tok Pisin was used as a contact
language in the acquisition of information. At times, however,
the limits of Tok Pisin vocabulary proved problematic and
frequently an Anêm word with no Tok Pisin equivalent was
suggested to informants bilingual in Anêm and Lusi who then
provided the Lusi equivalent. In a similar manner, Lusi was
used to acquire Bariai vocabulary or syntactic structures.
Such vocabulary was always verified in other circumstances or
with different informants to check for consistency and errors.
In this manner it was possible to quickly expand vocabulary
beyond the limits of Tok Pisin, and to acquire terms for
cultural concepts lacking in both Tok Pisin and English.

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Mortuary vocabulary provides a good example of this procedure. Initially, a word for 'feast' was elicited in Lusi. When the Anêm were then asked for a translation of the Lusi word /ololo/, they provided /lêlêxîm/ and explained that this was specifically a mortuary feast. A discussion of mortuary practices ensued, and the following Anêm words were acquired: /saia/ 'k.o. armlet worn by women in mourning', /mok/ 'taboo on the eating of a favourite food when in mourning', /akŋos/ 'mourning skirt of widows', /mokmogu/ 'rope made of scrap clothing belonging to the dead person and worn around the neck of a surviving spouse', /laelae/ 'belt made of pandanus used to hold up /akŋos/', etc.

This vocabulary was suggested to Lusi informants who then provided the translations: /saia/,/mok/,/akos/,/mogmogu/, and /laelae/. In addition, several new terms were provided. When all these terms were suggested to Bariai speakers, cor-responding Bariai vocabulary, often cognate, was quickly acquired. Occasionally explanations of non-cognate terms was needed in order to elicit a translation, but previous work on another language had provided areas of vocabulary that might otherwise have been missed.

Through the use of picture books, a number of names of animals and fish were acquired. These sessions were in-variably attended by a number of villagers who debated and discussed the pictures prior to providing the Lusi or Bariai names. Since these names remained consistent with later verification and different informants, or when matched with cognate names in other languages, they are fairly accurate.

Other names of flora and fauna were acquired with descriptions
of plant use, or animal cries or characteristics. Where these
descriptions matched similar descriptions for flora and fauna
in other languages, the names are assumed to be the same. It
is acknowledged here that some degree of error is expected in
the matching of such vocabulary, especially when it is not
cognate. Whenever doubt is present, however, such terms are
not considered equivalent.

3.2 Languages and Language Use

There can be no doubt that the various languages of
West New Britain have interacted and affected each other in
the past, and continue to do so today, not only in terms of
borrowing, but also in terms of areal typological similarities.
Although a detailed analysis of the role that Anêm, Amara, and
the Lamogai languages have played in the development of the
Siasi languages of West New Britain is not provided in this
thesis, it is impossible to avoid the subject of borrowing,
and, where relevant, this topic will be addressed. First,
however, it is necessary to outline briefly some of the
sociolinguistic factors that relate to language contact and
language change. The reader interested in more detailed
ethnographic information on the peoples involved is invited
to consult the bibliography which includes a selection of
material by Counts on the Lusi; by Dark, Grant and Zelenietz
on the Kilenge; and by Chowning on the Kove. To date
Friederici provides the only ethnographic description of

the Bariai, but currently a social anthropologist, Naomi
Scaletta, is working in that area and new material will be
available soon.

The Lusi number just over 1,000 individuals and
live in coastal villages. To the west is Kove territory
and inland on the banks of the Aria River live the Aria and
Toruai peoples. To the south on the mountain ridges dwell
the Mouk, and the Bolo Anêm. To the east of the Lusi, along
the coast live the rest of the Anêm. The Lusi maintain some
degree of contact with all these peoples, and members of each
of these other languages groups can be found married into
Lusi villages. The Lusi say that the Anêm are their "origins"
and that the Anêm gave rise to the Lusi people and the Lusi
language. Interaction with the Anêm and Aria is the result
of previous inland habitation by the Lusi who moved back to
the coast only within this century.

Lusi bigmen often speak some Aria, Mouk, or Anêm
since multilingualism is prestigious, as is the possession
of any esoteric knowledge. Since Anêm is extremely difficult
for AN speakers to learn, the ability to speak Anêm is
especially admired. Although several Lusi bigmen know some
Anêm, only a handful speak it well.

Traditionally the interior dwellers, including the
Lusi, were hostile to the coastal peoples, especially to the
Kove. Traditional hostility against the Kove is still
apparent in the suspicion and mistrust voiced by the Lusi,
but present-day contact among the Lusi, Kove and Bariai

is considerable. In conversation with the Kove, Lusi speakers

use Lusi while Kove speakers respond in Kove. Lincoln (1975)

refers to such language interaction as dual-lingualism, and

communication between the Lusi and the Bariai or the Aria

usually involves dual-lingualism. The Anêm, however, speak

Lusi and Kove, since most Lusi and Kove speakers do not

understand Anêm. Some Anêm, such as the residents of

Malasoŋo, also speak Bariai. Other Anêm interact with Bariai

speakers by using Lusi or Kove.

While Lusi speakers perceive that the Kove language

is similar to Lusi -in fact, they differ only at the dialect

level-, they prefer to stress the differences, because they

see the Kove as culturally and historically distinct. Thus

the Kove are said to 'drawl' or 'stretch' their speech, an

impression resulting from the Kove preference for open

syllables, whereas the Bariai 'clip' their language. In light

of the Bariai tendency to drop final and some medial high

vowels, this perception is sound. Certain such features are

seen as emblematic. Grace, in a discussion of accelerated

vocabulary divergence, comments:

> I have heard informal suggestions that in some
> Melanesian areas, observable linguistic differences
> may be valued as 'emblematic' (the term was first
> suggested to me by Ted Schwartz) of different
> social groups. If such an emblematic function
> was all that was being selected for, then simple
> vocabulary differences -difference words for the
> same thing- seems sufficient to meet the require-
> ment. This minimal kind of difference -same con-
> cepts, but different labels- would seem adequately
> to satisfy our notion of different languages while
> at the same time posing the minimal obstacle to
> communication (1970:17).

Such appears to be the case with the Bariai languages of West New Britain. In addition to a number of distinct lexical differences, such as K /ndoko/, L /poea/ and B /kemi/ 'good', there are certain phonological differences that are played upon when, for instance, a Lusi speaker imitates a Kove speaker. These phonological differences include intonation contours, and the replacement of Lusi /r/ with Kove /h/. Grammatically, however, Lusi, Kove, and Bariai are almost identical, as predicted in Grace's observation about "posing the minimal obstacle to communication", and these languages translate virtually morpheme by morpheme.

Approximately 850 Bariai live in seven villages along the coast in the Bariai census division. From east to west these are: Gurisi, Kokopo, Akoŋa, Bambak, Namaramaŋa, Mareka, and Alaido. A number of Bariai speakers are also resident in Siamatai, an Amara village, and Malasoŋo, an Anêm village. Inland from Kokopo is another Amara village, Kimbe, while Siamatai separates the Bariai from the Anêm to the east and the Amara village Kaugo separates the Bariai from the Kilenge to the west. Amara is an AN language, said by Amara informants to extend to the south coast. It is quite different in lexicon and morphology from the Bariai languages.

The Amara and Bariai interact a great deal, and the Bariai claim the Amara homeland, /evin pio/ 'place of origin', as their homeland too. This parallels the Lusi belief that the Anêm are ancestral. In both cases, the languages are quite distinct. The Lusi and Bariai beliefs regarding their

heritage, however, suggest that the Anêm and Amara were already resident when Siasi ancestors to the Bariai, Lusi, and Kove settled in West New Britain. The distribution of the Amara in relation to the Bariai, and the distribution of the Anêm in relation to the Lusi corroborate the suggestion that the Bariai and Lusi are intrusive. Both the Anêm and the Amara surround their neighbours the Lusi and the Bariai to the east, south, and west. Although there is now no Anêm village to be found to the east of the Lusi, Iboki Plantation is on former Anêm territory.

As is the case with their Lusi and Kove relatives, the Bariai generally speak their own language in occasional dealings with Siasi traders or with the Kilenge, Amara, Kove, Anêm, and Lusi. The Bariai speak some Kilenge and some Siasi, but Amara, being morphologically much more complex, is deemed impossible to learn, and appears to have had little influence on the Bariai language. The Bariai perceive the Lusi and the Kove as the same people. Since the Bariai were traditionally hostile to the Anêm and the Mouk, there is less communication between them than is the case with the Lusi and Kove who have maintained trading relations. For this reason it is suggested that most Anêm vocabulary that has entered Bariai comes via the Lusi.

Today the major influence affecting all the languages of West New Britain is Tok Pisin, one of the three national languages of Papua New Guinea, and a widespread lingua franca. Tok Pisin is understood by virtually all men, women, and

children in West New Britain, although certain older
villagers, especially senior women, feel that their speaking
ability in Tok Pisin is inadequate for dealing with the
rigorous prescriptions of story narration, with the result
that they recount tales in the vernacular only. Nonetheless,
the effect of Tok Pisin is so widespread that borrowed words
and calques are frequently heard in the vernacular speech of
all age groups.

Lusi and Bariai bigmen feel that the influence of Tok
Pisin threatens to extinguish their languages. In this
connection, an interesting difference exists in attitudes
regarding loanwords from Tok Pisin and loanwords from neigh-
bouring languages. The proximity of the Bariai to the Kilenge
and the considerable interaction between them has resulted in
many Kilenge borrowings in Bariai. Similarly, the Lusi have
borrowed heavily from Anêm and Aria-Toruai. In fact, both
the Lusi and the Bariai acknowledge that this is the case, and
recognize an emblematic value in the number of loanwords and
their source. That is, the Bariai say that one of the features
distinguishing their language from Lusi or Kove is the number
of Kilenge loanwords, while the Lusi, with a similar observation
point to the Anêm and Aria borrowings. Consequently, although
the borrowings are known to be foreign, they nonetheless provide
character and individuality to the language. Tok Pisin, on
the other hand, common to all language groups, plays no such
role, with the result that bigmen consider it dangerous to
the maintenance of discrete languages, deploring its influence.

4. Consonants

4.1   Introduction

This chapter presents the comparative data relating to
the consonants of Lusi and Bariai and their origins in POC,
but also discusses Kove and Kilenge where relevant. As a
rule, consonant correspondences between Lusi and Bariai are
regular and predictable, but an examination of certain ir-
regularities and unexpected correspondences shows patterns
suggesting areas in which the development of Lusi and Bariai
phonemes from POC is incomplete, or in which borrowing has
occurred, either between unrelated languages or between closely
related languages and dialects. Other explanations are
occasionally offered to account for instances of interlinguistic
and intralinguistic variation that have their origins in

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definable phonological environments or sociolinguistic

circumstances.

Table 4.1 presents the consonant inventories of Lusi

and Bariai. The individual phonemes of Lusi on the left

of Table 4.1 correspond in most Bariai cognates isomorphically

to those phonemes on the right, that is, to those Bariai

phonemes occupying the same relative position.

TABLE 4.1	
Consonant Correspondences of Lusi and Bariai	
LUSI	BARIAI
p t k	p t k
β z ɣ	b d g
mb nd ŋg	mb nd ŋg
m n ŋ	m n ŋ
l	l
r	r
s h	s

Normally the nasal element of the prenasalized stops

/mb nd ŋg/ need not be included in the Lusi orthography since

all voiced stops in Lusi are prenasalized. Bariai, however,

has a set of oral-grade voiced stops corresponding to Lusi

voiced spirants, and consequently there is potential for con-

fusion if the Bariai prenasalized stops are written without

the nasal element. To maintain a single orthographic system

for both Lusi and Bariai in this study, all prenasalized stops

are written /mb nd ŋg/, although in the usual Lusi ortho-
graphy used by this author, these stops are written /b d q/.
Lusi speakers write the voiced spirants as /v r g/, but for
the purpose of this study, /β z γ/ are used in order to con-
trast Lusi voiced spirants with the voiced stops /b d g/ of
Bariai.

4.2 Voiceless Stops

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                       TABLE 4.2
                  Lusi /p/ : Bariai /p/

Initial /p/:   patu        pat         stone
               peleŋa      peleŋa      a comb
               piza        pida        how much?
               ponu        pon         turtle
               puzi        pud         banana

Medial /p/:    tapa        tapa        to fan
               sapepe      sapepe      cliff, slope
               tupi        tupi        to peck at
               popo        popo        give birth, bear
               sapu        sapup       pull off
```

Lusi and Bariai /p/ reflect POC *p, as in *patu
'stone', *ponu 'turtle', *pinsa 'how much?', *punti 'banana'
(Cashmore's reconstruction for PEO, 1969), and *sapu 'pull
out'. In this last example, the Bariai form /sapup/ shows
reduplication of the final syllable and loss of the final
reduplicated high vowel. The POC word *kunsupe 'rat' becomes
L /kuzuke/ B /kuduke/. This development of *p to /k/ is un-
expected, but shared by Lakalai which has /kusuke/ (Chowning
1973:201).

POC *p is more stable in initial position than in medial position, where it is frequently lost or is reflected by /u/ (/aua/ → /aoa/): *upe 'seedling' → L,B /ue/ 'taro cutting for cloning', *nsapa → L,B /saoa/ 'what?', *RapiRapi 'evening' → L,B /lailai/ 'afternoon', *ma-pana → L /oanana/ B /oanaoana/ 'hot'.

There are a number of instances where /p/ corresponds to or alternates internally with /u/ or /Ø/, as in the following: L /pepe/ B /ueue/ 'break open an earth oven', from POC *peRa 'open up'[3] (cf: L,B /pera/ 'gape open' [vulgar]), L /potu/ 'outside;beyond the reef' ≠ L /otu/ B /uot/~/ot/ 'arrive, appear;go outside;go beyond the reef', from POC *potu, L /patu/ 'stone' ≠ L /uatu/ 'break open by hitting with a stone', from POC *patu, L /poze/ B /pode/ 'a paddle' ≠ L /uoze/~/oze/ B /ode/ 'to paddle', from POC *ponse, B /odoa/ 'rattan fibre skirt' ≠ B /uodoa-n/ 'to put on rattan fibre skirts', and L /onu/ B /uon/~/on/ 'be full', from POC *ponu.

There appears in a number of these examples a contrast in meaning between words with /p/ and other with /u/ or /Ø/. The initial /p/ of L /potu/, /patu/, and /poze/ is weakened in the corresponding verb forms where obligatory verbal prefixes result in intervocalic lenition: Proto-Eastern Bariai *ŋa-pode → L /ŋa-uoze/, which is being levelled in the speech of the

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3.   Reduplication of the first syllable occasionally results in loss of the second syllable. Other examples include L /launi/ 'hair, leaf' ≠ L /laulau/ 'leaves used to wrap food', L /γauku/ K /γauγau/ 'mist', L /lauzi/~/laulau/ 'to fasten, bind', L /uana-ni/ B /uaua-n/ 'to wake up' (L /ni/ B /n/ are transitive suffixes).

younger members of the community. In addition, various discrete
stages of a progression /p/ → /u/ → /Ø/ are evinced internally,
such as L /uoze/~/oze/ 'to paddle', B /uot/~/ot/ 'to arrive,
appear', and B /uon/~/on/ 'be full'. The loss of *p appears
to have progressed further in the eastern Bariai languages
than in other Siasi languages, where /p/, /b/, or /β/ often
reflect eastern Bariai /u/ or /Ø/:

*Rapu[4] 'hit, kill' → L,B /rau/ Kg /lau/ but G /rap/ M /rabi/,

*topu   'sugarcane' → L,B,Kg /tou/ but G,M /top/,

*api   'fire'   → K /eai/ but G /yap/ M /yab/,

*ponu   'be full'   → L /onu/ B /uon/~/on/ but G /βon/.

The Gitua reflex /β/ for POC *p in *ponu → G /βon/
'be full', or *Ropo → G /roβo/ (M /rob/) suggests another
stage in the development of POC *p, thus: *p → /b/ → /β/ → /u/ → /Ø/.
The fact that modern forms showing each of these various stages
are contemporaneous suggests that the process in incomplete,
unless dialect mixture can be shown to be involved.

There are also examples of POC *p becoming L /β/ B /b/:
*pulu 'hair' → L /βuβuru/ B /burbur/ 'body hair', and *ndapu
'ashes' → L /laβu/ 'sand' and B /lab/ 'beach'. POC *pulu
also has reflexes in L /ulu/ B /ul/, which are taboo markers
of shredded coconut leaves that hang down between two upright
sticks. The variation among /p/, /β/ or /b/, and /Ø/ is
evident also in the reflexes of POC *tupa 'fish poison' →

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4.   The POC forms *(dR)apat 'strike, hit' and *sapu 'hit,
kill' are problematic in accounting for the modern forms cited
above which suggest a proto-Siasi form like *Rapu.

L /tuβa/, but B /tua/, and in K /sasapu/ L /sasaβu/ 'k.o.
bamboo'.

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┌─────────────────────────────────────────────────────────────┐
│                    TABLE 4.3                                 │
│              Lusi /t/ : Bariai /t/                           │
│                                                              │
│  Initial /t/:  tazi       tad         sea                   │
│                tete       tete        ladder                │
│                tini       tini        body                  │
│                toto       toto        to punt, pole         │
│                tuaŋa      tuaŋa        village               │
│                                                              │
│   Medial /t/:  mata       mata        eye                   │
│                atete      atate       liver                 │
│                uti        uti         penis                 │
│                ato        ato         message               │
│                natu       natu        offspring             │
└─────────────────────────────────────────────────────────────┘
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Lusi and Bariai /t/ regularly reflect POC *t: *tansi
'sea', *tini 'body', *topu 'sugarcane', *mata 'eye', *qate
'liver', and *utin 'penis'. POC *(n)sa 'one', however, gives
rise to L,B /e-ta/ 'one, a certain'. Similarly, alternation
between /t/ and /s/ is found in two Lusi doublets: /tasio/~
/sasio/ 'put down', and /taki/~/saki/ 'rub, wipe'. Correspondence
between Lusi /s/ and Bariai /t/ is evinced in L /sasi/ B /sat/
'bad' (the Bariai gloss for 'bad' is normally /paeamao/ 'not
good', but /sat/ is used in the expression /posa-ŋa sat/, L
/posa-ŋa sasi/ 'bad, vulgar language'), and in L /sa/ B /ta/
'and, so'. Friederici (1912) gives /satsi/ for Kove 'bad',
now /sasi/, suggesting that the current Lusi and Kove form
arose thus: POC *saqati[5] → /sati/ → /satsi/ → /sasi/.

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5.   The POC form normally cited is *saqat, but the presence
of final /i/ in both Lusi /sasi/ and Gitua /saqati/ suggests
a final /i/ in POC, since final consonants are lost in Lusi.

In Lusi /s/ is sometimes replaced by /t/ in baby talk, e.g. L /saoa/~/taoa/ 'what?'. This may explain the development of Lusi /tuzu/ 'breast' from POC *(n)su(n)su . The expected reflexes are *suzu or *susu (Kilenge has /su/), but the former appears to have become /tuzu/ following the baby talk pattern, and the latter is reflected by L /tutu/ 'mommy'. The /t/ reflex is not uncommon among the Siasi languages, however, e.g. G /tuzu/, and if the use of /t/ for /s/ in this manner is not found among other Siasi peoples, then another explanation must be found.

Unexpected correspondences involving /t/ and /l/ are found in L /βolazu/ K /mbotazu/ 'litter, debris', and in L /taŋoβizi/ K /laŋoβizi/ B /laŋobid/ 'bluebottle fly'. In all three languages 'fly' is /laŋo/, indicating that the /t/ in the Lusi form /taŋoβizi/ represents a dissimilation of the first sonorant from the second, a nasal.

Chowning (1973:198) points out that POC *t becomes K /z/ in *tudu 'leak' → K /zuzulu/. The Lusi and Bariai forms agree with the Kove: L /zuzulu/ B /dodolo/, indicating that for these languages, *(n)tudu is more appropriate a proto-form. Chowning also suggests that final *t of POC *matakut 'to fear' is preserved in the Kove reflex /matauzi/. As discussed in Section 6.1, however, /zi/ appears to be a suffix.

The discrepancy between Lusi /titipua/ and Bariai /kikipua/ 'wart' is difficult to account for, as is the Lusi doublet /kimboro/~/timboro/ 'crescent perch'. Examples of POC *t reflected by /k/ can be found, however, in such Central

District languages as Kuni and Lala (see Pawley 1974:17 for examples), and instances of POC *t reflected by /l/ are not uncommon in other Oceanic languages, such as Gedaged (Lincoln 1973:passim) or the Azera languages (Bradshaw 1978:66).

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┌─────────────────────────────────────────────────────────────┐
│                      TABLE 4.4                               │
│              Lusi /k/ : Bariai /k/                           │
│                                                             │
│  Initial /k/:   kalo      kalo      frog                    │
│                 keti      keti      cut, slice              │
│                 kisi      kisi      hold onto               │
│                 kora      kora      blowfish                │
│                 kuku      kuku      k.o. mussel             │
│                                                             │
│  Medial /k/:    kakatolu  kakatol   egg                     │
│                 kuzuke    kuduke    rat                     │
│                 saki      sak       rub, wipe               │
│                 taiko     taiko     moon                    │
│                 iku       iku       k.o. parakeet           │
└─────────────────────────────────────────────────────────────┘
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POC *k is sometimes reflected by Lusi and Bariai /k/, as in *koti 'to cut', *kuku 'mussel species' (Blust 1972b), and *kunsuke 'rat'. Frequently, however, POC *k is lost: *kani → L /ani/ B /ean/ 'to eat', *lako → L,B /lao/~/la/ 'go'. As is the case with POC *p, there is evidence that the loss of POC *k is still in progress, and a development /k/ → /g/ → /ɣ/ → /h/ → /∅/ can be reconstructed by comparing different reflexes in the modern languages, and by observing internal variation. Kilenge, for instance, differs from Bariai, Lusi, and Kove in that it frequently retains /k/ lost in the eastern languages: Kf /kun/ L /unu/ B /un/ 'breadfruit' (POC *kulu), Kf /ku/ L /u/ B /∅/ '2sg subject prefix' (POC *ko), Kg /kan/ L /ani/ B /ean/ 'to eat' (POC *kani),

Kg /kulo/ L,B /ulo/ 'clay pot' (POC *kudon),

Kg /sake/ 'climb' L /sae/ 'up' (PCP *nsake, Hockett 1976),

Kd /pokai/ L /puai/ B /poai/ 'Malay apple", and

Kg /tika/ L,B /tia/ 'coiled basket'.

In addition, there are examples of /k/ retained in Lusi or Bariai, as well as /k/~/Ø/ variation internally: Kg /kuti/ 'penis' and L /kuti/ 'baby talk for /uti/;penis'[6], Kd /kanae/ B /kanaenae/ but L /anae/ 'sea swallow' (POC *kanake), L /kahu/ B /au-pu/ 'ashes'[7], K /sukula-ni/ L /sukla-ni/ but B /susura-n/ 'push', K /kasoka/ L /asoso-ŋa/ 'black'[8], L /mako/ 'emphatic form of /mao/;no, not', and B /tuke/~/tue/ 'k.o. mangrove clam'. It is possible that borrowing between languages and dialects has resulted in the retention of /k/ in some words.

Instances of the proposed /k/ → /g/ → /γ/ stage are evident in two correspondences: L /βoka/ B /boga/ 'branch of tree', and L /kaura/ B /kaur/ but K /γauha/ 'k.o. bamboo'. Kove also has the form /kau/ 'pan's pipes', found also in in Lusi. Internal evidence of /k/~/γ/ or /k/~/g/ variation is available in such Lusi doublets as /γoro/ 'crush, cause to

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6.   The presence of initial /k/ in these forms suggest a proto-form *kuti. The established POC form is *utin.
7.   The suffix /pu/ 'origin, base' on the Bariai word comes from POC *puqun and occurs on a number of words in Lusi and Bariai, sometimes appearing in one language but not the other, as above, and in L /laβu-pu/ B /lab/ 'beach'. The POC *kampu 'dust' is a possible etymon, but the Lusi form has an unexpected /h/ for *mp, and the Bariai is more likely derived from *kapu, or *ka(m)pu.
8.   /-ŋa/ is a suffix found on a number of adjectives in Lusi, Bariai, and Kove. The Kove and Lusi words have different reduplication patterns for a hypothetical form *kaso.

collapse', /koro/ 'smash, break apart'; /γororo/ 'break open

and fill with water (of canoes)', /kororo/ 'crumble, fall

apart'; and the Bariai doublet /kupat/~/gupat/ 'small giant

clam'. Furthermore, a number of words that have /k/ in

Kandoka Lusi show /γ/ in Atiatu speech: /kasa/~/γasa/ 'lest',

/kaβea/~/γaβea/ 'illicit affair', and /kulupu/~/γulupu/ 'heavγ'.

Examples of POC *k becoming /g/ are common in Gitua

and other Siasi languages. Some examples from Gitua include:

*ikun → G /igu/ 'tail', *kani → G /gān/ 'eat', *ikan → G /iga/

'fish'. Note, however, that the loss of *k is also in flux

in Gitua, where examples of /k/~/Ø/ variation and *k → /Ø/

are also available: G /kaŋar/~/aŋar/ L /aŋari/ B /aŋal/

'the nut Canarium polyphyllum', *kudon → G /uro/ L,B /ulo/

'clay pot', *kulu → G,L /unu/ B /un/ 'breadfruit'. In the

case of *kita 'lin pronoun', the modern forms have /g/ or /γ/:

L /γita/ G,B /gita/ 'lin object pronoun'.

A number of POC *k become /h/ in Lusi and /Ø/ in Bariai,

as in *ikan → L /iha/ B /ia/ 'fish'. This is addressed in

more detail in Section 4.8.

4.3 Voiced Spirants and Voiced Stops

/β z γ/ represent voiced spirants in Lusi and Kove.

/z/ ranges from a simple tap to a fricative. Previous authors

(Counts 1969, Chowning 1973, Thurston n.d.a) write this as /r/,

and the trill as /r̃/, reflecting the preference for the tap

allophone in current speech, the fricative being restricted

to older Lusi and Kove speakers. In this study, however, /z/

is used for a number of reasons: a) it forms a natural set with /β/ and /γ/; (b) it behaves like a spirant in its correspondence to Bariai; (c) the use of /z/ alleviates the problem of distinguishing tap /ř/ from trill /r̃/. Note, however, that /z/ does not represent a voiced alveolar fricative as in English.

/b d g/ are voiced stops in Bariai, which has no voiced fricatives. Bariai /b d g/ are not prenasalized, as they are in Lusi and Kove, although clusters of homorganic nasal and voiced stop do occur (see Section 4.4). In rapid speech, Bariai /b/ and /g/ are sometimes fricated as [β] and [γ], but these are allophones with no phonemic status. This variation reflects the development of the Lusi spirants arising through lenition. Gitua also shows [g]~[γ] variation, although Gitua /v/ is always [β], hence the use of /β/ in this study for Lincoln's /v/. Bariai /b d g/ regularly correspond to Lusi /β z γ/. As a rule, Lusi voiced spirants and Bariai voiced stops reflect POC prenasalized stops.

TABLE 4.5
Lusi /β/ : Bariai /b/

Initial /β:b/:	βaza	bada	get, fetch
	βezane	bedane	thus
	βiaŋa	biaŋa	bat, flying fox
	βorou	borou	magic
	βua	bua	areca palm, nut
Medial /β:b/:	βoβaka	babaka	k.o. Cycas palm
	βeβea	bebea	defecate
	βiβirani	bibiran	squeeze
	loβone	labone	today, now
	uβu	ubu	hips, hind legs

POC *mp and *ŋp yield Lusi /β/ and Bariai /b/: *mpuaq →
L /βua/ B /bua/ 'areca nut', *nponi → L /βoŋi/ B /boŋ/ 'night',
*tumpu → L /tuβu/ B /tibu/ 'grandchild, grandparent', *tumpu →
L /tuβu/ B /tub/ 'grow fat', *mpempe → L /βoβo/ B /bobo/
'butterfly'.

Few irregularities in the correspondence of Lusi /β/
with Bariai /b/ can be found. A limited number of examples
of /β/ or /b/ alternating with /ɣ/ or /g/ are available, such
as: B /uber/~/uger/ 'wrist', L /βuβuar/~/ɣuɣuar/ 'k.o. vine',
and K /βulupa/ L /ɣulupa/ B /gulupa/ 'k.o. wasp'.

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┌─────────────────────────────────────────────────────────────────┐
│                          TABLE 4.6                                │
│                  Lusi /z/ : Bariai /d/                            │
│                                                                   │
│  Initial /z:d/:   zaŋa      daŋa      thing, something            │
│                   zeoa      deoa      k.o. crab                   │
│                   ziŋa      diŋa      fire                        │
│                   zozoni    dodon     plug, stopper               │
│                   zuzue     dudue     k.o. snail                  │
│                                                                   │
│  Medial /z:d/:    zaza      dada      pull                        │
│                   poze      pode      a paddle                    │
│                   nuzi      nud       smell something             │
│                   kazo      kado      do, make                    │
│                   uzu       ud        carry on the head           │
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POC *nt becomes Lusi /z/ and Bariai /d/ in *punti →
L /puzi/ B /pud/ 'banana', and *nta → L /za/ B /da/ 'lin
possessive pronoun'. POC *ntuna, however, is /tuna/ 'eel' in
Lusi and Bariai, suggesting an earlier *(n)tuna.

Lusi /z/ and Bariai /d/ also arise from POC *nd and
from intervocalic *ns: *ndaŋma 'forehead' → L /zomo/ 'face,

forehead' B /dama/ 'prow of canoe', *ndami → L /zame/ B /dame/
'to lick', *ndamu → L /zamu/ B /dam/ 'lime spatula', *tansi →
L /tazi/ B /tad/ 'sea', *qanso 'day' → L /azo/ B /ado/ 'sun, day',
*pinsa → L /piza/ B /pida/ 'how much?'.

POC *ns has a double reflex in two sets of Lusi words:
*nsape (or PCP *nsake) 'go up' → L /zae/ 'go up', and L /sae/
'up, above'; *nsipo 'go down' → L /zio/ 'go down' and L /sio/
'down, below'. Initial *ns usually becomes L /s/, and this
is reflected in L /sae/ and /sio/. Since Lusi verbs always
occur with a prefixed subject pronoun, it is possible to
interpret the Lusi forms in /z/ as regular reflexes of *ns
which is intervocalic in the verbal forms as a result of the
prefixing of subject pronouns. Bariai has only intervocalic
reflexes: B /dio/ 'sit down' and B /gadio/ 'down, below';
B /dae/ 'go up' and B /gadae/ 'up, above'. The etymology of
the prefix /ga/ in the adverbs is uncertain.

An alternate interpretation of the /z/≠/s/ distinction
in Lusi is that oral-grade and nasal-grade alternation was
present in the proto-language or in POC (see Section 4.4 for
a more detailed discussion). Thus *nsake give L /sae/ and *sake
produces L /zae/. The latter case, in which *s is reflected
by /z/ in Lusi, differs from the expected *s → /s/ development,
but occurs elsewhere: POC *sina 'sun' → L /zina/ B /dina/ 'fire',
*nusu → L /nuzu/ B /nud/ 'nose', *tanis → L /tani/ B /tan/ 'cry,
weep' but Lusi /tani-za/ 'crying, weeping' shows /za/ instead
of the productive nominalizing suffix /na/. Bariai, however,
shows both suffixes in B /tan-da-na/ 'crying'. Similarly, POC

*ŋiŋisi 'to grin' becomes L /ŋiŋi/ B /ŋiŋ/ 'smile, laugh', but
L /ŋiŋi-za/ B /ŋiŋ-da-ŋa/ 'laughter'. PAN *diɣus 'bathe'
(Capell 1943) → L,B /liliu/ but Bariai has /liliu-da-ŋa/
'bathing', and the Lusi /liliu-ŋa/ has the productive suffix
only. A final example of /z/:/s/ comes from K /βusa/ L /βuza/
'to rot, stink'.

The preference of one interpretation over the other
is open to debate. In the first case, reconstructions of POC
grammar such as Pawley (1973) indicate that subject pronouns
were not prefixed to the verb, and this may be a later Siasi
development. If an argument that intervocalic *ns produced
Lusi /z/ in /zae/ 'go up' is to be accepted, then it must be
assumed that the development of *ns to /z/ followed the
development of prefixed subject pronouns, e.g. some earlier
form *ŋa-nsake become L /ŋa-zae/ 'I am going up'.

In the second interpretation, the irregularity of a
shift from *s to /z/, in addition to the need for alternation
in the POC form, appear to weaken the argument. Other instances
of oral and nasal-grade variation, however, give it support, as
discussed in Section 4.4. Hockett (1976), for instance, posits
both *sake~*nsake 'up' and *sifo~*nsifo 'downwards' in Proto-
Central Pacific in order to account for the data from Polynesian
and Fijian languages.

Two final variations in correspondence are worth mentioning.
In a single instance, Lusi /z/ appears to correspond to Bariai /n/:
L /nuzu/ B /nunu/ 'nose'. In the Bariai form /i-nud/ 'his/her
nose', however, the regular /z/:/d/ correspondence reappears,

suggesting that the /nunu/ variation in Bariai is an innovation, arising through reduplication of the first syllable and concomitant loss of the second syllable. A number of examples of this process can be found, such as: *Ropo → L,B /roro/ 'to fly', and *nansu → L,B /nono/ 'to cook' (see also footnote 3).

Two examples of Lusi /z/ and Bariai /d/ corresponding to /∅/ in Kilenge are: L /izo/ B /ido/ Kf /io/ 'spear', and L /tazi/ B /tad/ Kg /tai/ 'sea'.

TABLE 4.7

Lusi /ɣ/ : Bariai /g/

Initial /ɣ:g/:	ɣaea	gaea	pig
	ɣelema	gelema	prawn
	ɣiɣiu	gigi	thorn
	ɣoɣo	gogo	chest
	ɣusa	gusa	squid
Medial /ɣ:g/:	oaɣa	oaga	canoe
	βaɣβaɣe	bagbage	wings
	zoɣi	dog	Piper betle
	ɣoɣoɣo	gogogo	k.o. sea anemone
	suluɣu	sulug	climb down

Lusi /ɣ/ and Bariai /g/ present few difficulties. Both reflect POC *ŋk, as in *ŋku → L /ɣu/ B /g/ '1sg possessive suffix', and *waŋka → L /oaɣa/ B /oaga/ 'canoe'. An exception is /k/ in *ŋkaun → L,B /kaua/ 'dog',(with unexpected final /a/, found also in Vitu /kauwa/ (Friederici:1912) and in *apuR → L,B/eaoa/ 'lime powder'). A change to *(ŋ)kaun would resolve this problem.

Variation between /ɣ:g/ and /k/ or between /ɣ:g/ and /β:b/ have already been discussed under /k/ and /β:b/ respectively.

4.4 Prenasalized Voiced Stops

Prenasalized voiced stops are relatively infrequent
in both Bariai and Lusi. Chowning notes this also for Kove:

> The lexical material indicates that at some time,
> the voiced stops in the proto-language that gave
> rise to Bariai, Kaliai, and Kove all became voiced
> spirants in Kove, and possibly in Kaliai as well.
> Subsequently, however, Kove acquired many words
> containing voiced stops, though where POC forms
> are represented, the spirant reflexes are greatly
> in the majority (1973:195).

Chowning also says that "the Kove themselves regularly
change voiced spirants to stops to avoid name tabus, and also
when addressing small children" (ibid:195), but this was not
observed among the Lusi or the Bariai. Either this practice
was lost in Lusi or Bariai, or it represents a Kove innovation.
Chowning also cites two doublets in Kove that show an alternation
between voiced spirant and prenasalized stop: K /βazuhi/~/mbalu/
'dove', and K /taβuahi/~/tambuka/ 'Saccharum spontaneum'. The
Lusi and Bariai cognates have only the oral-grade correspondences:
L /βelis/ B /barur/ 'dove', and L /tauari/ B /tabual/ 'Saccharum
spontaneum'. Other witnesses of oral and nasal-grade alternation
are available from Lusi and Bariai, however, such as:
L /βuβuri/~/mbumbu(ri)/ 'sky, clouds', L /βonamu/~/mbonamu/
'k.o. tree', L /kiriβaηβaη/~/kiriumbaηban/ 'caterpillar',
L /azali/~/andali/ 'k.o. ginger', and B /luga/~/luηga/ 'k.o.
croton'. The nasal element is pronounced only in intervocalic
position, and not in utterance initial position or after another
consonant. It is written in initial position here, however,
since it is pronounced if the word follows another word ending

in a vowel, e.g. L /u-kona mbumbu?/ 'Did you see the clouds?'.

In basic vocabulary, the amount of prenasalization is quite low. As Chowning suggests, many words with a prenasalized stop appear to be borrowed, for the following reasons: a) most prenasalized stops occur in words that are not basic vocabulary, and hence in the realm of terminology most susceptible to borrowing. (b) Frequently a word with a prenasalized stop in one Bariai language has no cognate in the other Bariai languages, such as: L /mbumbu(ri)/ but B /laulau/ 'clouds', L /raŋgu/ but B /napiu/;(the Bariai form is also borrowed, as indicated by the Kilenge nominal /na/), K /ndoko/ but L /poea/ B /kemi/ 'good'. (c) In addition to (b), many words with prenasalization have a non-cognate synonym in the same language: L /mbalbalu/ = /azeze/ B /adade/ 'chin, jaw', K /mbaki/ = /kalizo/ L /kalizo/ B /karlo/ 'breadfruit seed', and K /kumba/ = /puo/ L,B /puo/'net'. (d) There are instances of irregular correspondences between cognates which have prenasalized stops, such as Kove /z/ where Lusi has /r/, as in: K /taŋguzi/ L /taŋguri/ 'k.o. insect', K /ndaza/ L /ndara/ 'Nassa shell money', K /mbazuku/ L /mbarku/ 'k.o. spirit mask'. Normally Lusi /r/ corresponds to Kove /h/ (see Section 4.6), and Lusi /z/ corresponds to Kove /z/. A number of dis-crepancies are evident in the couplets mentioned earlier: K /βazuhi/~/mbalu/ 'dove', in which /z/, and not /h/, alternates with /l/ (Kove /h/ L /r/ occasionally correspond to /l/ in Bariai, or vice-versa, although the expected correspondence is usually K /h/: L /r/: B /r/). The extra syllable /hi/ re-

occurs in the Kove doublet /taβuahi/~/tambuka/ 'Saccharum
spontaneum' and as /ri/ in Lusi /mbumbu(ri)/~/βuβuri/ 'clouds',
with optional addition of /ri/ in the latter doublet. Such
irregularities further strengthen the borrowing hypothesis for
these words.

The source of the loanwords is most likely a language
in which there is regular prenasalization of voiced stops.
The neighbouring languages of Kaliai and Bariai, namely Anêm,
Mouk, Aria-Toruai, and Amara, also lack prenasalization as a
regular and frequent feature of their basic vocabulary, and so
borrowing of these forms into the Bariai languages must be from
Bulu, Bakovi, the languages of the Vitu Islands, or the languages
of the Siasi Islands. According to Chowning (1978b:8), some
Kove villages have Bakovi connections, and there is also inter-
action with the Vitu islanders. A short wordlist of Bulu and Bola
(=Bakovi) in Goodenough (1961) and another wordlist of Vitu
collected by Friederici (1912) shows that prenasalization in
basic vocabulary in these languages is not uncommon, e.g.
Vitu, Bola /ŋgu/ '1sg possessive suffix', cf. L/ɣu/ B /g/,
from POC *ŋku.

The following Vitu words are of special interest:
Vitu /balbalu/ cf. L /mbalbalu/ 'chin' (although Friederici
does not indicate prenasalization in his transcription of this
word, if Vitu /mb/ is pronounced /b/ in utterance initial
position, or after another consonant, as is the case in Lusi,
then he may have missed the nasal element), Vitu /ndara/
'Nassa shell belt' cf. L /ndara/ K /ndaza/ 'Nassa shell money',

Vitu /mbalu/ cf. K /mbalu/ 'dove', Vitu /mbaki/ 'breadfruit'
cf. K /mbaki/ 'breadfruit seed'.

In light of the paucity of prenasalized stops in the basic
vocabulary of the Bariai languages, it is interesting to compare
marine vocabulary in which prenasalization occurs much more
frequently. Marine words are those terms relating to the ocean
environment, maritime technology, and the names of reef animals
and fish. Some examples of maritime terminology with prenasalized
stops include L /karembu/ B /karimbo/ 'k.o. fish', L /ndandani/
B /ndandan/ 'k.o. crab', L /aoβaka/~/aombaka/ B /aombaka/
'giant grouper', L,B /lumbalumba/ 'moray eel', L,B /mariamba/
'storm', L,B /luaŋge/ 'flying fish'. The list could easily be
tripled for each language if non-cognate forms were included,
or instances where Lusi had a nasal-grade form where Bariai
had the oral correspondence, e.g. L /ndaela/ B /daela/ 'frigate
bird'. A list of cognate words considered basic vocabulary
and showing prenasalization in both Lusi and Bariai is not
possible because the few words with nasal-grade stops have no
cognates in the other language, e.g. L /mboŋboŋi/ B /gaisala/
'morning'.

Lusi shows a number of doublets with /β/~/mb/ alternation,
showing that the prenasalized forms are being levelled:
L /aoβaka/~/aombaka/ 'giant grouper', L /βoreka/~/mboreka/
'scarlet sea perch', L /βarekaua/~/mbarekaua/ 'eagle ray'.
There is also a single instance in which fluctuation among
/β/, /m/ and /mb/ showing reduction of the prenasalized cluster
in two directions: L /mbumburuti/~/βumburuti/ /mumuruti/ 'k.o.
sea anemone'.

There are suggestions in the data that a certain amount of this maritime vocabulary has entered Lusi, and to a lesser degree Bariai, from Kove. For example, the occurrence of /h/ in Lusi maritime vocabulary is much more frequent than in basic vocabulary (see Section 4.6). In Kove, however, /h/ is an emblematic feature, corresponding regularly to Lusi and Bariai /r/. In some maritime words the Bariai form has /r/ but both the Kove and Lusi have /h/: L /pihoho/ B /piroro/ 'pyramid shell', L /kahuma/ B /kauruma/ 'bailer shell', L /kuaho/ B /kuaro/ 'golden-lined spine fish', L /βaha/ B /barau/ 'side of canoe platform to which outrigger is attached'. The vowel discrepancy in L /kahuma/ and B /kauruma/ and in L /βaha/ and B /barau/ also supports the argument that the Lusi forms come from Kove, since Lusi and Bariai elsewhere show /au/ where Kove has /a/: L /karauki/ K /kazaki/ 'k.o. crab' (another example of discrepancy between L /r/ and K /z/). Examples of maritime terminology with /h/ in Lusi include the fish names: /silahani/, /mohazi/, /zazamuhi/, /βahasio/, /hela/, /huhus/, and /maŋaha/. Section 4.8 presents evidence of Kove /h/ in other areas of Lusi vocabulary.

In historical terms, the idea that Lusi marine vocabulary has been affected by Kove is reasonable. The Lusi had a period of inland habitation prior to moving back to a beach environment, whereas the Kove have a long tradition of coastal and off-shore habitation. However, since prenasalization appears to be mostly intrusive in Kove, it remains to be resolved where the nasal-grade forms originate in fish and marine animal names. If these are

loanwords, which language has acted as the donor? Until more research has been conducted in the various neighbouring languages, this question cannot be answered with certainty. The internal evidence, however, suggests that these words are, for the most part, not indigenous to Kove, Lusi, and Bariai.

A final set of words with prenasalized stops remain to be examined. These words provide doublets in which there is oral and nasal-grade contrast with concomitant change in meaning: L /βoβo/ 'hole' ≠ L /mbombo-ŋa/ 'full of holes', L /βoŋi/ 'night' ≠ L /mboŋboŋi/ 'morning', B /gere/ 'draw, paint' ≠ B /pa-ŋgere/ 'decorate'. There is also an instance of /ŋ/ contrasting with /ŋg/ in L /liŋe/ 'voice' ≠ L /liŋeliŋge/ 'make noise', similar in structure to the example cited earlier in which /m/ alternated with /mb/. It is noteworthy that the prenasalized variant occurs in words that show an increase in the number of syllables, either by reduplication, as in L /mboŋboŋi/ and L /liŋeliŋge/, or by the addition of an affix, such as the causative prefix in B /pa-ŋgere/, or the adjectival suffix in L /mbombo-ŋa/. A contrast between plain and pre-nasalized stops exists in several AN languages with a syntactic or semantic force (Hockett 1976, Holmer 1965, Bradshaw 1978b). These examples from Lusi and Bariai may be vestiges of an earlier contrast that is no longer productive, the change in meaning being strengthened by reduplication or the use of affixes.

An earlier contrast between oral and nasal-grade stops may also account for alternation between /p/ and /β/ or /b/ in

the following: L /puli/ B /pul/ 'stir, turn over' ≠ L /βuli/
B /bul/ 'mix', and L /sapu/ B /sapup/ 'pull off a ring, shirt,
armlet' ≠ L /saβu-ni/ B /sabu-n/ 'pull on a ring, shirt, armlet'
(note the addition of the transitive suffix /ni/:/n/). One
Lusi doublet shows alternation between /p/ and /mp/: L /puli/
'stir, turn over' ≠ L /pa-mpuli/ 'roll (something) over', and
another doublet shows /β/ ≠ /mp/ contrast: L /βere/ 'bash
something against another thing' ≠ L /pa-mpere/ 'bump against
something'. Both show the addition of /pa/ 'causative prefix',
like the Bariai example /gere/ ≠ /pa-ŋgere/ above. The /p/ ≠
/β/ ≠ /mp/ contrasts of Lusi /puli/, /βuli/, and /pa-mpuli/
and Lusi /βere/, /pa-mpere/ suggest an underlying *mp ≠ *p
contrast in which *mp is reflected regularly by /β/ as in
/βuli/, but appears to be frozen in /pa-mpuli/. A doublet
in *p produces /puli/. Such an interpretation involving oral
and nasal-grade contrasts was suggested to account for L /zae/
'go up' ≠ L /sae/ 'up, above' and L /zio/ 'go down' ≠ L /sio/
'down, below'. Gitua shows the same alternation in G /zage/
'go up' ≠ G /sage/ 'up', G /zio/ 'go down' ≠ G /sio/ 'lower',
G /zuŋa/ 'go west' ≠ G /suŋa/ 'west', and G /zaŋa/ 'go east'
≠ G /saŋa/ 'east'.

A number of *p ≠ *mp contrasts have been posited in POC,
such as *puaq 'fruit' and *mpuaq 'areca nut' which give rise to
L /puapua/ B /poapoa/ 'fruit;seeds' and L /βua/ B /bua/ 'areca
nut' in a predictable manner. Several revised POC forms have
been posited in this thesis to account for the Bariai and Lusi
data by adding an optional prenasalization or making an established

prenasalization optional: *(n)tudu 'leak' (pg. 38), *ka(m)pu 'dust' (pg. 40), *(n)tuna 'eel' (pg. 43), *(n)kaun 'dog' (pg. 46), and to be discussed in Section 4.6, *(n)dapu 'ashes' and *(n)daun 'leaf, hair'. In addition, a number of optional prenasalized stops have been posited for POC, such as *(n)su(n)su 'breast'.

Hockett (1976) has extended this contrast to include a larger number of doublets in Proto-Central Pacific than are available in POC, but similar reconstructions may be appropriate to account for Lusi and Bariai examples, at least, such as: B /puopua/ 'immature (of coconuts)' ≠ B /buobuo/ L /βuoβuo/ 'immature (of thought)', and B /pono/ 'to block, cover up' ≠ B /bono/ L /βono/ 'tie a knot' (the semantic association in this latter example is more clearly demonstrated by the Tok Pisin gloss pasim which means 'to fasten, tie; to hold back, block, obstruct; to close, shut in').

Whether the POC forms reflect contrasts or alternation is open to debate, but evidence of contrast between plain and prenasalized stops in Lusi and Bariai is weak, especially as compared to Fijian with its large number or oral ≠ nasal-grade doublets (Holmer 1965:482), or to Yabêm "which exhibits in its verb morphophonemics an alternation between oral-voiced obstruents in the Realis-inflected verbs and prenasalized-voiced obstruents in the Irrealis (Bradshaw 1978b:127).

4.5 Nasals

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┌─────────────────────────────────────────────────────────────────┐
│                         TABLE 4.8                                 │
│                  Lusi /m/ : Bariai /m/                            │
│                                                                   │
│   Initial /m/:   mao       mao       no, not                      │
│                  meme      meme      urinate                      │
│                  misi      misi      dry, cooked                  │
│                  mosi      mosi      artwork                      │
│                  muso      muso      sorcery                      │
│                                                                   │
│   Medial /m/:    luma      luma      house                        │
│                  zame      dame      lick                         │
│                  ɣomi      gomi      hold in fist                 │
│                  eamo      eamo      earth oven                    │
│                  lumu      lumu      men's communal house         │
└─────────────────────────────────────────────────────────────────┘
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Lusi and Bariai /m/ reflects POC *m: *mimiR 'urinate',
*ndami 'lick', and *qumu 'earth oven'. POC *ŋm merges with
*m to produce L,B /m/ (compare the merger of *p and *ŋp to
L,B /p/): *ŋmata → L,B /mota/ 'snake', *ndaŋma 'head' → L /zomo/
K /zamoha/ 'forehead, face', and *ŋmane → L /to-mone/ K /ta-mone/
'male'. Note that the sequence *ŋma becomes /mo/, except in
the case of *Ruŋma → L,B /luma/ 'house', and *ndaŋma 'head' →
B /dama/ 'prow of canoe'. The development of /mo/ from *ŋma is
associated with the change of some instances of Bariai /a/ to /o/
in Lusi following labials (see Section 5.3).

Lusi has several occurrences of /m/ that show unexpected
correspondences in Bariai. Lusi /amsere/ B /ansere/ 'Hibiscus
tileaceus' can be explained by assimilation of /m/ to /n/ before
/s/ in Bariai. Lusi /tamine/ B /taine/ 'woman' come from POC
*tapine. The /m/ reflex in Lusi for POC *p is irregular, but
loss of *p in the Bariai form is expected. Lusi /m/ corresponds

to Bariai /ŋ/ in L /seremserem/ B /naseresereŋ/ 'k.o. fragrant
plant', L /lakendam/ B /nakendaŋ/ 'k.o. tree used in carving',
and L /ɣulumu/ B /guluŋ/ 'moss, algae' from POC *lumut. The
origin of the shift from /m/ to /ŋ/ is uncertain, but POC *lumut
and Gitua /serem/ show the /ŋ/ in Bariai to be innovative in
/guluŋ/ and /nasereseren/. The fact that /ŋ/ occurs in final
position in the Bariai forms may be relevant, although there are
no constraints against final /m/ in Bariai. In a single instance,
both Lusi and Bariai have /m/ where Kove has /ŋ/: L /kahuma/
B /kauruma/ but K /kahuŋu/ 'bailer shell', with unexpected final
/u/ in the Kove form. The presence of /h/ in the Lusi form
where Bariai has /r/ indicates that the Lusi word is a Kove
borrowing, perhaps prior to the change to K /kahuŋu/.

TABLE 4.9
Lusi /n/ : Bariai /n/

Initial /n/:	nama	nam	come
	ne	ne	this
	niu	niu	coconut
	noɾo	noro	avalanche
	nusi	nusi	pull out from under
Medial /n/:	nana	nana	chase
	ɣane	ganene	here
	pani	pan	give
	tano	tano	earth, ground
	manu	man	bird

Lusi and Bariai reflexes of POC etyma regularly show /n/
for *n: *niuR 'coconut', *pani 'give', *tanaq (the PAN *tanəh and
the Lusi and Bariai form /tano/ suggest POC *tanoq) 'earth' and

*manuk 'bird'. Some /n/ originate from *ñ (examples from Blust 1978): *ñopu → L,B /nou/ 'stonefish', *ñoRa → L /nora/, *ñamuk 'mosquito' → K /nimnimu/ B /nimnim/ 'sandfly'. The change in vowel in the last example may reflect the earlier palatalization, and is found also in *ña '3sg possessive suffix' → L,K /ni/ '3sg object suffix'.

There are a few instances of variation between /n/ and /ŋ/: L /sonu/ B /son/ but K /souŋu/ 'to swallow', L /sana/ B /saŋa/ 'groin, crotch' from POC *saŋa (but L /kasaŋa/ 'crotch of tree' and L /saŋan/ 'grappling hook'), L /nosnose/ B /ŋesŋeso/ 'k.o. ant', and L /ŋa/ B /na/ '1sg subject prefix'. Except for the last example, the change appears to be:/ŋ/ to /n/ in assimilation to /s/.

Other alternations include L /z/: B /n/ in L /zoɣzoɣo/ 'tremble, quiver' B /nogonogo/ 'jiggle', and /n/:/l/ in L /vili/~ /vini/ 'to swell', K /ponu/ L /polu/ 'to fold', L /kazo nene-ŋa/ B /kado alele/ 'take one's time',(with addition of the nominal suffix /ŋa/ and loss of initial /a/ in Lusi), and L /lakendam/ B /nakendaŋ/ 'k.o. tree'. This last example appears to be a borrowing from Anêm /lakendam/. Bariai has possibly shifted /la/ to /na/ by analogy with the Kilenge nominal /na/ found in a host of loanwords in Bariai.

An instance of POC *l becoming L,B /n/ is afforded by *kulu → L /unu/ B /un/ 'breadfruit'. This is found in other Siasi languages: G /unu/, Kd /kun/ Tuam /un/ Sigap /kun/ (the last two from Dempwolff 1905).

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                        TABLE 4.10
                   Lusi /ŋ/ : Bariai /ŋ/

Initial /ŋ/:     ŋalu        ŋalu        waves
                 ŋeza        ŋeda        when?
                 ŋiri        ŋiri        coconut scraper
                 ŋotu        ŋotu        bite
                 ŋuru        ŋuru        grunt (of pigs)

Medial /ŋ/:      oaŋa        oaŋa        flood
                 paŋe        paŋe        four
                 siŋi        siŋi        blood
                 ŋoŋo        ŋoŋo        mucus
```

The sequence /ŋu/ is extremely rare, occurring only in
L /ŋuru/ B /ŋur/ 'to grunt', K /kahuŋu/ 'bailer', and K /souŋu/
'to swallow'. The infrequency of this sequence may account for
the development of POC *ŋ becoming L,B /n/ in *ŋusu → L /nuzu/
B /nunu/~/nud/ 'nose'. The usual reflex of POC *ŋ is /ŋ/: *ŋalu
'wave' (Blust 1972b), *ŋansa 'when?', and *ŋuru 'growl, groan,
grumble'. The /ŋe/ of L,B /paŋe/ from POC *pati is unexpected,
but shared by other languages of the Siasi group: Kf,G /paŋe/,
M /paŋ/, Barim /faŋ/, Mutu /paŋ/, Malasanga /paŋe/ (the last
three from Hooley 1971) 'four'.

Other irregular correspondences involving /ŋ/:/m/ and
/ŋ/:/n/ have been mentioned and two more are worth noting. Lusi
has /γoγa/ 'thumb' where Bariai has /goŋa/ 'finger', and Lusi
shows an alternation between /ŋ/ and /l/ in L /ŋani-γe/ /lani-γe/
'because'. The Bariai form /goŋa/ is an irregular reflex of
*nkaŋka 'finger', which becomes /ŋgaŋga/ in Gitua.

The /l/ of L /lani-γe/ in the second instance is unusual.

The word /ŋani-γe/ (B /ŋan/) consists of L /ŋani/ 'because of,
for, from, with' and L /γe/, a deictic similar in meaning to
the French voici, as in L /uasi γe/ 'here's the tobacco'. /γe/
is found attached to such words as: L /naγe/ 'thus, like',
L /eγe/ 'here it is'. The change from /ŋ/ to /l/ appears to
be assimilatory, due to the nasal /n/. A similar assimilation
is found in the variation of L /nagalŋa/ 'k.o. taro dish' (from
Kilenge) in which the initial /n/ assimilates to the following
/ŋ/, producing L /ŋagalŋa/.

4.6 Liquids

The resonants /r/ and /l/ show considerable variation
in correspondence in Bariai, Lusi, Kove, and Kilenge. Often
one language has /r/ where another has /l/, but this correspondence
is not consistent. In the majority of cases, however, Lusi /l/
corresponds to Bariai /l/, and Lusi /r/ corresponds to Bariai /r/
and Kove /h/, as demonstrated in Tables 4.11 and 4.12 below.

TABLE 4.11
Lusi /l/ : Bariai /l/

Initial /l/:	lailai	lailai	afternoon
	leoa	leoa	fathom length
	lima	lima	five
	lolo	lolo	insides, guts
	lusi	lusi	mountain
Medial /l/:	ala	ala	fence
	elea	elea	white cockatoo
	ziβali	dibal	be sick
	ulo	ulo	clay pot
	kaluβia	kalubia	barracuda

Lusi and Bariai /l/ have their origin in POC *R, *l and
*d: *Ruŋma → L,B /luma/ 'house', *RapiRapi 'evening' → L,B /lailai/
'afternoon', *aRu → L /ealu/ B /eal/ 'Casuarina species', *tuRi
'to sew' → L,B /tuli/ 'to string fish, beads', *paRi → L,B /pali/
'stingray', *lima → L,B /lima/ 'five', *laŋo → L,B /laŋo/ 'a fly',
*poli → L,B /oli/ 'to buy', *tolu → L /tolu/ B /tol/ 'three',
*doŋoR → L /loŋo-ni/ B /loŋo/ 'to hear', *kudon → L,B /ulo/
'clay pot', *dopa → L,B /leoa/ 'fathom'. Occasionally /l/ is
lost, as in L /ahila/ B /aria/ 'k.o. rattan'. Two instances
of POC *nd becoming L,B /l/ are found in *ndaun 'leaf, hair' →
L,B /launi/ 'leaf, hair, feather, fur' and L,B /laulau/ 'leaf
wrapping for food', and in *ndapu 'ashes' → L /laβu/ 'sand'
B /lab/ 'beach'. These exceptions can be avoided by positing
*(n)daun and *(n)dapu, the Lusi and Bariai reflexes descending
from *daun and *dapu.

TABLE 4.12

Lusi /r/ : Kove /h/ : Bariai /r/

Initial:	rau	hau	rau	to hit, strike
	rai	hai	rai	south-east wind
	roro	hoho	roro	to fly
	rua	hua	rua	two
Medial:	karaŋa	kahaŋa	karaŋa	enough
	ore	ohe	ore	to cross over
	iriau	ihiau	iriau	young man
	ɣoro	ɣoho	goro	to break
	βurua	βuhua	burua	injury

/r/ occurs only infrequently in initial position, more
rarely before front vowels initially, and consequently no cognate

sets with initial /re:he:re/ and /ri:hi:ri/ are presented in
Table 4.12. This is partly due to lacunae in the data -for
instance, Kove and Bariai glosses for Lusi /repe/ 'k.o. shell',
and Lusi /rere/ 'accuse, bring to court' are unavailable- and
partly the result of disparate glosses, such as L /riɣu/
B /napiu/ 'cyclone', B /ririŋa/ L /laβu/ 'sand', and K /hezi/
L /kaβasi/ B /kabasi/ 'axe'.

Lusi and Bariai /r/ and Kove /h/ most frequently reflect
POC *R, as in *wakaRi (Pawley 1972) → L /uaruari/ B /uaruar/
K /uauahi/ 'roots', *waRos → L,B /oaro/ K /oaho/ 'vine, rope',
*Ropo → L,B /roro/ K /hoho/ 'to fly', and *poRo → L,B /poro/
K /poho/ 'to wring'.

As shown earlier, POC *R also gives rise to L,B /l/.
There is also considerable variation between /r/ and /l/
correspondences in Lusi and Bariai, as shown in Table 4.13.

TABLE 4.13

a) L /r/ : B /l/

tauari	tabual	Saccharum spontaneum
kororo	korol	pig cage
tori	tol	to dance
karaŋani	kalaŋan	parrot
aŋari	aŋal	Canarium polyphyllum
ɣereŋa	gelegeleŋa	having a design
moɣari	mogali	intestines
tara	tal	unfortunate
zuri	dul	to bore into

b) L /l/ : B /r/

alapa	arapa	k.o. mullet
kikilamo	kikiramo	mosquito
lui	rui	dugong
βale	bare	mangrove
lualua	ruarua	to vomit
suklani	susuran	to push

Internal alternation between /l/ and /r/ is attested
in doublets such as L /ziβali/ 'be sick' and L /ziβara/ 'sickness',
L /βiβiri-ηa/ 'green, blue', L /taηo-βiri/ 'blue bottle fly'
(from /laηo/ 'fly' + /βiri/ 'blue') but L /karaηani vilvili/
'k.o. colourful parrot', and L /soko vili/ 'cassowary with blue
wattle', B /birbiria-ηa/ 'blue, green', B /laηo-bir/ 'bluebottle
fly' but B /bil/ 'blue, purple'.

A number of correspondence discrepancies reflect the
two reflexes of POC *R: *suRu 'liquid' → L /suru/ B /sulu/
'breast milk', *waRinsa → L /oazira/ B /oadla/ 'day before
yesterday',(with metathesis of the consonants in the modern
forms). Kilenge tends more towards /l/ as a reflex of *R:
*noRa → L /nora/ but Kd /nola/ 'yesterday', *suRu 'liquid' →
L /suru/ but Kg /suli/ 'breast milk', *kuRita → L /urita/
but Kf /kulta/ 'octopus'. It is quite possible that some of
the Bariai forms in /l/ where Lusi has /r/ are Kilenge loanwords.
Kilenge, for instance shares /korol/ 'pig cage', and /aηal/
'Canarium polyphyllum' with Bariai.

Other examples of alternation between /r/ and /l/ arise
from POC *d and *l. There appears to be a merger of these two
proto-phonemes, becoming /l/ in the majority of cases, and less
frequently becoming /r/: *pulu 'hair' → L /βurβuru/ B /burbur/
Kg /βurβuri/ 'body hair', *pitolo → K /pitoho/ B /pitor/ 'hunger',
*lua → L /lualua/ Kd /lua-ηa/ but B /ruarua/ 'to vomit', *duyuη →
L /lui/ but B,Kd /rui/ 'dugong', *dua → Kf /lua/ but L,B /rua/
K /hua/, and *mudi → L,B /muri/ K /muhi/ 'behind'. The variation
in these examples supports the hypothesis that *d and *l merge as

/l/, and that the sporadic /r/ reflex is an irregularity, or a later shift. On the other hand, *R appears to have split almost equally into /l/ and /r/. The /l/ reflex of *R merges with the /l/ reflex of *d and *l, but the /r/ reflex is distinct.

Two other patterns of variation involving the liquids are worth discussing. The first involves /l/ corresponding or alternating internally with /z:d/, as in: L /aliali/ B /adial/ 'obsidian', L /malilo/ B /madlo/ 'calm (of sea)', L /βolβoze/~/βozβoze/ 'off-white; albino' B /bodebode/ 'white', K /ziβali/~/ziβazi/ 'be sick', K /tilomu/~/tizo/ 'oyster' (Chowning 1973), K /mbalu/~/βazuhi/ 'dove' (ibid.), L /suru/~/suzi/ 'breast milk, liquid'. Irregular reduplication is seen in B /adial/ 'obsidian' and in L /βolβoze/ 'albino'. Both L /malilo/ and B /madlo/ 'calm' show unexpected reflexes of both instances of POC *n in *manino (cf. Tolai /malila/; Lanyon-Orgill 1960). The possibility of borrowing has been discussed in the case of K /mbalu/~/βazuhi/ 'dove', and most likely explains the discrepancy between K /tilomu/ and /tizo/ 'oyster'.

The second variation involves discrepancies between Lusi /r/ and Kove /z/, where one expects Lusi /r/ to correspond to Kove /h/. This variation was mentioned in Section 4.4 in the case of the probable borrowings L /taŋguri/ K /taŋguzi/ 'k.o. insect', L /ndara/ K /ndaza/ 'Nassa shell money', L /mbarku/ K /mbazuku/ 'k.o. spirit mask', and L /karauki/ K /kazaki/ 'k.o. crab'. Two other examples of marine terminology showing this discrepancy are: L /raŋraŋo/ K /zaŋzaŋo/ 'scorpionfish', and L /riɣu/ K /ziɣu/ 'cyclone'. It has been suggested that much marine vocabulary may

be the result of borrowing, corroborated by the Bariai word for 'cyclone', /napiu/, which comes from Kilenge as shown by the nominal /na/. It is likely that borrowing between Lusi and Kove has led to the discrepancy between /z/ and /r/. Kove has [ř] and [r̃] as allophones of /z/. The tap and trill variants do not contrast in Kove, whereas Lusi /z/ and /r/ are separate phonemes: L /zeze/ 'to close (a door)' ≠ L /rere/ 'to accuse', and L /zamu/ 'lime spatula' ≠ L /ramu/ 'k.o. fragrant plant'. Chowning notes:

> The Western dialect of Kove is said by outsiders to substitute a trill for the alveolar spirant, but when I lived in a western village, the men corrected me, saying that only (their) women and children did so (1973:195).

It appears that the trill allophone at a prescriptive level is deemed incorrect, consistent with the maintenance of a Kove /z/ ≠ /h/ contrast, parallel to the Lusi /z/ ≠ /r/ contrast. At the popular level, however, it is gaining ground among the women and younger members of the community, the latter perhaps influenced by the pronunciation of Tok Pisin /r/ as [r̃]. Keu, the Kove man from whom the Kove data in the present work is acquired, comes from Arumigi, a western Kove settlement. In Keu's speech, [ř] and [r̃] are in free variation, in spite of the prescriptive value placed on [ř]. In the case of marine vocabulary, the Lusi form may reflect the borrowing of a word in its trill pronunciation. Chowning points out that the [ř] allophone is used by Kove women, who, through intermarriage with the Lusi, may have affected the pronunciation of borrowed words, and passed them on to their bilingual children. Alternately,

foreign women married into Kove villages will tend to pronounce
Kove /z/ as [r̃] if their first language has a trilled /r/.
Currently there appears to be a certain amount of fluctuation
in the value of /z/ in Kove, and this is reflected in the dis-
crepancy between Lusi /r/ and Kove /z/. Presumably this variation
in Kove allows for the interpretation of a trill in a borrowed
word as an allophone of Kove /z/, and not of Kove /h/.

4.7 Voiceless Slit Fricative

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                        TABLE 4.14
                   Lusi /s/ : Bariai /s/

  Initial /s/:    saoa      saoa      what?
                  sere      sere      to discard
                  sia       sia       reef
                  soŋo      soŋo      chew areca nut
                  sumu      sum       full, replete

  Medial /s/:     mamasa    mamasa    to dry
                  mase      mase      Trochus species
                  βisi      bisi      carry
                  eso       eso       k.o. crab
                  pasu      pasu      dig up, remove
```

Lusi and Bariai /s/ has two sources in POC, either *s
or initial *ns: *nsapa 'what' and *mamasa 'dry'. Although
Milke says that *s and *ns (his *z) are distinguished in the
languages of West New Britain, the apparent /s/:/z/ contrast
that he cites as demonstrating an opposition (1965:338-339) is
the result of conditioning factors. *s and *ns merge in initial
position, but in intervocalic position *ns becomes L /z/ B /d/.
Problems in Friederici's transcription of Bariai are partly

responsible for obscuring this conditioning, since some of his
words with /r/ should have /d/. In Milke, for example, the
following errors led him to explain that "even Western Nakanai
and Barriai show irregularities due to borrowing" (1965:339)
when, in fact, the correct Bariai forms are quite regular:
B /turu/ should be /tudu/ 'breast', B /era/ should be /eda/ 'name',
B /ore/ should be /pode/ 'a paddle' (the **verb** is /ode/), and
B /tari/~/tadi/ is just /tadi/ 'sibling of like sex'.

Other correspondences, such as /s/:/t/ and /s/:/z/ are
presented in Sections 4.2 and 4.3 respectively.

4.8 Voiceless Glottal Fricative

TABLE 4.15

Lusi /h/ : Bariai /Ø/

ahe	ae	leg, foot
hani-ŋa	an-ŋa	food
pa-hani	pa-ean	to feed
hihiu	ui	tail
iha	ia	fish
kahaku	kakau-ede	small
tahe	tae	excrement
uaha	ua	mother's brother
haoa	eaoa	flee

In several of the above examples, Lusi /h/ reflects
the POC velar *k and the laryngeal *q: *kani 'eat' → L /hani-ŋa/
'food' and L /pa-hani/ 'to feed', *iku → L /hihiu/ 'tail' (with
metathesis of *i and *k, whereas the Bariai /ui/ shows metathesis
of *i and *u), *taqe → L /tahe/ 'excrement', and *qaqe (derived
from PAN *qaqay; Blust 1972b) → L /ahe/ 'foot, leg'. Usually
POC *q is lost in Lusi and Bariai: *qate → L /atete/ B /atate/

'liver', *puqaya → L,B /puaea/ 'crocodile', *qinep → L /eno/
B /enono/ 'sleep'. Less frequently *q is reflected as /k/ or
as /ɣ/ or /g/: *maqudip → K /maɣuzi/ 'to live' (Chowning 1973),
*quluŋa → Kf /kuluŋa/ 'head support', *qau (Blust 1972a) → L
/kaura/ B /kaur/ K /ɣauha/ 'bamboo' and L,K /kau/ 'pan pipes',
*muqa 'front; to precede' (Milke 1968) → L,K /muɣa/ B /muga/
'first, beforehand; to precede'. These various reflexes of *q
are similar to the reflexes of *k discussed in Section 4.2, in
which *k develops through various stages: *k → /k/ → /g/ → /ɣ/ →
/h/ → /Ø/. Gitua cognates of Lusi words which show /h/ from
POC *k or *q usually have /g/: L /ahe/ G /age/ 'leg, foot',
L /hihiu/ G /igu/ 'tail', L /iha/ G /iga/ 'fish', L /uaha/
G /waga/ 'mother's brother', and L /haoa/ G /gawa/ 'to flee'[9].
It is possible, then, to consider the loss of POC *q to have
undergone a similar sequence as *k, having perhaps merged with
*k prior to these developments.

Some other observations regarding the cognates listed
in Table 4.15 are in order. Lusi /hani-ŋa/ 'food' and /pa-hani/
'to feed' are derived from L /ani/ 'to eat' by the addition of
the nominalizing suffix /ŋa/ and the causative prefix /pa/.
Both derived forms reflect POC *kani 'to eat' with /h/ which
has been lost in the verb /ani/ and in the nominalized /ani-ŋa/
'eating'. Similarly, Bariai /an-ŋa/ and /pa-ean/ are derived
from B /ean/ 'to eat'. The nominalized form /an-ŋa/, however,
lacks the /e/-accretion present in /pa-ean/ and /ean/. This
accretion is also present in B /eaoa/ 'to flee', and a number of

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9. POC *q becomes G /g/ in *puqaya - G /pugaya/ 'crocodile'.

other words show /e/-accretion in Lusi, Kove, and Bariai:
L,B /ealu/ 'Casuarina species', from POC *aRu, L,B /eamo/
'earth oven', from POC *qumu (with irregular vowel reflexes),
L,B /eaoa/ 'lime powder', from POC *apuR (and addition of final
/a/), L,K /eaβaβa/ B /eababa/ 'human being', B /eaba/ but K /aβa/
'man' (cf. PPN *l-ava 'person, human being'; Dempwolff 1929),
K /eau/ 'lsg pronoun', from POC *aku, K /eai/ 'fire', from
POC *api. Accretion of this nature is common in other Oceanic
languages as well. Chowning says of Lakalai and Kove that "both
have developed a phoneme (L. h, K. e, pronounced y) before POC
initial *a, as in L. havi K. eai, 'fire'" (1973:198). Motu
(Lawes 1888) has /l/-accretion, seen above also in the PPN form
*l-ava, in Motu /lahi/ 'fire' and /lau/ 'lsg pronoun', whereas
Tolai (Lanyon-Orgill 1960) has /iap/ 'fire' and /iau/ 'lsg
pronoun'. Banoni (Capell 1971) adds /dz/ in /džai/ 'fire' and
/džaso/ 'smoke', from POC *qasu, and Amun (ibid.) has /e viavi/
'fire' and /e viaso/ 'smoke'. This last accretion of /vi/ is
seen in the Lusi independent pronouns /βiau/ 'lsg', /βeao/ '2sg'
(cf. B /eau/ '2sg'; /βi/ has been reduced to /β/ before /e/),
/βiai/ 'lex', and in Kove /βei/ '3sg' (cf. B /ei/ '3sg'). Bariai
has /g/ in the independent pronouns /gau/ 'lsg' and /gai/ 'lex'.
Pawley also discusses accretion in reference to the languages
of Malaita and San Cristobal (1972:30).

Lusi /kahaku/ and Bariai /kakau-ede/ 'small' are derived
from an underlying *kakaku. As seen above, the change from *k
to /h/ could be posited to account for *kakaku → L /kahaku/, and
loss of the final occurrence of *k produces B /kakau-ede/. The

extra syllable /ede/ in Bariai is found in L /βolβolo eze tau/
'quite short' (literally 'short one very'), an unproductive usage
both languages. /kakau/ in Lusi and Bariai means 'boy, girl',
and is found in L /uzuzu kakau/ 'small pole that sits on top
of the ridgepole (uzuzu)', in B /tadi kakau/ 'younger sibling
of the same sex', and in B /liu kakau/ 'younger sibling of the
opposite sex'. Other Lusi reflexes of *kakaku include L /kaka/
'runt of a litter', /niu kaka/ 'underdeveloped coconut',
/lima-γu ae-a kaka/ 'my little finger' (literally 'hand-my
its runt'), /ahe-γu ae-a kaka/ 'my little toe' (literally 'foot-my
its runt'), /βua kakara/ 'underdeveloped areca nut', /kakalomu/
'boys and girls; collective of /kakau/', and /kakalumu/ 'quietly,
softly'.

As discussed in Section 4.4, a number of Lusi words
dealing with marine technology contain /h/ which appears to come
from Kove. Some of these words have /r/ in the corresponding
Bariai cognate, indicating that the Lusi form in /r/ is lacking.
A number of words which do not deal with maritime technology also
exist which are suspected Kove borrowings because the Lusi form
with /h/ either alternates with another Lusi form having /r/,
or corresponds to a Bariai word with /r/ or /l/. These include:
L /γuhi/ B /guri/ 'k.o. tree', L /ahilu/ B /arilu/ 'mortuary feast',
L /mahumu/ /marumu/ B /marum/ 'soft', L /βohi/ B /bori/ 'pig's
upper canines', L /βohoku/ B /buruku/ 'name of cannibal character
in stories', L /ahala/ B /arala/ 'lascivious woman', L /γeheβo/
B /gerebo/ 'brideprice', L /haia/ B /laia/ 'k.o. ginger',
L /kihini/ B /kiniri/ 'clean-shaven, glabrous' (with metathesis),

L /pohuku/~/poruku/ B /poruku/ 'green anglehead lizard',
L /ahila/~/arila/ B /aria/ 'k.o. rattan'. It is noteworthy that
Lusi bigmen use K /hua/ instead of L /rua/ when counting shell-
money and brideprice.

   Thurston (in press) suggests that loanwords from Anêm
containing /x/, a voiceless velar trill, give rise to /h/ in
some Lusi forms, but more commonly to /r/. Two of the above
examples fall into this category, namely L /guhi/ A /guxi/
'k.o. tree', and L /ahila/ A /axila/ 'k.o. rattan'. Another
instance, L /kaha/ A /kaxa/ 'k.o. tree', has no cognate in
Bariai. The question arises, however, why these forms have /h/
when most loanwords have /r/: A /mexiaη/ L /meriaη/ 'hornbill',
A /sixgo/ L /siryo/ 'k.o. millipede', A /moxoxua/ L /mororuo/
'spider', A /oxen/ L /oren/ '<u>Ficus</u> species'. Since the appropriate
Kove data is lacking, the answer is uncertain, but it appears
that the Kove form with /h/ has supplanted the Lusi borrowing
with /r/. Examples of Kove /h/ corresponding to Anêm /x/ include:
A /amsexe/ K /amsehe/ L /amsere/ '<u>Hibiscus tileaceus</u>', and
A /axila/ K /ahila/ L /ahila/~/arila/ 'k.o. rattan'. The doublet
in this last Lusi example shows the expected response co-occurring
with the Kove form.

5. THE VOWELS

5.1 Introduction

Both Lusi and Bariai have the five-vowel system found in most Oceanic languages: /i e a o u/. In addition, there are the following diphthongs: /ae ai ao au ei oe oi ou/. In previous transcriptions by Counts (1969), Friederici (1912, 1913), and Thurston (in press), the use of /w/ is Lusi and Bariai is problematic, as it obscures a difference perceived by Lusi and Bariai speakers between /o/ and /u/ glides, as shown in the Lusi minimal pair: L /kaua/ 'dog' and L /kaoa/ 'k.o. bird'. The almost complete agreement in correspondences of /o/ and /u/ glides in Lusi and Bariai, and the consistency shown by native speakers when writing their own language confirm the orthography used here in which /w/ is replaced by /u/ or /o/. Both /u/ and /o/ glides reflect POC *w and POC *p, as discussed in Section 4.2. *w and *p are lowered to /o/ in the sequence *awa and *apa, as in: *ansawa → L,B /araoa/ 'spouse', and *nsapa → L,B /saoa/ 'what?'. *p is reflected by /u/ in some verbs, such

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as *potu → B /uot/ 'arrive, appear', and *ponse → L /uoze/ 'to
paddle'. The existence of /aua/ and /aoa/ contrasts, however,
requires a maintenance of this distinction in the orthography,
as not all /aua/ sequences are lowered to /aoa/. Similarly,
contrasts exist between /i/ and /e/ glides, such as L,B /aea/
'for, of', and L,B /aia/ 'mother', or B /eaba/ 'man', and B /iaba/
'k.o. banana'. Counts (1969) does not include /y/ in his Lusi
phoneme inventory, and Chowning notes that the status of /y/ in
Kove is dubious (1973:194), although she does not address the
comparable status of /w/ in Kove. In Lakalai, however, she
replaces /w/ with /u/, as in Lakalai /uaga/ 'canoe'. The Kove
material in the present study conforms with the Lusi and Bariai
data in the use of /o/ and /u/.

Dahl, in a discussion of the validity of separate semi-
consonants in PAN, concludes that "in PAN there was no phonemic
difference between *u and *v [=w] nor between *i and *j [=y]"
(1973:17). This may also be relevant to POC *w and *y. Whether
the current contrast between /u/ and /o/ glides in Lusi and Bariai
was also present in POC or is a later development cannot be
ascertained until investigation of these glides in the daughter
languages of POC determines whether this contrast is pervasive
or not, or predictable on the basis of lowering.

Tables 5.1 through 5.6 give examples of the isomorphic
correspondences between Lusi and Bariai vowels and diphthongs.
Sections 5.2 to 5.6 discuss variations in the vowel systems of
Lusi and Bariai.

```
                    TABLE 5.1
         Lusi /i/ : Bariai /i/

         izo         ido         spear
         iha         ia          fish
         βizaβiza    bidabida    bedbug
         pisopiso    pisopiso    k.o. grass
         kiki        kiki        k.o. crab
         βoγi        bogi        sea eagle
```

Lusi and Bariai /i/ most commonly reflect POC *i,
as in *ikan → L /iha/ B /ia/ 'fish', *nsipo → L /sio/ B /ga-dio/
'down', and *niuR → L,B /niu/ 'coconut'.

```
                    TABLE 5.2
         Lusi /e/ : Bariai /e/

         eza         eda         name
         eta         eta         some, a few
         βereo       bereo       mountain ridge
         zeŋa        deŋa        a grave
         pele        pele        to comb
         asile       asile       fuzz, bristles
```

POC *e most frequently remains /e/ in Lusi and Bariai:
*kunsupe → L /kuzuke/ B /kuduke/ 'rat', *wanse → L /uaze/ B /uade/
'count out, distribute', and *tage → L /tahe/ B /tae/ 'excrement'.

```
                    TABLE 5.3
         Lusi /a/ : Bariai /a/

         anunu       anunu       dream, shadow
         atama       atama       door
         kali        kali        stockade
         malo        malo        barkcloth
         mona        mona        grease, fat
         sama        sama        rub
```

POC *a is reflected by L,B /a/, as in: *qanso →
L /azo/ B /ado/ 'sun, day', *tansi → L /tazi/ B /tad/ 'sea',
and *dua → L,B /rua/ 'two'.

```
                    TABLE 5.4
               Lusi /o/ : Bariai /o/

        ololo       ololo       feast
        oro         oro         pubic hair
        γoγo        gogo        carry in mouth
        βoze        bode        paint, draw
        luo         luo         tooth
        uato        uato        call by name
```

Examples of POC *o becoming Lusi and Bariai /o/ include:
*malo → L,B /malo/ 'barkcloth', *tolu → L /tolu/ B /tol/ 'three',
and *doŋoR → L /loŋo-ni/ B /loŋo/ 'to hear'.

```
                    TABLE 5.5
               Lusi /u/ : Bariai /u/

        ura         ura         strength
        uru         uru         breathe
        puna        puna        head pad
        tuma        tuma        louse, lice
        luku        luku        grasp, clutch
        saku        saku        a pair (of mats)
```

Lusi and Bariai /u/ reflect POC *u, as in: *kudon →
L,B /ulo/ 'clay pot', *tuma → L,B /tuma/ 'louse, lice', and
*natu → L,B /natu/ 'offspring, child'.

```
        TABLE 5.6
        Diphthongs

    rai         rai         trade wind
    lailai      lailai      afternoon
    zae         dae         go up, ascend
    laelae      laelae      k.o. belt
    pao         pao         top
    eaoa        eaoa        lime powder
    pau         pau         new
    eau         eau         water
    aβei        abei        tree
    kureirei    kureirei    lobster
    moi         moi         taro
    poipoi      poipoi      plaited armband
    moe         moe         pandanus mat
    βoroeo      boroeo      lungs
    nou         nou         stonefish
    tou         tou         sugarcane
```

Many Lusi and Bariai diphthongs arise when POC *p or
*k is lost intervocalically: *Raki (reconstructed on the basis
of G /rak/ and PPN *laki; Biggs 1970) → L,B /rai/ 'southeast
trade wind', *RapiRapi 'evening' → L,B /lailai/ 'afternoon',
*nsake → L /sae/ B /ga-dae/ 'up', *ñopu → L,B /nou/ 'stonefish',
*topu → L,B /tou/ 'sugarcane', *lako → L,B /lao/ 'go' L /lalao/
'walk'.

5.2 Final High Vowels

A feature of Bariai that is perceived as emblematic by
both Lusi and Bariai speakers is the regular loss of final high
vowels. This loss is shared by Kilenge and some other Siasi
languages on the islands and on the mainland, such as Gitua.
The loss in Kilenge and Gitua is more sporadic than in Bariai.
Table 5.7 presents some examples from Lusi, Bariai, and Kilenge:

```
                        TABLE 5.7
                  Loss of Final High Vowels

    Lusi       Bariai      Kg,Kf

    puzi       pud         pur      banana
    otu        uot         pot      arrive, appear
    ɣali       gal         gal      to spear
    ɣiɣiu      gigi        gigi     spine, thorn
    uasi       guas        guas     tobacco
    unu        un          kun      breadfruit
    lupu       lup         lup      to gather
    manu       man         man      bird
    aŋari      aŋal        aŋal     Canarium polyphyllum
    ŋiŋi       ŋiŋ         ŋiŋ      to laugh
```

Examples of lost high vowels in Gitua include: G /von/ L /onu/ B /uon/ 'full', G /gan/ L /ani/ B /ean/ 'to eat', G /gun/ L /unu/ B /un/ 'to drink', G /ŋgal/ L /ɣali/ B,Kg /gal/ 'to spear', G /man/ L /manu/ B,Kf /man/ 'bird', G /aŋar/ L /aŋari/ B,Kg /aŋal/ 'Canarium polyphyllum', and G /ŋiŋ/ L /ŋiŋi/ B,Kg /ŋiŋ/ 'to laugh'. In other instances, however, Gitua or Kilenge agree with Lusi instead of Bariai: G,L /unu/ B /un/ Kf /kun/ 'breadfruit', G /pundi/ L /puzi/ B /pud/ Kg /pur/ 'banana', G,L /lupu/ B,Kg /lup/ 'to gather'; and Kd,L /pani/ B /pan/ G /van/ 'to give', Kf /tai/ L /tazi/ B /tad/ 'sea'. Bariai, however, consistently loses the final high vowel that has been retained in various other languages. Three cases exist, however, in which a final /u/ or /i/ occurs in Bariai: the first involves inalienable possession; the second instance appears to be phonologically conditioned; the final case can be explained only in terms of borrowing.

Inalienable possession refers to the class of nouns to

which possessive pronouns are directly affixed, as against those
nouns which are preceded by a separate morpheme, either /a/ or
/le/ in Lusi and Bariai depending on the nature of the association,
which receives the possessive pronominal affixes. For the most
part, inalienable nouns are body parts and kinship terms. In
Lusi and Bariai, the possessive pronouns are suffixed with the
exception of the third person singular which is a prefix. In
the third person singular form, Bariai loses a final high vowel
which is maintained in the other persons before the possessive
suffixes. Sample paradigms are presented in Table 5.8.

TABLE 5.8

Bariai /u/, /i/ ~ /Ø/

Lusi	Bariai	
anunu-ɣu	anunu-g	my soul, dream
anunu-mu	anunu-m	your soul, dream (2sg)
ai-anunu	i-anun	his,her soul, dream
anunu-za	anunu-da	our soul, dream (1in)
anunu-mai	anunu-mai	our soul, dream (1ex)
anunu-mi	anunu-mi	your soul, dream (2pl)
anunu-zi	anunu-d	their soul, dream

In Bariai, a number of inalienable nouns end in /u/ or /i/
and all of these words follow the pattern presented in Table 5.8:
B /tudu-g/ 'my breast' but /i-tud/ 'her breast', B /tadi-g/ 'my
sibling same sex' but /i-tad/ 'his brother, her sister'. The
only exception to this is B /asu/ 'bladder': B /asu-g/ 'my bladder'
and B /i-asu/ 'his,her bladder'. The preceding /s/ prevents the
loss of final /u/, as the occurrence of final /s/ in Bariai is
relatively rare. Only three instances of final /s/ can be found:

B /kus/ 'finished, all gone', B /guas/ 'tobacco', and B /aŋas/
'left-hand'. The first example is unexplained. The last two
examples are borrowings, from Kf /guas/ 'tobacco', and Amara
/(a)ŋas/ 'left-hand'. Some examples of final high vowels
occurring after /s/ in Bariai are: /usi/ 'thatch', /lusi/
'mountain', /misi/ 'dry, cooked', /nasi/ 'to follow', and
/pasu/ 'dig up, extract'.

A third class of words having final /i/ and /u/ cannot
be accounted for in terms of conditioning or morphological factors
but the observation that most of these words are in the realm of
bush and marine vocabulary suggests borrowing. Examples of bush
terms include various tree species: /amoru, bululu, pamulu,
barubaru, papatu, guri/; various insects: /kuku/ 'k.o. spider',
/tamaruru/ 'k.o. beetle', /taŋguri/ 'k.o. cicada'; various birds:
/bokumu, kulukulu, iku, kaini/; and other plants and animals
inhabiting the bush: /bulu/ 'k.o. bat', /ureru/ 'anglehead lizard',
/pindi/ 'k.o. fragrant plant', and /keri/ 'k.o. rattan'. Many
of these have Anêm and Lusi cognates, a fact which argues for
entry into Bariai from Lusi, having come initially from Anêm.
Since traditionally the Anêm and Bariai were enemies, it is doubtful
that inheritance of these borrowings came directly from Anêm, and
so the Lusi likely acted as intermediaries.

Examples of marine terminology which show final /u/ or
/i/ in Bariai include fish species: /laebubu, potudu, kabuku,
lamilami, loki, legiti/; crab species: /turu, kiki, kuku/; shell
species: /talimbu, bogbogi, murimuri/, and others: /lubulubu/
'k.o. seaweed', /bogi/ 'sea eagle', /mataŋgilu/ 'sea snake', and

/ŋalu/ 'waves, surf'. Lusi and Kove cognates are plentiful, suggesting one likely source for these words, and the presence of such terms as B,L /naŋili/ 'scales (of fish)', L,B /naŋura/ 'Trevally species', L /nale/ B /napaela/ 'mast', and a host of other nautical and marine terms beginning with /na/ shows that Kilenge has also acted as donor of maritime vocabulary.

Not all marine terminology, however, has retained final high vowels in Bariai. Compare the following Lusi and Bariai terms: L /ponu/ B /pon/ 'sea turtle', L /tazi/ B /tad/ 'sea', L /laβu/ 'sand' B /lab/ 'beach', L /sakani/ B /sakan/ 'k.o. net', L /samani/ B /saman/ 'outrigger float', L /azoni/ B /adon/ 'outrigger float booms', L /mazoani/ B /maduan/ 'deep sea', and L /sumsumu/ B /sumsum/ 'triggerfish'. That there are two sets of terminology in Bariai, one displaying a regular loss of final /u/ and /i/, and the other having intact final high vowels is particularly interesting. The majority of words in the first set are fairly commonly used terms with cognates in POC: *ponu 'turtle', *tansi 'sea', *ndapu 'dust', *saRaman 'outrigger float', *kianto (from Milke 1968 with revision of Milke's *g to *k) 'outrigger boom'. The second set with final high vowel retention is composed predominantly of specific names, as opposed to generic terms. Often esoteric, this type of vocabulary is part of the wisdom of adult men and women, and limited in distribution among AN languages. Gitua, for instance, rarely shows cognates of specific fish, insect, mammal, tree, and bird names, except in cases where the name is widespread enough that a POC etymon has been reconstructed. Chowning notes that "there is almost no

agreement between [Lakalai and Kove] in the rich vocabulary dealing with fish and other marine life; the few exceptions may all be derived from POC" (1973:206). Even then, the displacement of POC words is not unusual, e.g. G /koβe/ for POC *tansi 'sea'.

High vowels are lost not only in final, but also in medial position in some words, varying in degree in the individual languages, Kove being the most conservative in the retention of these vowels:

TABLE 5.9
/i/, /u/ : /Ø/

a) L /i/,/u/ : B /Ø/

tilo	tlo	to peer into
taβila	tabla	wooden bowl
βulaβula	blabla	ripe
βilala	blala	young woman
zilezile	dledle	dorsal fin
oazira	oadla	two days hence

b) K /i/,/u/ : L,B /Ø/

maitune	maitne	maitne	not yet
anitu	antu	antu	ghost
tina	tna	tna	mother
taliŋa	taŋa	taŋa	ear
alimaŋo	amlaŋo	amlaŋo	mangrove crab
sukulani	suklani	susuran	to push

The development of L,B /taŋa/ from POC *taliŋa 'ear', is /taliŋa/ → /talŋa/ → /taŋa/. The Maleu cognate /talŋa/ has /l/ but has lost *i. The Lusi and Bariai form /amlaŋo/ shows metathesis of *l and *m of POC *alimaŋa 'mangrove crab'. Lusi appears as an intermediary stage between Kove /sukulani/ and Bariai /susuran/ 'to push', the latter with reduplication of

the first syllable. Kilenge also loses some high vowels between consonants, as shown in Kf /kulta/ L /urita/, from POC *kuRita 'octopus', Kf /kuluŋa/~Kd /kulŋa/, from POC *quluŋa 'headrest', Kf /tna/ K /tina/, from POC *tina 'mother', and Kf /almaŋo/ K /alimaŋo/, from POC *alimaŋa 'mangrove crab'.

Examples of the loss of final /a/ and /o/ in Bariai are also available, although this loss is relatively infrequent: B /nam/~/nama/ L /nama/ 'to come', B /kaur/ L /kaura/ 'k.o. bamboo', B /korol/ L /kororo/ 'pig cage', B /tal/ L /tara/ 'unfortunate', B /pitor/ K /pitoho/ 'hunger'. A final /a/ has been added in: L,B /eaoa/, from POC *apuR 'lime powder', and L,B /kaua/, from POC *ŋkaun 'dog'.

5.3 Lusi /o/ : Bariai /a/

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                TABLE 5.10
           Lusi /o/ : Bariai /a/

      poea        paea        good
      apo         apa         belly
      lipo        lipa        climbing noose
      βou-ŋa      bau-ŋa      a song
      aβomu       abam        hourglass drum
      βoβo        baba        to call out
      mou         mau         saliva
      momo        mama        sago
      ɣiɣimo      gigima      stars
```

Table 5.10 presents a sample of a number of instances where Lusi /o/ corresponds to Bariai /a/. A conditioning factor is present: the vowel concerned precedes or (usually) follows a labial (/p β b m/). Kilenge also shows a tendency to change /a/

to /o/: Kg /pot/ 'stone', from POC *patu, Kf /mon/ 'bird', from
POC *manuk. Gitua has a number of words in /wa/ where Lusi or
Bariai have /o/: G /bwa/ 'call (a dog)', L /βoβo/ B /baba/ 'call
(by name)', G /bwaga/ L /βoka/ B /boga/ 'branch', G /bwaro sese/
L /βoro/ B /boro/ 'egret', G /kurum bwatumbwatum/ 'gecko' B /batum/
'k.o. lizard', G /bwazi/ 'move stick in circle to make hole'
L /βozi/ 'stick (finger) into hole, orifice', G /gumwa/ 'work
in garden' L /umo/ 'clear garden', B /uma/ 'plant taro', G /mwai/
L,B /moi/ 'taro', G /mwata/ L,B /mota/ 'snake', G /pwaya/
L /poea/ B /paea/ 'good', G /apwa/ L /apo/ B /apa/ 'belly'.

A certain amount of internal variation between /o/ and
/a/ is seen in: L /marere/ 'roll over and over', L /morere/
'to spin', L /apo-γu/ 'my belly', L /ai-opo/ 'his,her belly',
L /tomo ŋani /~/toma ŋani/ 'along with', B /pa-popo/~/pa-papo/
'assist at childbirth' (from B /pa/ 'causative prefix' and
B /popo/ 'give birth').

Although labials play a role in the /o/~/a/ alternation,
not all instances of /o/ after a labial in Lusi are /a/ in
Bariai, suggesting that a distinction between plain and labialized
/p b m/ was present in the proto-language and is still evident in
Gitua.

Examples are available in which /o/~/a/ alternation is
not conditioned by labials: L,B /toutou/~/tautau/ 'soul substance',
and L /mokaka/~/mokoko/ 'loose, slack'. Some POC *a becomes
L,B /o/: *ŋkaŋka 'finger' → L /γoγa/ 'thumb' B /goŋa/ 'finger',
POC *nansu → L,B /nono/ 'to cook'.

5.4 High Vowels : Mid Vowels

Another pattern occurring frequently enough to note is the alternation or correspondence between high vowels (/i u/) and the mid vowels (/e o/) that agree in tongue advancement. Examples of the more common /o/ : /u/ correspondence follow:

TABLE 5.11
/o/ : /u/

a) L /o/:B /u/:

oluae	uluae	porpoise
βole	bule	thigh
βohoku	buruku	cannibal character
morupo	murupo	Evening star

b) L /u/:B /o/:

puae	poae	Malay apple
puapua	poapoa	fruit, seeds
zuzulu	dodolo	drop, leak
kuvu	kobkob	empty, finished
karembu	karimbo	k.o. fish
kulaluo	kolaluo	k.o. adze

Correspondences between /i/ and /e/ are less frequent: L /semo/ B /sima/ 'to infect', L /elo/ B /ilo/ 'to look (for)', B /kekesi/~/kikisi/ 'stage in the growth of the areca nut'; cf. also: L /momoho/~/mumoho/ 'old people', L /momoni/~/mumuni/ 'to hide', L /γomimi/~/γumimi/ 'k.o. millipede', L /ai-poro/ 'flowering fruitstalk of areca palm' L /ai-puru/ 'flower', and L /posi/~ /pusi/ 'rub, wipe'. The prevalence of labials in these examples involving /o/ and /u/ suggest that labials may play a role in the variation of these vowels, as it does with /o/ and /a/.

POC *i is reflected by L,B /e/ in *mimiR → L,B /meme/ 'urinate', *ndami → L /zame/ B /dame/ 'to lick', *mpakiwak →

B /bakeoa/ 'shark', *qinep → L,B /eno/ 'sleep', and *pilak →

L,B /pelaka/ 'lightning'. POC *u becomes L,B /o/ in *tuqa →

L /toa/ 'older sibling same sex', and *qumu → L,B /eamo/

'earth oven'. The development of /a/ from *u in this last

example is possibly the result of an intermediate *omo stage.

In a number of the examples given, it is possible to

posit that the high vowel is original, but a following mid or

low vowel produces assimilation by lowering /u/ or /i/ to /o/

and /e/: *bule → L /βole/, *puae → B /poae/, *puapua → B /poapoa/,

*kulaluo → B /kolaluo/, *sima → L /semo/, *ilo → L /elo/. A com-

parison of the POC reconstructions and the Lusi and Bariai reflexes

supports this: *ndami → L /zame/ B /dame/, *mpakiwak → B /bakeoa/,

*pilak → L,B /pelaka/, and *tuqa → L /toa/. In other examples,

the opposite process is at work; an original *o or *e is raised

to assimilate to a high vowel: *oluae → B /uluae/, *boroku →

B /buruku/, and *morupo → B /murupo/. The lowering of /u/ to /o/

has been discussed in Section 5.1, and examples of umlauting are

presented in Section 5.6. It is interesting to note that both

Anêm and the Lamogai languages have pervasive vowel harmony rules,

providing impetus for similar shifts in the eastern Bariai languages.

Such an interpretation can also be applied to instances of fronting

and backing, discussed in Section 5.5.

There are also examples of variation between /ou/ and /o/,

as in: K /souŋu/ L /sonu/ B /son/ 'to swallow', L /ɣouzi/~/ɣozi/

B /gou/ 'to collect', L /pizau kokolo/ B /koloulo/ 'k.o. king-

fisher', and between /ou/ and /u/ in: B /kouŋa/ L /kuŋa/ 'stick

used for knocking fruit out of trees'.

5.5 Front Vowels : Back Vowels

Also available is a set of examples showing variation
between /i/ and /u/, and to a lesser degree, between /e/ and /o/:

```
                        TABLE 5.12

a) L /u/: B /i/
                kapusia    kapisa     to fart
                tuβu       tibu       ancestors
                tuβuru     tibur      place
                surani     siran      to spill
                usu        usi        sago thatch

b) L /i/: B /u/
                βilolo     bulolo     bottom
                misilani   musilan    L:slowly B:seldom
                sioni      suon       fishing spool
                βiliɣaliɣa buligaliga aimlessly
```

Correspondences between /o/ and /e/ include: L /nosnose/
B /nesneso/ 'k.o. ant' (this may be metathesis), L /soɣo/ K /soɣe/
'to be decorated', B /tamagogo/ L /tamaɣeɣe/ /k.o. starfish'.
Internal variation of front and back vowels includes: L /suzi/
'liquid, juice' L /suru/ 'bodily fluids', L /nuzi/ 'to smell
(something)', L /nuzu/ 'nose', and L /surani/~/suranu/ 'to spill'.

Blust (1970) catalogues variation between /i/ and /u/ in
other AN languages, indicating that it is widespread. Lynch
suggests that "front/non-front alternation was not uncommon"
(1976:23) in PAN, and that this alternation is visible in the
varying reflexes between /i/ and /u/ in modern AN languages. A
similar variation between the front/non-front vowels of POC
would account for some of the variation in the Lusi and Bariai
examples above. Other instances may represent assimilation of

front vowels to back vowels or vice-versa, as in: *bilolo →
B /bulolo/, *musilani → L /misilani/, *sioni → B /suon/, and
*buliqaliqa → L /βiliɣaliɣa/. Examples from POC include:
*lipon → L,B /luo/ 'tooth', *inum → L /unu/ B /un/ 'drink',
and *ndaula → L /ndaela/ B /daela/ 'frigate bird'. The
evidence for this sort of assimilation, however, is not as
convincing as the lowering and raising phenomena discussed
in Section 5.4. For example, *tumpu → L /tuβu/ but B /tibu/
'ancestors', and *qutub → L /uti/ 'draw water', shift contrary to
the assimilation discussed above. Similarly, alternations
such as *suRuq 'flood' → L /sili/ B /sil/ 'high tide' support
Lynch's argument for alternation between /i/ and /u/ in the
proto-language.

     In the same article, Lynch (1976) argues that the
change from PAN *ə to POC *o was not unconditional, and that
some PAN *ə eventually became /e/ in daughter languages such
as Fijian, and some languages of the Southern New Hebrides.
Some examples of POC *o, or PAN *ə, becoming /e/ in Lusi and
Bariai are: PAN *bəkas 'residue' → L /βeβea/ B /bebea/ 'defecate',
PAN *dəpa POC *dopa → L,B /leoa/ 'fathom', PAN *kətip POC *koti →
L /keti/ B /ket/ 'cut, slice'. In one instance Lusi and Bariai
have /o/ where POC has *e and PAN has *ə: PAN *mbəmbə POC *mpempe →
L /βoβo/ B /bobo/ 'butterfly'.

5.6 Low Vowel : Mid Vowel

     A final recurrent pattern, similar to the L /o/ : B /a/
correspondence discussed earlier, will be presented here.

A number of Lusi words with /e/ have a corresponding form in Bariai with /a/: L /esi/ B /asi/ 'crawl along something', L /azeze/ B /adade/ 'chin', L /atete/ B /atate/ 'liver', and L /sei/ B /sai/ 'who?'.

A conditioning factor is evident: raising of /a/ to /e/ before /i/, with or without an intervening consonant: *nsai → L /sei/ 'who?'. In some words there is variation between /ai/ and /ei/ in Lusi: /lailai/~/leilei/ 'afternoon', L /ai/~/ei/ '3sg possessive prefix', L /aiai/~/eiei/ 'to hurt, be painful'. This variation is not shared by Bariai and Kove.

A number of POC *a have shifted to /e/ in Lusi and Bariai, without any perceivable conditioning: *ansan → L /eza/ B /eda/ 'name', *nsa → L /eze/ B /ede/ 'one', *ansawa → L /azaoa/ but L /ai-ezaoa/ 'his,her spouse' shows /e/, and *nansa → L /ŋeza/ B /ŋeda/ 'when?'. The nouns L /eza/ B /eda/ and L /azaoa/ are inalienably possessed, and it is possible that the third person singular prefix L /ai/~/ei/ B /i/ has caused the shift in vowels, as seen in the alternation between L /ai-ezaoa/~/ai-azaoa/ 'his,her spouse'. Similarly the addition of the extra syllable /e/ in *nsa → L /eze/ B /ede/ 'one' may have raised the POC vowel. It may also be relevant that these examples involve the sequence *ansa → L /eza/ B /eda/.

Difference in reduplication gives rise to the /e/ : /a/ correspondence in L /atete/ B /atate/ 'liver', from POC *qate(qate) and in L /azeze/ B /adade/ 'chin', from POC *anse(anse). Lusi also allows the /a/ form in the third person singular:

L /ai-atete/~/ai-atate/ 'his,her liver', and L /ai-azeze/~/ai-azaze/ 'his,her chin'.   The Lusi doublets /zezaβa/~/zazaβa/ 'head', and /γezaua/~/γazaua/ 'yonder' appear to be related to the shift from *ansa̱ to /eza/.

6. Conclusions

6.1 Summary of Results

6.2 Implications for Subgrouping

6.1 Summary of Results

For the most part, the phonemes of POC have developed
regular reflexes in Lusi and Bariai which are, for this reason,
said to be conservative languages. The development has been:

```
POC    *p   *t   *k   *s   *mp  *ŋp  *nt  *nd  *ns  *ŋk  *q
        ↓    ↓    ↓    ↓     ↘   ↙    ↘   ↙     ↓    ↓    ↓
L,B    p    t    k    s      β:b      z:d       s    γ:g   Ø
```

```
POC    *m   *ŋm  *n   *ñ   *ŋ   *l   *d   *R   *y   *w
         ↘   ↙     ↘   ↙    ↓     ↘   ↓   ↙↓    ↓    ↓
L,B        m          n          ŋ     l    r    i,e   u,o
```

```
POC    *i   *e   *a   *o   *u
        ↓    ↓    ↓    ↓    ↓
L,B    i    e    a    o    u
```

Some alternate reflexes occur frequently enough to merit
attention. Both /p/ and /k/ are lost in a number of words, especially
in intervocalic position, and lenition in both initial and inter-
vocalic positions provides instances of the process of loss which
is still in progress. Although POC *q is lost in most Lusi and
Bariai reflexes, the development or merger of POC *q to /k/ provides
an explanation for a number of reflexes with /h/ in Lusi or /k/ in
both Lusi and Bariai, in that *q also parallels the progression of

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POC *k.

POC *R has /r/ as a regular reflex, but evidence of a merger of *R with *d and *l is provided by the numerous instances of *R becoming L,B /l/. This merger, however, is incomplete, and considerable confusion between /r/ and /l/ reflexes of all three POC phonemes, as well as internal inconsistencies, suggest that the POC phonemes were not stable in Proto-Bariai, or have been confused as the result of borrowing between languages and dialects.

While the POC vowels develop fairly regularly in both Lusi and Bariai, some variation between these two languages is evident, either the result of conditioning factors such as the loss of high vowels in final position in Bariai, or reflecting variation that was probably present in the proto-language, such as front:back vowel alternation, or suggesting some form of vowel agreement, such as high:mid vowel alternation. Generally the back vowels are affected more frequently than the front vowels.

Although most POC final consonants are lost, a few exceptions exist in Lusi, Kove, and Bariai: *tokon 'pole' → L /atoko/ 'walking stick' (the initial /a/ is found in B /asape/ but not L /sape/ 'widow', and L /arakrak/ but not B /rakrak/ 'k.o. pig trap'. It may be the remains of an old nominal akin to Kilenge /na/ and Lamogai /o a e/, subject to vowel harmony), as well as L /tokonkon/ 'twigs', *taŋis → L /taŋi/ B /taŋ/ 'to cry', but L /taŋi-za/ B /taŋ-da-ŋa/ 'crying', *ŋiŋis 'to grin' → L /ŋiŋi/ B /ŋiŋ/ 'smile, laugh', but L /ŋiŋi-za/ B /ŋiŋ-da-ŋa/ 'smile, laughter', *pilak → L,B /pelaka/ 'storm, lightning'. Further examples are cited in Chowning (1973:197). It is uncertain whether such words as L /launi/

'hair', and L /samani/ 'outrigger float', have added /i/ to POC

*ndaun 'hair' and *saRaman 'outrigger float', or have added /ni/

after the regular loss of the POC final consonant. The addition

of /ni/ to POC words with no final *n, such as *kianto → L /azoni/

'connecting sticks between outrigger floats and outrigger float

booms', supports the argument that L /launi/, for instance,

comes from POC *ndaun plus POC *n̄a '3sg possessive suffix'.

A similar problem arises with L /matauzi/ B /mataud/

'to fear', from POC *matakut. The development of *t to /z/:/d/

is difficult to account for, and doublets such as L /γouzi/~/γou/

'to collect' indicate that /zi/ is added. This analysis conforms

with the regular loss of POC final consonants, and avoids the

problem of explaining the development of /z/:/d/ from *t. The

fact that /zi/:/d/ is '3pl object suffix' suggests an interesting

parallel with the /ni/ of transitive verbs. Other transitive verbs

exist which end in /zi/:/d/, such as L /lauzi/ 'to tie'.

In the vast majority of cognates, it is quite evident

that sound correspondences between various members of the eastern

Bariai language group are systematic and regular. When one

examines the instances of variation or discrepancy, certain insights

are afforded. It is argued here that many divergences from expected

reflexes or correspondences are potential indications of borrowing.

This is especially probable (a) where non-basic vocabulary is

involved, (b) where one language has an expected reflex of POC but

the other shows a divergence, and (c) where the intrusion of sounds

alien to the phonologies of the languages involved results in different

responses. Lynch warns that

borrowing is often a convenient panacea in cases
like these [doublets in Fijian] but I feel that
one has to at least partly document the sources
of borrowed words... (1976:22).

This implies that a knowledge of the languages and

dialects which interact with the language under discussion is

necessary to a full understanding of the origins of sound change

and the variations within a sound system. If a system is

established that is inherently cohesive and demonstrates predictable

sound correspondences with related languages and regular reflexes

of an available proto-language, then it is possible to select those

lexemes that show variation or divergence. The next stage is to

seek an explanation for the irregularities either as a result of

conditioning factors -given that a number of abberant forms provide

a pattern- or as a result of external influence, such as borrowing.

A knowledge of the sound systems of neighbouring languages some-

times shows that an irregular form in one language is regular in

another, suggesting the source of borrowing. Unfortunately, when

borrowing between closely related languages or between dialects is

involved, such patterns are often difficult to establish.

The linguistic situation in northwestern New Britain is

fairly complex. Interaction between neighbouring groups is

considerable, and many different language groups are present. In

tracing the direction of borrowing, the historical background of

each language group is an important factor. Thus the Kove, who

have been fairly isolated from interaction with the interior peoples,

are most likely the source of a great deal of marine vocabulary in

Lusi, whose association with the sea was interrupted by a period

of inland habitation. During this period, however, the Lusi
interacted with the interior peoples to a greater degree than
either the Bariai or the Kove, and are probably the distributors
of certain bush vocabulary acquired from the Anêm and the Aria, and
now common to all these languages.

To make sense of the considerable variation that is found
in the AN languages, it is necessary to provide in-depth analyses
of lower-order subgroups not only in terms of their basic vocabulary
and lexicostatistics derived from it, but also in their esoteric
vocabulary and the features shared at an areal level. It is hoped
that the present study is the beginning of such an understanding
of the eastern Bariai languages.

6.2 Implications for subgrouping

The conclusion reached by an in-depth analysis of sound
correspondences corroborates Friederici's (1912, 1913) and
Chowning's (1969, 1976) conclusions as to the subgrouping of the
Bariai languages of West New Britain, and their association with
the Siasi languages. Kilenge's separation from Bariai, Lusi, and
Kove, as suggested by Lincoln (1977), is not apparent on phonological
grounds, as it shares a host of phonological developments with the
other three. If, however, the seven-vowel system that Grant (n.d.)
proposes is shown to be valid at the phonemic level, then this would
be an innovation marking Kilenge as unique among the Siasi languages
of West New Britain. Future fieldwork by the author will ascertain
whether this innovation is valid. Some other differences do occur,
such as the retention of /k/ in some Kilenge words where it is lost

in Lusi and Bariai, but these differences are not regular enough to act as isoglosses, and frequently Lusi and/or Bariai may agree with the Kilenge in a given form. On the basis of lexical and syntactic evidence, however, there are several reasons to split Kilenge and Maleu apart from Lusi, Kove, and Bariai. As Table 6.1 shows, a considerable number of commonly used lexemes in Kilenge are not cognate with those shared by Lusi, Kove, and Bariai. This list could be greatly expanded.

TABLE 6.1

Kilenge Lexical Isoglosses

Kf,Kg	Lusi	Kove	Bariai	
tipo	siŋi	siŋi	siŋi	blood
iuare	tamine	tamine	taine	woman
kuri	(βola)	βola	labora	head (L:skull)
airo	mata	mata	mata.	eye
mei	γa	γa	ga	and
nia	luma	luma	luma	house
ŋoŋo-ŋa	posa-ŋa	posa-ŋa	posa-ŋa	language
saba	aoara	aoaha	aoara	rain
bani	nuzu	nuzu	nudu	nose
mai	nama	nama	nam	come
bolboli	tuatua	tuatua	tuatua	bone

Some syntactic grounds for separation include:

a) the Kilenge nominal marker /na/ that is lacking in Lusi, Kove, and Bariai,

b) the third person singular possessive suffix /a/, from POC *ña, in Kilenge which has been replaced by a prefix in Lusi /ai/~/ei/, Kove /ai/ and Bariai /i/. Chowning suggests that a focal pronoun preceding the third person form with /∅/ suffix, as is the case with Manam and Gitua, has become prefixed in Lusi, Kove, and Bariai

(1973,216),

c)   the Kilenge preposition /ki/ has two corresponding forms in
Lusi and Bariai: L /toni/ B /ton/, and L,B /aea/. The latter is
a postposition: Kf /na-ga ki-au/ L /γaea to-γau/ B /gaea to-gau/
'the pig is mine', but Kd /na-mos ki-ei na-saβoi/ L /γere-ηa mase aea/
B /gele-ηa mase aea/ 'design for an armlet', Kd /na-korol ki-ei na-ga/
L /kororo γaea aea/ B /korol gaea aea/ 'cage for the pig'.

Further investigation into Kilenge syntax will undoubtedly
uncover other syntactic isoglosses. Unfortunately, lack of Kilenge
syntactic data prevents a confirmation of Lincoln's (1978) suggestion
that Kilenge-Maleu may be associated more closely to languages such
as Sio, Mangap, etc., but the tree presented at the end of Chapter 2
seems reasonable on syntactic and lexical grounds.

The separation of Bariai from Lusi and Kove at a lower level
is justified by three major phonological criteria:
a)   Bariai has voiced stops where Lusi and Kove have voiced spirants,
b)   Bariai has lost /h/ retained in Lusi and Kove, and
c)   Bariai has lost most final high vowels.

Lexically the divergence between Bariai and Lusi is much
greater than between Lusi and Kove. The only phonological dis-
tinction between Lusi and Kove is in the correspondence of L /r/
to K /h/.

A number of words frequently agree in two languages but are
distinct in the third: K /aβa/ B /eaba/ but L /tanta/ 'man',
L /ziηa/ B /diηa/ but K /eai/ 'fire', K /soko/ L /soko/ but B /kaini/
'cassowary', and K /βola/ B /labora/ but L /zezaβa/ 'head'. The
pronouns also show distinctive developments in each language:

```
                           TABLE 6.2
                           Pronouns

a) focal:   Kove: eau    Lusi: βiau   Bariai: gau    1sg
                  βeao          βeao           eau    2sg
                  βei           eai            ei     3sg
                  taita         teita          gita   1in
                  eai           βiai           gai    1ex
                  amiu          amiu           gimi   2pl
                  asizi         asizi          gid    3pl

b) subject  Kove: ηa           ηa             na     1sg
   prefixes:      u            u              ∅      2sg
                  i            i              i      3sg
                  ta           ta             ta     1in
                  ea           βia            a      1ex
                  a            a              a      2pl
                  ti           ti             ti     3pl
```

The Bariai focal pronouns are almost identical to the suffixed object pronouns with the exception of /go/ '2sg object pronoun'. The object pronominal suffixed and the possessive pronominal affixes are similar in all three languages (see Table 5.8 for a sample possessive paradigm). The object suffixes are:

```
Lusi, Kove: γau     Bariai: gau    1sg
            γo              go     2sg
            ∅               ∅      3sg
            γita            gita   1in
            γai             gai    1ex
            γimi            gimi   2pl
            zi              d      3pl
```

Otherwise, Lusi, Kove, and Bariai are virtually identical in their syntax. Individual morphemes may vary in form, but no difference is found in function, e.g. L,K /mina/ B /param/ 'prohibitive' as in: L,K /(u)taηi mina/ B /taη param/ 'stop crying!' (in the imperative, L,K /u/ '2sg subject prefix' is optional). Criteria for subgrouping of these languages must rest on lexical and phonological grounds.

APPENDIX A.1 Map of Languages Mentioned

(index on page 98)
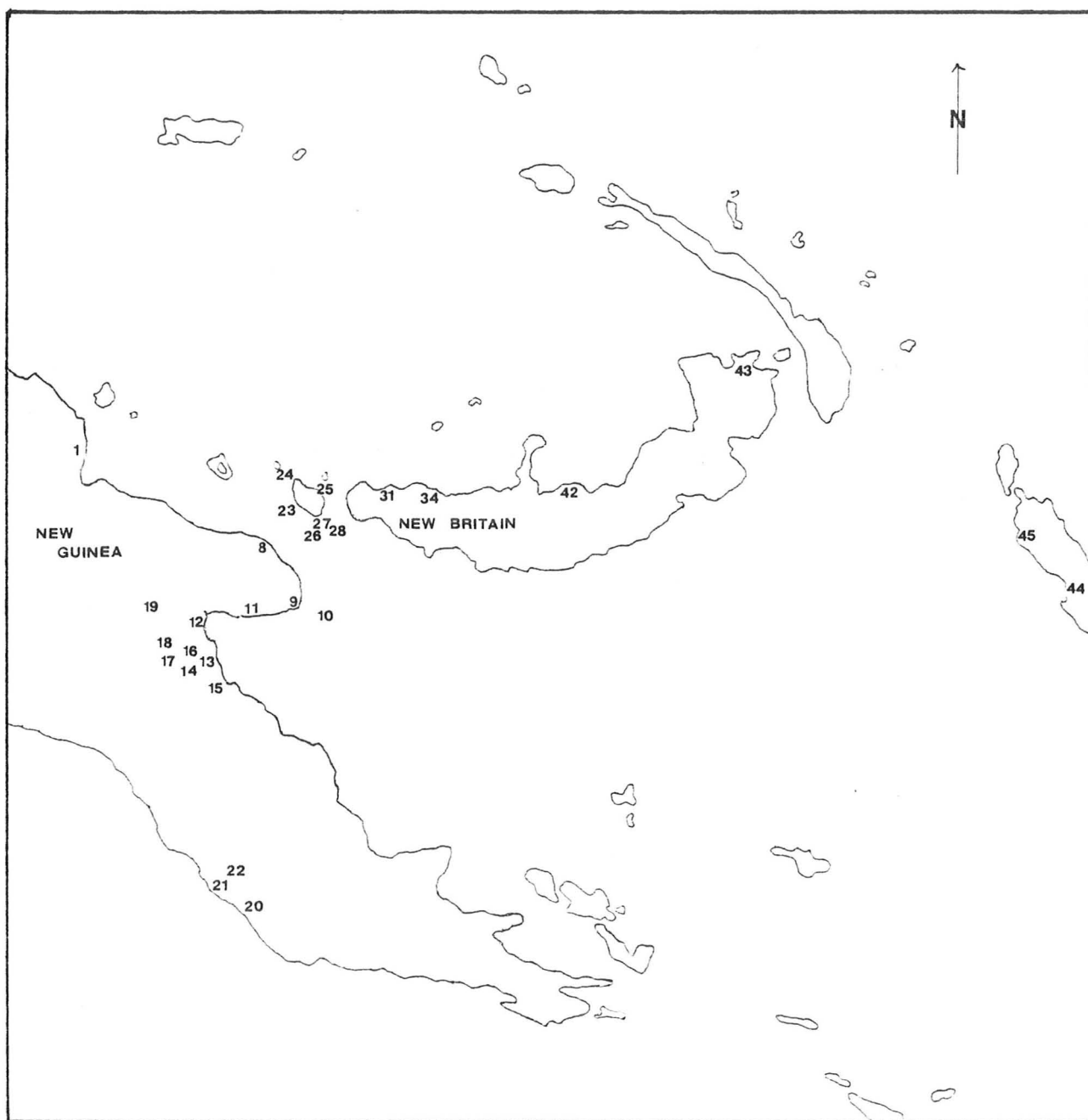
APPENDIX A.2 Map Of West New Britain
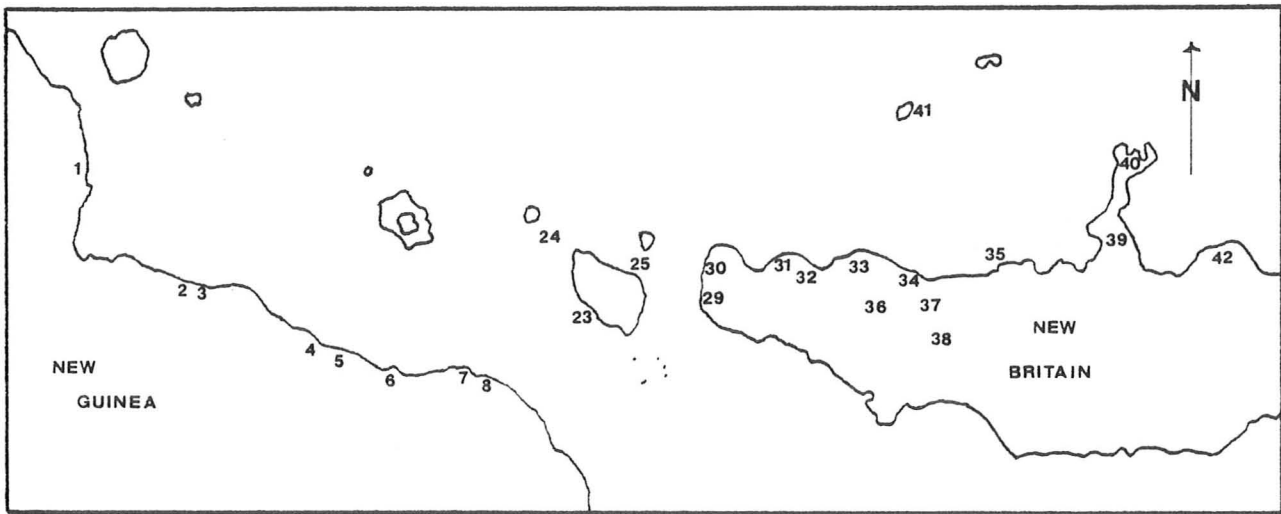
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6. Malasanga	29. Maleu
7. Sio	30. Kilenge
8. Gitua (=Kelana)	31. Bariai
9. Yabem	32. Amara
10. Tami	33. Anem
11. Bukaua	34. Lusi (=Kaliai)
12. Labu	35. Kove
13. Kela	36. Mouk
14. Kaiwa	37. Aria-Toruai
15. Sipoma	38. Lamogai
16. Hote	39. Bola (=Bakovi)
17. Yamap	40. Bulu
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22. Kuni	45. Amun (=Piva)
23. Barim	

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