

A LOU VOCABULARY, WITH PHONOLOGICAL NOTES

ROBERT BLUST

0. INTRODUCTION AND AIMS

Lou is a volcanic island situated some 25 km southeast of Manus in the Admiralty Islands of western Melanesia, at about 2 degrees south latitude. Its maximum length is approximately 13 km and its maximum width 5 km, although for nearly half of its length it is no more than two and one half km wide. Its closest neighbours are the much smaller and lower Pam and St Andrew islands less than 7 km to the south, and the high round island of Baluan (roughly 5 km in diameter), about 12 km to the southwest.

Both Lou and Baluan lie on the rim of a partially submerged caldera, and together they constitute one of three known sources of volcanic obsidian in the New Guinea region (Key 1969). In the traditional tripartite ethnic division imposed by the culturally dominant Titan-speaking traders of southern Manus, the inhabitants of both islands were known as 'Matankor' (Friederici 1912, Rivers 1914, Mead 1930, Nevermann 1934). Two cultural features of these islands are especially noteworthy. First, prehistoric stoneworks on the smaller island of Baluan are attributed by the local population to a presumably mythical race of little people known as the 'Mapou men', reminiscent of the well-known *menehune* of Hawai'i. Luomala (1951) reports similar tales from Polynesia, Micronesia, the Banks and Solomon Islands, but includes no examples from western Melanesia. Second, according to Rivers (1914:2:553) Lou is the only island in the Admiralty group on which kava (a mildly intoxicating beverage prepared from the root of the *Piper Methysticum*) is drunk, and one of the few parts of the Pacific in which both betel-chewing and kava-drinking are found. In fact, kava apparently was used traditionally on both Lou and Baluan, where it was known by a term that is cognate with Proto-Polynesian **kava* (Lou *ka*, Baluan *kaw*).

In discussion the 'Matankor' of the southern Admiralty Islands, Rivers (1914:2:552) reports that "they are said to be lighter in colour and to have straighter hair and thinner noses than the Moanus" (= Titan-speakers). My own impression, based on limited exposure to the population at large, is that this may be true, but that both hair form and skin colour vary greatly throughout the Admiralties. In any event the people of Lou and Baluan differ little from the peoples of Manus or the western islands (the Ninigo Lagoon, Wuvulu-Aua) in stature, and appear to fall well within the general Melanesian physical type with respect to other somatic parameters.

Darrell Tryon, ed. *Papers in Austronesian linguistics* No.5, 35–99.
Pacific Linguistics, A-92, 1998.

© Robert Blust

According to my informants the population of Lou, Baluan and Pam speak dialects of a single language. Wurm and Hattori (1981), who concur with this assessment, give the combined population of the three islands as approximately 1,280.

Baluan-Pam-Lou belongs to a subgroup which includes the other four languages of the southeastern Admiralty islands (dialects of the same language are joined by a hyphen; island names that are not identical to language names follow the latter in parentheses): 1. Pak-Tong; 2. Baluan-Pam-Lou; 3. Lenkau (Rambutyo); 4. Penchal (Rambutyo); 5. Nauna. Its closest relative appears to be Lenkau. These five languages in turn belong to the Admiralty group, which is believed to form a primary branch of the Oceanic division of the Austronesian language family (Blust 1978, Ross 1988).¹

Research on the languages of the Admiralties in general as of the mid-1970s is competently reviewed by Healey (1976a, 1976b). A vocabulary of about 138 Pam (= Poam) items appears in Dempwolff (1905), some scattered Baluan and Lou lexical material in Friederici (1912), a Baluan vocabulary of about 180 items in Z'graggen (1975), and a few Lou sentences in Ross (1988). No phonological analyses are provided in any of these sources.

The following vocabulary of approximately 800 words was collected between February and May 1975, during a linguistic survey of the Admiralty Islands which was carried out while the writer was employed by the Australian National University.² Lou was one of 29 languages for which data was transcribed while I resided in Lorengau, near the eastern end of Manus. Because the primary purpose of this fieldwork was to determine the number of

¹ Ross (1988, Chapter 9) presents by far the best historical survey of languages in the Admiralties to date. In his view, which agrees closely with that of Blust (1978), the languages of the Admiralties divide into western and eastern branches, the latter including all languages except Wuvulu-Aua, Seimat and the extinct language or languages of the Kaniet Islands. The languages of the eastern Admiralties in turn divide into two primary branches, which Ross calls the "Manus network", and the "South-East Admiralty network" (SEA). With regard to the classification of the SEA languages Ross and I differ in one minor and in one major respect. Whereas Ross treats Baluan-Pam as dialects of a single language and Lou as a separate (though closely related) language, I recognise only one language with three dialects. Although I collected no data from Pam, and too little from Baluan to be usefully employed in a lexicostatistical calculation, native speaker reaction strongly suggests that Baluan and Lou are dialects of one language. Moreover, 74 of 95 items, or 78% of those that appear in the attached Baluan vocabulary have a homosemantic cognate in Lou, a figure that is well above the usually accepted figure of 70% marking the 'language limit'. With regard to the second point, Ross (1988:316, fn.112) maintains that Pak "originally belonged to the Manus network but has in more recent times been in closer contact with Lenkau". I would argue the precise opposite—that Pak-Tong is a Southeast Admiralty language that has been influenced through contact with the languages of eastern Manus. Apart from sharing an innovative numeral for 'four' with all other SEA languages (reflecting PSEA **talatu*) and an innovative numeral for 'five' with all other SEA languages (reflecting PSEA **juranV*), Pak can be subgrouped with the other languages of the Southeast Admiralties on the basis of a number of innovations both in basic and in non-basic vocabulary, and through such distinctive phonological innovations as the change I call "**a* assimilation" (see §3.2.1).

² I am indebted to S.A. Wurm, then head of the Department of Linguistics, Research School of Pacific Studies, Australian National University, who made the initial arrangements for my trip to the Admiralties, and to the university itself for providing the necessary funds. The late Donald C. Laycock generously assisted me in the preparation of elicitation materials in New Guinea Pidgin English.

languages in the area, the main outlines of their synchronic and diachronic phonologies, and their subgrouping relations, I worked only brief periods (generally no more than 15 contact hours) with speakers of any one language. To save time and unnecessary difficulty with unpredictable local transportation I worked primarily with students at Manus High School in Lorengau.

The data for Lou were transcribed in approximately 18 contact hours. My principal informant was Sovo Kanik, an adult man from the village of Rei, who was born about 1933. Additional material was collected from Lester Aussell, born in 1958, and Kevin Korup, born in 1962, both of whom were students at Manus High School at the time of data collection. In eliciting data I used a standard vocabulary representing 749 meanings, together with a set of 43 sentences and a short dialogue. However, for some languages (including Lou) a fairly substantial amount of additional vocabulary was recorded. Although my elicitation list was in Tok Pisin, much of my discussion of the vocabulary with Lester Aussell and Kevin Korup took place in English. Toward the end of my stay in Papua New Guinea I was able to spend about 90 minutes with a group of three or four high school boys from Baluan. Because of their great enthusiasm in teaching me everything they could about their language in the short time available I was able to collect a Baluan vocabulary of over 100 words. Although it was transcribed in haste and did not have the benefit of rechecking, it is appended to the much longer and more carefully checked Lou vocabulary.

My major aims in this paper parallel those in Blust (1984), which is used as an organisational model for the present study. These aims are: 1. to provide a much larger and phonetically more accurate corpus of lexical data for Lou than is available in any of the earlier sources; 2. to supplement the Baluan data in Friederici (1912) and Z'graggen (1975); 3. to provide a first statement of both the synchronic and the diachronic phonology of Lou (with topical asides on Baluan). In addition to these aims I offer a few very limited remarks on grammar.

Even when one's exposure to a language is much longer than my rather fleeting contact with Lou, unresolved problems may remain in recognising phonological distinctions, in determining morpheme boundaries, and the like. Despite my best intentions the present publication undoubtedly contains some errors. However, given the large number of languages in Melanesia that have yet to be described at all, the small number of speakers of many of these languages, the small number of linguists working to describe them, and the increasing influence of politically more important languages in the lives of people such as those of Lou, I feel justified in publishing my fieldnotes now in the hope and expectation that others will be moved to improve upon them. My observations and analyses may in some cases be imperfect, but without a beginning there can be no progress.

1. GRAMMAR

The principal scholarly aims in my three months of fieldwork were the collection of phonetically accurate data for the 29 languages studied, reliable phonological analyses, and the determination of historical relationships based on shared innovations in phonology, lexicon and morphology. Because sentence material figured only marginally in this

enterprise, relatively little was collected relating to syntax. What I did collect is presented almost in full below. The discussion is divided into 1. subsystems (numerals, pronouns) and 2. morphology and syntax.

1.1 SUBSYSTEMS

Like some other Oceanic languages (particularly in Micronesia), Lou has multiple, partially similar systems of numeration which vary with the class of object being counted. I recorded four distinct sets of numerals, which I will call sets A, B, C and D. They are:

SET A NUMERALS

1	<i>sip</i>	20	<i>ru-ŋoul</i>
2	<i>ruep</i>	30	<i>tulu-ŋoul</i>
3	<i>tellp</i>	40	<i>awl</i>
4	<i>tolɔt</i>	50	<i>topol</i>
5	<i>ŋuran</i>	60	<i>ono-ŋoul</i>
6	<i>ŋiniop</i>	70	<i>ŋani-sulu-ŋoul</i>
7	<i>ŋani-sellp</i>	80	<i>ŋani-ru-ŋoul</i>
8	<i>ŋani-ruep</i>	90	<i>ŋani-sa-ŋaul</i>
9	<i>ŋani-sip</i>	100	<i>so-ŋɔt</i>
10	<i>sa-ŋaul</i>	200	<i>ru-ŋɔt</i>
11	<i>sa-ŋaul a sip</i>	300	<i>tulu-ŋɔt</i>
12	<i>sa-ŋaul a ruep</i>	400	<i>a-ŋ-ɔt</i>
	etc.	1000	<i>mwasun sip</i>

No other numerals from set A were recorded, but 13–19 appear to be entirely predictable from the data given (10 and one, 10 and 2, 10 and 3, etc.). The shapes of the numerals 500–900 are somewhat more difficult to predict.

SET B NUMERALS SET C NUMERALS SET D NUMERALS

1	<i>so-m</i>	<i>s-e</i>	<i>su</i>
2	<i>ru-mo</i>	<i>ru-e</i>	<i>ru</i>
3	<i>tulu-mo</i>	<i>tulu-e</i>	<i>tulu</i>
4	<i>a-mo</i>	<i>para-n-tolɔt</i>	
5	<i>ŋuran</i>	<i>para-n-ŋuran</i>	
6	<i>ŋiniop</i>	<i>para-n-ŋiniop</i>	
7	<i>ŋani-sellp</i>	<i>para-n-ŋani-sellp</i>	
8	<i>ŋani-ru-mo</i>	<i>para-n-ŋani-ruep</i>	
9	<i>ŋani-so-m</i>	<i>para-n-ŋani-sip</i>	
10	<i>sa-ŋaul</i>	<i>para-n-sa-ŋaul</i>	

Numerals follow their quantified nouns. In the limited data collected set A numerals are used in the following contexts: 1. in serial counting; 2. in counting detached coconuts (but not bunches of coconuts), hence *puol sip* 'one coconut', *puol ruep* 'two coconuts', etc.; 3. in counting houses, hence *um sip* 'one house', *um ruep* 'two houses', etc.

Set B numerals are used: 1. in counting children, hence *nɔt som* 'one child', *nɔt rumo* 'two children', etc.; 2. in counting pigs, hence *puo som* 'one pig', *puo rumo* 'two pigs', etc.; 3. in counting fish, hence *nik som* 'one fish', *nik rumo* 'two fish', etc.; 4. in counting leaves,

hence *rei-n-ke som* 'one leaf', *rei-n-ke rumo* 'two leaves', etc.; 5. in counting ropes, hence *tel som* 'one rope', *tel rumo* 'two ropes', etc.

Set C numerals are used: 1. in counting sticks, hence *ke se* 'one stick', *ke rue* 'two sticks', etc.

Set D numerals are used: 1. in counting bunches of coconuts (and perhaps other objects), hence *puol su* 'one bunch of coconuts' (cf. *puol sip* 'one coconut'), *puol ru* 'two bunches of coconuts', etc.

Noteworthy features of the Lou numerals include the following. First, although not enough of set D was recorded to determine the point, sets A, B and C all make use of subtractive numerals (where '7' = 'three taken away', '8' = 'two taken away' and '9' = 'one taken away'). This is a widespread feature of the numeral systems of the eastern Admiralties. Although set A numerals above '5' appear to be morphologically complex they are listed as simple lexical entries in the vocabulary, since their morphology appears to be only marginally productive, and involves some idiosyncracies (e.g. '7' is *ηani-sellp*, not *ηani-tellp*). Second, set C numerals above '3' include *para-n* 'stalk, stem of', which evidently functions something like a classifier. Third, some historical reflexes that are lost in lower numerals are preserved in higher numerals, as with POC **onom* 'six', preserved in *ono-ηoul* '60', but not in *ηiniop* '6'. In the word for 'three' POC **tolu* may be reflected in all four sets, but is less altered by irregular change in sets B, C and D than in set A (where, however, it is better preserved in *tulu-ηoul* '30').

Certain features of the morphology of the Lou numerals are perhaps best treated here. First, in set A the recurrent partial in *sa-ηaul*, *ru-ηoul*, *so-ηα*, *ru-ηα*, *tulu-ηα*, etc. shows that *sa-* 'formative for 'one'' and *ru-* 'formative for 'two'' can be segmented on purely synchronic grounds. The historical ligature **ηa* which appears in these forms evidently has fused with the reflexes of **puluq* (*ul*) and **Ratus* (*α*) in contemporary Lou. The formative *ηani-*, clearly segmentable in the numerals 7, 8 and 9, is of unknown origin and function, but appears to be a relatively recent innovation in the southeast Admiralties. The element *-p* in *sip*, *ruep*, *tellp* apparently reflects a Proto-Admiralties numeral suffix **-pi*. Its synchronic status is unclear.

For set B the suffix *-mo*, and for set C the suffix *-e* seem clearly segmentable. The latter may simply be /ke/ 'tree, wood, stick' in intervocalic position (where historically **k* disappeared). Both probably are, or at one time were numeral classifiers which have become attached to the preceding numeral. If so, it is noteworthy that *-mo* (variant: *-m*) is used only for the first four numerals (repeated in the subtractives '8', '9' and '10'), and that *-e* is used only for the first three numerals.

For Baluan only set A was recorded. Structurally it appears to be very similar to the corresponding set in Lou, although certain details of the content show interesting differences (e.g. a reflex of POC **lima* 'five' appears in Baluan *limlim* '50', but not in Baluan *ηunan* '5', nor in any Lou numeral).

The material that I was able to record on pronouns is incomplete. For this reason it is unclear whether there is a set of object pronouns that is formally distinct from subject pronouns. Because the system of possessive marking is fairly complex in Lou, it is best to discuss the personal pronouns and possessive pronouns separately.

With the exception of the first person singular, which exhibits two competing forms, I recorded only one set of personal pronouns. I will call this set A:

SET A PRONOUNS

singular	dual	paucal	plural
1 <i>ŋa, woŋ</i>	1incl. <i>tolu</i> 1excl. <i>elu</i>	1incl. <i>tarI</i> 1excl. <i>erI</i>	1incl. <i>tarap</i> 1excl. <i>ep</i>
2 <i>o</i>	2 <i>alu</i>	2 <i>arI</i>	2 <i>ap</i>
3 <i>i</i>	3 <i>ulu</i>	3 <i>irI</i>	3 <i>ip</i>

The paucal number was described to me as applying to at least three, and not more than nine persons, while the plural applies to ten or more.

Set A pronouns occur in subject position with both transitive and intransitive verbs, e.g. *woŋ i niŋ John* 'I see John', *woŋ e im* 'I am drinking', *ŋa ro ŋan kal* 'I am eating taro', *ŋa ro metir* 'I am sleeping'. I recorded a single object pronoun, *woŋ* 'me' in the sentence *John i niŋ woŋ* 'John sees me'. In addition, *woŋ* was recorded out of context as the pronoun used in a one-word reply to a "who?" question. It appears likely, then, that *ŋa* cannot be used as an object pronoun, although both variants were recorded in subject position.

The morphology of the set A pronouns is of some interest. Although synchronic evidence is perhaps too limited to justify clear morpheme divisions, it is apparent from a combination of synchronic and comparative information that the first person inclusive pronouns contain an element /ta/ (assimilated to [to] in the dual number). Once this is recognised a clear pattern emerges: the four non-singular subject pronouns consist of base elements *ta-*, *e-*, *a-* and *i-*, to which are added suffixes *-lu* 'dual', *-rI* 'paucal' and *-rap* (for the first person inclusive) or *-p* (for all other persons) 'plural'. The one exception to this pattern is *ulu* 'they two', for which ***ilu* is the expected form. It is likely that the pronominal suffixes *-lu* and *-rI* derive from POC **rua* 'two', **tolu* 'three' respectively, but if so they have been reshaped to such an extent that their relationship even to the contemporary Lou numerals is obscure.

Like most Oceanic languages, Lou distinguishes what are sometimes called 'alienable' and 'inalienable' possession. Syntactically, three possessive patterns are present (one for inalienable possession, two for alienable possession), although the same pronominal forms are used to mark possession in two of these patterns. The system is best illustrated with the possessive paradigms for *mara-* 'eye' (inalienably possessed), *puol* 'coconut' (alienably possessed object intended for eating), and *kut* 'louse' (alienably possessed object not intended for eating). Because of unresolved difficulties in predicting the shapes of certain allomorphs, bases are cited in roughly their surface forms:

SET B AND SET C PRONOUNS

singular	<i>mara-</i> 'eye'	<i>puol</i> 'coconut'	<i>kut</i> 'louse'
1	<i>morɔ-ŋ</i>	<i>kɔ-ŋ puol</i>	<i>kut ta-ŋ</i>
2	<i>morɔ-m</i>	<i>kɔ-m puol</i>	<i>kut to</i>
3	<i>mara-n</i>	<i>ka-n puol</i>	<i>kut te-i</i>
dual			
1incl.	<i>mara-n tolu</i>	<i>ko-lolu puol</i>	
1excl.	<i>mara-n elu</i>	<i>ke-lu puol</i>	
2	<i>mara-n alu</i>	<i>ka-lu puol</i>	
3	<i>mara-n ulu</i>	<i>ka-lalu puol</i>	

paucal		
1incl.	<i>mara-n tarI</i>	<i>ka-rarI puol</i>
1excl.	<i>mara-n erI</i>	<i>ke-rI puol</i>
2	<i>mara-n arI</i>	<i>ka-rI puol</i>
3	<i>mara-n irI</i>	<i>ka-larI puol</i>
plural		
1incl.	<i>mara-n tarap</i>	<i>ka-rap puol</i>
1excl.	<i>mara-n ep</i>	(?)
2	<i>mara-n ap</i>	<i>ka-p puol</i>
3	<i>mara-n ip</i>	<i>ka-lap puol</i>

Before discussing the pronominal suffixes themselves it will be worthwhile to note that the genitive construction has the general form: part-n whole, as in *moloɔ-ŋ* 'my shadow/spirit' *moloɔ-m* 'your shadow/spirit', *moloa-n* 'his/her shadow/spirit', *moloa-n ramat* 'spirit of a dead person'.

For inalienably possessed nouns (including body parts, kin terms, and such lexical items as the words for 'name' and 'shadow/soul') the general structural pattern used to indicate a possessive relationship is X-PN in the singular, and X-n-PN in the non-singular, where X is the possessed noun, -n the genitive suffix (homophonous with the 3sg. possessive pronoun) and PN the possessive pronoun (singular) or pronominal mark of the possessor (non-singular). Given the fact that a genitive marker is obligatory for the non-singular forms of inalienably possessed nouns, it might be argued that only -ŋ, -m and -n are true possessive pronouns, the non-singular forms not being formally distinguished from set A pronouns in any case.

For alienably possessed nouns that the possessor intends to eat the pattern is *ka*-PN X, where *ka-* is the marker of edible possession. For alienably possessed nouns that the possessor does not intend to eat the pattern is X *ta*-PN, where *ta-* is the marker of general possession. It is worth emphasising that many alienably possessed nouns can be marked with either the edible or the general possessive marker: what is crucial is the **intent** of the possessor with regard to use of the possessed object. Thus *ko-ŋ puol* and *puol ta-ŋ* both mean 'my coconut', the former implying that I intend to eat it (presumably in the near future), the latter carrying no such implication of intent. No distinctive marker of drinkable possession was recorded.³

The set B pronouns are fully documented in the possessive paradigm for 'eye'. In the paradigm of edible possession for 'coconut' a first person plural exclusive form was not recorded, although by analogy with *mara-n ep* we would expect it to be ****ke-p**. Only the singular forms were recorded for set C, and only the first person singular form of the general possessive marker was recorded with any noun other than *kut*. For this reason it is difficult to guarantee the accuracy of the 2sg. and 3sg. possessive pronouns that attach to *ta-*

³ Thus, for 'my water' I elicited *we ta-ŋ* (= 'water' + marker of alienable general possession + 'my'). In attempting to elicit a similar form which is morphologically marked as indicating intent to drink, I was given the possessive phrase *ko-ŋ we* 'my mango (to eat)'. According to Ross (1988) the edible: drinkable distinction for alienably possessed nouns, which is common in eastern Melanesia and the central Pacific, is unattested in western Melanesia.

(apparently zero and *-i*, but quite possibly *-u* and *-i*, with assimilation of the preceding vowel in both cases).

1.2 MORPHOLOGY AND SYNTAX

As noted already, during the approximately 16 hours of elicitation that I spent with Lou speakers I was able to collect only incidental information on morphology and syntax. The following section is an attempt to milk the data that I collected for whatever information can be extracted, although I am unable in some cases to provide morpheme-by-morpheme glosses. I collected about 80 isolated sentences and phrases (no texts), 6 verb paradigms which included at least the singular subjects in all three persons, and one relatively complete transitive verb paradigm ('to see'). All of these except a few largely repetitive examples of the same structural type are given below in what I assume to be their underlying forms.

- (1) *i nuek* (3sg. + dive) 'he is diving'
- (2) *i e panak* (3sg. + predication marker? + steal) 'he/she is stealing'
- (3) *i arara* (3sg. + hunched) 'he/she is hunched over'
- (4) *i ilp not* (3sg. + carry + child) 'she is carrying a child' (= pregnant)⁴
- (5) *i porak* (3sg. + pus) 'it has pus' (of a wound)
- (6) *i akmat, i akmat-i* (3sg. + fall down + *-i*) 'he/she fell down'
- (7) *mwat i mwap* (sore/wound + 3sg. + heal) 'the sore is healed'
- (8) *ponu i masar* (place + 3sg. + clear) 'the place is clear'
- (9) *ara-ŋu i porok* (head-my + 3sg. + ache) 'my head is aching' (= 'I have a headache')
- (10) *tina-ŋu o wa me* (mother-my + 2sg. + walk + come) 'mother, come here!'
- (11) *o ro wa* (2sg. + continuative + go) 'you are going'
- (12) *o aŋ i* (2sg. + feed + 3sg.) 'feed him!'
- (13) *ol lul* (2sg. + throw down) 'throw it down!'
- (14) *uk mara-mu* (open + eye-your) 'open your eyes!'
- (15) *e mwanIn* (make + straight) 'make it straight!'
- (16) *ŋan kal* (eat + taro) 'eat the taro!'
- (17) *o roŋ* (2sg. + hear) 'listen to me!'
- (18) *sapa o ŋan kal* (don't + 2sg. + eat + taro) 'don't eat the taro!'
- (19) *sapa alu ka ŋan kal* (don't + 2du. + ? + eat + taro) 'don't (you two) eat the taro!'
- (20) *mwi la ro mara-n um* (dog + distal + continuative + front-of + house) 'the dog is in front of the house'

⁴ I assume that this expression also has the literal meaning, but no information relevant to the point was collected.

- (21) *mwi la ro moloki-n um* (dog + distal + continuative + back-of + house) 'the dog is behind the house'
- (22) *mən mən la ro pata-n um* (bird + distal + continuative + top-of + house) 'the bird is on top of the house'
- (23) *koloponu(a) la ro mweli-n rI* (snake + distal + continuative + underside-of + stone) 'the snake is under the stone'
- (24) *nik la ro lalun kori* (fish + distal + continuative + inside-of + basket) 'the fish are inside the basket'
- (25) *mwi la ro masarin* (dog + distal + continuative + outside) 'the dog is outside'
- (26) *mwi la ro tepelek la set* (dog + distal + continuative + run + toward + sea) 'the dog is running toward the sea'
- (27) *mwi la ro tepelek la lolo-n ke* (dog + distal + continuative + run + toward + bush) 'the dog is running toward the bush'
- (28) *mwi la ro tepelek me* (dog + distal + continuative + run + come) 'the dog is running toward us'
- (29) *mwi la ro soŋ* (dog + distal + continuative + run away) 'the dog is running away from us'
- (30) *ip ka la tara* (1pl. + AGR + go + fish drive) 'we all are going on a fish drive'
- (31) *ŋa gat nət rumo* (1sg. + have + child + two) 'I have two children'
- (32) *pen ta-ŋu (i) tokte* (pen + general possession-my + (3sg.) + sit + here) 'my pen is here'
- (33) *pen ta-ŋu (i) tok asum* (pen + general possession-my + (3sg.) + sit + there, second person) 'my pen is there (near hearer)'
- (34) *pen ta-ŋu la ro koloŋ* (pen + general possession-my + distal + continuative + there, third person) 'my pen is there (not near hearer)'
- (35) *ŋara-mu sie* (name-your who) 'what is your name?'
- (36) *ŋara-ŋu Lester* (name-my Lester) 'my name is Lester'
- (37) *sa pei e o* (what + FUT? + make + 2sg.) 'what is the matter?'
- (38) *sie ŋan ka-ŋu nik* (who + eat + edible possession-my + fish) 'who ate my fish?'
- (39) *John i ŋan ka-mu nik* (John + 3sg. + eat + edible possession-your + fish) 'John ate your fish'
- (40) *o ŋan sa* (2sg. + eat + what) 'what did you eat?'
- (41) *i ro e ŋeri-an e?* (3sg. + continuative + predication marker? + painful + question) 'does it hurt?'
- (42) *ŋeri-an* 'it hurts!'
- (43) *tapo i ka-ŋu puol* (this + 3sg. + edible possession-my + coconut) 'this is my coconut (to eat)'

- (44) *tamante John i pe ŋan ka-mu nik* (why + John + 3sg. + ? + eat + edible possession-your + *nik*) 'why did John eat your fish?'
- (45) *i ŋan perira sioŋ i ŋan i* (3sg. + eat + because + hungry + 3sg. + eat + 3sg.) 'he ate it because he was hungry'
- (46) *o kem nik kipi* (2sg. + catch + fish + when) 'when did you catch the fish?'
- (47) *o kem nik elipe* (2sg. + catch + fish + where) 'where did you catch the fish?'
- (48) *o kem nik la tamante* (2sg. + catch + fish + ? + how) 'how did you catch the fish?'
- (49) *ŋa kem nik eli samat* (1sg. + catch + fish + with + trap) 'I caught the fish with a trap'
- (50) *nik samanun ta o kem* (fish + how many + which + 2sg. + catch) 'how many fish did you catch?'
- (51) *John i rek mat mwi eli ke* (John + 3sg. + hit + die + dog + with + stick) 'John killed the dog with a stick'
- (52) *ulu la ro rek mat ulu eli ke* (3du. + distal + continuative + hit + die + 3du. + with + stick) 'the two of them are killing each other with sticks'
- (53) *John i om i* (John + 3sg. + cut + 3sg.) 'John cut himself (by accident)'
- (54) *John i san kuna-n* (John + 3sg + cut + skin-his) 'John cut himself (deliberately, as to get the poison out of a snake bite)'
- (55) *John a woŋ ka pei la Momote tipeŋ* (John + and + 1sg. + AGR + FUT + to + Momote + tomorrow) 'John and I will go to Momote tomorrow'
- (56) *elu John ka pei la Momote tipeŋ* (1du.incl. + John + AGR + FUT + to + Momote + tomorrow) 'John and I will go to Momote tomorrow' (this construction is preferred to the preceding)
- (57) *i ki pei a Momote me rupeŋ* (3sg. + AGR + FUT + depart from + Momote + come + day after tomorrow) 'he will leave Momote the day after tomorrow'
- (58) *John a Mary ulu la ro ŋan kal* (John + and + Mary + 3dul. + distal + continuative + eat + taro) 'John and Mary are eating taro'
- (59) *John ulu Mary la ro ŋan kal* (John + 3du. + Mary + distal + continuative + eat + taro) 'John and Mary are eating taro'
- (60) *John a Mary ulu e niŋ woŋ* (John + and + Mary + 3du. + predication marker + see + me) 'John and Mary see me'
- (61) *ŋa niŋ John toŋ kone* (1sg. + see + John + at + beach) 'I saw John at the beach'
- (62) *ŋa niŋ John a Mary toŋ kone* (1sg. + see + John + and + Mary + at + beach) 'I saw John and Mary at the beach'
- (63) *ŋa niŋ John ulu Mary toŋ kone* (1sg. + see + John + 3du. + Mary + at + beach) 'I saw John and Mary at the beach'
- (64) *John la ro nɔmɔm* (John + distal + continuative + eat) 'John is eating'
- (65) *John la ro ŋan nik* (John + distal + continuative + eat + fish) 'John is eting a fish'

- (66a) *ŋa ro im wei-n puol* (1sg. + continuative + drink + water-of + coconut) 'I am drinking coconut water'
- (66b) *o ru im wei-n puol* (2sg. + continuative + drink + water-of + coconut) 'you are drinking coconut water'
- (66c) *i ro im wei-n puol* (3sg. + continuative + drink + water-of + coconut) 'he/she is drinking coconut water'
- (67) *ŋa im wei-n puol minu* (1sg. + drink + water-of + coconut + yesterday) 'I drank the coconut water yesterday'
- (68a) *ŋ-ka pei im wei-n puol tipeŋ* (1sg. + AGR + FUT + drink water-of + coconut + tomorrow) 'I will drink the coconut water tomorrow'
- (68b) *o pei im wei-n puol tipeŋ* (2sg. + FUT + drink water-of + coconut + tomorrow) 'you will drink the coconut water tomorrow'
- (68c) *i ki pei im wei-n puol tipeŋ* (3sg. + AGR + FUT + drink + water-of + coconut + tomorrow) 'he will drink the coconut water tomorrow'
- (69a) *ŋa ro ŋan kal* (1sg. + continuative + eat + taro) 'I am eating the taro'
- (69b) *o ro ŋan kal* (2sg. + continuative + eat + taro) 'you are eating the taro'
- (69c) *i ro ŋan kal* (3sg. + continuative + eat + taro) 'he is eating the taro'
- (69d) *tolu ro ŋan kal* (1du. + continuative + eat + taro) 'you and I are eating the taro'
- (69e) *elu ro ŋan kal* (1du.excl. + continuative + eat + taro) 'we two (addressee not included) are eating the taro'
- (69f) *tarI ro ŋan kal* (1pl.incl. + continuative + eat + taro) 'we're all (addressee included) eating the taro'
- (69g) *erI ro ŋan kal* (1pl.excl. + continuative + eat + taro) 'we're all (addressee not included) eating the taro'
- (69h) *alu ro ŋan kal* (2du. + continuative + eat + taro) 'you two are eating the taro'
- (69i) *arI ro ŋan kal* (2pauc. + continuative + eat + taro) 'you all are eating the taro'
- (69j) *uluI ro ŋan kal* (3du. + distal + continuative + eat + taro) 'the two of them are eating the taro'
- (69k) *irI ro ŋan kal* (3pauc. + continuative + eat + taro) 'all of them are eating the taro'
- (70) *ŋa ŋan kal minu* (1sg. + eat + taro + yesterday) 'I ate the taro yesterday' (*minu* can optionally precede *ŋa ŋan kal*)
- (71a) *ŋ-ka pei ŋan kal tipeŋ* ((1sg.) + AGR + FUT + eat + taro + tomorrow) 'I will eat the taro tomorrow'
- (71b) *o pei ŋan kal tipeŋ* (2sg. + FUT + eat + taro + tomorrow) 'you will eat the taro tomorrow'
- (71c) *i ki pei ŋan kal tipeŋ* (3sg. + AGR + FUT + eat + taro + tomorrow) 'he will eat (the) taro tomorrow'
- (71d) *tolu ka pei ŋan kal tipeŋ* (1du.excl. + AGR + FUT + eat + taro + tomorrow) 'the two of us (addressee included) will eat (the) taro tomorrow'

- (71e) *elu ka pei ŋan kal tipeŋ* (1du.excl. + AGR + FUT + eat + taro + tomorrow) 'the two of us (addressee not included) will eat (the) taro tomorrow'
- (71f) *tarI ka pei ŋan kal tipeŋ* (1pauc.incl. + AGR + FUT + eat + taro + tomorrow) 'we all (addressee included) will eat (the) taro tomorrow'
- (71g) *erI ka pei ŋan kal tipeŋ* (1pauc.excl. + AGR + FUT + eat + taro + tomorrow) 'we all (addressee not included) will eat (the) taro tomorrow'
- (72) *ŋa pa ŋ-ka lak mimi* (1sg. + irrealis + 1sg. + AGR + go + piss) 'I want to go piss'
- (73) *o ll Ip ŋa-mu* (2sg. + pull + breath + your) 'you are breathing'
- (74a) *ŋa ro metir* (1sg. + continuative + sleep) 'I'm sleeping'
- (74b) *o ro metir* (2sg. + continuative + sleep) 'you are sleeping'
- (74c) *i ro metir* (3sg. + continuative + sleep) 'he is sleeping'
- (74d) *ulu (la) ro metir* (3du. + continuative + sleep) 'the two of them are sleeping'
- (75) *John i niŋ woŋ* (John + 3sg. + see + 1sg.) 'John sees me'
- (76) *woŋ i niŋ John* (1sg. + (?) + see + John) 'I see John'
- (77) *o i niŋ John, e?* (2sg. + (?) + see + John + question) 'do you see John?'
- (78) *alu e niŋ John, e?* (2du. + predication marker + see + John + question) 'do the two of you see John?'
- (79a) *ŋa e layan* (1sg. + make + good) 'I fixed it'
- (79b) *o e layan* (2sg. + make + good) 'you fixed it'
- (79c) *i e layan* (3sg. + make + good) 'he/she fixed it'
- (80a) *ŋa ro e kuario* (1sg. + continuative + predicative + call) 'I am calling'
- (80b) *o ro e kuario* (2sg. + continuative + predicative + call) 'you are calling'
- (80c) *i ro e kuario* (3sg. + continuative + predicative + call) 'he/she is calling'

In addition to the above the following complex noun phrases should be noted: *kikiri-n rI sip kara-n* (small-adj. + stone + one/a + black-adj.) 'a small black stone', *laposu-n nik* (net + of + fish) 'fish net', *kusu-mIna-ŋ sip marak* (finger-my + one + big) 'my thumb', *lal wei sip* (round + water + one) 'lake', *ŋusu-n ap* (lip-of + many) 'many lips'.

Based on the foregoing limited data the following tentative conclusions about Lou sentence structure can be proposed:

- 1) the order of major sentence constituents is SVO.
- 2) markers of tense/aspect precede the verb.
- 3) in simple declarative sentences a third person singular nominal subject is often reinforced by a pleonastic pronoun (e.g. *ponu i masar* 'the place is clear').
- 4) unlike Motu, Mussau and many of the languages of Manus, Lou lacks proclitic subject markers on the verb.
- 5) like a number of 'Eastern Oceanic' languages, Lou allows a conjoined nominal subject to be expressed by the structure: dual pronoun + first noun (e.g. John and Mary = 'they

two John'). Some variation in this structure was recorded, but the structure which makes use of the dual pronoun + personal name appears to be the most idiomatic.

6) the structure of attributive constructions is head (+ possessor) + quantifier + attribute, e.g. *kusu-mIna-n sip marak* (= finger-his/her-one-big) 'his/her thumb'. Rare deviations from this pattern in my data, such as *moŋu-n puol* (= 'dry-coconut'; cf. *sul moŋu-n* 'dry coconut frond') or *para-n mara-n* (= 'sharp point') are unexplained. Genitive constructions follow the order part + whole.

7) the negative marker *puln* follows the noun or verb that it negates, as in *teŋa-n puln* 'deaf' (= 'ear-his/her-NEG') or *mat puln* (= 'die-NEG') 'alive'. The latter expression is remarkable, in that Lou and a few of its close relatives in the southeast Admiralties are the only languages I have ever encountered in which the word for 'live, be alive' is expressed by negating the word for 'die'.

8) isolated expressions such as *llp me* 'bring' (lit. 'fetch-come'), *llp lak* (lit. 'fetch-go') resemble serial verb constructions, but may be nothing more than the use of words for 'come' and 'go' as lexical formatives. It is unclear from the data whether either *me* or *lak* is used generally as a particle indicating motion toward or away from the speaker.

9) the order of question words appears to vary with the particular morpheme used: 'what' and 'why' precede the verb, 'when', 'where' and 'how' follow it, and 'who' precedes except in the expression *ŋara-mu sie* 'name-your-who?' = 'what is your name?'. Surprisingly, the same morpheme was recorded both for the meaning 'why' (sentence (44)) and the meaning 'how' (sentence (48)). Since the position of the interrogative differs in the two sentences it is conceivable that /tamante/ serves for both types of question, and is distinguished only by distribution. Given the paucity of data, this matter (like many others I have touched on) clearly is in need of further investigation.

The most problematic areas in the analysis of my data are those involving affixes of limited productivity and grammatical particles of uncertain function. A brief inventory of minor morphemes that have been identified, and some speculations about their functions follows:

-a/ (nominaliser). Recorded in a single pair of words: /mimi/ 'urinate', /mimi-a/ 'urine'.

/e/ (predication marker?). A similarly problematic element /e/ was identified in Mussau (Blust 1984). Ross (1988:334, 345) treats /e/ in several sentences as a preposition, but the similar form in *e mwanInl-n* 'make it straight', *i e panak* 'he/she is stealing' or *o e im* 'drink!' clearly has a very different function. Whatever its function, /e/ evidently is optional, as suggested by sentences (1) and (2).

/e/ (tag question?). The final /e/ in sentence (41) appears to have the function of marking a tag question. It is possible that it is only an intonationally differing variant of the preceding /e/.

-ek/ (verbal suffix?). In two pairs of phonologically and semantically similar words it appears possible to analyse a suffix *-ek/*: 1. *nu* 'bathe, take a bath in the sea' : *nuek* 'dive, submerge', and 2. *roa* 'coconut grater' : *roek* 'scrape coconut meat from the shell'. A substantial number of other verbs end with the same phoneme sequence, and may contain an active or fossilised suffix: /aek/ 'shoot, stab, thrust', /aniek/ 'submerge to fill', /aweek/ 'announce, inform', /esuŋek/ 'collect, gather together', /luek/ 'spit out, eject from the mouth', /nek/ 'throw, as a stone', /nesek/ 'say, tell, speak', /orek/ 'to open', /pasek/ 'know,

understand', /perek/ 'to hide (intr.)', /pirek/ 'blow with the mouth', /porek/ 'find', /rek/ 'hit', /rek/ 'turn, as the head', /saek/ 'rub in (liniment, etc.)', /suek/ 'push, shove', /tepelek/ 'run', /tiek/ 'pour out, spill out'. Since none of the latter forms is attested in my fieldnotes without /-ek/, however, and since there are also many verbs in Lou which do not end with /-ek/, this analysis remains problematic. Nonetheless, it is tempting to consider the possibility that *nuek*, *roek* and perhaps some other Lou forms contain a reflex of the POC transitive suffix **-aki* (Pawley 1973). Harrison (1982) has drawn attention to problems with the functions of **-aki* as inferred by Pawley, and the forms given here (to the extent that they can be considered relevant to the debate) also cast doubt on the claim that POC **-aki* marked only transitive verbal relations. Until more information becomes available I have included *nu* and *nuek*, *roa* and *roek* as separate entries and left the final *-ek* of other verbs unmarked in the vocabulary.

/i/ (pleonastic 3sg. subject marker). As in Tok Pisin, an element /i/, which can be identified with the 3sg. subject pronoun, often appears after 3sg. nominal subjects. The rules for occurrence of postnominal /i/ in Lou probably will turn out to be interesting. No examples were recorded in sentences with /la/ 'distal' or /ro/ 'continuative', but this may be an artefact of my small data sample. Occasionally a similar element was recorded after other persons, as in sentences (76) and (77). Tentatively I assume that the use of /i/ with first and second person nominal subjects is not part of the structure of pre-contact Lou, but reflects recent interference caused by extensive bilingualism in Tok Pisin.

-/i/ (verbal suffix). A suffix with this shape was recorded only in /i akmat/, /i akmat-i/ 'he/she fell down'. Since no difference was noted in the glosses of these variant constructions it is impossible to suggest a function for /-i/.

/ka/ (first person agreement marker for irrealis and future constructions). An element /ka/ was consistently recorded following all first person subjects in future constructions, and in /ŋa pa ŋ-ka la mimi/ 'I want to go piss', which I have analysed as containing a marker of the irrealis (/pa/). The similar element in sentence (19) appears to be unrelated, and remains un glossed.

/ki/ (third person agreement marker for irrealis and future constructions). This element appears to correspond exactly to /ka/, except that it is attested only following a third person subject (sentence (68c)).

/la/ (marker of distal action, event or state). An element with this shape was recorded in a number of present tense constructions with a third person subject. The clearest indication of the function of /la/ is seen in the sentential minimal pair: (1) /ulu ro metir/, (2) /ulu la ro metir/, both glossed 'they are sleeping'. According to Sovo Kanik (1) would be appropriate as an answer to the question 'where are your sons?' if the interlocutors were inside the house where the sons were sleeping; (2) on the other hand, would be appropriate if the interlocutors were outside the house when the question was asked. It is tempting to see /la/ as a reduced form of /lak/ 'go' which occurs across word boundary before a consonant-initial morpheme, but this interpretation sometimes appears awkward. In any event /la/ was never recorded with a first or second person subject, a fact which is consistent with the semantic interpretation suggested here. This interpretation is further strengthened by the use of /la/ in conjunction with the third person demonstrative in sentence (34), but not in conjunction with the first or second person demonstratives in sentences (32) or (33).

It might be mentioned further that the lexical distinction between /*tarak*/ 'climb (used when one is at the thing to be climbed)' and /*nej*/ 'climb (used when one must first go to the thing before climbing it)' would seem to exemplify the same type of semantic parameter between proximal and distal actions, events or states.

/la/ (directional?). The second homophonous sequence in sentence (26), /*mwi la ro tepelek la set*/ 'the dog is running toward the sea' clearly is distinct from the first. It is likely that this is a reduced form of /*lak*/ 'go'.

-/n/ (genitive). This suffix is found in many constructions which express a part-to-whole relationship (*kul-n kusu-mIna*- 'nail-of finger' = 'fingernail', *pulu-n mIna*- 'joint-of arm' = 'elbow', *susu-n pein* 'breast-of woman' = 'female breast', *mara-n susu*- 'nipple-of breast', etc.). On this basis it is interpreted as a genitive marker. However, because of its homophony with -/n/ '3sg. possessor', and historical irregularities associated with **a* assimilation (§3.2.1), it is possible that I have erred in this interpretation. If so, constructions such as *susu-n pein* must be glossed 'breast-her woman'.

-/n/ (attributive). A suffix found as an inseparable element of many attributive words. In a few cases a stem was recorded both with and without the attributive suffix: 1. [*ŋat*] 'a bald head': [*ŋāran*] 'bald', 2. [*mat*] 'die': [*māIn*] 'dead', 3. [*ponu řořo*] 'a cold place', but [*wei řořoun*] 'cold water'. Some attributive words lack this suffix, as *montI* 'yellow'—the only colour term which does not end with -n.

/ŋ/ (pleonastic form of /*ŋa*/ '1sg. subject'). A bound morpheme apparently used to reinforce the free 1sg. subject pronoun. In all examples recorded this morpheme is attached to /*ka*/ 'first person agreement marker'.

/ŋi/ (?). Recorded only in [*ŋi teli*] 'I'm lost' (for expected **[*ŋa teli*]). This may simply be a transcriptional error.

-/p/ (numeral marker). A fossilised suffix, reflecting Proto-Admiralties **-pi* found in the Lou numerals 'one', 'two' and 'three'. It could easily be overlooked in the contemporary language.

/pa/ (irrealis). Ross (1988:345) glosses this as a future marker. I recorded it in the sentence /*ŋa pa ŋ-ka lak mimi*/ 'I want to go piss', which is difficult to reconcile with a future interpretation. Moreover, I recorded a morpheme /*pei*/, which appears to mark the future (see below).

/pei/ (future). This element seems clearly to mark future tense in sentences (55)–(57), (68a-c) and (71a-g). The similar form in (37) appears to be unrelated, and remains un glossed.

/ro/ (continuative aspect). Ross (1988:334) glosses this 'stay', and regards it as a marker of the continuative aspect, which is consistent with the material I recorded (e.g. *ŋa ro aŋi* 'I + stay + feed + 3sg.) = 'I am feeding him/her'). Like some other morphemes which contain /o/, I recorded the vowel sometimes as /o/ and sometimes as /u/. In addition to marking aspect /ro/ appears to continue to function as a content morpheme, as in *i ro kasin* 'it + stay + near' = 'it is near' and *ŋa ro ponu* (recorded as [*ŋaŋuponu*]) 'I + stay + village' = 'I live in the village'.

/ta/ (relativiser). I recorded this morpheme in a single sentence (*nik samanun ta o kem* 'how many fish did you catch?'). Ross (1988:329) glosses this as a marker of relative clauses.

/te/ (directional). In the sentence *o aek mIna-m te i* 'you + shoot/throw + hand-your + to + him' = 'thrust your hand to him', /te/ seems clearly to be a directional particle. However, a phonetically similar sequence was recorded in *um te raj* 'house + te + spider' = 'spider web', where it cannot have this sense. We may be dealing here with homophonous minor morphemes, both poorly attested in my data.

/toŋ/ (locative?). In eliciting words in isolation I recorded both [kone] 'sand' and [toŋgone] 'beach'. However, I also recorded the sentence [ŋa niŋ jɔn toŋgone] 'I saw John at the beach'. The first instance of [toŋ] appears to be a free morpheme which can be combined with *kone* 'sand' to form a compound meaning 'beach'. The second, on the other hand, appears to be a locative preposition. Without further information I am unable to resolve this problem, or even to be certain of the underlying shape of [toŋ], since /ton kone/ would assimilate in rapid speech to [toŋgone].

2. SYNCHRONIC PHONOLOGY

The discussion of synchronic phonology will be divided into: 1. phoneme inventory, 2. phonotactic constraints, 3. morphophonemics and 4. phonetics.

2.1 PHONEME INVENTORY

Lou contrasts 13 consonants and 7 vowels, as follows:

Consonants			Vowels	
<i>p</i>	<i>t</i>	<i>k</i>	<i>i</i>	<i>u</i>
<i>pw</i>			<i>ɪ</i>	
<i>m</i>	<i>n</i>	<i>ŋ</i>	<i>e</i>	<i>o</i>
<i>mw</i>				<i>ɔ</i>
	<i>s</i>		<i>a</i>	
	<i>l</i>			
	<i>r</i>			
<i>w</i>	<i>y</i>			

Two other rare phonemes appear in phonologically unassimilated loans, as with the /b/ in *kukamba* 'cucumber' or *tabak* 'tobacco' and the /g/ in *gat* (variant: *kat*) 'have, possess', both borrowed from Tok Pisin.

The most recalcitrant phonemic problems in Lou are found with the vowels. Because I began my elicitation in all languages with the numerals ([sip] 'one', [ruʔep]/[ruwep] 'two', [tɛlp] 'three' ...), I recognised the phonetic distinctness of [i], [e] and [ɪ] in Lou almost immediately. Moreover, in the early stages of elicitation, when I strove for a narrow phonetic transcription, I distinguished [o] and [ɔ], as in [soŋɔt] '100'. However, because I **expected** Lou to have the five vowel system typical of most Oceanic languages, I developed a tendency to believe that /i/ and /ɪ/ were actually free variants, and that [o] and [ɔ] were in complementary distribution. The first of these misimpressions was gradually corrected as I collected more data, but it was not until I began to systematise my data toward the end of the elicitation period that I discovered my second error. Fortunately, time permitted me to recheck most forms, and the contrast of /o/ and /ɔ/ was firmly established in such pairs as [rɔŋ] 'hear' vs. [ŋɔʔɔŋ] 'my name', and in the sole minimal pair elicited: [okok] 'to float' vs. [ɔkɔk] 'climb slowly up a mountain'.

2.2 PHONOTACTIC CONSTRAINTS

Because of incomplete morphemic analysis some problems remain in the statement of Lou phonotactics. It is certain that heterorganic consonant clusters are permitted across a morpheme boundary in reduplicated monosyllables such as *kupkup* ‘white hair’, *mənəmən* ‘bird’ or *teŋteŋ* ‘cry’. Whether the recorded consonant clusters in forms such as *alma* ‘yawn’, *pukrIn* ‘budding flower’, or *kInsuk* ‘rainbow’ are intramorphemic or inter-morphemic, however, is not at all clear (despite the fact that *alma* apparently reflects POC **mawap* and hence requires a **historical** morpheme boundary: *al-ma*). In a word such as *anektoun* ‘to hide’ the heterorganic consonant cluster, the length of the form and the partial similarity of *kaltoun* ‘hide something in the closed fist’ strongly suggest a bimorphemic word *anek-toun*, but an analysis into meaningful parts is yet to be accomplished.

Putting aside the abovementioned problems of morpheme analysis, the most frequent canonical shape in Lou is CVC, followed by CVCVC and CVCV.

A maximum of two sequential consonants was recorded. The labiovelars /pw/, /mw/ and the semivowel /w/ do not occur in final position, and the semivowel /y/ is found only intervocalically. Apart from these restrictions consonants are attested in all possible positions, although some (e.g. intervocalic /t/) are rare.

A maximum of three sequential vowels was recorded in one lexical item (/papaeun/ ‘new’). Two-vowel clusters are common, and include sequences of like (rearticulated) vowels, as in *mween* ‘man, male’. All such sequences of like vowels appear to involve two distinct chest pulses rather than differences of vowel length. Vowel sequences that would seem to be disallowed include /a/ followed immediately by a high vowel, and /l/ and /ɔ/ in prevocalic position. Among other distributional limitations on vowels, /ɔ/ may not occur in open syllables.

2.3 MORPHOPHONEMICS

Three types of morphophonemic alternation are well attested in my data; several other types are suggested by an example or two.

(1) Flapping of /t/. Historically POC **t* and **nt* merged with **r* as Lou [r] in intervocalic position. Where no alternation was produced lexical items that had contained **t* were reinterpreted as containing /r/: **qate-ŋku* > [kareŋ] = /kare-ŋu/ ‘my liver’. Where an alternation was produced restructuring did not occur, but a rule of /t/ flapping was added to the synchronic grammar of Lou. Such alternations are attested across both (a) morpheme boundary and (b) word boundary:

(a) /ŋat/ [ŋat] ‘bald head (in general)’, but /ara-mu ŋata-n/ [āṛəmŋaʔan] ‘your head is bald’; /mat/ [mat] ‘die’, but /kI-n matI-n/ [kInmaʔIn] ‘crippled, lame’ (lit. ‘his/her leg is dead’); /i akmat/ [yakmat] ‘he/she fell down’, but /i akmat-i/ [yakmaʔi] ‘he/she fell down’; /i lIp nɔt/ [ilIpɔt] ‘pregnant’ (lit. ‘she is carrying a child’), but /nɔtu-n/ [noʔun] ‘his/her child’.

(b) /mwat/ [mwat] ‘wound, sore’, but /mwat i mwap/ [mwaʔimwap] ‘the wound/sore has healed’; /met i moŋ/ [meʔimɔŋ] ‘low tide’ (lit. ‘the reef is dry’); /kut taŋ/ [kuttaŋ] ‘my louse’, but /wei taŋ/ [weʔaŋ] ‘my water’; /tara/ [taʔa] ‘fish drive’, but /ip ka la tara/ [ipkalaʔaʔa] ‘they are all going on a fish drive’.

Because most of my lexical material was collected in citation form rather than in natural conversations, it is likely that the flapping of /t/, which was not recorded across word boundary in a number of cases, is actually much more common. I recorded a single case of intervocalic /t/ which is not flapped: [patəŋkɪl] 'seat of a boat'. Because this term appears to contain the same morpheme (/para/- 'stalk, stem, trunk, log') found in [paŋampallɪ] 'mast' and some other expressions, it is possible that some lexical items that I have written with /r/ actually contain /t/, and that phonemic restructuring has yet to occur in them as a result of the historical rule of *t flapping.

In principal, given the environments in which various POC phonemes split in Lou, we can expect also to find other synchronic alternations under conditions similar to those which govern the alternation of /t/ with /r/. Such predicted alternations include both /p/ and /k/ with zero morpheme-finally in suffixed forms (since POC *p and *k were preserved in Lou word-finally, but lost intervocalically), zero (morpheme-final) with /w/ and /y/ (in suffixed forms), /m/ (morpheme-final) with /p/ (in suffixed forms), /n/ (in suffixed forms). To date no examples of possessed stems with the appropriate endings have been found.

(2) Assimilation of /n/. When words are juxtaposed in Lou the genitive suffix -/n/ frequently comes to precede a heterogonic stop. Although -/n/ is pronounced as an alveolar nasal in citation forms, it has a strong tendency to assimilate to the point of articulation of the following stop in more casual speech: /para-n pami/ [paŋampami?] 'areca palm', /puru-n ke/ [puŋuŋke?] 'thorn'. In a few cases where I have not collected sufficient information to determine morpheme boundaries it is possible that a similar type of place assimilation has gone undetected (e.g. in [paŋkat] 'broom made of coconut or sago frond' /pa-n ka/?).

(3) Rounding of /a/; vowel alternations with zero. Although Lou normally lost POC vowels in absolute final position, if a stem-final vowel was protected by a suffix it was preserved phonetically under any of four conditions: 1) in the possessive paradigm of inalienably possessed nouns (which take suffixed possessive markers); 2) in part-to-whole constructions with the genitive suffix -/n/; 3) in adjectives or stative verbs with the attributive suffix -/n/; 4) in active verbs that originally took the verbal suffixes *-aki or *-i, or the 3sg. object suffix *-a (as POC *suli-a). In all such cases the suffixal vowel was lost (under some conditions after triggering assimilatory changes in the last stem vowel), but the last stem vowel was thereby spared. The richest source of data is the singular possessive paradigm, in which five well-attested patterns of variation in the last stem vowel appear (one pattern also affects the penultimate stem vowel, and will be discussed separately below). These (phonetic) vowel patterns and their POC sources are as follows:

No.	POC	1sg.	2sg.	3sg
1.	*i-	i-	i-	i-
2.	*u-	u-	u-	u-
3.	*e-	ɛ-	ɪ-	ɪ-
4.	*o-	o-	o-	o-
5.	*a-	ɔ-	ɔ-	a-

Patterns (3 and 5) involve well-attested alternations. The first is illustrated by [kaŋɛŋ] 'my liver', [kaŋɪm] 'your liver', [kaŋɪn] 'his/her liver', the second by [moŋɔŋ] 'my eye', [moŋɔm] 'your eye', [maŋɔn] 'his/her eye'. Historically, these alternations have resulted from: 1) raising of POC *e to /ɪ/ in all environments except before a final velar nasal, and 2) rounding of POC *a to /ɔ/ when the suffix contained *u (cf. POC *-ŋku '1sg. possessor', *-mu '2sg. possessor', *-ŋa '3sg. possessor').

Pattern (5) is most easily explained synchronically by positing an underlying /u/ in the possessive suffixes for the first second persons, since a rule of rounding assimilation (followed by final vowel deletion) can then generate the alternation. Final stem vowels, then, are preserved both phonetically and phonemically under certain conditions, whereas the vowels of the first and second person singular possessive suffixes are preserved only phonemically, being inferred indirectly through assimilatory traces on preceding stem vowels. In both cases a rule of final vowel deletion is needed in contemporary Lou, although its precise form remains problematic (since many surface final vowels occur). This synchronic interpretation follows the historical facts closely, but is directly needed only for pattern (5). For all other patterns the hypothetical underlying suffixal vowel /u/ in the 1sg. and 2sg. possessive suffixes does no work, but must be posited to maintain uniformity of phonemic shape in what clearly are the same morphemes.⁵

In general the underlying form of nouns that follow pattern (5) is determined from the surface form of the (unconditioned) 3sg. variant. By contrast, use of the 3sg. variant to determine the underlying form of nouns that follow pattern (3) leads to a synchronic explanation which reverses the historical facts, since it requires a rule in the grammar of contemporary Lou which lowers /l/ only before a velar nasal.

In addition to the foregoing patterns of alternation in stem-final vowels, I recorded two patterns of alternation in penultimate vowels. The first of these is well-attested. As seen above in the singular possessive paradigm for 'eye', underlying /mara-ŋu/ 'my eye' and /mara-mu/ 'your eye' exhibit not only an assimilatory rounding of the last stem vowel, but also a regressive rounding assimilation of the penultimate vowel. A similar pattern is found in /tama/- 'father', /nana/- 'parent-in-law' and /ŋara/- 'name'. Since the contrast of Lou /o/ and /ɔ/ appears to be neutralised in open syllables the two phonetically rounded vowels in such forms are different: [mōɔŋ] 'my eye', etc.

The second pattern of penultimate vowel alternation was recorded in a single paradigm. Where the *u that triggered regressive rounding assimilation was part of the stem rather than the 1sg. or 2sg. possessive suffix it led to restructuring of the original penultimate *a: *manuk > /mɔnmɔn/ 'bird'. In most cases such restructured vowels were not subject to further contextual variations, but in [nɔt] 'child' (in collocations such as [nɔt mor] 'twin') and [noŋun] 'his/her child', /ɔ/ alternates with surface /o/.

Vowel alternations with zero before the marker of the genitive construction and before the attributive suffix -n are less common in my data. Three cases are known: [kolponu] 'snake', [kolponuwan pun mot] 'kind of sea snake'; [ŋat] 'a bald head', [ŋaŋan] 'bald', [mat] 'die', [maŋIn] 'dead'.

The word /lak/ 'go' was recorded in two different forms: as [la] when preceding a consonant ([o la lalun] 'you go inside', [o la perek] 'you go hide'), and as [lak] in final position ([lɪp lak] 'take'. Ross (1988:345) gives only the latter form, but a phoneme sequence [la] that can be identified with it appears much more often in my fieldnotes than does [lak].

⁵ One exception to the rounding rule was noted: /ta/- 'marker of alienably possessed nouns not intended to be eaten' shows no rounding when suffixed with ŋu '1sg. possessor'. This failure of /a/ to assimilate to the underlying /u/ of the 1sg. possessive pronoun in /taŋ/ is particularly striking, since the similar vowel in /ka/- 'marker of edible possession' does assimilate: /ta-ŋu/ = [taŋ], but /ka-ŋu/ = [koŋ]).

One final type of morphophonemic alternation that is marginally attested in my data, but which may ultimately turn out to be productive in the language, is vowel syncope in reduplications such as *pwalpwali* (underlying /pwalipwali/) and *pwirpwire* (underlying /pwirepwire/). Until the facts can be better established these forms are written in their surface realisations. A few non-reduplicated forms were recorded with or without a syncopating vowel, as [kolponu], [koloponu] 'snake'. In these cases I write the vowel if it was heard in at least some pronunciations.

2.4 PHONETICS

The discussion of phonetics will be divided into: 1) the syllable-closing automatic consonant; 2) consonant and vowel allophones; and 3) stress.

2.4.1 THE SYLLABLE-CLOSING AUTOMATIC CONSONANT

The glottal stop is prominent in Lou, appearing both intervocally and in final position. Careful attempts to establish contrast, however, show that (as in many other languages of the eastern Admiralties) this segment is used solely to mark syllable closure. In languages which contrast phonemic final vowels with phonemic final glides the glottal stop undoubtedly facilitates perception of the difference between *-i/* and *-iy/* or *-u/* and *-uw/*, but in Lou such contrasts do not exist. Lou words that end with a vowel phonemically are followed by an automatic glottal stop in careful speech, at least in citation forms. This applies both to native words and—so far as I was able to determine—to loans, e.g. [kukambaʔ] 'cucumber'. For a few words I recorded two pronunciations, one with and one without the glottal stop. The former was always the first variant offered, and appeared to be the more carefully articulated, citation form. The rapid speech (or more relaxed) variant lacked the glottal stop, and sometimes was heard with a homorganic glide after the vowel. Examples are: /mimi/ [mimiʔ] 'urinate', /awl/ [awlʔ] 'four', /ke/ [kɛʔ] 'tree, wood', /moso/ [mosoʔ] 'cinnamon', /ponu/ [ponuʔ] 'village', /ni/ [niʔ] (careful), [niy] (relaxed) 'squid'.

A similar automatic insertion of glottal stop is seen in intervocalic position in such forms as /ruep/ [ruʔɛp] (careful), vs. [ruwɛp] (relaxed) 'two', and /mween/ [mweʔɛn] (careful) vs. [mween] (relaxed) 'man, male'.

2.4.2 CONSONANT AND VOWEL ALLOPHONES

The canonical (unconditioned) values of the Lou consonants and vowels are as follows. Conditioned values will be described below, in relation to the phonological processes that affect them.

When preceded or followed by silence, or by a non-nasal consonant /p/, /t/ and /k/ are voiceless, unaspirated bilabial, alveolar and velar stops. They appear to be optionally released or unreleased in final position. As noted already, /t/ alternates with [ɾ] in intervocalic position. The nasals /m/, /n/ and /ŋ/ are fully voiced and made at corresponding points of articulation.

The labiovelar phonemes /pw/ and /mw/ appear to vary from velarised labials with lip spreading to velarised labials with some lip rounding. Because of the relative difficulty of perceiving the /m/ : /mw/ difference when the latter phoneme is pronounced with spreading

rather than rounding, I occasionally recorded variant forms with [m] and [mw] (e.g. [mamaŋes], [mwamwaŋes] 'lazy'). Such forms are interpreted phonemically as instances of /mw/ in which the velarisation was imperfectly heard. In a single case I recorded variant pronunciations with [pwa] and [po]: [pwanat], [ponat] 'earth'.

A related issue involves the phonemic interpretation of phonetic sequences that include a labial or velar stop followed immediately by a rounded vowel and then another vowel: *poV-*, *puV-*, *koV-*, *kuV-*. It is clear that Lou has a phoneme /pw/, and equally clear that it permits the phonemic sequence /pu/ before a vowel. In a form such as [pwIk] 'flying fox' [w] is non-syllabic, and can never carry the stress, whereas in a form such as [puwol] 'coconut', or [puwan] 'its fruit', the [u] is distinctly stressed. On the other hand, in the history of Lou it appears that some instances of allophonic velarisation have been re-interpreted phonemically as sequences of consonant plus vowel, as with POC **poñu* > /puon/ (expected ***pon*), possibly a phonemic reinterpretation of earlier [pwon]. Applying these same criteria to the interpretation of *koV-*, *kuV-* sequences, we must conclude that there is no convincing evidence for a phoneme /kw/.

/s/ is a voiceless alveolar grooved fricative, /l/ a voiced alveolar lateral and /r/ a 4-5 tap alveolar trill. In word-final position /r/ is conspicuously devoiced during the latter part of this articulation.

/w/ is a voiced labiovelar glide. In initial position it is in complementary distribution with /u/ (/u/ occurs only before consonants, /w/ only before vowels). However, a distinct intervocalic phoneme /w/ is needed to simplify the statement of morpheme structure constraints. Thus /aweek/ 'announce, inform' would contain an otherwise unattested string of four consecutive vowels if interpreted phonemically as **/aueek/.

/y/ is a voiced palatal glide, the non-syllabic counterpart of /i/.

Two other consonant phones were transcribed, but are considered to be non-phonemic. Of these, the glottal stop has already been mentioned. In addition I recorded two instances of -[h]: [sa], [sah] 'what?', [sasa] 'year'. I take these to be transcriptional vagaries, and write /sa/, /sasa/. Alternatively, since Lenkau has /sah/ 'what?', it is possible that the dialects of some villages on Lou have a phoneme /h/, which appears in this word. Note, however, that this cannot be the explanation for the final consonant recorded once in [sasa], since Pak /sasaw/ 'year' points to an earlier final glide.

When stressed or when preceding a consonant /i/ and /u/ are realised as tense high front unrounded and high back rounded vowels respectively. A palatal glide was recorded as an unstressed allophone of /i/, particularly where /i/ '3sg. subject' precedes a vowel-initial verb: /i as/ > [yas] 'he/she is planting', /i om/ > [yom] 'he/she is cutting'. A parallel semi-vocalisation is seen when the 2sg. subject pronoun /o/ precedes a vowel-initial verb: /o anji/ [wanji] 'feed him!'. /I/ is a lax lower-high front vowel in all environments except before a final velar nasal, where it is realised as [ɛ]. /e/ is realised as [e] before a vowel and [ɛ] elsewhere. The remaining vowels /o/, /ɔ/, /a/) have their expected phonetic values, with the following exception. A persistent transcription problem was the frequency with which the same word was recorded sometimes with [o] and sometimes with [u] (or perhaps [U]). Examples include 1. *liol/liul* 'bachelor's house', 2. *lot/lut* 'boil, abscess', 3. *ɲor/ɲur* 'grunt, growl, snore', 4. *o/u* '2sg. subject', 5. *por/pur* 'white residue left from boiling coconut oil', 6. *por/pur* 'to swallow', 7. *ro/ru* 'continuative aspect', 8. *roy/ruj* 'hear, listen', 9. *tok/tuk* 'sit'.

In all cases where etymological information is available the seemingly variable phoneme reflects POC **o*.

Various assimilatory processes that are familiar from many other natural languages are operative in Lou. A brief inventory of these follows:

Palatalisation. Before /i/ slight palatalisation of /s/ was recorded in /sip/. No other examples were noted.

Velarisation/labialisation. When adjacent to a rounded vowel /o/ or /u/, labial consonants may be velarised: /pot/ [pwot] 'large bamboo sp.', /posposu-ŋ/ [pwospwosun] 'my chest', /toma-n/ [tomwan] 'his/her back', /uma-n/ [umwan] 'its nest'. Although the evidence is not as clear, it is possible that velar consonants also are at least optionally labialised in the same environment. The underlying form of [toktokwař] 'sit down (request)' is multiply ambiguous, since we may be dealing here with a morpheme /war/ or /uar/ that is otherwise unattested in my fieldnotes, or with a similarly unique morpheme /ar/, together with labialisation of the final consonant of /toktok/. As can be seen, the feature of labialisation/velarisation appears to be capable of spreading either leftward or rightward.

Voicing. Although Lou has no voiced stop phonemes in native words I recorded [β] and [b] as allophones of /p/, [βw] as an allophone of /pw/, [d] as an allophone of /t/ and [g] as an allophone of /k/. These assimilations are found in fully voiced environments (voicing on both sides), and are characteristic of more rapid or relaxed speech in contrast to the unassimilated values found in more self-conscious citation forms:

/p/ [β] (intervocalically): /kapeun/ [kaβeun] 'bitter', /pepe/ [peβe?] 'centipede', /kIp-kIpIt/ [kIpklβIt] 'tongs', /kopkopur/ [kopkoβuř] 'foam, bubbles', /sipe-n tubu-n/ [siβen tuβun] 'his buttocks', 'i porak/ [i βořak] 'it has pus';

/p/ [b] (after a nasal): /kampuri/ (= /kam-puri/?) [kambuři?] 'knot, tie a knot', /kompaŋ/ (= /kom-paŋ/?) [kombaŋ] 'landslide'; /pw/ [βw]: /kapwirI/ [kaβwiri] 'small; easy';

/t/ [d] (after a nasal): /um te raŋ/ [undeřaŋ] 'spider web', /tamante/ [tamande?] 'why?';

/k/ [g] (after a nasal): /ŋ-karik pak/ [ŋgařikpak] 'I'm telling a story', /ŋ-keI kut/ [ŋgeI?kut] 'seek lice, nit-pick', /wei-n kolo-m/ [weiŋgolom] 'your saliva'. In intervocalic position /k/ is realised as a voiced velar fricative in rapid speech.

Stop epenthesis. As a result of reduplication and compounding a nasal sometimes comes to immediately precede other consonants. The sequence nasal + /t/ is commonly realised phonetically with what I transcribed as a homorganic voiced stop between the nasal and the liquid: /ramraman/ [ramβraman] 'ember', /kInru/ [kIndru?] 'housepost', /moloa-n ramat/ [molowandramat] 'spirit of a dead person'. These phonetic sequences, which involve the timing of nasal closure and oral release, are phonetically similar to the prenasalised bilabial and alveolar trills which are phonemic in many of the languages of Manus.

Glide insertion. Between /i/, /e/, /o/ or /u/ and a following unlike vowel a glide homorganic with the first vowel is automatically inserted: /tia-n/ [tiyan] 'his/her abdomen', /kea/ [keya] 'swim', /moloa-n/ [molowan] 'his/her shadow/spirit', /suep/ [suep] 'digging stick'.

Nasalisation. Vowels are automatically nasalised adjacent to a nasal consonant. For convenience nasalisation has been omitted in my phonetic transcriptions except where it is the subject under discussion. Vowel nasality is particularly strong between two nasal consonants: /tomo-ŋ/ [tomōŋ] 'my back', /mwemwes/ [mwēmwes] 'scabies'.

2.4.3 STRESS

In citation forms primary stress generally was recorded on the final syllable peak. However, in a number of cases I also recorded penultimate stress. It is possible that the former is an emphatic pattern, characteristic of forms offered in isolation, while the latter is more typical of forms in sentence context, but this remains speculative.

Because of the shortness of most Lou lexical items there appears to be a tendency for some sentences to merge into a single phonological word, as in *ŋa pa ŋ-ka lak mimi* [ŋaβaŋkalamimi?] 'I want to go piss' (with stress on the penult of /mimi/). Too little sentence material was recorded to determine how general this tendency is in Lou.

3. DIACHRONIC PHONOLOGY

The discussion of diachronic phonology will be divided into: 1. canonical changes; and 2. segmental changes. Appendix 1 lists all Lou forms for which I have been able to find, or to establish, a probable POC etymology (several of the reconstructions being proposed here for the first time). Throughout the discussion reference is made to this body of data.

3.1 CANONICAL CHANGES

Like all other languages in the Admiralty group except Wuvulu-Aua and the now extinct Kaniet, Lou has lost the final syllable of Proto-Oceanic CVCVC or CVCVCVC forms. This 'erosion from the right' evidently took place in two steps: 1. loss of the final consonant; 2. loss of the last-syllable vowel, as Wuvulu-Aua and Kaniet show change 1, but not change 2. Examples of syllable reduction in Lou are:

POC	Lou	English
<i>ia</i>	<i>i</i>	3sg.
<i>panua</i>	<i>ponu</i>	village
<i>kutu</i>	<i>kut</i>	louse
<i>kananse</i>	<i>kanas</i>	mullet
<i>pasok</i>	<i>as</i>	to plant
<i>kuron</i>	<i>kur</i>	cooking pot
<i>taŋis</i>	<i>teŋ</i>	cry, weep

Like some other Oceanic languages which have lost POC final syllables (Mota of the Banks Islands, Nuclear Micronesian languages), the original last-syllable vowel reappears under suffixation: *tur* 'blood, sap (in general)', *turI-n* 'his/her blood, its sap', *not mor* (child-double) 'twin', *notu-n* ([noŋun]) 'his/her child'. In the lexical entries for the Lou-English vocabulary two different conventions are adopted for representing such vowels: 1. where the vowel is present in **all** recorded forms, but these forms take an obligatory suffix, the lexical entry is followed by a hyphen (e.g. *karI-* 'liver', which never occurs without a possessive or genitive suffix), 2. where the vowel is present **only** in suffixed forms it is enclosed within parentheses (e.g. *tur(I)* 'blood, sap'.)

3.2 SEGMENTAL CHANGES

Because of the importance and relative complexity of vocalic developments in Lou the evolution of vowels and consonants will be treated separately. The following discussion of segmental changes includes: 1. vowels; 2. consonants; 3. irregular reflexes and doubling; and 4. chronological ordering.

In discussing the environment of changes that involve a relative chronology it will sometimes be convenient to speak of 'secondary' environments, as with the **t* in **kutu* > *kut* 'louse', which (though originally intervocalic) is in secondary final position.

3.2.1 VOWELS

Proto-Oceanic had five vowels: **i*, **u*, **e*, **o* and **a*. These five vowels have developed into a system of seven vowels in Lou. Through both vertical comparison with Proto-Oceanic and horizontal comparison with other languages of the Southeast Admiralty (SEA) group I have arrived at the following theory of the evolution of the Lou vowels.

Pre-Proto-Southeast Admiralty retained the POC five vowel system, with the expected phonetic values. In PSEA, however, the reflex of POC penultimate **a* in the environment **a(C)i* and **a(C)u* developed two new allophones, [ɛ] and [ɔ] respectively, by partial assimilation in anticipation of the following vowel. This change is reflected in some form in all SEA languages, including Pak. Although the same change appears in Lou *telija-*, Penchal *relija-* 'ear', it is not found in Lenkau *tralja-*, Pak *dolja-* or Nauna *taliŋ*. I assume, then, that the partial assimilation of prepenultimate **a* in Lou and Penchal was a separate and later development.

For convenience I will refer to the change of POC penultimate **a* under the stated conditions as '**a* assimilation'. As some point following **a* assimilation final vowels were lost. POC final vowels have been lost throughout the eastern Admiralties, but the comparative evidence leaves no doubt that this change was independent in languages such as Loniū (Los Negros Island, eastern Manus) and Lou. Whether the loss of final vowels in Lou and other SEA languages was also independent remains unclear. In any event, this change left the earlier allophones of **a* (at least in CVC forms that did not alternate with CVCV-under suffixation) without a rule-governed synchronic source, producing two new phonemes, pre-Lou **ɛ* and **ɔ*.

To judge from the attested reflexes the new phoneme **ɛ* and the older phoneme **e* were so similar phonetically that there was a danger of merger, and with it the confusion of important lexical distinctions. To avoid this loss of contrast **e* was raised to **i* in pre-consonantal position. The latter change, which followed the separation of Baluan from Lou, allowed **ɛ* from earlier **a* to be redefined phonemically as /e/.

There was one phonological environment in which pre-Baluan **e* evidently did not raise. As already noted, one of the more common morphophonemic patterns in the singular possessive paradigm involves the alternation of [ɛ] in the first person with [i] in the second and third persons, as in [karɛŋ], [karIm], [karIn] 'my/your/his or her liver' (POC **gate-ŋku*, **gate-mu*, **gate-ŋa*). POC **e* thus developed into a single Lou phoneme /i/, but a phoneme with two allophones, [ɛ] (before final ŋ) and [i] (elsewhere). The result is a situation that in classical phonemic theory was called "phonemic overlapping" (Bloch 1941). In effect, [ɛ] is

assigned to /ɪ/ if it alternates with [I] in the singular possessive paradigm, but otherwise is assigned to /e/.

It appears that the contrast of pre-Lou *o and *ɔ was either phonetically more distinct or functionally less important than the corresponding contrast among the front vowels, since the evidence for an upward movement of the reflex of POC *o is far less clear than for *e. This is not to say that there is no evidence for raising of *o. As noted in the description of synchronic phonology, I recorded a number of lexical items inconsistently, sometimes with /o/ and sometimes with /u/. Whether this means that a merger of Lou /o/ and /u/ is in progress, or whether it means that /o/ has begun to raise to [U] (which was misheard as [u]) to avoid merger with [ɔ] cannot be determined to my satisfaction from my transcriptions and tapes. If contemporary Lou /o/ is raising to [U] to maximise contrast between /o/ and /ɔ/, it is evidently following the same path (raising to avoid merger) followed by the reflex of POC *e.⁶

Table 1 summarises these developments: 1. POC had five vowels with no determinable allophonic variation; 2. Proto-SEA or a language that immediately preceded it developed two new allophones of *a; 3. these allophones of *a became new phonemes *ε and *ɔ after the loss of POC final vowels; 4. to avoid merger of *e and *ε, *e moved upward, becoming modern Lou /ɪ/ in all environments except before a final velar nasal, and pre-Lou *ε was redefined as /e/; among the back vowels, pre-Lou /ɔ/ merged with /o/ in open syllables (where only [o] is found), but the contrast was maintained in closed syllables; more recently in closed syllables /o/ has begun to move upward to avoid merger with /ɔ/; either through free variation with /u/ or through the creation of a new phone [U]).

TABLE 1: STAGES IN THE EVOLUTION OF THE LOU VOWELS

Proto-Oceanic	Proto-SEA	Pre-Lou	Lou
*i [i]	*i	*i [i]	/i/ [i]
*u [u]	*u	*u [u]	/u/ [u]
*e [e]	*e	*e [e]	/ɪ/ [ɪ], [ɛ]
*o [o]	*o	*o [o]	/o/ [o], [u]
*a [a]	*a [ε] / __i	*ε [ε]	/e/ [ε], [ɛ]
	*a [ɔ] / __u	*ɔ [ɔ]	/ɔ/ [ɔ], [o]
	*a [a] /elsewhere	*a [a]	/a/ [a]

Examples of all vowel reflexes follow:

POC *i > Lou /i/; *ia > i ‘he/she’, *kianso > *kias* ‘outrigger boom’, *mimiR-i > *mimi* ‘urinate’, *suli-a > *suli* ‘burn’, *Rampia > *epi* ‘sago’.

POC *u > Lou /u/: *kuron > *kur* ‘cooking pot’, *lumut > *lumlum* ‘moss, algae’, *panua > *ponu* ‘village’, *natu > *nətu-* ‘child’. The phoneme sequence *-ui or *-uy contracted to /i/: *kuRita (> *kuit*) > *kit* ‘octopus’, *ruyuy (> *ruy*) > *ri* ‘dugong’, *suRuq (> *suy*) > *si* ‘soup’.

⁶ The reader familiar with theories of phonological change will recognise the raising of pre-Lou *e and of contemporary Lou *o as reminiscent of the first stages of a “push-chain” (Martinet 1952). As in other push-chain explanations of sound change, it is difficult to see why the tendency to avoid merger with one phoneme (in this case /o/ with /ɔ/) sometimes produces merger with another (/o/ with /u/, if that is the change now in progress).

POC *e > Lou /l/: *qenop > *In* 'lie down (to sleep)', *qate > *karI-* 'liver', *kamea > *karmI-* 'tongue', *mate > *marI-n* 'sick; dead', *pweka > *pwIk* 'fruit bat, flying fox', *keli > *ll* 'dig'.

POC *o > Lou /o/: *roŋoR > *roŋ* 'hear', *Ropok > *op* 'to fly', *toRas > *to* 'hardwood tree: *Intsia bijuga*', *mputo > *puro-* 'navel'.

POC *a > Lou /e/: *tali > *tel* 'rope, string', *paRi > *pe* 'stingray', *kalia > *keli* 'a fish, the grouper', *ma-tiruR > *metir* 'sleep', *rua (> Proto-Admiralties *rua-pi) > *ruep* 'two'. The raising of POC *a to Lou /e/ clearly occurred if the following syllable contained *i. There is some evidence that the same raising also took place if the following syllable contained *e: *maRuqane (> *mwane*) > *mween* 'man, male', *kaŋaRi > *kene* 'Canarium nut', *pa-Rapi > *weep* 'afternoon' (the latter two with assimilation of the first syllable *a to the following derived *e).

POC *a > Lou /ɔ/: *manuk > *mənən* 'bird', *qapuR/kapuR > *kɔpɔp* 'lime', *qalu > *kɔl* 'a fish, the barracuda'. The raising of POC *a to Lou /ɔ/, like the raising of POC *a to pre-Lou *ɛ, occurred when the following syllable contained a high vowel. However, unlike the situation with front vowels, where *a was sporadically raised if the next syllable contained *e, there is no known evidence for raising of *a before a syllable with *o: *laŋo > *laŋ* 'fly (insect)', *qatop > *kat* 'sago leaf', *lalatoŋ > *lalat* 'stinging nettle', etc. (note that *masou > *moso* 'cinnamon' appears to involve an intermediate change to *mwasou, with *mwa- then becoming /mo/: cf. Baluan *mwasow* 'cinnamon').

POC *a > Lou /a/: *apaRat 'northwest wind' > *aa* 'south wind', *paŋan > *aŋ* 'feed', *kataman > *karam* 'door', *mata > *mara-* 'eye, face'.

3.2.2 CONSONANTS

As noted by Ross (1988), in all of the languages of the Admiralties that distinguish oral grade from nasal grade reflexes, POC *p, *t, *k and *s in initial position show only nasal grade reflexes in nouns, regardless of the consonant grade that is reflected in the cognate morpheme in other Oceanic languages. He interprets this pattern as indicating that in Proto-Admiralties the POC common noun article *na fused with a following morpheme through loss of the (unstressed) vowel and assimilation of the nasal to the point of articulation of the stem-initial obstruent. I am in full agreement with Ross on this point, and accordingly list all nouns in Appendix 1 with the preceding article *na. In effect, nouns exhibit only nasal grade reflexes of initial obstruents, whereas the initial obstruent in verbs and adjectives, or a non-initial obstruent in nouns may be either oral grade or nasal grade.

With the foregoing proviso the following consonant reflexes are attested for Lou (cf. Appendix 1):

Labials:

POC *p disappeared before a vowel: *paŋan > *aŋ* 'feed', *pia > *ia-n* 'good', *puka > *uk* 'open, uncover', *apaRat 'northwest wind' > *aa* 'south wind', *sa-ŋapuluq > *saŋaul* 'ten'.

POC *p > Lou /p/ in secondary final position: *katapa > *karap* 'frigate bird', *kaput > *kɔpɔp* 'fog, mist', *Ropok > *op* 'to fly', *supi > *sup* 'peel, pare'.

POC *mp (including nouns that began with POC *p) > Lou /p/ before a vowel: *Rampia > *epi* 'sago', *tumpu > *tupu-* 'ancestor', *pataŋ > *para-* 'stem, trunk', *papine > *pein*

'woman; female', **paluj* > *pəl* 'pigeon, dove', **panua* > *ponu* 'village', **pitaquR* > *piro* 'a tree: *Calophyllum inophyllum*', **pulan* > *pul* 'moon'.

POC **mp* > Lou /m/ in secondary final position: **kompa* > *asa-kom* 'hermit crab', **kampe* > *kam* 'fibre obtained from a jointed vine', **kompuRu* > *kum* 'east monsoon'.

POC **m* > Lou /m/: **mate* > *matI-n* 'sick; dead', **mai* > *me* 'come', **mimiR-i* > *mimi* 'urinate', **manuk* > *mənəmən* 'bird', **mu-mutaq* > *mumut* 'vomit', **kataman* > *karam* 'door', **karamea* > *karmI-* 'tongue', **ñamuk* > *nəmənəm* 'chew, nibble, eat', **Rumaq* > *um* 'house'.

Labiovelars:

POC **pw* > Lou /pw/: **pweka* > *pwlk* 'flying fox'.

POC **mw* > Lou /mw/: **mwansor* > *mwas* 'bandicoot', **maRuqane* (> *mwaqane*) > *mween* 'man; male'.

Although no POC etymologies relating to this point are available, in several cases Proto-Eastern Admiralty reconstructions with **mwa-* show a change to *mo-*: PEADM **mwalutV* > *molut* 'white-tailed dove', PEADM **mwanru* > *mor* 'twin', PEADM **mwatV* > *mot* 'eel grass'. No reflexes of medial **mw* (which would have become final after the loss of final vowels) were recorded.

POC **w* > Lou /w/ before a vowel: **wai* > *we* 'mango', **waiR* > *we(i)-* 'fresh water', **karawi-na* > *arawI-n* 'green, blue'.

POC **w* disappeared in secondary final position: **mawap* > *al-ma* 'yawn', **kawa* > *ka* 'kava', **kanawe* > *kana* 'seagull', **lawa* > *la* 'fish net', **sawaq* > *sa* 'channel', **tawan* > *ta* 'a tree: *Pometia pinnata*'.

In a small number of cases the sequence **-aw-* became /o/, or **a* was rounded before **w*, which was then lost: **qasawa* > *asoa-* 'spouse', **kawil* > *ko* (Baluan *kow*) 'fishhook'.

Alveolars:

POC **t* > Lou /t/ in initial and in secondary final position: **taŋis* > *teŋ* 'cry', **toka* > *tok* 'sit', **qatop* > *kat* 'sago leaf', **tasik* > *set* (metathesis) 'sea, saltwater', **ñatu* > *nət* 'tall timber tree', **loto* > *lot* 'boil, abscess', **kuRita* > *kit* 'octopus', **kutu* > *kut* 'louse'.

In intervocalic position POC **t* became Lou [ɾ], which was reinterpreted as /r/ if it did not alternate with [t], but remained underlying /t/ in cases where an alternation was present: **qate* > *karI-* 'liver', **mata* > *mara-* 'eye, face; point', **pitaquR* > *piro* 'a tree: *Calophyllum inophyllum*', **mputo* > *puro-* 'navel', but **natu* > *nətu-* 'child' (where the [ɾ] of the obligatorily possessed form alternates with the [t] of forms in composition, such as [nət mor] 'twin').

The flapping of **t* in **tuRu* > *kIn-ru* 'housepost' presumably is due to **t* having been intervocalic at the time of this change.

POC **nt* (including nouns that began with POC **t*) > Lou /t/ in initial position, but /r/ intervocalically: **tama* > *tama-* 'father', **tali* > *tel* 'rope, string', **tina* > *tina-* 'mother', **toRas* > *to* 'a tree: *Intsia bijuga*', **tumpu* > *tupu-* 'ancestor', **kantita* > *kerit* 'putty nut'.

In secondary final position POC **nt* evidently is reflected as /n/, parallel to the development of POC **mp* (to /m/) and **ŋk* (to /ŋ/) in the similar environment. The only

relevant example contains an irregularity in the initial consonant: **punti* > *mun* ‘banana’ (cf. §3.2.3).

POC **r* > Lou /r/: **roŋoR* > *roŋ* ‘hear’, **rua* > *rue-p* ‘two’, **karawi-na* > *arawI-n* ‘blue, green’, **keri* > *er* ‘scrape out’, **kuron* > *kur* ‘clay cooking pot’, **ŋorok* > *ŋor* ‘grunt, snore’.

POC **nr* (including nouns that began with POC **r*) > Lou /r/: **raŋan* > *ra-* ‘branch’, **ruyuy* > *ri* ‘dugong’, **ranum* ‘fresh water’ > *ronu-n mara-* ‘tears’, **nramataŋ* > *ramat* ‘person, human being’, **nrami* > *rem* ‘lime spatula’, **panran* > *par* ‘pandanus’.

POC **n* > Lou /n/: **natu* > *nōtu-* ‘child’, **nunuk* > *nun* ‘banyan’, **kananse* > *kanas* ‘mullet’, **qone* > *kone* ‘sand’, **manuk* > *mōnmōn* ‘bird’, **papine* > *pein* ‘woman; female’, **panua* > *ponu* ‘village’, **puna* > *pun* ‘vine which yields poison used to stun fish’.

POC **s* > Lou /s/: **sake* > *sak* ‘rise, ascend’, **suli-a* > *suli* ‘to burn’, **tasik* > *set* (Met.) ‘sea, saltwater’, **i-sai* > *sie* (Met.) ‘who?’, **pasok* > *as* ‘to plant’, **isaŋ* > *l-isa-* ‘gills’, **masou* > *moso* ‘cinnamon’, **ŋusu* > *ŋusu-* ‘lips’, **talise* > *telis* ‘a tree: *Terminalia catappa*’.

POC **ns* (including nouns that began with POC **s*) > Lou /s/: **salan* > *sal* ‘path, road’, **nsio* > *si* ‘down, descend’, **suluŋ* > *sul* ‘coconut frond’, **kianso* > *kias* ‘outrigger booms’, **lanse* > *las* ‘coral limestone’, **mwansor* > *mwas* ‘bandicoot’, **konso* > *os* ‘husk coconuts’.

POC **l* > Lou /l/: **lala* > *lal* ‘trochus shell’, **laŋia* > *lei* ‘ginger’, **lisa* > *lisa-* ‘nit, egg of a louse’, **loto* > *lot* ‘boil, abscess’, **lumut* > *lumlum* ‘moss, algae’, **qalimaŋo* > *alimaŋ* ‘mangrove crab’, **kalia* > *keli* ‘small grouper’, **lalatoŋ* > *lalat* ‘stinging nettle’, **kuluR* > *kul* ‘breadfruit’, **paluj* > *pəl* ‘pigeon, dove’, **sa-ŋapuluŋ* > *saŋaul* ‘ten’.

Palatals:

POC **j* > Lou /r/: **ŋajan* > *ŋara-* ‘name’, **taji* > *teri-* ‘younger sibling of the same sex’.

POC **ñ* > Lou /n/: **ñapi* > *nap* ‘to taste’, **ñatu* > *nōt* ‘tall timber tree’, **ñuñuR* > *nu* ‘bathe’, **poñu* > *puon* ‘turtle’.

POC **y* disappeared in secondary final position: **kayu* > *ke* ‘tree, wood’, **puqaya* > *pua* ‘crocodile’. In derivations such as **ruyuy* > *ri* ‘dugong’ and **suRuŋ* (> *suy*) > *si* ‘soup’ it appears that /y/ (from both **y* and **R*) persisted until the change **-uy* > /i/.

Velars:

POC **k* disappeared before a vowel: **ka* > *a* ‘and’, **ka(mu)* > *a-* ‘2pl.’, **keri* > *er* ‘scrape out’, **i-ko* > *o* ‘2sg.’, **konso* > *os* ‘husk coconuts’, **saku* > *so-lat* ‘sailfish’.

POC **k* > Lou /k/ in secondary final position: **lako* > *lak* ‘go’, **luaq-aki* > *luek* ‘spit out’, **nsoka* > *sok* ‘stab’, **iike* > *tiktik* ‘squat’, **toka* > *tok* ‘sit’, **puka* > *uk* ‘open, uncover’.

POC **ŋk* (including nouns that began with POC **k*) > Lou /k/ before a vowel: **ŋkumuR* > *kum* ‘suck’, **kawa* > *ka* ‘kava’, **kawil* > *ko* ‘fishhook’, **kuRita* > *kit* ‘octopus’, **kutu* > *kut* ‘louse’.

POC **ŋk* > Lou /ŋ/ in secondary final position: **-ŋku* > *ŋ* ‘1sg. possessor’, **toŋkol* > *toŋ* ‘punting pole’. To these two examples we can add Proto-Eastern Admiralty **kaŋkV* > *kaŋ* ‘crown-of-thorns starfish’.

POC *ŋ > Lou /ŋ/: *ŋajan > ŋara- 'name', *paŋan > aŋ 'feed', *roŋoR > roŋ 'hear', *taliŋa > teliŋa- 'ear', *taŋis > teŋteŋ 'cry'.

Uvular:

POC *R sometimes became pre-Lou /y/, and sometimes disappeared without storable conditions. In *suRuq > (Baluan *suy*) > *si* 'soup', the derived sequence -uy became /i/, and thereby preserved a language-internal trace of the earlier reflex *R > /y/. In all other recorded reflexes pre-Lou *y (from POC *R and *y) disappeared in Lou, but was preserved in Baluan: *apaRat 'northwest wind' > *aa* 'south wind', *Rampia > *epi* 'sago', *kuRita > *kit* 'octopus', *naRa > *na* 'tree with red wood' (Baluan *nay*), *Ropok > *op* 'to fly', *paRi > *pe* 'stingray', *toRas > *to* 'a tree: *Intsia bijuga*', *Rumaq > *uma* 'house'.

Glottal:

POC *q sometimes became /k/ and sometimes disappeared unpredictably in initial position: *qate > *karl*- 'liver', *qatop > *kat* 'sago leaf thatch', *qone > *kone* 'sand', *quloj > *kull*- 'maggot', *qupan > *kupkup* 'grey hair', but *qalimaŋo > *alimaŋ* 'mangrove crab', *qasawa > *asoa*- 'spouse', *qenop > *In* 'lie down to sleep', *qutup > *ut* 'fetch water; bail out'. This bifurcate development parallels the reflexes of POC *k in that all instances of *q- > /k/ are found in nouns, and two of the four instances of *q > /Ø/ are found in verbs. However, as seen above, *q has disappeared in initial position in two nouns. Both apparent exceptions are longer than two syllables, and it is possible that canonical shape played a part in the environment for this change.

POC *q invariably disappeared in non-initial position: *laqia > *lei* 'ginger', *maqati > *met* 'low tide, dry reef', *maRuqane > *mween* 'man: male', *pitaquR > *piro* 'a tree: *Calophyllum inophyllum*', *puqaya > *pua* 'crocodile', *raqan > *ra*- 'branch', *taqi > *te* 'faeces; defecate'.

The following patterns of split and merger can be inferred from the above observations: 1) POC *a split into /e/ (when followed by *i in the next syllable), /ɔ/ (when followed by *u in the next syllable), and /a/ (elsewhere). There were no mergers of the POC vowels in Lou, except where the loss of a last-syllable vowel produced merger with zero; 2) POC *p split and partially merged with zero (before a vowel); 3) In parallel fashion, *k split and partially merged with zero under the same conditions; 4) *t split and partially merged with *nt, *j, *nj, *r and *nr intervocalically; 5) *mp split and partially merged with *m (in secondary final position); 6) *nt split, merging with *t, *j, *nj, *r and *nr intervocalically, and with *n in secondary final position; 7) *ŋk split and partially merged with *ŋ in secondary position; 8) *s and *ns merged unconditionally; 9) *q split into /k/ and zero in initial position, without storable conditions; in intervocalic and secondary final positions *q merged with zero; 10) *n and *ñ merged unconditionally; 11) *R split into pre-Lou /y/ and zero, without storable conditions. Where it disappeared it partially merged with zero, but traces of earlier /y/ reflexes of *R remain in the assimilatory effects on adjacent vowels; 12) *w split and partially merged with zero in secondary final position; 13) *y split and partially merged with zero under identical conditions.

Based on the limited Baluan material that is presently available, the following appear to be the major differences between the historical phonology of Baluan and Lou:

(1) Lou /t/ often corresponds to Baluan /y/: Lou *karpu*, Baluan *kaypu* 'heron'; Lou *koror*, Baluan *koyoy* 'bee'; Lou *mwarIn*, Baluan *mwayen* 'yam'; Lou *rIprIp*, Baluan *ɣepyep* 'itchy'; Lou *ruep*, Baluan *yuep* 'two'. Some instances of intervocalic /t/ in Lou, however,

correspond to Baluan /r/: Lou, Baluan *mara-* 'eye'; Lou, Baluan *tarak* 'climb'. These two correspondences, Lou /r/, Baluan /y/, and Lou /r/, Baluan /r/ derived respectively from POC *r (presumably also *nr and *j), and *t (presumably also *nt). The fact that these POC phonemes have not merged leaves no doubt that the flapping of *t, *nt in both dialects post-dates their separation from one another, since otherwise POC *t, *nt would have become Baluan /y/. It is noteworthy that the /t/ of /pata-/ 'log, beam' has not become flapped in either Baluan or Lou.

(2) Lou final zero often corresponds to Baluan final /y/ or /w/: Lou *ka*, Baluan *kaw* 'kava'; Lou *ko*, Baluan *kow* 'fishhook'; Lou *menua*, Baluan *manuay* 'sea eagle'; Lou *moso*, Baluan *mwasow* 'cinnamon'; Lou *na*, Baluan *nay* 'edible seaweed'; Lou *pua*, Baluan *puay* 'crocodile'; Lou *si*, Baluan *suy* 'soup'. In every such case Baluan preserves a final glide which derives from POC *y or *w, or from POC *R, which became Proto-Admiralties *y in particular lexical items. Most of the other differences or apparent differences between the historical phonology of Baluan and Lou are confined to individual lexical items (e.g. the irregular correspondence in Lou *pul*, but Baluan *pun* 'moon' or Lou *ɲuran* but Baluan *ɲunan* 'five'), or involve probable transcription error.

(3) Although only two examples were recorded, it appears that POC *p is reflected as Baluan /p/ word-initially in non-nominal forms. The evidence is seen in POC *paŋan-i 'to feed, care for (as a pet)' > Baluan *paŋ* 'to feed', Lou *aŋ* 'to feed', *aŋa* 'look after an animal, care for a pet', POC *pati 'four' > Baluan *pa-wuy* '40', *pa-ŋot* '400', Lou *a-wl* '40', *a-ŋot* '400'. Minor as it may seem at first, this difference has important implications for the role of drift in the phonological history of the languages of the Admiralties (see discussion at the conclusion of §3.2.4).

3.2.3 IRREGULAR REFLEXES AND DOUBLETING

Some 35, or 18% of the Lou forms for which an etymology is proposed in Appendix 1 exhibit some kind of irregularity that has not yet been mentioned. The following discussion does not include the apparently unconditioned double reflexes of POC *R and *q noted above. In the interest of brevity irregularities are grouped into classes wherever possible.

(1) /l/ for expected /i/: *karawi-na > arawI-n 'blue, green', *kani > kanI- 'meat', *mipi > mlpmlp 'dream'.

(2) /e/ for expected /l/: *e > e 'predication marker', *qone > kone 'sand'.

(3) Retention of a last-syllable vowel not supported by a suffix: *qone > kone 'sand', *ñoro > noro 'flood', *mpoRok > puo 'pig', *tolu > tulu-ŋoul '30' (cf. *rua > ru-ŋoul '20', where the last vowel of *rua was lost).

(4) Exceptions to *a assimilation: *qalimango > alimaŋ (expected **elimaŋ) 'mangrove crab', *ñapi > nap 'to taste', *paŋus-i > aŋus 'blow the nose'. Also note *paŋan-i > aŋa (expected **aŋen) 'look after an animal, care for a pet', which is doubly irregular. I assume that *n was lost in the sequence *-ani-, as has happened sporadically in the reflexes of *kani 'eat' and *qanitu 'ghost, spirit of the dead' in other Oceanic languages. The resulting sequence *-ai-, however, should have become Lou /e/, not /a/.

Two more general classes of apparent exceptions to *a assimilation can also be noted here. In the first, there are no examples of *a assimilation before the genitive suffix, which is assumed to reflect POC *ni.

In the second, *a assimilation affects the reflex of the POC numeral ligature *ŋa in the word for 'one hundred' ([səŋət]), but not in the word for 'ten' ([saŋaul]), This difference of development is especially striking, since in the former word (POC *sa-ŋa-Ratus) the *a of the ligature did not originally precede a rounded vowel, whereas in the latter word (POC *sa-ŋa-puluq) it did. A parallel divergence in the development of the ligature is seen in Baluan [saŋal] 'ten', but [səŋət] 'one hundred'. Interestingly, in the words for '20' and '200', reflecting POC *rua-ŋapuluq and *rua-ŋaRatus respectively, Lou shows *a assimilation ([ruŋəul], [ruŋət]), whereas Baluan shows *a assimilation only where a rounded vowel both precedes and follows the vowel of the ligature ([yuŋal], [yuŋət]). These differences suggest a complex pattern of conditioning which remains to be worked out.

(5) Rounding before *w: *qasawa > asoa (through **asowa?) 'husband', *kawil > ko (through *kow) 'fishhook'. Although the rounding of *a before *w is attested in these two forms, no rounding is seen in, e.g. *mawap > al-ma 'yawn', *karawin > arawI-n 'blue/green', *kawa > ka 'kava', *kanawe > kana 'seagull', *lawa > la 'fishnet', *sawaq > sa 'channel' or *tawan > ta 'a tree: *Pometia pinnata*'.

(6) /e/ for expected /o/: *tolu > tell-p 'three', *mponi > keli-peŋ 'night' (and the morphologically related forms ti-peŋ 'tomorrow', ru-peŋ 'day after tomorrow'). The reflex of *tolu is doubly irregular, and probably has been reformed under structural pressure from the other numerals. It is noteworthy that *tolu is reflected without the second vowel irregularity, and with a different first vowel irregularity in *tulu-ŋoul* 'thirty'.

(7) /l/ for expected /a/: *layaR > pa-lI 'sail'. The irregularity in this form probably derives from an assimilation of *a to the following glide (cf. Penchal *paley*) before the raising of *e to /l/.

(8) /l/ for expected /o/: *quloj > kul(l) 'maggot'. The irregular last vowel appears only in the genitive construction (e.g. [kulln nik] 'maggots in rotten fish').

(9) /e/ for expected /o/: *manuk > menua 'eagle, hawk' (Baluan *manuay*). The regular reflex of *manuk appears in *mənəmən* 'bird'.

(10) /mw/ for expected /m/: *mapo > mwap 'heal', *masak > mwas 'cooked'. In addition to the foregoing items, which show unexpected /mw/ for /m/, the change *masou > moso shows a further development from an earlier labiovelar (Baluan *mwasow*) 'cinnamon'. Blust (1981) discusses the problem of labiovelar 'crossover' in Oceanic languages within a broader comparative framework.

(11) /w/ for expected /p/: *pa-Rapi > weep 'evening' (Baluan *poyep*). Ross (1988:330) recorded Lou (*po*)ep (I assume for correct (*po*)eep). The apparently irregular change *p > /w/ in this form may be a result of glide insertion ([poweep]), followed by loss of the initial syllable. If so, the first syllable vowel of earlier *poep is itself anomalous.

(12) /w/ for expected /o/: *ma-taqu > kal-moru 'right (side)', *potok > puru- 'thorn', *tolu > tulu- 'three' (in combination forms), *to(ŋ)kol > tuŋ 'punting pole'.

(13) breaking of *o: *mpoRok > puo (expected **po) 'pig'. At first glance this form appears to be doubly irregular in preserving the last vowel, and in showing an irregular reflex of the penultimate *o. However, *poŋu > puon (expected **pon) 'turtle' shows a comparable irregularity. As noted earlier, labial stops in Lou are often heard with slight to moderate velarisation before a rounded vowel. Generally this tendency did not affect my

perception of the number of syllables in a morpheme, but it is possible that both *puo* and *puon* contain a single underlying vowel /o/ (cf. Lenkau, Nauna *pow*, Penchal, Pak *pu* ‘pig’, Lenkau *pwen*, Penchal *puñ*, Nauna, Pak *ply* ‘turtle’). If so, these forms are /po/ ([po], [pwo]) ‘pig’ and /pon/ ([pon], [pwon]) ‘turtle’.

(14) Breaking of **u*: **uriap* > *wiri* ‘dolphin’. A similar breaking is seen in Proto-Admiralties **mosimo* > *mwesim* ‘a tree: *Casuarina equisetifolia*’.

(15) /n/ for expected /ŋ/: **kaŋaRi* > *kene* ‘canarium nut’ (cf. Lenkau *keney*, Nauna *aŋey*).

(16) /m/ for expected /p/: **punti* > *mun* ‘banana’ (cf. Lenkau *mun*, Penchal *mut*, Nauna *muc*, Pak *pun* ‘banana’).

(17) /ŋ/ for expected /k/: **kanroRa* > *ŋora* (Met. of the vowels) ‘cuscus’ (cf. Lenkau *ŋohay*, Penchal *kotay*, Nauna *kocay* ‘cuscus’).

(18) Single vowel for expected sequence of like vowels: **ma-qati* > *met* (expected ***meet*) ‘low tide, dry reef’. The apparent irregularity here may be a product of transcriptional error.

(19) Syncope: **karamea* > *karmI* ‘tongue’. The syncope of medial **a* in this form is mirrored in some synchronic variations (e.g. [porŋa], [poruŋa] ‘neck’), but is not found in, e.g. **karawin* > *arawI-n* ‘blue/green’, **taliŋa* > *teliŋa* ‘ear’, or other Lou trisyllables.

(20) /t/ for expected /r/: **ma-tiruR* > *metir* ‘sleep’. The failure of **t* to undergo flapping in this form suggests that flapping may have taken place only after a stressed (penultimate) vowel. However, forms such as **pitaquR*, and obligatorily possessed nouns such as **qate* or **mata*, would have been trisyllabic prior to the loss of final vowels, hence also stressed on the penult. The medial stop in Lou *metir* thus remains problematic.

In addition to the foregoing, several forms show sporadic metatheses: **nima* > *mIna* ‘hand’, **kanroRa* > *ŋora* ‘cuscus’, **tasik* > *set* ‘sea, saltwater’, **i-sai* > *sie* (expected ***sei*) ‘who?’, etc.

Despite its limited scope, the lexical material collected presents some evidence of doubling. Perhaps most notable are the two forms *arop* ‘thatch’ and *kat* ‘sago leaf’, both of which appear to reflect **qatop* ‘sago leaf thatch’. If this etymology is correct the longer form raises some interesting questions. On the one hand, it could conceivably reflect a suffixed form of **qatop*. But even so, the absence of initial /k/ makes it difficult to attribute both /kat/ and /arop/ to the same etymon in the same language. Alternatively, /arop/ may be a loan, but no plausible source language is available. A similar problem is perhaps also seen in *apur* ‘to boil in water’, *kopkopur* ‘foam, bubbles’.

3.2.4 CHRONOLOGICAL ORDERING

There are essentially two ways to establish the relative chronology of sound changes. The first is language-internal: what would be the consequences of assuming an order different from the one adopted? The second is comparative: has the same change occurred in other dialects of the same language, or in closely related languages?

Some details of relative chronology have already been mentioned in connection with the development of the Lou vowels. Below I will attempt to expand on these remarks and to

relate them to consonant reflexes. The total set of reflexes discussed in the previous section is first summarised (and reordered) for ready reference:

- (1) Final vowels were lost;
- (2) **i* became /i/;
- (3) **u* became /u/;
- (4) **e* became /ɛ/;
- (5) **o* became /o/;
- (6) **a* became /e/ before front vowels, /ɔ/ before back vowels, and /a/ elsewhere;
- (7) **p* and **k* disappeared before a vowel, but were unchanged in secondary final position;
- (8) **t* was flapped between vowels (where it merged with **nt*, **r*, **nr* and **j*), but was unchanged in secondary final position;
- (9) **mp* and **ŋk* (including instances of POC initial **p* and **k* in nouns) became /p/ and /k/ before a vowel, but became the homorganic nasal in secondary final position;
- (10) **nt* (like **t*) was flapped between vowels. It is unattested in initial position, but (like **mp* and **ŋk*) became the homorganic nasal in secondary final position;
- (11) **pw* remained unchanged (but is attested only in initial position);
- (12) **mw* remained unchanged (but is attested only in initial position);
- (13) **s* and **ns* merged as /s/;
- (14) **r*, **nr* and **j* merged as /r/ in all positions;
- (15) **l* became /l/;
- (16) **m* became /m/;
- (17) **n* and **ñ* merged as /n/;
- (18) **ŋ* became /ŋ/ (merging with **ŋk* in secondary final position);
- (19) **R* split into pre-Lou **y* and zero without storable conditions. As a result of change
- (20) almost all traces of this split have been eradicated in modern Lou;
- (20) **w* and **y* disappeared in secondary final position, but were otherwise retained unchanged;
- (21) **q* split into /k/ or zero in initial position, without storable conditions. In medial (including secondary final) position it invariably disappeared;

Based on the foregoing primary observations I assume the following changes in the order stated:

- (1) **a* assimilation;
- (2) Loss of final vowels (apocope);
- (3) Lenition of **p* and **k*;
- (4) Reduction of prenasalised stops to the homorganic nasals in secondary final position;

- (5) Reduction of prenasalised stops to the homorganic simple stops before a vowel;
- (6) Flapping of **t*;
- (7) Loss of final glides;
- (8) Raising of **e*;
- (9) Raising of **o*.

(1) before (2): If final vowels had been lost before **a* assimilation, there would have been no conditioning factor to determine the quality of the vowels in, e.g. **manuk* > *mənəmən* 'bird' or **taŋis* > *teŋteŋ* 'cry'. Change (1) must, therefore, have preceded change (2). Since all of the languages of the Admiralties except Wuvulu-Aua and the extinct language (or languages) of Kaniet have lost POC final vowels when not followed by a suffix, it follows that apocope was an independent change in many of the languages that underwent it.

(2) before (3): To varying degrees, the lenition of POC **p* and **k* before a vowel is found in all of the languages of the Admiralties. Only in initial position in nouns, where fusion with the article **na* produced what Ross (1988) has called a "secondary nasal grade", were **p* and **k* protected from phonological erosion. Yet the preservation of both stops in secondary final position in Lou, Lenkau and Penchal (and of **p* in Sori of northwest Manus) cannot easily be reconciled with a hypothesis that lenition was already present in Proto-Admiralties. To explain these reflexes it is simplest to assume that POC **p* and **k* lenited in Lou only after the loss of final vowels. Since the loss of final vowels took place after the break-up of Proto-Admiralties, the same must be true of lenition. Change (3), then, had to follow both changes (1) and (2).

(3) before (4): The reduction of prenasalised stops to the homorganic nasals in secondary final position could only have taken place after the loss of final vowels, since in etymologies such as **tumpu* > *tupu-* 'ancestors' this change did not occur. While this internal evidence supports the ordering of (4) after (1), it says nothing about the relative chronology of (4) in relation to (2) and (3). Comparative evidence sheds some further light on the relative chronology of these changes. Like Lou, Lenkau reflects prenasalised stops as the simple homorganic nasal in secondary final position. However, all other SEA languages show some other development for at least some prenasalised orders: **mp* (**kompuRu* > Lenkau *kum*, Penchal, Pak *kup* 'south wind', Nauna *kup* 'east wind'; **kompa* > Lenkau *aso-kom*, Penchal, Nauna *kai-kop*, Pak *kop* 'hermit crab'), **nr* (**panran* > Lenkau, Pak *pah*, Penchal, Nauna *pac*), **nt* (**punti* > Lenkau *mun*, Penchal *mut*, Nauna *muc*, Pak *pun* 'banana'), **ŋk* (**ŋku* > Lenkau *-ŋ*, Penchal zero (phonetically a glottal stop), Pak *-k* '1sg. possessor'; **toŋkon* > Lenkau *troŋ*, Penchal *ro*, Nauna *to*, Pak *do* 'punting pole'). Since the loss of final vowels and the lenition of POC **p* and **k* before a vowel are found in all SEA languages, while the reduction of prenasalised stops to the simple nasals is not, it would seem to be a safe assumption that (4) followed not only (1), but also (2) and (3).

(3) before (5): If change (5) had preceded change (2) POC **p* and **mp*, **t* and **nt* and **k* and **ŋk* would have merged in secondary final position. Since they did not, it can be concluded that (5) followed (2). Since **mp* and **ŋk* did not lenite, (5) must also have followed (3). I see no basis for ordering (4) relative to (5); these may be divergent realisations of a single conditioned change.

(3) before (6): The flapping of **t* is found in all SEA languages except Penchal (it is optional in Nauna). Since the lenition of **p* and **k* before a vowel is found in all SEA languages, I assume that (6) followed (3). Although it violates no phonetic principle to suggest that **t* underwent flapping prior to reduction of **nt* and that the same change recurred after the reduction of **nt*, simple parsimony favours an ordering in which **t* and **nt* first merged as **t* before undergoing intervocalic flapping. A similar change is found in Nali, Ere, and some other languages of eastern Manus, a distribution suggestive of diffusion. As noted already, the flapping of **t* in Lou and Baluan apparently took place after the dialects had separated, since the further change of **r* to /y/ in Baluan affected only earlier **r*, not /t/ from **t*.

(6) before (7), (8) before (9): The loss of final glides and raising of **e* must have occurred after the separation of Lou from Baluan, as neither occurs in the latter dialect. These and the apparently incipient raising of **o* are therefore assumed to be the most recent phonological innovations in Lou.

The foregoing discussion is at odds on several points with statements in Ross (1988) regarding the phonological history of Admiralties languages, and it is best to address these differences at this juncture. First, according to Ross (1988:330) "POC **p* became PAd **-f-* word medially". If we take this statement at face value we must conclude that POC **p* became medial **-f-* and then returned to /p/ in secondary final position in such languages as Sori, Lou, Lenkau and Penchal. Granted that this direction of change is attested (e.g. in the Polynesian Outlier Anuta, in the Solomon Islands), it is extremely rare in relation to the common lenition of **p* to /f/. Moreover, in Lou the development of **p* and **k* are parallel: if /p/ developed from an earlier fricative in secondary final position, what about /k/?

Second, according to Ross (1988:335) POC **p* and **b* (my **p* and **mp*) "may have been phonetically *[f], *[p]" in Proto-Admiralties. Ross expresses some doubt about this point, and rightfully so in my view, since a voiceless bilabial stop offers little hope of accounting for the development of **mp* to /m/ in secondary final position in Lou.

Finally, Ross (1988:330) proposes that POC **R* "was lost before high vowels in Proto Admiralty (PAd) and became PAd **R* before other vowels". Yet POC **suRuq* 'liquid, sap, gravy, juice, soup' is widely reflected in the Admiralties with /y/ from **R* (Loniu, Nauna *cuy*, Titan, Baluan *suy* 'soup'). Without access to a preceding stage such as that preserved in Baluan, the Lou reflex *si* would be unexplained.

3.2.5 INDIRECT REFLEXES

In addition to its overt reflexes, Lou shows clear indirect evidence for two Proto-Oceanic grammatical morphemes which are themselves reflected as zero. The first of these is the common noun article **na*, and the second the 3sg. object suffix **-a*. As first pointed out by Ross (1988), languages of the Admiralties show only nasal grade reflexes of initial **p*, **t*, **k*, **s* and **r* in nouns, indicating fusion of the stem-initial consonant with the nasal of **na*. A reflex of **na* is thus present in Lou in the form of secondary nasal grade. Similarly, in suffixed forms such as POC **suli-a* 'burn (it)', the final stem vowel was preserved by the suffixal vowel, which itself was lost. A reflex of **-a* is thus present in Lou in the form of stem-final vowel retention in transitive verbs. A third possible POC grammatical morpheme that is indirectly attested is the 'close transitive' suffix **-i* (Pawley 1973), as in **mimiR-i* 'urinate (on)' > Lou *mimi* 'urinate'.

4. LOU-ENGLISH VOCABULARY

The following is an alphabetised list of all Lou morphemes not recorded. In the lexical entries immediately after the entry number homophonous forms are distinguished by subscript, obligatorily affixed forms are followed by a hyphen, and underlying representations incorporate morphophonemic information. In illustrative material which follows the lexical entry exemplifications of the morpheme omit subscripts, and state morpheme alternants as such rather than under a single invariant form. Thus, 002. a_2 'gone; away'; *i a* 'he's gone'; 405. *ŋat(a)*: *ŋat* 'bald head', *ara-n ŋara-n* 'his head is bald'; 799. *we(i)*: *we* 'fresh water'; *wei-n kolo-* 'saliva'; *wei-n puol* 'coconut water'. The final /n/ of adjectives is preceded by a hyphen to indicate that these forms probably contain a synchronically justified attributive suffix which is always present. Where a form cannot yet be glossed it is followed by (?) and cross-referenced to a glossed entry under which it is illustrated, e.g. 049. *enan* (?); (cf. *per*).

Following the Lou vocabulary I have included my very imperfectly recorded Baluan material, for whatever it is worth. As with Lou, the greatest probability of transcriptional error in the Baluan data lies in the vowels.

/a/

- 001. a_1 : and
- 002. a_2 : gone; away; departed from; *i a* he's gone (cf. *teli*)
- 003. aa_1 : small canoe paddle, used in a side-to-side paddling rhythm (cf. *paa*)
- 004. aa_2 : south wind
- 005. *æk*: to shoot
- 006. *aipika*: an edible plant: *Hibiscus manihot* (loan: NG Pidgin *aipika*)
- 007. *alt*: copulate, have sexual intercourse
- 008. *akmat*: stumble, fall down; *i akmat-i* he fell down (cf. *lus*)
- 009. *aku-*: vein, tendon; root
- 010. *alimarj*: crab with large pincer; mangrove crab
- 011. *alma*: to yawn
- 012. *aman*: maybe, perhaps, possibly
- 013. *amsi*: sneeze
- 014. *amtu-*: sweat, perspiration
- 015. *anek*: out, out of
- 016. *anektoun*: to hide (trans.) (cf. *kaltoun*; *perek*)
- 017. *ani*: whet, sharpen (cf. *serip*)
- 018. *aniek*: immerse a container to fill it with water (cf. *ut*)
- 019. *aj*: feed
- 020. *aŋa*: look after an animal, care for a pet
- 021. *aŋar*: think
- 022. *aŋɔt*: 400
- 023. *aŋus*: blow the nose (cf. *roŋus*)
- 024. *ap*: many, lots of, you (pl.) (cf. *ip*)
- 025. *apnl-*: sister, man speaking? (cf. *mwani-*)
- 026. *apur*: to boil in water (cf. *kopkopur*)

027. *apuru-n*: few, not many
 028. *ara-*: head (cf. *pelewek*)
 029. *arara*: hunched over, bent (as a person with age)
 030. *arawI-n*: green/blue
 031. *areŋa-*: molar tooth
 032. *arIsap*: to bite
 033. *aro*: to follow
 034. *arop*: thatch (cf. *kat*)
 035. *as*: to plant
 036. *asakom*: hermit crab
 037. *asoa-*: husband (cf. *peria-*)
 038. *asum*: there (near hearer) (cf. *kolog*)
 039. *aur*: wind (cf. *soso*)
 040. *aweek*: announce, inform
 041. *awI*: 40
 042. *awɔt*: far, distant (cf. *rop*)

/e/

043. *e*₁: to make; *ŋa-e* I made it; *o-e* you made it; *i-e* he/she made it
 044. *e*₂: predication marker; question marker
 045. *elewe-n*: long (of objects)
 046. *eli*₁: that (demonstrative)
 047. *eli*₂: with (instrumental), by means of
 048. *elipe*: where?
 049. *enan*: (?); (cf. *per*)
 050. *epi*: sago; *kapwIn epi* sago tree
 051. *epwin*: finished, all gone, used up (cf. *mele, mut*)
 052. *er*: scrape out a coconut (cf. *roek*)
 053. *erIt*: cough
 054. *eroi*: bury
 055. *esunjek*: collect, gather together

/i/

056. *i*: he, she
 057. *ia-n*: good
 058. *ik*: search, look for
 059. *ilia-*: nephew, niece
 060. *illp*: pull; *o illp ŋoa-n* he/she is breathing
 061. *im*: drink
 062. *ip*: many, lots of; they (pl.) (cf. *ap*)
 063. *ir*: squeeze, as a fruit to extract the juice
 064. *irir*: to shave

/I/

065. *Il*: to dig (NOTE: recorded only as [wIl], which I interpret as /o Il/ you dig)

066. *In*: lie down (to sleep)
/k/
067. *ka*₁ -: alienable possessive marker; edible possession (cf *ta*₁)
068. *ka*₂: kava: *Piper methysticum*
069. *kak*: to lift something
070. *kakaruk*: chicken, fowl (loan: NG Pidgin *kakaruk*)
071. *ka*₁: to steal, as by picking pockets
072. *ka*₂: taro
073. *kalkoko*: to bend, as a piece of iron
074. *kalmoru*: right (hand, side)
075. *kalpare-*: armpit
076. *kaltoun*: hide something in the clenched fist (cf. *anektoun*)
077. *kaltut*: dark
078. *kalu-*: wing; *kalu-n mɔnmɔn* wing of a bird
079. *kam*: kind of fibre from a jointed vine; used to make cordage for nets
080. *kamkam*: walk with arms around one another's shoulders, as boys (cf. *kemkem*)
081. *kampuri*: knot, tie a knot
082. *kamu*: angry
083. *kana*: seagull
084. *kanas*: a fish, the mullet
085. *kan*₁ -: meat, flesh; *kan*₁-*n ara-* brain; *kan*₁-*n nik* meat of a fish; *kan*₁-*n sut* breast milk
086. *kan*₂ -: surface?; *kan*₁-*n mwan*₁-*n* straight, smooth, level
087. *kaŋ*: spiny red starfish, crown-of-thorns starfish
088. *kaŋal*: tail feathers
089. *ka*₁: kind of tall, tufted grass similar to *Saccharum edule*
090. *ka*₂: small crab that stays on beach stones
091. *kapase-*: chin, jaw
092. *kapɛu-n*: bitter
093. *kapok*: the wild cotton or kapok tree: *Ceiba pentandra* (loan: NG Pidgin *kapok*)
094. *kapwIn*: (?); (cf. *epi*)
095. *kapwIrI*: small; easy, not difficult (cf. *kikirin*)
096. *ka*₁: palm, sole; *ka*₁-*mIna-* palm of the hand, *ka*₁-*kl-* sole of the foot
097. *ka*₂: a shore plant, the wood of which is used to make fireploughs
098. *karam*₁: door (cf. *kulu-*)
099. *karam*₂: torch; also /koram/ (cf. *ramram*)
100. *kara-n*: black
101. *karap*: frigate bird
102. *kareŋ*: red parrot
103. *kari*: coal; *kari mɔn* charcoal
104. *karik*: to tell, relate (as a story); *ŋ-karik pak* I'm telling a story
105. *karirIt*: fear, afraid

106. *karl-*: liver
107. *karml-*: tongue
108. *karpu*: heron
109. *kasoj*: near
110. *kat₁*: have, possess; also /gat/ (loan: NG Pidgin *gat*)
111. *kat₂*: sago leaf (cf. *arop*)
112. *kaukau*: sweet potato (loan: NG Pidgin *gat*)
113. *kayaŋ*: pandanus with edible red fruit; the fruit of this tree (cf. *mon*, *no*, *par*, *pok*)
114. *ke₋₁*: tree, wood, stick; *ke-n pali* stick for the sail, mast (cf. *para-*)
115. *ke₂*: (?); (cf. *puaŋ*)
116. *kea*: to swim
117. *keik*: large variety of Malay apple: *Syzygium gomata* (cf. *nes*)
118. *kel*: crush lice between the nails
119. *kel₁*: black reef fish with poisonous barbs near its long tail
120. *kel₂*: tie leaves in a bundle and put in boiling water
121. *keli*: kind of small grouper (cf. *kot*)
122. *kelipeŋ*: night; *pa kelipeŋ* dawn (cf. *masar*, *paripeŋ*)
123. *kelln*: firewood (= *ke-lln*?)
124. *kelpona-*: cheek
125. *kem*: catch (as fish)
126. *kemkem*: to hug, embrace, encircle with the arms (cf. *kamkam*)
127. *kene*: canarium nut
128. *kensellŋ*: ladder
129. *ker*: coconut flower spathe
130. *kerit*: putty nut: *Parinari Laurinum*
131. *keriup*: bailer for removing water from a canoe (cf. *ut*)
132. *kes*: take fruit from a bunch, but leave some behind
133. *kesi*: intermediate growth stage of marine fish later called *sui* (cf. *kolaŋ*)
134. *kesia-n*: (closed?); *mara-n kesia-n* blind
135. *kias*: outrigger connecting sticks, outrigger booms
136. *kikiri-n*: small (cf. *kapwirI*)
137. *kina-*: mark, trace, imprint; *kina-n* hole in a canoe (cf. *llm*)
138. *kipi*: when?
139. *kit*: octopus
140. *kl₋₁*: leg (see *kou-n kl-*, *pwele-kl-*; not recorded in isolation)
141. *klI*: boat, outrigger canoe
142. *klIkI₁*: kingfisher
143. *klm*: salt; *klmkI-n* salty (cf. *set*)
144. *klŋpwirI-*: waist
145. *klŋru*: housepost
146. *klŋsuk*: rainbow
147. *klp*: large greenish reef fish with black stripes and a red area around its mouth

148. *kIpkIplI*: tongs, forceps
149. *ko*: fishhook
150. *koas*: friend, companion
151. *koes*: kind of slender bamboo (cf. *pesIt*)
152. *koki-n*: hot (cf. *ɲaraa-n*)
153. *koko*: fence around a garden
154. *kokok*: to bark, of a dog; to crow, of a rooster
155. *kokora-*: heart (cf. *sibia-*)
156. *kokorot*: sugarcane
157. *kokorup*: to spit (cf. *luek*)
158. *kolaŋ*: immature growth stage of the fish later called *kesi* and *sui*
159. *kolkoloni*: butterfly
160. *kolo-*: mouth; space within a long fishnet spread in a semi-circle by men in canoes
161. *koloŋ*: there (far from hearer) (cf. *asum*)
162. *koloponu(a)*: snake; *koloponua-n pun mot* sea snake that hides in the eel grass
163. *kolu-*: throat; *kolu-ŋ i ɲaŋa* my throat is sore/hoarse (NOTE: possibly identical to *kolo-*)
164. *kom*: comb of a fowl (loan: NG Pidgin *kom*)
165. *komkom*: stuck on the anus, of excreta
166. *komom*: a mussel (shells still joined)
167. *kompaŋ*: landslide
168. *komtal*: the morning star/evening star: Venus
169. *kon*: balsa wood, very light cork-like wood, sometimes used for fishnet floats
170. *kone*: sand; beach
171. *kono*: a flowering shrub: *Hibiscus tiliaceus*; *pua-n kono* hibiscus flower
172. *konua*: firefly
173. *konum*: garden
174. *koŋ*: kind of squarish yellow or brown reef fish
175. *koŋkoŋ*: of clothing, too big for the person wearing it
176. *kop*: rafter
177. *kopkopur*: foam, bubbles; *kopkopur-an* foaming, bubbling (cf. *apur*)
178. *kori*: basket (cf. *kun*, *lapos(u)*, *liklik*)
179. *korkorI-n*: dirty
180. *korkoro*: patchy skin fungus
181. *koroma*: spoon, ladle
182. *korogaŋal*: scorpion
183. *koror*: bee (generic)
184. *korou-n*: white
185. *korut*: lid, cover
186. *kosar*: widow; mween kosar widower (cf. *sokar*)
187. *kosu*: smoke; *kosu mɔn* smoke of a fire
188. *kosur*: left (hand, side)

189. *kosusu-n*: cream; *kosusu-n puol* coconut cream
 190. *kosut*: coconut crab
 191. *kot*: spotted fish: largest type of rock cod or grouper (cf. *keli*)
 192. *kou-n kl-*: calf of the leg
 193. *kɔl*: calf of the leg
 194. *kɔp*: lime; lime gourd (cf. *las*)
 195. *kɔpkɔp*: dust; fog, mist
 196. *kɔskɔs*: nauseated; upset, of the stomach
 197. *kuaro*: to hail, call out to
 198. *kuI₁*: holothurian, sea cucumber
 199. *kuI₂*: lick, chew
 200. *kuI₃-*: nail; *kuI-n kusu ml_{na}*- fingernail
 201. *kukamba*: cucumber (loan: NG Pidgin *kukamba*)
 202. *kukuk*: game of hide-and-seek
 203. *kuI₁*: breadfruit
 204. *kuI₂*: cerumen, earwax
 205. *kulam*: hiccough
 206. *kulit*: rudder of a boat; to steer
 207. *ku(I)*: *kuI* maggot; *kuI-n nik* maggots in fish
 208. *kulu-*: slit, narrow opening; *kulu-n um* door opening (cf. *karam*) (NOTE: possibly identical to *kolo-* and *kolu-*)
 209. *kulua*: hearth
 210. *kulun*: bay
 211. *kulut*: rubbish, garbage
 212. *kum₁*: east
 213. *kum₂*: monsoon; *kum lan* northwest monsoon, *kum ra* northeast monsoon (NOTE: *kum₁* and *kum₂* may be the same item)
 214. *kum₃*: suck on something, as a popsicle
 215. *kun*: carrying basket worn on the back; carry on the back (cf. *kori*, *lapos(u)*, *liklik*)
 216. *kuna-*: skin, peeling; *kuna-n ke* tree bark; *kuna-n mun* banana skin; *kuna-n mwat* scab; *kuna-n nik* fish scales; *kuna-n puo* pig's skin
 217. *kunkunu-n*: heavy; *kunkunu-n puIn* light in weight
 218. *kuop*: pluck, pull out (as grass, feathers)
 219. *kup₁*: to hit, strike (of e.g. an adult striking a child)
 220. *kup₂*: sea urchin
 221. *kupkup*: white hair, as of the elderly
 222. *kur*: clay cooking pot
 223. *kurak*: poisonous reef fish: scorpionfish
 224. *kurkur*: mushroom
 225. *kuruer*: skin blemish, mole on the skin
 226. *kurupis*: lobster
 227. *kurur*: thunder

228. *kusu mIna*:- finger; *kusu mIna-n marak* his thumb
229. *kusupuo*: nettle, *Laportea* spp. (cf. *lalat*) (NOTE: possibly *kusu-puo*)
230. *kut*: louse
231. *kutkut*: pounded taro with grated coconut
- //
232. *la*: fish net spread out by men working in two canoes; *la tara* net spread out during a fish drive
233. *lak*: go; verbal particle
234. *lal*₁: round; *lal we sip* lake (calque of NG Pidgin *raunwara* + *sip* = one)
235. *lal*₂: trochus shell
236. *lalat*: stinging nettle, *Laportea* sp.
237. *lall-n*: foundation?; *lall-n um* floor
238. *lalul*: to set (of the sun)
239. *lalun*₁: inside; enter
240. *lalun*₂: (?); *lalun pinerŋ* fallow land
241. *laman*: grave
242. *lan*: (northwest?); cf. *kum*
243. *lanŋet*: housefly (NOTE: probably *lanŋ-et*)
244. *lanŋan(a)*: a fly, flying insect; *lanŋan-n palawa* honey bee; *lanŋan ŋara* bluebottle, horsefly, stinging March fly
245. *lapankawl*: stinging red tree ant; fire ant (cf. *loll*)
246. *lapos(u)*: *lapos* carrying bag (NG Pidgin *bilum*), small trap net; *laposu-n nik* fish net, *laposu-n nət* placenta (cf. *kori*, *kun*, *liklik*)
247. *las*: limestone (cf. *kəp*)
248. *layan*: mend, repair
249. *lei*: ginger
250. *leleap*: jungle, bush, forest (cf. *lolo-n ke*)
251. *leplepkat*: gecko
252. *li*₁: already (?); (cf. *mele*)
253. *li*₂: anchor
254. *lia*:- tooth, teeth; *lia-n puo* tusk of a pig; *mara-n lia-n* incisor(s)
255. *liklik*: kind of large basket in which loads are carried on the head (cf. *kori*, *kun*, *lapos(u)*)
256. *liŋliŋ*: very quiet, of the surf
257. *liol*: men's house, bachelor's house
258. *lisa*₁:- gills; *lisa-n nik* red inner gills of a fish (cf. *poan*)
259. *lisa*₂:- nit; *lisa-n kut nit* egg of a louse
260. *llm*: hole or depression in the ground
261. *llp*: get, fetch; carry, take along; *llp me* bring; *llp lak* take; *llp nət* pregnant (lit. carry child)
262. *loka*: high tide, flood (cf. *noro*)
263. *loll*: small black sugar ant (cf. *lapankawl*)
264. *lolo-n ke*: bush, forest (cf. *leleap*)

265. *lot*: boil, abscess
 266. *lou*: kind of whale (larger than *molmoluam*)
 267. *loup*: kind of large marine shell
 268. *lɔklɔk*: wobble about, as an oversized shoe on the foot
 269. *luek*: spit out (food, etc.), eject from the mouth (cf. *kokorup*)
 270. *luI*: drop, throw to the ground
 271. *lulisom ramraman*: small red ant (cf. *lapankawI*, *lolI*)
 272. *lum*: ripe
 273. *lumlum*: moss, algae, seaweed
 274. *lumu-*: hair; feather; *lumu-n ara-n* head hair; *lumu-n kapasI-n* beard; *lumu-n mɔnmɔn* feather
 275. *lus*: fall from a height (cf. *akmat*)
- /m/**
276. *maan*: axe, adze
 277. *mak*: playground, place where children play
 278. *malI*: quick, rapid, fast (cf. *neneman₁*)
 279. *malul*: tree with bell-shaped red fruit that has a large seed
 280. *mamat*: wake up, rise after sleeping
 281. *maŋas*: work
 282. *mar*: knowledgeable; educated
 283. *mara-*: eye; face, front; point; lid, cover; *mara-n puln* dull point; *mara-n um* the front of a house; *para-n mara-n* sharp point
 284. *marak*: big; old (of people); title for a male elder (cf. *san*)
 285. *marIk*: sick
 286. *masar*: clear, as the air clearing after smoke dissipates; dawn (cf. *kelipeŋ*)
 287. *masarin*: outside (NOTE: possibly *masari-n*)
 288. *mat*: die; *mat puln* living, alive; *matI-n* dead; *kl-n i matI-n* crippled, lame (lit. leg it dead)
 289. *matmarak*: to grow (as plants in a garden) (NOTE: this item may contain *marak* big)
 290. *me*: come
 291. *mei-n*: fontanelle
 292. *mele*: finish; finished, gone; *i li mele* he disappeared (cf. *epwin*, *mut*)
 293. *melen*: melon (loan: NG Pidgin *melen*)
 294. *meleo*: large tree with green, four-cornered fruit
 295. *menera-n*: big, large
 296. *menua*: hawk, eagle (cf. *paraŋ*)
 297. *merIt*: sleep (cf. *metir*)
 298. *met*: reef, dry reef (cf. *ramet*)
 299. *metir*: sleep (cf. *merIt*)
 300. *mimi*: urinate; *mimi-a* urine
 301. *minu*: yesterday
 302. *mIna-*: hand

303. *mIpmlp*: to dream
304. *molmoluam*: whale (smaller than *lou*)
305. *moloa*:- shadow, picture, spirit; *moloa-n mIna-n* the shadow of his/her hand; *moloa-n ramat* spirit of a dead person
306. *molok*: young; *puol molok* young coconut
307. *molok(i)*: stern of a boat, hindpart of something; *kll molok* stern of a boat; *moloki-n* back, as of an object
308. *molut*: white-tailed dove (cf. *pɔl*)
309. *mon*: kind of pandanus with fruit that is yellow or red when ripe (cf. *kayaŋ, no, par, pok*)
310. *monmuon*: caterpillar
311. *montI*: yellow
312. *moŋ(u)*: *moŋ* barren, as a woman past childbearing age, a dried-up tree or a dry reef; *met i moŋ* low tide; *moŋu-n puol* dry coconut
313. *mor*: double?; *nɔt mor* twin
314. *mora*: calm, still, of water
315. *morul*:- grandchild
316. *moso*: tree with redolent bark, the cinnamon: *Cinnamomum xanthoneuron*
317. *mot*: eel grass (on sea floor)
318. *mɔn*: fire
319. *mɔnmɔn*: bird
320. *muli*: citrus fruit (loan: NG Pidgin *muli*)
321. *murmur*: dew
322. *mumut*: to vomit
323. *mun*: banana
324. *mut*: finish, stop; last; *toro mut* last-born child (cf. *epwin, mele*)
- /mw/**
325. *mwak*: to surface from underwater, as a whale coming up to breathe
326. *mwal*: first
327. *mwamwayes*: lazy
328. *mwamwarou*: female friend
329. *mwani*:- brother (woman speaking)
330. *mwanInI-n*: straight
331. *mwantu-n*: much, many
332. *mwap*: heal
333. *mwarIn*: yam
334. *mwarse*: catfish
335. *mwarup*: hole (in the roof): *um i mwarup* the roof is leaking
336. *mwasi*: bandicoot, marsupial rat
337. *mwasi*: cooked
338. *mwason*: thousand
339. *mwat*: sore, wound; *mwat i mwap* the sore/wound is healed
340. *mween*: man; male

341. *mweli-*: under, underside
 342. *mwelmwelea-n*: spotted, mottled, as the skin of a snake
 343. *mwemwe*: vine
 344. *mwemwes*: scabies
 345. *mwemwesik*: shame, ashamed
 346. *mweneek*: slow, leisurely
 347. *mwesim*: a shore tree with needle-like leaves: *Casuarina equisetifolia*
 348. *mwi*: dog
 349. *mwirIn*: between, among
 350. *mwInemwIn*: half of a mussel shell used for scraping the meat out of coconuts
/n/
 351. *na₁*: edible seaweed
 352. *na₂*: tree with red wood (probably *Pterocarpus indica*)
 353. *naknak*: to shine; yellow, ripe, of a fruit; *sinsin la ro naknak* the sun is shining
 354. *namnam*: swearing
 355. *namnI-*: the taste of something; *namnI-n kImkI-n* salty taste (cf. *nap*)
 356. *nana-*: father-in-law, mother-in-law
 357. *nap₁*: pronged fish spear; *mara-n nap* prong of a fish spear
 358. *nap₂*: to taste (cf. *namni-*)
 359. *ne*: rat
 360. *nek*: throw, as a stone; discard, throw away
 361. *nenema-n₁*: fast, quick (cf. *malI*)
 362. *nenema₂*: fat (n.), grease; tasty (cf. *sumsumuan*)
 363. *nenewa*: message
 364. *neŋ₁*: climb (used when one is not at the thing to be climbed, but must travel to it before climbing (cf. *tarak*)
 365. *neŋ₂*: sleeping mat
 366. *nes*: the Malay apple: *Syzygium gomata* (cf. *keik*)
 367. *nesek*: say, tell, speak (cf. *nompα*)
 368. *ni*: squid
 369. *nik*: fish
 370. *niknik*: very sharp, as a spear or knife point, thorn, etc.
 371. *niŋ*: see, look
 372. *no*: pandanus used for raincoapes; pandanus raincape (cf. *kayaŋ, mon, par, pok*)
 373. *nompα*: say, answer (cf. *nesek*)
 374. *noro*: flood (cf. *loka*)
 375. *nɔmnɔm*: eating (cf. *ŋan*)
 376. *nɔpnɔp*: jealousy, gossip, slander; quarrel about (as women quarreling over a man or men quarreling over a woman)
 377. *nɔt*: tall tree which provides good timber, and a large edible sweet green fruit
 378. *nɔt(u)*: *nɔt mor* twin, *laposu-n nɔt* placenta, *noru-n* his/her child
 379. *nu*: bathe, take a bath in the sea (cf. *nuek*)

380. *nuek*: dive, submerge (cf. *nu*)
 381. *nun*: a tree with numerous aerial roots: the banyan
 382. *nunun*: roast over hot coals
 383. *nuru*: tired, exhausted
 /ŋ/
 384. *ŋa*: I
 385. *ŋals*: scratch an itch (cf. *ŋapils*)
 386. *ŋak*: expression of anger or impatience used by someone to another person who keeps saying 'huh?' to a request, as though he/she can't hear it (cf. *ŋuk*)
 387. *ŋan₁*: eat (cf. *nɔmnɔm* eating)
 388. *ŋan₂*: fathom (cf. *perimin*)
 389. *ŋan₃*: termite, white ant
 390. *ŋani-ruep*: eight
 391. *ŋani-runjoul*: 80
 392. *ŋani-saŋaul*: 90
 393. *ŋani-sellp*: seven
 394. *ŋani-sip*: nine
 395. *ŋani-suluŋoul*: 70
 396. *ŋaŋ*: poisonous reef fish, the stonefish
 397. *ŋaŋa₁*: beetle sp.
 398. *ŋaŋa₂*: hoarse, losing one's voice
 399. *ŋapils*: scratch (as an itch) (cf. *ŋals*)
 400. *ŋara₁-*: name; *ŋara-n sie* what is his/her name?
 401. *ŋara₂*: (?) (cf. *lanlaŋ*)
 402. *ŋaraa-n*: hot (of food, water, sun); *para-n ŋaraa-n* difficult (as a task) (cf. *koki-n*)
 403. *ŋarlk*: feel, sense
 404. *ŋaru*: live, reside, dwell
 405. *ŋat(a)*: ŋat bald head (in general); *ara-n ŋara-n* his head is bald
 406. *ŋauŋauan*: steam
 407. *ŋer*: sago grub
 408. *ŋeria-n*: painful; *para-n ŋeria-n* a sharp pain (cf. *porok*)
 409. *ŋesiup*: spill
 410. *ŋiniop*: six
 411. *ŋir*: open wide (as the eyes)
 412. *ŋlm*: cockroach
 413. *ŋlnrut*: crush lice between the fingernails
 414. *ŋlnsap*: pinch
 415. *ŋoa-*: breath
 416. *ŋomŋom*: tattoo
 417. *ŋor*: to grunt (as a pig), to growl (as a dog); to snore
 418. *ŋora*: cuscus, phalanger, possum
 419. *ŋorɔp*: sky; raincloud

420. *ɲɔk*: having a depressed nose bridge
 421. *ɲuk*: expression of anger or irritation given by someone to someone else who refuses his/her advice (cf. *ɲak*)
 422. *ɲuran*: five
 423. *ɲusu-*: lip
- /o/**
424. *oa*: a bird, the megapode
 425. *ok*: drift; okok float, bob on the surface
 426. *om*: to cut (wood) (cf. *san*₁)
 427. *onoɲoul*: 60
 428. *op*: to fly, opop flying fish
 429. *orek*: to open
 430. *oro*: give
 431. *os*: husk coconuts (cf. *suep*)
 432. *osoi*: rattan
 433. *osos*: kind of black fish
- /ɔ/**
434. *ɔk*: hold; *ɔkto* hold in the hand
 435. *ɔkɔk*: climb slowly up a mountain
 436. *ɔp*: strike, hit with force; *ɔp mat* to kill (cf. *rek*)
 437. *ɔsɔs*: to whistle
- /p/**
438. *paa*: long canoe paddle used like an oar on one side of the canoe only (cf. *aa*)
 439. *pae*: down; *In la pae* lie down
 440. *pak*: story
 441. *pala-*: penis
 442. *palawa*: flower; elephant ear taro (loan: NG Pidgin *plaua*)
 443. *palawIk*: bad
 444. *pall*: the sail of a boat
 445. *palɲln*: eel
 446. *paloal*: day
 447. *pamat*: uncooked (cf. *papur*)
 448. *pami*: areca nut, betel nut; *para-n pami* areca palm
 449. *pana*: stick used to sew sago leaves
 450. *panak*: thief; to steal
 451. *panap*: garfish: a small blue fish with long needle-like mouth tipped with red
 452. *paɲ₁*: bench
 453. *paɲ₂*: rain
 454. *paɲkat*: broom made of coconut or sago frond (NOTE: possibly /pa-n kat/ (= *pa* of sago leaf, where *pa* remains unglossed)
 455. *pa₁*: buy
 456. *pa₂*: carry someone (as a child or sick person) pick-a-back

457. *papaeu-n*: new
 458. *papur*: raw, unripe (cf. *pamat*)
 459. *par*: *Pandanus tectorius*; its leaves are much used in plaiting mats (cf. *kayan*, *mon*, *no*, *pok*)
 460. *para-*: stalk, stem, trunk; *elewe-n para-n* its stalk is long; *para saŋa-n* fork of a branch
 461. *para-n*: sharp (as a point)
 462. *paray*: black sea hawk or sea eagle (cf. *menua*)
 463. *paraŋka*: fishing line
 464. *parapa-*: thigh
 465. *parawa*: false; lie
 466. *paripeŋ*: morning (cf. *kelipeŋ*)
 467. *parIrl-n*: clean
 468. *pas*: stone fish corral
 469. *pasek*: know, understand
 470. *paso*: fishing pole
 471. *pata-1*: log, beam (?); *pata-n kll* cross-seat of a boat; *pata-n pall* mast (cf. *ke-2*) (NOTE: possibly identical with /*para-*/ stalk, stem, trunk)
 472. *pata-2*: top
 473. *pe*: stingray
 474. *peilo*: spear
 475. *pein*: woman; female
 476. *pelesam*: shark
 477. *pelewek*: head? (cf. *ara-*, *rek*)
 478. *pelia*: a fish, the bonito or skipjack tuna
 479. *peŋes*: tree which bears a sappy, sticky fruit on which alighting birds sometimes adhere; *pua-n peŋes* the fruit of this tree
 480. *pen*: pen (English loan)
 481. *penreun*: tail (of fish, pig, dog)
 482. *pepe*: centipede
 483. *per*: surf, breakers; *per enan* wave in the open sea, swell
 484. *perek*: to hide (intr.) (cf. *anektoun*)
 485. *perelian*: (?) (cf. *sin*)
 486. *peri*: war? (cf. *tln*)
 487. *peria-*: wife (cf. *asoa-*)
 488. *perilt*: three stones of the hearth; trivet
 489. *perimin*: handspan (cf. *ŋan₂*) (NOTE: possibly *peri-mIn*)
 490. *perira*: because
 491. *periup*: kind of medium-sized clam that burrows in beach sand (cf. *tele*)
 492. *pes*: wooden fork for removing taro or other hot food from a pot
 493. *pesIt*: kind of slender bamboo used to make fish spears (cf. *koes*)
 494. *peterI-*: bone; *peterI-n touma-* scapula, shoulder blade
 495. *pi*: filariasis, swelling of leg

496. *pilel*: laugh, smile
 497. *pineŋ* (?); (cf. *lalun*)
 498. *pipi*: bait
 499. *pirek*: blow with the mouth, blow on the fire (cf. *tepelek*)
 500. *piro*: a shore tree: *Calophyllum inophyllum*
 501. *pln*: brother-in-law, sister-in-law, *pln ta-ŋ* my brother-in-law, *pln to* 'your brother-in-law, *pln tei* his/her brother-in-law
 502. *poan*: external gills of a fish (cf. *lisa-1*)
 503. *pok*: pandanus with broad leaves; of no practical use (cf. *kayaŋ, mon, no, par*)
 504. *polpoluŋ*: wrap food in leaves and cook it over an open fire
 505. *ponu*: village, large area
 506. *por₁*: to swallow
 507. *por₂*: thick, sweet white residue left after boiling off coconut oil
 508. *porak₁*: pus; *i porak* it has pus
 509. *porak₂*: tall tree with edible fruit
 510. *porek*: find
 511. *poroa*: river
 512. *poroa-n*: rotten as wood) (cf. *poroka-n*)
 513. *porok*: painful; ara-n i porok he/she has a headache (cf. *ŋeria-n*)
 514. *poroka-n*: spoiled, rotten (as meat, fish or vegetables) (cf. *poroa-n*)
 515. *poruŋa-*: neck
 516. *posa*: dry(as food or clothes); to dry
 517. *posposu-*: chest (man's)
 518. *posu-*: shell; *posu-n* puon shell of a turtle
 519. *posuŋɔp*: ashes
 520. *pot*: large, thick bamboo variety
 521. *pɔl*: pigeon, dove: *Ducula* spp. (cf. *molut*)
 522. *pu*: sword grass, kunai grass
 523. *pua₁*: crocodile
 524. *pua₂*: fruit; flower; seed; testicles
 525. *puanŋke*: food (NOTE: possibly *pua-n ke*)
 526. *pul*: crack (?) (cf. *rIk*)
 527. *puln*: no, not, negative
 528. *puke*: giant clam, *Tridacna* sp.
 529. *pukrIn*: budding flower
 530. *pul*: moon
 531. *pulasI-*: (front part?); *pulasI-n kll* prow of a boat
 532. *pull-*: forehead
 533. *pulme*: kind of black wildfowl with a red crest
 534. *pulpulut*: sing
 535. *pulto*: stuck, sticking to

536. *pulu-n*: joint; node (as in bamboo or sugarcane); *pulu-kl-* knee; *pulu-n kusu mIna-* finger joint, knuckle; *pulu-n mIna-* elbow
537. *pun*₁: a vine which yields poison used to stun fish
538. *pun*₂: bottom part? (occurs in *pun mot* bottom part of a bed of eel grass) (NOTE: possibly /pu-n/)
539. *pun*₂: real, true
540. *puna*: west
541. *puni*: caulk a canoe, fill cracks with a sealant
542. *puŋu-n*₁: core?; *puŋu-n ke* heartwood of a tree
543. *puŋu-n*₂: husk; *puŋu-n puol* coconut husk (= *puŋu-n*₁?)
544. *puo*: pig
545. *puol*: coconut
546. *puon*: sea turtle
547. *pup*: bamboo basket trap for fish
548. *pupu*: grandfather
549. *pur*: to paint
550. *purik*: break wind, fart
551. *puro-*: navel
552. *purpura-n*: soft; *pwanat purpura-n* clay
553. *pursu-*: nose, snout, beak; *pursu-n puo* snout of a pig; *pursu-n mɔnmɔn* beak of a bird
554. *puru*₁-(container?); *puru ke* wooden bowl
555. *puru*₂-(thorn); *puru-n ke* thorn
556. *puru-n*: deep; *puru-n puln* shallow
557. *pusuk*: island
558. *pusuke*: conch shell, triton
- /pw/**
559. *pwak*: cave
560. *pwali*: natural spirit (NG Pidgin *marsalai*); *pwali silal* ancestral spirit (NG Pidgin *tambaran*); *pwal-pwali* mad, insane, possessed
561. *pwalirop*: wrong, in error (NOTE: possibly *pwali* spirit + *rop* distant, far away)
562. *pwanat*: earth
563. *pwanrit*: fishnet float
564. *pwatpwarIt*: trembling, shivering
565. *pwele-kl-*: foot/leg
566. *pweni*: coconut shell; bald spot on the crown of the head
567. *pwesit*: sleep in the eye, dried mucus in the corner of the eye
568. *pwi*: (?); *pwi-lia-* gums
569. *pwili*: mountain
570. *pwil-*: handle; *pwil-n maan* handle of an axe or adze
571. *pwipwirI*: stone (cf. *rI*)
572. *pwirirIn*: dorsal fin
573. *pwirpwire*: mud; swamp (NOTE: possibly identical to *pwIrI* wet)

574. *pwlk*: fruit bat, flying fox; *pwlk sum* insectivorous bat
 575. *pwlrI*: wet
/r/
 576. *ra-₁*: branch; *ra-n ke* branch of a tree
 577. *ra₂*: northeast; northeast wind
 578. *rakeli-n*: thin (of people or material objects)
 579. *rakI-*: rib
 580. *rakIn*: roof
 581. *ralke*: coconut oil
 582. *ram*: search, look for; *o ro ram sa?* what are you looking for?
 583. *ramat*: person, human being; *ramat som* body
 584. *ramet*: reef, dry reef (cf. *met*)
 585. *ramram*: fish at night by torchlight
 586. *ramraman*: ember
 587. *raŋ*: spider; *um te raŋ* spiderweb
 588. *raŋraŋ*: want, desire; choose
 589. *rara*: kind of red reef fish with large eyes, probably squirrelfish sp.
 590. *rei-₁*: leaf; *rei-n ke* leaf of a tree
 591. *rei-₂*: odour; *rei-n palawlk* stench, bad smell
 592. *rek₁*: hit; *rek mat* kill (cf. *ɔp*)
 593. *rek₂*: turn; *rek pelewek* turn the head
 594. *rekrek*: large green frog, bullfrog
 595. *rem*: lime spatula
 596. *rere*: star
 597. *ri₁*: dugong, sea cow
 598. *ri₂*: pull, as on a rope
 599. *rI*: stone (cf. *pwipwirI*)
 600. *rIk*: break; *rIk pul* split
 601. *rIkrlk*: to feel, of emotions or presentiments; to grope (as in the dark)
 602. *rIprIp₁*: itchy
 603. *rIprIp₂*: jellyfish
 604. *rIrIk*: swollen
 605. *roa*: coconut grater
 606. *roe*: edible reef fish with large body and small tail
 607. *roek*: scrape coconut meat from the shell (cf. *er*, *roa*)
 608. *rol*: stonefish
 609. *rola*: rollers for banking a canoe (loan: NG Pidgin *rola*)
 610. *ronu-n mara-*: tears (NOTE: cf. POC **ranum* 'fresh water'; recorded only as the word for 'tears')
 611. *roŋ*: hear; *roŋroŋ* listen
 612. *roŋas*: carry on the shoulder
 613. *roŋus*: nasal mucus, snot (cf. *aŋus*)

614. *rop*: distant, far away (cf. *awot*)
615. *roro*: wind from the interior of the island (blows at night)
616. *roro(u-)*: cold, as water, a place or the weather; *ponu roro* a cold place; *we rorou-n* cold water
617. *rou-*: egg; *rou-n nik* fish eggs, roe
618. *ruep*: two
619. *rult*: ask, inquire; ask for, beg for
620. *rujoul*: 20
621. *rujɔt*: 200
622. *rupeŋ*: day after tomorrow (cf. *tipeŋ*) (NOTE: possibly /ru-peŋ/)
623. *rutrut*: to hatch, emerge from an egg
- /s/*
624. *sa*₁: channel; *mara-sa* passage through the reef
625. *sa*₂: what?
626. *saek*: rub in (liniment, etc.)
627. *sak*₁: a tree of coastal swamps: the mangrove
628. *sak*₂: up; rise, ascend
629. *sakilipora*: earthquake
630. *sal*: path, road
631. *salim*: to sell (loan: NG Pidgin *selim*)
632. *sall*: to wash (as clothes, dishes)
633. *salpir*: lightning
634. *salum*: enemy
635. *sam*: outrigger float
636. *samanun*: how much/how many?
637. *samat*: kind of fish trap
638. *samil*: knife
639. *samwit*: trim the branches off a tree
640. *san*₁: to cut (meat, fish, rope) (cf. *om*)
641. *san*₂: old (of things) (cf. *marak*)
642. *saja-*: bifurcation, forking (cf. *sajesaj*)
643. *sajaul*: ten
644. *sajesaj*: starfish (cf. *saja-*)
645. *sap*: pull down a fruit from a tree
646. *sapa*: dehortative: don't
647. *sapol*: gold-lip pearl shell
648. *sasa*: year, season
649. *sepsep*: to weed a garden
650. *serip*: whet, sharpen (cf. *ani*)
651. *set*: sea, saltwater; *set rop* open sea (cf. *klm*)
652. *si*₁: down; descend; *o wa si pei* come down!
653. *si*₂: soup

654. *si*₃: (?); cf. *teŋteŋ*; *tok*
655. *sie*: who?
656. *siera*: green croton or cordyline (cf. *taro*)
657. *sike*: a fruit tree: *Morinda citrifolia*
658. *siksia-n*: sour
659. *sil*: to peel, as a banana; to remove the bark from a tree
660. *silal*: (?); cf. *pwali*
661. *silln*: taro sucker, plant shoot
662. *sim*₁: cold (to the touch?)
663. *sim*₂: satisfied, satiated, full, of the stomach (cf. *ur*)
664. *sin*: *sinsin* sun; *perelian sin* noon
665. *sinslp*: kinsman
666. *siŋa-*: vulva
667. *sioŋ*: hungry
668. *sip*: one
669. *sipe-n tupu-*: buttocks
670. *sipia-*: heart (cf. *kokora-*)
671. *sipua*: black palm (NG Pidgin: *waillimum*)
672. *sirip*: carry a load on a pole, of one or two men
673. *sisira*: kind of soft grass broom used only in the house
674. *sIt*: bunch, cluster (as of fruit)
675. *so*: sew (loan)
676. *soan*: reciprocate, return in kind
677. *sok*₁: suresighted, of someone who is good at throwing a spear, shooting, etc.
678. *sok*₂: rub a friction stick against wood to make fire; flaming up
679. *sok*₃: stab; *sok mat* stab to death
680. *sokar*: widow (cf. *kosar*)
681. *solat*: marlin, swordfish
682. *solpe*: house wall
683. *soŋ*: flee, run away
684. *soŋɔt*: 100
685. *sopwir*: to dazzle, as brilliant light in the eyes
686. *sorI*: to play, as children
687. *soron*: cape of land
688. *soso*: wind, breeze (cf. *aur*)
689. *sou-*: needle; *sou-n pwIk* needle made of the wingbone of a flying fox
690. *su*: comb
691. *suek*: push, shove
692. *suep*: digging stick (for gardening); husking stick (for coconuts) (cf. *os*)
693. *sui*: mature growth stage of fish earlier called *kolanŋ*, and *kesi*
694. *suk*: brackish; *we suk* brackish water
695. *suksuk*: traditional dance

696. *sul*: coconut frond (used for torches); *sul moŋu-n* dry coconut frond
 697. *suli*: to burn
 698. *sum*: grasshopper
 699. *sumsumua-n*: fat, corpulent (cf. *neneman*₂)
 700. *sun*: cover something up
 701. *suŋsuŋ*₁: elope
 702. *suŋsuŋ*₂: hunt, go hunting for game; when lost in the bush, to persist walking in one direction until found
 703. *sup*: peel, pare, remove the skin (as from a yam)
 704. *supu-*: base, foundation; *supu-n ke* base of a tree
 705. *sur*: kind of marine fish that swims in schools
 706. *susu-*: breast; *mara-n susu-* nipple ('eye') of the breast; *susu-n pein* female breast
 707. *sut*: breast? (cf. *kanl-*)
- /t/**
708. *ta*₁₋: alienable possessive marker: general possession (cf. *ka*₁)
 709. *ta*₂: relative pronoun; *nik samanun ta o kem* how many fish did you catch?
 710. *ta*₃: a tree with edible fruit: *Pometia pinnata*
 711. *tabak*: tobacco (loan: NG Pidgin *tabak*)
 712. *tak*: suddenly become unbalanced, as a canoe when the outrigger lifts at sea
 713. *talki*: heavy rope
 714. *tama-*: father
 715. *tamante*: why?; how?
 716. *tamina*: all
 717. *taŋini*: a fish, the Spanish Mackerel (loan: NG Pidgin *taŋini*)
 718. *tapo*: this
 719. *tara*₁: fish drive (cf. *la*)
 720. *tara*₂: slap; *tara orek mlno-m* slap with your hand
 721. *tarak*: climb (used when you are at the thing to be climbed (cf. *neŋ*)
 722. *tari*: draw, make designs, write
 723. *taro*: red croton or cordyline (cf. *siera*)
 724. *tasium*: to catch, as a ball
 725. *te*₁: faeces; defecate
 726. *te*₂: here
 727. *te*₃: to (directional), toward
 728. *tel*: rope, string
 729. *tele*: kind of small clam that lives on the reef (cf. *periup*)
 730. *тели*: missing, gone; to lose (as possessions); stray, get lost; *noru-n teli* orphan: *ŋl teli* I'm lost (cf. *a*₂)
 731. *teŋa-*: ear; *teŋ-a puln* he/she is deaf
 732. *telis*: a shore tree: *Terminalia catappa*
 733. *telln*: shelf; *telln kelln* firewood shelf
 734. *tellp*: three

735. *tenua*: belt
 736. *teŋ*: weep, cry; *teŋteŋ*: crying; sorry; *teŋteŋ si* pity, sympathy, love
 737. *tepelek*: run; blow (of the wind); *soso i ro tepelek* the wind is blowing (cf. *pirek*)
 738. *tere*: crawl
 739. *teri-*: younger sibling of the same sex (cf. *tio-*)
 740. *teterIp₁*: fan (for fanning the fire)
 741. *teterIp₂*: veranda
 742. *tia-*: abdomen
 743. *tiek*: pour out, spill out
 744. *tik*: to plait (mats or baskets)
 745. *tiktik*: to squat, hunker down, sitting on one's toes
 746. *tina-*: mother
 747. *tio-*: older sibling of the same sex (cf. *teri-*)
 748. *tip*: press hard; *e tip* press it hard!
 749. *tipenŋ*: tomorrow (cf. *rupenŋ*) (NOTE: possibly /ti-peŋ/
 750. *tipnon*: mosquito; sandfly
 751. *tirill*: cicatrix, scar
 752. *tirIŋ*: shell (generic)
 753. *tirok*: betel leaf
 754. *tIktIkpun*: kind of fish net spread in the passage through the reef
 755. *tIn*: fight; *tIn peri mwirIn ponu* war between villages
 756. *to₁*: a hardwood tree: *Intsia bijuga*
 757. *to₂*: (?); cf. *ək*
 758. *tok*: sit; *tok I si pae* sit down!; *toktok* sit; *toktok war* sit down
 759. *toll*: slitgong
 760. *tolɔt*: four
 761. *tolul-*: intestines
 762. *tolul*: stand up, rise from sitting; be in a standing position
 763. *toŋul*: wooden headrest; pillow
 764. *topol*: 50
 765. *toptoɔs*: to smoke something to preserve it (as fish)
 766. *toro*: (? (cf. *mut*)
 767. *touma-*: back (anat.)
 768. *touru-n*: short (in length)
 769. *tulna-n*: correct, true
 770. *tukna-*: mother's brother
 771. *tukoru-*: shoulder
 772. *tuktuk₁*: sit?; *tuktuk tak* seesaw (NOTE: possibly identical to /toktok/ (cf. *tok, tak*))
 773. *tuktuk₂*: sound, noise
 774. *tuluŋoul*: 30
 775. *tuluŋɔt*: 300
 776. *tunŋ*: punting pole, pole for moving a boat through shallow water

777. *tujuru-*: back of the head
 778. *tupu₁-*: ancestors
 779. *tupu₂*: (cf. *sipe-n*)
 780. *turI-*: blood; sap of a tree; *turI-n kul* breadfruit sap
 781. *turuep*: chew betel
 782. *turur*: ridgepole
 783. *tut*: to count
 /u/
 784. *uk*: to open, uncover
 785. *ultum*: tidal wave
 786. *um(a)-*: *um* house, dwelling; *uma-n mən mən* nest of a bird
 787. *uŋ*: sniff, smell
 788. *ur*: full, of a container (cf. *sim₂*)
 789. *ururu-n*: thick (as a plank)
 790. *usuk*: (?); *usuk mən* fireplough
 791. *ut*: draw water; bail out; *ut wei-n kll* bail water out of a canoe (cf. *aniek*)
 /w/
 792. *wa₁*: man's clothing (cf. *wo*)
 793. *wa₂*: walk, go; *o ro wa* you are walking/going; *wawa* walking; *o wawa* you are walking/going; *o wa si* come down!, *o wa sak* come up!, *o wa me* come here!
 794. *wak*: monitor lizard: *Varanus* sp.
 795. *war*: (possibly = *ar* or *uar*); cf. *tok*
 796. *wayI-n*: hard (of material objects)
 797. *we*: mango: *Mangifera indica*
 798. *weep*: afternoon; *weep kelipeŋ* evening
 799. *we(i)*: *we* fresh water; *wei-n kolo-* saliva; *wei-n puol* coconut water
 800. *wiri*: dolphin
 801. *wirIk*: around, encircling
 802. *wirIt*: cut (as yams for planting)
 803. *wo*: woman's traditional grass skirt (cf. *wa₁*)
 804. *woŋ*: I; me

ADDENDUM: SOME BALUAN VOCABULARY

001. *akakit*: to scratch (as an itch) (Lou: *ŋals, ŋapils*)
 002. *aman*: perhaps, maybe (Lou: *aman*); cf. *naman*
 003. *i*: he/she/it (Lou: *i*)
 004. *kamundow*: axe, adze (Lou: *maan*)
 005. *kanen*: meat, flesh; *kanen kow* bait (Lou: *kanI-*)
 006. *kapuen*: branches (Lou: *ra*)
 007. *kaw*: kava: *Piper Methysticum* (Lou: *ka*)
 008. *kay*: a tree from which wood is obtained for making fireploughs (Lou: *kar*)
 009. *kaypu*: heron (Lou: *karpu*)

010. *kel*: canoe (Lou: *kIl*)
011. *kelkel*: kingfisher (Lou: *kllkIl*)
012. *koki-n*: hot (Lou: *koki-n*)
013. *kop*: coral (Lou: *kɔp* lime)
014. *kow*: fishhook (Lou: *ko*); cf. *kanen*
015. *koyoy*: large red bee or wasp (Lou: *koror* bee (generic))
016. *kul*: breadfruit (Lou: *kul*)
017. *kulit*: steering paddle, rudder (Lou: *kulit*)
018. *lak*: go; verbal particle (Lou: *lak*)
019. *lalat*: stinging nettle, *Laportea* spp. (Lou: *lalat*)
020. *lem*: hole (Lou: *Ilm*)
021. *limlim*: 50 (Lou: *topol*)
022. *lipnipnon*: sandfly (Lou: *tipnon*)
023. *lol*: dirt on the skin that rolls off when rubbed
024. *malol*: tree with bell-shaped red fruit that has a large seed (Lou: *malul*)
025. *manuay*: sea eagle (Lou: *menua*)
026. *mapay*: know, recognise
027. *mapou*: mythical little people credited with the construction of ancient stoneworks on the island of Baluan
028. *mara-*: eye (Lou: *mara-*)
029. *misimIn*: 1000 (Lou: *mwasun sip*)
030. *mon*: pandanus sp. (Lou: *mon*)
031. *mutmut*: tree which yields a useful timber for the construction of houses, canoes, etc.
032. *muy*: coconut grater (Lou: *roa*); cf. *yey*
033. *mwalkow*: stonefish (Lou: *rol*)
034. *mwamway*: timber tree used in the construction of houses, canoes, etc.
035. *mwanene-n*: straight (Lou: *mwanInl-n*); cf. *salilon*
036. *mwasow*: cinnamon tree (Lou: *moso*)
037. *mwayen*: yam (Lou: *mwarIn*)
038. *nam*: plant similar to the ginger, the leaves of which are used for grass skirts
039. *naman*: perhaps, maybe (Lou: *aman*); cf. *aman*
040. *nap*: to taste (something) (Lou: *nap*); cf. *yem*
041. *narap*: flood (Lou: *loka, noro*)
042. *naw*: tree sp. (Lou: *ta*)
043. *nay₁*: edible seaweed (Lou: *na*)
044. *nay₂*: tree with red wood (probably *Pterocarpus indica*) (Lou: *na*)
045. *neŋ*: climb (used when the actor is not near the thing to be climbed) (Lou: *neŋ*); cf. *tarak*
046. *nik*: fish (Lou: *nik*)
047. *nin*: fight (generic) (Lou: *tlŋ*)
048. *noye-*: blood; sap; *noye-n kul* breadfruit sap (Lou: *ture-*)

049. *nɔpnɔp*: jealous; to gossip, slander, quarrel over a man (of women), quarrel over a woman (of men) (Lou: *nɔpnɔp*)
050. *ŋanorulɪp*: seven (Lou: *ŋanisellɪp*)
051. *ŋanoruluŋal*: 70 (Lou: *ŋanisuluŋoul*)
052. *ŋanosanjal*: 90 (Lou: *ŋanisajaul*)
053. *ŋanosip*: nine (Lou: *ŋanisip*)
054. *ŋanoyulɪp*: eight (Lou: *ŋaniruep*)
055. *ŋanoyuŋal*: 80 (Lou: *ŋaniruŋoul*)
056. *ŋapueŋ*: brown bird with white breast – stays on beach and eats fish; it is similar to the sea eagle, but smaller
057. *ŋauŋaua-n*: steam
058. *ŋunan*: five (Lou: *ŋuran*)
059. *ŋunɪp*: six (Lou: *ŋiniop*)
060. *paki*: on the verge of, about to (do something); *i la ro wop* it's flying, *i wop* it just flew away, *i paki wop* it is about to fly
061. *palesam*: shark (Lou: *pelesam*)
062. *paŋ*: to feed (Lou: *aŋ*)
063. *paŋot*: 400
064. *pata-*: log, beam; *pata-n kel* canoe platform (Lou: *pata-*; *pata-n kil*)
065. *paw*: canoe paddle (Lou: *paa*)
066. *pawuy*: 40 (Lou: *awl*)
067. *pein*: woman; female; *pein um* housewife (modern) (Lou: *pein*)
068. *pet*: wooden fork used to remove hot taro from a pot (Lou: *pes*)
069. *pilel*: to laugh (Lou: *pilel*)
070. *poloke-*: handle; *poloke-n kamundow* handle of an axe (Lou: *pwill-*)
071. *poyep*: evening (Lou: *weep kelineŋ*)
072. *poyow*: garfish (Lou: *panap*)
073. *puy*: crocodile (Lou: *pua*)
074. *pun*: moon (Lou: *pul*)
075. *pwek*: flying fox (Lou: *pwɪk*)
076. *salilon*: straight; cf. *mwanene-n*
077. *sam*: outrigger float (Lou: *sam*)
078. *sanjal*: ten (Lou: *sanjal*)
079. *say*: large variety of Malay apple: *Syzygium gomata* (Lou: *keik*)
080. *saysay*: horizontal board at the top of the sideboards of a canoe (used to keep punting poles and sails when the boat is not in use)
081. *sip*: one (Lou: *sip*)
082. *soay*: fish spear (Lou: *nap*)
083. *soksok*: flaming up (Lou: *sok*)
084. *soŋot*: 100 (Lou: *soŋot*)
085. *suk*: beach (Lou: *kone*)
086. *suy*: soup (Lou: *si*)
087. *talot*: four (Lou: *tolot*)

088. *tarak*: climb (used when the actor is at the thing to be climbed) (Lou: *tarak*); cf. *nej*
 089. *tolaw*: north wind (Lou: *ra*)
 090. *tuliam*: black and white sea snake that lives on the reef
 091. *tullp*: three (Lou: *tellp*)
 092. *tuluḡal*: 30 (Lou: *tuluḡoul*)
 093. *tuluḡot*: 300 (Lou: *tuluḡot*)
 094. *tum*: tidal wave (Lou: *ultum*)
 095. *um*: house (Lou: *um(a)-*)
 096. *waluḡal*: 60 (Lou: *ononḡoul*)
 097. *wop*: to fly (Lou: *op*)
 098. *wow*: woman's traditional grass skirt (Lou: *wo*)
 099. *yaum kaney*: mangrove crab (Lou: *alimaḡ*)
 100. *yem*₁: lime spatula (Lou: *rem*)
 101. *yem*₂: taste something on the tip of the tongue; cf. *nap*
 102. *yepyep*: itchy (Lou: *rIprIp*)
 103. *yet*: hit (Lou: *kup*₁, *op*, *rek*, *tara*)
 104. *yey*: scrape out a coconut (Lou: *er*); cf. *muy*
 105. *yeyey*₁: crawl (Lou: *tere*)
 106. *yeyey*₂: shave (Lou: *irir*)
 107. *yim*: dive (Lou: *nuek*)
 108. *yulp*: two (Lou: *ruep*)
 109. *yunḡal*: 20 (Lou: *ruḡoul*)
 110. *yunḡot*: 200 (Lou: *ruḡot*)

APPENDIX 1: LOU REFLEXES OF PROTO-OCEANIC RECONSTRUCTIONS

No.	POC	LOU	ENGLISH
001.	<i>ka</i>	<i>a</i>	and
002.	<i>pati</i>	<i>a-</i>	four
003.	<i>kamu</i>	<i>a-</i>	2p.non-sg.
004.	<i>na apaRat</i>	<i>aa</i> ⁷	west wind
005.	<i>na qalimaḡ</i>	<i>alimaḡ</i>	mangrove crab
006.	<i>mawap</i>	<i>al-ma</i> ⁸	yawn
007.	<i>paḡan</i>	<i>aḡ</i>	feed
008.	<i>paḡan-i</i>	<i>aḡa</i>	care for a pet
009.	<i>paḡus-i</i>	<i>aḡus</i>	blow the nose
010.	<i>karawin</i>	<i>arawI-n</i>	blue/green
011.	<i>pasok</i>	<i>as</i>	to plant

⁷ cf. Lenkau *ahay* 'north wind', Pak, Penchal, Nauna *ahay* 'west wind'.

⁸ cf. Lenkau *almaw*, Pak *almamaw*, Penchal, Nauna *mamaw* 'yawn'.

012.	<i>na kompa</i>	<i>asa-kom</i> ⁹	hermit crab
013.	<i>na qasawa</i>	<i>asoa-</i>	spouse
014.	<i>e</i>	<i>e</i>	predication marker
015.	<i>-aki</i>	<i>-ek</i>	verbal suffix
016.	<i>na Rampia</i>	<i>epi</i>	sago
017.	<i>kari</i>	<i>er</i>	scrape out a coconut
018.	<i>ira</i>	<i>i-</i>	3p.non-sg.
019.	<i>ia</i>	<i>i-</i>	3p.sg.
020.	<i>(ma)-pia</i>	<i>ia-n</i>	good
021.	<i>keli</i>	<i>Il</i>	dig
022.	<i>qenop</i>	<i>In</i>	lie down
023.	<i>na kawa</i>	<i>ka</i>	kava
024.	<i>ka-</i>	<i>ka-</i>	edible possession
025.	<i>mataqu</i>	<i>kal-moru</i> ¹⁰	right side
026.	<i>na kampe</i>	<i>kam</i>	useful vine fibre
027.	<i>na kanawe</i>	<i>kana</i>	seagull
028.	<i>na kananse</i>	<i>kanas</i>	a fish: mullet
029.	<i>na kani</i>	<i>kanI-</i>	meat, flesh
030.	<i>na katama</i>	<i>karam</i>	door, doorway
031.	<i>na katapa</i>	<i>karap</i>	frigate bird
032.	<i>na qate</i>	<i>karI-</i>	liver
033.	<i>na karamea</i>	<i>karmI-</i>	tongue
034.	<i>na qatop</i>	<i>kat</i>	sago leaf thatch
035.	<i>na kayu</i>	<i>ke-</i>	wood, tree
036.	<i>na kalia</i>	<i>keli</i>	a fish: grouper
037.	<i>na poŋi</i>	<i>keli-peŋ</i>	night
038.	<i>kaŋaRi</i>	<i>kene</i>	Canarium nut
039.	<i>na kantita</i>	<i>kerit</i>	putty nut
040.	<i>na kianso</i>	<i>kias</i>	outrigger booms
041.	<i>na kuRita</i>	<i>kit</i>	octopus
042.	<i>na tuRu</i>	<i>kIn-ru</i> ¹¹	housepost
043.	<i>na kawil</i>	<i>ko</i> ¹²	fishhook
044.	<i>kokoko</i>	<i>kokok</i>	to crow (rooster)
045.	<i>na qone</i>	<i>kone</i>	sand
046.	<i>na koŋa</i>	<i>koŋ</i>	fish sp.

⁹ cf. Penchal, Nauna *kai-kop*, Pak *kəp* 'hermit crab'.

¹⁰ cf. Pak *kalmara*, Nauna *kalmatu*, Penchal *kamatu* 'right side'.

¹¹ cf. Lenkau *tru*, Penchal *ru*, Nauna *tu*, Pak *kendu* 'housepost'.

¹² cf. Lenkau *kow*, Penchal *kanin kəw*, Nauna *kanən kəw* 'fishhook'.

047.	<i>na kasu/na qasu</i>	<i>kosu-</i>	smoke
048.	<i>na kotoŋ</i>	<i>kot</i>	spotted fish
049.	<i>na qalu</i>	<i>kəl</i>	barracuda
050.	<i>na kapuR/qapuR</i>	<i>kəp</i>	lime
051.	<i>na kaput</i>	<i>kəp-kəp</i>	fog, mist
052.	<i>na kuluR</i>	<i>kul</i>	breadfruit
053.	<i>na quloj</i>	<i>kulI-</i>	maggot
054.	<i>na kompuRu</i>	<i>kum</i>	monsoon
055.	<i>ŋkumuR</i>	<i>kum</i>	suck
056.	<i>na qupan</i>	<i>kup-kup</i>	grey hair
057.	<i>na kuron</i>	<i>kur</i>	clay cooking pot
058.	<i>na kururu</i>	<i>kurur</i>	thunder
059.	<i>na kutu</i>	<i>kut</i>	louse
060.	<i>na lawa</i>	<i>la</i>	kind of fish net
061.	<i>lako</i>	<i>lak</i>	go
062.	<i>na lala</i>	<i>lal</i>	trochus shell
063.	<i>na la-latoŋ</i>	<i>lalat</i>	stinging nettle
064.	<i>na laŋo</i>	<i>laŋ-laŋ</i>	a fly, flying insect
065.	<i>na lanse</i>	<i>las</i>	limestone
066.	<i>na laqia</i>	<i>lei</i>	ginger
067.	<i>na isaŋ</i>	<i>l-isa-</i>	gills
068.	<i>na lisa</i>	<i>lisa-</i>	nit, louse egg
069.	<i>lueki</i>	<i>luek¹³</i>	spit out
070.	<i>lumu</i>	<i>lum</i>	soft, ripe
071.	<i>na lumut</i>	<i>lum-lum</i>	moss, algae, seaweed
072.	<i>na loto</i>	<i>lot</i>	boil, abscess
073.	<i>-mu</i>	<i>-m</i>	2sg. possessor
074.	<i>mamata</i>	<i>mamat</i>	awake, wake up
075.	<i>mate</i>	<i>mat</i>	die, dead
076.	<i>na mata</i>	<i>mara-</i>	eye, face
077.	<i>mai</i>	<i>me</i>	come
078.	<i>na manuk</i>	<i>menu-a</i>	hawk, eagle
079.		<i>mən-mən</i>	bird
080.	<i>ma-qati</i>	<i>met</i>	dry, of reef
081.	<i>ma-tiruR</i>	<i>metir</i>	sleep
082.	<i>mimiR-i</i>	<i>mimi</i>	urinate
083.	<i>na nima</i>	<i>mIna-</i>	hand
084.	<i>mipi</i>	<i>mIp-mIp</i>	dream

¹³ cf. Mussau *lueki* 'vomit'. In Blust (1984) the Mussau form is assigned to **luaq* 'eject from the mouth', but this interpretation required the recognition of several irregularities that can now be avoided. Alternatively, Lou *luek* could reflect **luaq-aki*.

085.	<i>na masou</i>	<i>moso</i>	cinnamon
086.	<i>mu-mutaq</i>	<i>mumut</i>	vomit
087.	<i>na punti</i>	<i>mun</i>	banana
088.	<i>mapo</i>	<i>mwap</i>	heal
089.	<i>na mwansor</i>	<i>mwas</i>	bandicoot
090.	<i>masak</i>	<i>mwas</i>	cooked
091.	<i>na maRuqane</i>	<i>mween</i>	man; male
092.	<i>-ña</i>	<i>-n</i>	3sg. possessor
093.	<i>ni</i>	<i>-n</i>	genitive
094.	<i>na naRa</i>	<i>na</i>	tree with red wood
095.	<i>na nana</i>	<i>nana-</i>	kin term
096.	<i>ñapi</i>	<i>nap</i>	taste
097.	<i>na ikan</i>	<i>n-ik</i>	fish
098.	<i>na ñoro</i>	<i>noro</i>	flood
099.	<i>ñamuk</i>	<i>nɔmnɔm</i>	chew, swallow
100.	<i>na ñatu</i>	<i>nɔt</i>	tall timber tree
101.	<i>na natu</i>	<i>nɔtu-</i>	child
102.	<i>ñuñuR</i>	<i>nu</i>	bathe, submerge
103.	<i>na nunuk</i>	<i>nun</i>	banyan
104.	<i>-ŋku</i>	<i>-ŋ</i>	1sg. possessor
105.	<i>na ŋajan</i>	<i>ŋara-</i>	name
106.	<i>ŋau¹⁴</i>	<i>ŋa</i>	1sg. actor
107.	<i>na kanroRa</i>	<i>ŋora</i>	cuscus
108.	<i>ŋorok</i>	<i>ŋor</i>	grunt, growl, snore
109.	<i>na ŋusu</i>	<i>ŋusu-</i>	lip
110.	<i>i-ko</i>	<i>o</i>	2sg.
111.	<i>onom</i>	<i>ono-ŋoul</i>	six
112.	<i>Ropok</i>	<i>op</i>	to fly
113.	<i>konso</i>	<i>os</i>	husk coconuts
114.	<i>na layaR</i>	<i>pa-ll</i>	sail of a boat
115.	<i>mataq</i>	<i>pa-mat</i>	raw; uncooked
116.	<i>na panako</i>	<i>panak</i>	thief; steal
117.	<i>na panapa</i>	<i>panap</i>	garfish
118.	<i>papa</i>	<i>pap</i>	carry pick-a-back
119.	<i>na panran</i>	<i>par</i>	<i>Pandanus tectorius</i>
120.	<i>na pataj</i>	<i>para-</i>	stalk, stem, trunk
121.	<i>na paRi</i>	<i>pe</i>	stingray
122.	<i>na papine</i>	<i>pein</i>	woman; female

¹⁴ Many of the languages of the Solomons and Vanuatu reflect **i-nau*. A variant with initial velar nasal is supported by reflexes in the Admiralties and by some other languages of western Melanesia, such as Manam (with *ŋau*).

123.	<i>na pitaquR</i>	<i>piro</i>	a tree: <i>Calophyllum</i> sp.
124.	<i>na paluj</i>	<i>pɔl</i>	pigeon, dove
125.	<i>na panua</i>	<i>ponu</i>	village, large area
126.	<i>na potuŋ</i>	<i>pot</i>	large, thick bamboo
127.	<i>na puqaya</i>	<i>pua</i>	crocodile
128.	<i>na puaq</i>	<i>pua-</i>	fruit
129.	<i>na pulan</i>	<i>pul</i>	moon
130.	<i>na puna</i>	<i>pun</i>	vine used for fish poison
131.	<i>na puqun</i>	<i>pu-n</i>	base, foundation
132.	<i>na poRok</i>	<i>puo</i>	pig
133.	<i>na poñu</i>	<i>puon</i>	turtle
134.	<i>na pupu</i>	<i>pup</i>	kind of fish trap
135.	<i>na pupu</i>	<i>pupu-</i>	grandfather
136.	<i>na mputo</i>	<i>puro-</i>	navel
137.	<i>na potok</i>	<i>puru-</i>	thorn
138.	<i>na pweka</i> ¹⁵	<i>pwIk</i>	flying fox
139.	<i>na raqan</i>	<i>ra-</i>	branch
140.	<i>na raya</i>	<i>ra</i> ¹⁶	northeast wind
141.	<i>rama</i>	<i>ram</i>	search; watch for
142.	<i>ramaR</i>	<i>ram-ram</i>	fish by torchlight
143.	<i>na nramataq</i>	<i>ramat</i>	person, human being
144.	<i>na nrami</i>	<i>rem</i>	lime spatula
145.	<i>na ruyuj</i>	<i>ri</i>	dugong, sea cow
146.	<i>na ranum</i>	<i>ronu-</i>	fresh water
147.	<i>roŋoR</i>	<i>roŋ</i>	hear
148.	<i>rua</i>	<i>rue-p</i>	two
149.	<i>na sawaq</i>	<i>sa</i>	channel, passage
150.	<i>sapa</i>	<i>sa</i>	what?
151.	<i>sake</i>	<i>sak</i>	rise, ascend
152.	<i>na salan</i>	<i>sal</i>	path, road
153.	<i>na saman</i>	<i>sam</i>	outrigger float
154.	<i>na saŋa</i>	<i>saŋa-</i>	bifurcation, forking
155.	<i>na saŋasaŋa</i>	<i>saŋe-saŋ</i>	starfish
156.	<i>sa-ŋapuluq</i>	<i>sa-ŋaul</i>	ten
157.	<i>na tasik</i>	<i>set</i>	sea, saltwater
158.	<i>nsio</i> ¹⁷	<i>si</i>	down, descend

¹⁵ Grace (1969) has **mpeŋka*, but this reconstruction fails to account for the medial labiovelar in western Fijian *bekwa*. The present reconstruction has a similar shortcoming, but is justified by the agreement of Proto-Micronesian **pweka* 'bat' with reflexes of a similar form in many of the languages of the Admiralties.

¹⁶ cf. Penchal *ray* 'west wind'.

159.	<i>na suRuq</i>	<i>si</i>	juice, sap; soup
160.	<i>na sinaR</i>	<i>sin-sin</i>	sun
161.	<i>nsoka</i>	<i>sok</i>	stab
162.	<i>na saku</i>	<i>so-lat</i> ¹⁸	needlefish; marlin
163.	<i>sa-ŋaRatus</i>	<i>so-ŋot</i>	one hundred
164.	<i>na saRum</i>	<i>sou-</i>	needle
165.	<i>na suRa</i>	<i>su</i>	comb
166.	<i>na suluq</i>	<i>sul</i>	coconut frond torch
167.	<i>suli-a</i>	<i>suli</i>	burn
168.	<i>supi</i>	<i>sup</i>	peel, pare
169.	<i>na susu</i>	<i>susu-</i>	female breast
170.	<i>na tawan</i>	<i>ta</i>	a tree: <i>Pometia pinnata</i>
171.	<i>kita</i>	<i>ta-</i>	we (include.)
172.	<i>na tama</i>	<i>tama-</i>	father
173.	<i>na taqi</i>	<i>te</i>	faeces
174.	<i>na tali</i>	<i>tel</i>	rope, string
175.	<i>na taliŋa</i>	<i>teliŋa-</i>	ear
176.	<i>na talise</i>	<i>telis</i>	a tree: <i>Terminalia catappa</i>
177.	<i>taŋis</i>	<i>teŋteŋ</i>	cry, weep
178.	<i>na taji</i>	<i>teri-</i>	younger sibling
179.	<i>na tian</i>	<i>tia-</i>	abdomen
180.	<i>tike</i> ¹⁹	<i>tik-tik</i>	squat down
181.	<i>na tina</i>	<i>tina-</i>	mother
182.	<i>na toRas</i>	<i>to</i>	a tree: <i>Intsia bijuga</i>
183.	<i>toka</i>	<i>tok, tok-tok</i>	sit, settle down
184.	<i>tolu</i>	<i>tulu-ŋoul</i>	three
185.	<i>na toŋkon</i>	<i>tunŋ</i>	punting pole
186.	<i>na tumpu</i>	<i>tupu-</i>	ancestors
187.	<i>puk</i>	<i>uk</i>	to open, uncover
188.	<i>na Rumaq</i>	<i>um(a)</i>	house
189.	<i>qutup</i>	<i>ut</i>	draw water
190.	<i>na wai</i>	<i>we</i>	mango
191.	<i>pa-Rapi</i>	<i>weep</i>	afternoon
192.	<i>na waiR</i>	<i>we(i)</i>	fresh water
193.	<i>na uriap</i>	<i>wiri</i>	dolphin

¹⁷ Doublet of POC **sipo*, based on Gitua *siotzio* and the present form.

¹⁸ cf. Lenkau, Penchal, Nauna *colay*, Pak *tolay* 'marlin, sailfish'.

¹⁹ cf. Lakalai *tike* 'walk on tiptoes; have the heels or, in sitting, buttocks off the ground', Tongan *sike* 'squat, sit on the heels', Rennellese *tike-tike* 'squat, as on the heels'. Biggs (1965) posited Proto-Eastern Oceanic **tiko* 'defecate, squat down', but appears to have conflated distinct cognate sets.

194. *-Vna* *-n* attributive suffix

Baluan reflexes of etyma not cited above

001. *lima* *lim-lim* five
 002. *tokalaur* *tolaw* north wind

REFERENCES

- Biggs, B.**, 1995, Direct and indirect inheritance in Rotuman. *Lingua* 14:383–415.
- Bloch, B.**, 1941, Phonemic overlapping. *American speech* 16:278–184. (Reprinted in Joos, ed. 1957:93–96).
- Blust, R.**, 1978, *The Proto-Oceanic palatals. Memoir* 43. Wellington: The Polynesian Society.
- 1981, Some remarks on labiovelar correspondences in Oceanic languages. In Jim Hollyman and Andrew Pawley, eds *Studies in Pacific languages and cultures in honour of Bruce Biggs*, 229–253. Auckland: Linguistic Society of New Zealand.
- 1984, A Mussau vocabulary, with phonological notes. *In papers in New Guinea Linguistics* No.23: 159–208. *PL*, A–69.
- Dempwolff, O.**, 1905, Beiträge zur Kenntnis der Sprachen von Deutsch-Neuguinea. *Mitteilungen des Seminars für orientalische Sprachen*, 8:182–254.
- Friederici, G.**, 1912, *Wissenschaftliche Ergebnisse einer amtlichen Forschungsreise nach dem Bismarck-Archipel im Jahre 1908. II. Beiträge zur Völker- und Sprachenkunde von Deutsch-Neuguinea. Mitteilungen aus den Deutschen Schutzgebieten.* Berlin.
- Grace, G.W.**, 1969, A Proto-Oceanic finder list. *Working Papers in Linguistics* 1/2:39–84. Honolulu: Department of Linguistics, University of Hawaii.
- Harrison, S.P.**, 1982, Proto-Oceanic *aki(ni) and the Proto-Oceanic periphrastic causative. In Amran Halim, Lois Carrington, S.A. Wurm, eds *Papers from the Third International Conference on Austronesian Linguistics*, vol.1:179–230. *PL*, C–74.
- Healey, A.**, 1976a, History of research in Austronesian languages: Admiralty Islands area. In Wurm, ed. 1976:223–231.
- 1976b, Austronesian languages: Admiralty Islands area. In Wurm, ed. 1976:349–364.
- Joos, M.**, ed., 1957, *Readings in linguistics* (4th edition). Chicago: The University of Chicago Press.
- Key, C.A.**, 1969, The identification of New Guinea obsidians. *Archaeology and Physical Anthropology in Oceania* 4:47–55.
- Luomala, K.**, 1951, *The Menehune of Polynesia and other mythical little people of Oceania.* Bernice P. Bishop Museum Bulletin 203. Hawaii.
- Martinet, A.**, 1952, Function, structure and sound change. *Word* 8:1–32.
- Mead, M.**, 1930, *Growing up in New Guinea: a comparative study of primitive education.* New York: William Morrow.
- Nevermann, H.**, 1934, *Admiralitäts-Inseln.* In G. Thilenius, ed. *Ergebnisse der Südsee-Expedition 1908–1910*, IIA, vol.3. Hamburg: Friederichsen, de Gruyter.
- Pawley, A.K.**, 1973, Some problems in Proto-Oceanic grammar. *Oceanic Linguistics* 12:103–188.
- Rivers, W.H.R.**, 1914, *The history of Melanesian society* (2 vols). Cambridge: Cambridge University Press.
- Ross, M.D.**, 1988, *Proto Oceanic and the Austronesian languages of western Melanesia.* *PL*, C–98.
- Wurm, S.A.**, ed., 1976, *New Guinea area languages and language study*, vol.2: *Austronesian languages.* *PL*, C–39.
- Wurm, S.A. and S. Hattori**, eds, 1981, *Language atlas of the Pacific area*, Part I: *New Guinea area, Oceania, Australia.* Canberra: The Australian Academy of the Humanities, in collaboration with the Japan Academy.
- Z'graggen, J.A.**, compiler, 1975, Comparative wordlists of the Admiralty Islands collected by W.E. Smythe. *Work Papers in New Guinea Linguistics* 14:117–216.

