

# 30 *The role of the Solomon Islands in the first settlement of Remote Oceania: bringing linguistic evidence to an archaeological debate*

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## 1 Introduction

This paper looks at some problematic aspects of the history of human settlement of the Solomon Islands over the last three millennia.<sup>1</sup> The initial spread of Oceanic languages into Remote Oceania<sup>2</sup> can be strongly associated with the movement into the Reefs/Santa Cruz group and Vanuatu, at about 3200–3100 BP, of bearers of the archaeological culture known as Lapita. Lapita is first attested in the Bismarck archipelago and on geographic grounds one would expect the islands in the main Solomons group (extending from Bougainville to Makira) to have been stepping stones for the Lapita expansion eastwards into Remote Oceania. Thus, archaeologists have been puzzled as to why no early Lapita archaeological sites been found in the main Solomons group, and why almost no pottery-bearing sites of any kind have been found in the southeastern part of the group. Does this mean that the main Solomons group was bypassed in the initial Lapita colonisation of Remote Oceania, as was suggested by Sheppard and Walter (2006), or is the archaeological record too fragmentary to allow any firm conclusions to be drawn?

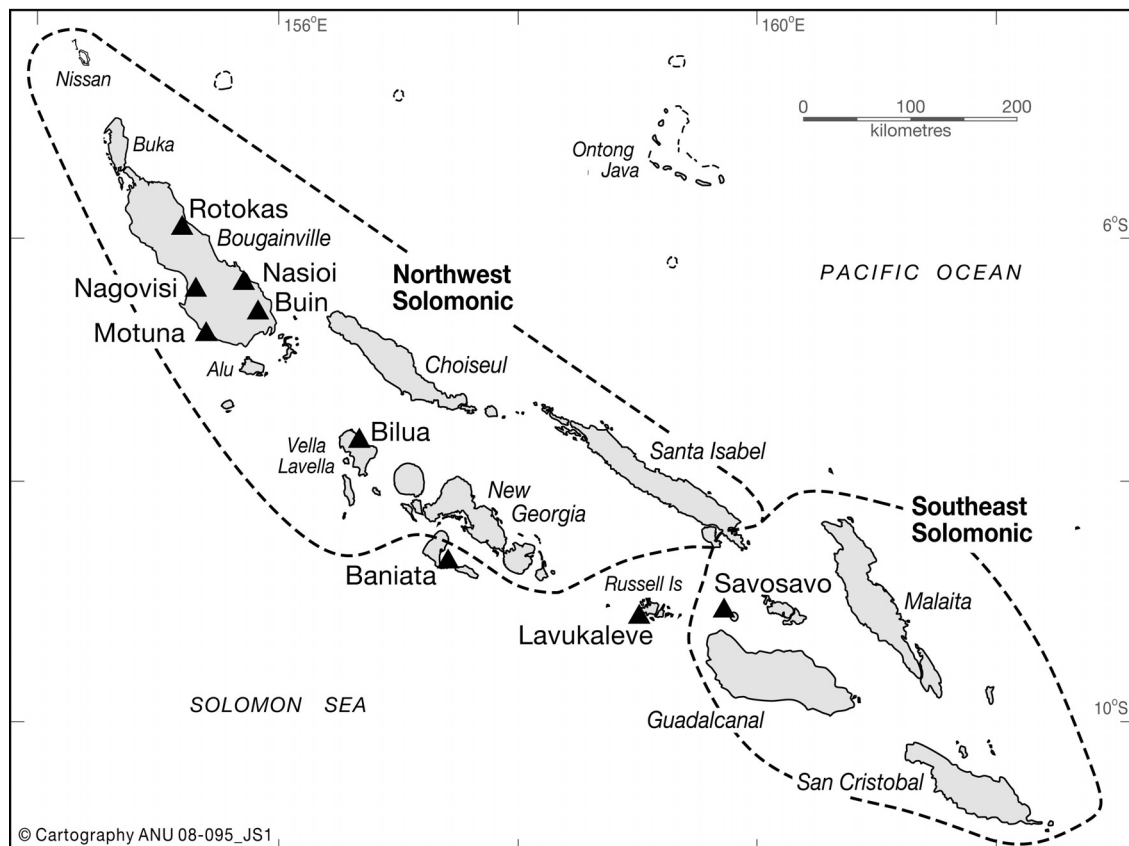
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<sup>1</sup> I am delighted to contribute to a volume honouring Bob Blust's distinguished and diverse contributions to Austronesian historical linguistics and culture history. An earlier version of this paper was presented at the 7<sup>th</sup> International Conference on Oceanic Linguistics, Noumea, July 2007. The paper has benefited from discussions with Roger Green, Stuart Bedford, Bethwyn Evans, Frank Lichtenberk, Malcolm Ross, Matthew Spriggs and Darrell Tryon.

<sup>2</sup> Whereas 'Near Oceania' consists of New Guinea, the Bismarck Archipelago and the main Solomons Archipelago (ending at Makira), which form a chain of largely intervisible islands, 'Remote Oceania' consists of the remaining, much more widely dispersed islands and island groups of the SW and Central Pacific (chiefly those of Vanuatu, New Caledonia, Fiji, Micronesia and Polynesia).

I will address three questions concerning the history of the Oceanic languages of the Solomons that have a bearing on this issue:

- (1) Given that there is no major geographic barrier that would account for an early and sharp separation of these subgroups, what circumstances created the major subgroup boundary that runs through the centre of the Solomons archipelago, separating Northwest Solomonic from Southeast Solomonic?
- (2) How long have the Northwest and Southeast Solomonic groups been in their present locations?
- (3) Why have the Northwest Solomonic languages replaced a much higher percentage of Proto Oceanic core basic vocabulary items than Southeast Solomonic languages?



**Figure 1:** Boundaries of Northwest Solomonic and Southeast Solomonic and locations of non-Austronesian languages

## 2 The Solomons archipelago

Because the geographic span of the main group of Solomon Islands differs markedly from that of the nation called ‘the Solomon Islands’ I will refer to the former as ‘the Solomons archipelago’ or ‘the main Solomons group’. The archipelago consists of a chain of closely spaced large islands that extends for about 1000 km from northwest to southeast (see Figure 1). The main islands are quite large: Bougainville is about 10,000 square

kilometres, Guadalcanal 6500, Makira 4600, Malaita 3900, Choiseul 3000, and New Georgia 2100. All the large islands are mountainous and heavily forested. Typically there is a narrow coastal strip of strand forest of sandy soil with light forest of salt-resistant trees and patches of mangrove and sago swamp. Man-made grasslands occur in some areas, most extensively in the plains of northern Guadalcanal. In several regions there are extensive fringing coral reefs and lagoons carrying a rich biota.

It will be convenient to distinguish between a Northwest Solomons region, including Buka, Bougainville, Choiseul, the New Georgia group and Santa Isabel, and a Southeast Solomons region, including Guadalcanal, Florida, Malaita and Makira. Buka and Bougainville are separated from New Ireland by an ocean gap of 180 km, with only the small island group of Nissan (aka Nehan or the Green Is.) in between. Some 400 km of open sea separate Makira from the small Santa Cruz-Reef Is. group to the east.

Humans reached New Guinea, New Britain and New Ireland by 40,000 years ago and by about 30,000 years ago had settled Greater Bougainville in the NW Solomons (Kirch 2000; Spriggs 1997; Specht 2005) at a time of lower sea levels, when the island of Bougainville extended from what is now Buka almost to Guadalcanal. However, the Solomons archipelago remained the limit of human expansion into the Southwest Pacific until just over 3000 years ago. Until then it appears that people lacked sailing craft capable of making the long crossings to islands further east, against the prevailing trade winds and currents.

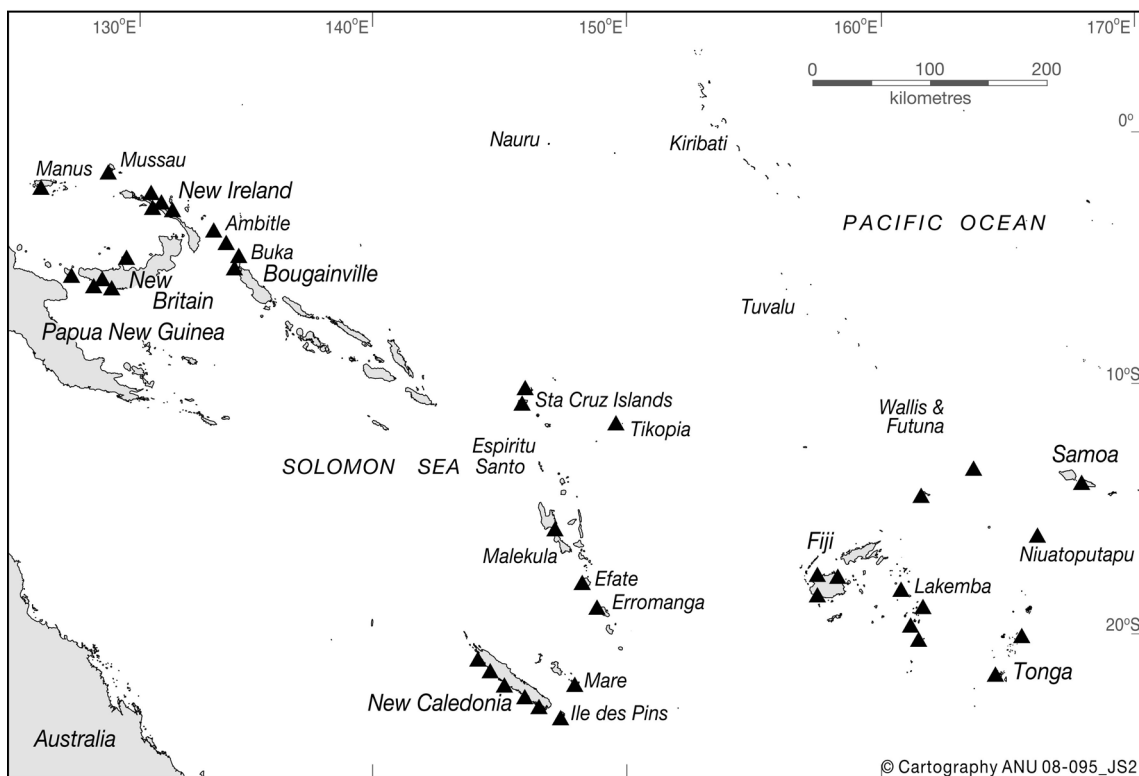
### **3 The spread of Lapita as a marker of the dispersal of Oceanic languages**

In the second half of the 2<sup>nd</sup> millennium BC people bearing a new language and technology entered Northwest Melanesia. These were fishermen–farmers from Southeast Asia, who by 3400–3300 BP had settled in various parts of the Bismarck Archipelago, chiefly on small islands, where they established the first nucleated villages known in Melanesia (Green 2003; Kirch 2000; Specht 2005; Spriggs 1997; Summerhayes 2000, 2001). The most visible archaeological marker of this Neolithic culture is its highly distinctive decorated pottery, with elaborated motifs impressed by dentate-stamping. In sites representing permanent habitations the decorated pottery is part of a cluster of distinctive elements: settlement patterns, rectangular houses raised in stilts, an array of ceramic vessel forms, mainly undecorated, fishing gear, adze/axe kit, shell ornaments and evidence of long distance exchange of obsidian. The pottery tradition is known as Lapita, after which the cultural complex as a whole is named. Changes in the styles and proportions of decorated pots lend themselves to the construction of a fine-grained seriation chronology which can supplement C<sup>14</sup> dating of Lapita assemblages. Many elements of the Lapita complex have close parallels in Neolithic cultures that appear in Taiwan, the Philippines and the Marianas and parts of Indonesia in the early to mid 2<sup>nd</sup> millennium BC (Bellwood 1997; Bellwood and Dixon 2005; Green 2003; Kirch 1997, 2000).

The sudden appearance of this distinctive cultural complex in the Bismarck Archipelago can be strongly associated with the arrival there of Austronesian languages, and specifically with the separation of the large Oceanic branch from its nearest relatives, spoken in the Cenderawasih Bay area at the western end of New Guinea, and in South Halmahera (Blust 1978a). Oceanic is a well-defined subgroup which contains all the Austronesian languages of Melanesia except the western end of New Guinea, plus those of Polynesia and (with two exceptions) Micronesia. The lexicon of Proto Oceanic has been

reconstructed in considerable detail (Ross et al. 1998–2008, in prep.) and, when compared with the lexicon reconstructed for Proto Malayo-Polynesian (Blust 1995) shows a fairly high degree of continuity in terminologies for various domains of material culture and social organization (Green 2003; Pawley 2007).

The earliest attested phase of Lapita in the Bismarcks is known as Early Western Lapita, which appears between 3400 and 3300 BP. Around 3200 BP or soon after bearers of the Early Western Lapita culture moved east of the Bismarck Archipelago into Remote Oceania. The Reefs/Santa Cruz group, some 400 km east of Makira, contains one of the earliest and most extensively excavated Lapita sites in Remote Oceania. Site SZ-8R, with initial occupation dated to between 3200–3100 BP (Green 1991, 2003, pers. comm.) is among 19 Lapita sites in Reefs/Santa Cruz. For some time the Lapita occupants of this group kept importing considerable quantities of obsidian from Talasea in New Britain, an indication that initially they maintained trade links with the homeland. Some Talasea obsidian appears in early Northern Vanuatu Lapita sites, a strong indication that this region was settled at about the same time as Reefs/Santa Cruz (Bedford 2003, Bedford et al. 2006). By 3050 BP, Lapita people had occupied New Caledonia (Sand 2001) and Fiji (Nunn et al. 2004). By 2950 BP they were in Tonga (Burley et al. 2007) and by 2800–2700 BP they were in Samoa and some of the other islands in the Tonga–Samoa voyaging corridor (Kirch 1997; Green 2003). In each of these island groups in Remote Oceania the distinctive Lapita decorated ware disappeared within a few centuries of first settlement but in most regions some other features of the Lapita cultural complex including, as a rule, the plain ware ceramic vessel forms, continued for much longer.



**Figure 2:** The distribution of important Lapita sites (after Spriggs 1995:113)

It appears that there was a pause of about 200–300 years in the Bismarcks before bearers of the Lapita culture moved eastwards into Remote Oceania. The final stages in the development of Proto Oceanic (POc) can be associated with this pause (Blust 1998; Pawley 2003a, 2008). The initial eastward migrations of Lapita people mark the spread of Oceanic languages into Remote Oceania. All but two of the 180–190 indigenous languages spoken in Remote Oceania at time of first European contact belong to the Oceanic subgroup. The two exceptions are two languages on the western margin of Micronesia, Chamorro and Palauan; both are Austronesian languages that probably stem from movements out of the Philippines or Indonesia before 3000 BP

#### **4 Archaeological debates over Lapita settlement of the Solomons archipelago**

Given the position and size of the main Solomons group one would expect colonies to have been established there during the first Lapita movements eastward from the Bismarcks. However, although Early Western Lapita sites have been found immediately to the west of the Solomons, on Nissan (3200 BP, Summerhayes 2000, 2001), and slightly later sites on Buka (3000 BP, Wickler 2001), no Lapita sites associated with the initial Lapita expansion of 3200–3000 BP have so far been identified in the main Solomons group east of Buka. The nearest approximations are various sites in the New Georgia group, chiefly in the Roviana Lagoon, which contain the remnants of stilt-house settlements built over the intertidal zone. These are evidenced by residues of potsherds and some stone tools in shallow water, one to two metres below the surface (Felgate 2001, 2003, 2007). The Roviana Lagoon sites are dated by seriation chronologies of ceramic styles as being late Lapita, around 2700–2400 BP.

The absence of Early Western Lapita pottery from the NW Solomons, and the almost complete absence of any pottery finds in the SE Solomons, has led to a lively debate among archaeologists about the role of the Solomons archipelago in the early Lapita settlement of Remote Oceania. Two competing sets of proposals have emerged, which I will refer to as the ‘early settlement’ and ‘late settlement’ hypotheses.

In a recent review of Solomons archaeology Sheppard and Walter (2006) put forward the following proposals:

(i) The early Lapita colonists leapfrogged the main Solomons group, moving directly to the Reefs/Santa Cruz Is. about 3200–3100 BP. (A similar proposal had been adumbrated by Roe 1993.) For a time the Reefs/Santa Cruz settlers maintained long distance obsidian trade connections with the Bismarck archipelago, as well as obtaining chert from Malaita or Ulawa and basalt for adzes from southeast Guadalcanal.

(ii) Several centuries later, ca 2700 BP, the NW Solomons were settled by Austronesian-speaking, farming, pottery-making populations who moved from the west (the Bismarcks) and whose languages in time became dominant over the non-Austronesian autochthonous languages.

(iii) More tentatively, they propose that Austronesian speakers did not settle the southeastern islands in the main Solomons chain (Guadalcanal, Malaita and Makira) until some 800–1000 years after the initial Lapita dispersal into Remote Oceania. Around 2300–2200 BP, these islands were settled by an a-ceramic, farming population coming from the Reefs/Santa Cruz group and/or Utupua and Vanikoro, where manufacture of pottery ceased about 2100 BP.

This scenario would of course explain the sharp linguistic boundary between the NW and SE Solomonic groups.

Felgate (2001, 2003, 2007) takes a more cautious view regarding the absence of early Lapita sites in the NW Solomons. He suggests that early Lapita occupation of the NW Solomons is likely to have been low density, because of the presence there of established non-Austronesian populations and perhaps because of malaria. He points out that archaeological surveys there have been mainly terrestrial, whereas Lapita settlements are likely to have consisted of stilt houses built over the edge of the lagoon, a pattern attested for late Lapita sites in the New Georgia region, as it is for a number of regions further west (Kirch 2000; Spriggs 1997). Felgate (2001:57) favours the view that:

a pattern of intertidal settlement [in the Lapita period] has created the dual conditions of low site preservation/visibility and unexpected site location. Implicit in this proposition is a suggestion that early Lapita may have been continuously distributed across the Near Oceanic Solomon Islands in the past, as a shifting network of interacting settlements, located exclusively over the tidal zone, of which we are likely to find only rare traces in settings favourable to their preservation.

Felgate's critics feel that he overstates the domination of intertidal sites in the Lapita settlement of the New Georgia group. Sheppard has recently reanalysed the geomorphic context of inter-tidal sites there and concludes that it is unlikely that an Early Lapita record has been obliterated by submersion (Sheppard pers. comm.). Insofar as there is a consensus on this matter, it is that the earliest material in the Roviana Lagoon dates to around 2700 BP and represents the late end of dentate-stamped pottery, after which decorations on pots were made using a different technique.

Archaeological surveys of the SE Solomons from Guadalcanal to Makira have so far found almost no ceramics. This stands in sharp contrast with the NW Solomons, where pot sherds are highly visible on all the main islands, and it is clear that pots continued to be made long after the Lapita period. The pollen record for Guadalcanal gives evidence of intensive slash and burn horticulture there beginning around 2300–2200 BP (Haberle 1996; Roe 1993) and the faunal record also points to increased predation and extinction of larger species about that time (Spriggs 1997). Comparing these indicators of the first appearance of large scale shifting agriculture in Guadalcanal with earlier dates for similar signs in Aneityum and New Caledonia, Spriggs (1997:149) comments '[t]he nearly 800 year time lag on Guadalcanal and the lack of pottery in any of the sites so far investigated suggests that Austronesian settlement here was delayed until pottery was no longer in use in the region'.

However, there is reason to think this suggestion is premature. The best surveyed of the main islands in the SE Solomons is Guadalcanal but even there the archaeological record is poor. Malaita remains virtually an archaeological blank. A few small excavations have been carried out on Makira, Uki and Ulawa, yielding no pottery or early dates. The solitary exception is a rock shelter on Santa Ana which contained plain (undecorated) ware ceramics of late Lapita type, dating to about 2900 BP (Green pers. comm.).

While it seems clear that the inhabitants of the SE Solomons have not made pottery during the past 2000 years, the scarcity of Lapita pottery in a region with a poor archaeological record should not necessarily be taken to indicate that the rest of the Lapita cultural complex was also absent. While pottery is an invaluable aid in finding sites and in dating assemblages, it was just one component in a rich Lapita cultural tradition. Phases 2 and 3 of Vatulama Posovi, a cave site in the Poha Valley, near Honiara on Guadalcanal,

have yielded an assemblage of artefacts dated to around 3250–2900 BP and 2750–2550 BP which has been described as ‘Lapita without pots’ (Roe 1993). Around 3000 BP the Lapita settlers of Reefs/Santa Cruz were importing basalt for adzes from Marau Sound on SE Guadalcanal, chert for blades from Ulawa and/or Malaita and temper for pots from part of the Florida group, off N. Guadalcanal, and it would be strange if they did not establish settlements or interact with sister Lapita colonists in these places. The Santa Ana rock shelter site is presumably the byproduct of one such settlement.

In the sections that follow I will discuss some linguistic evidence that bears on these archaeological issues.

## **5 The language groups of the Solomons Archipelago**

### **5.1 Overview**

In many cases dialect chaining makes it hard to draw language boundaries without some degree of arbitrariness, but on a conservative estimate there are 60 or so mutually-unintelligible languages spoken in the Solomons archipelago. Some 50 of these languages belong to the large Oceanic branch of Austronesian. Another 12 or so are non-Austronesian (‘Papuan’) and fall into at least four different families that cannot, on present evidence, be convincingly shown to share a common origin (Ross 2001; Dunn et al. 2002, 2005).

Except on Bougainville, where they occur in coastal pockets, the Oceanic languages in the Solomons have a continuous distribution over all the habitable parts of the larger islands. Two major subgroups of Oceanic are represented there: Northwest Solomonian and Southeast Solomonian. The boundary between them runs roughly north–south between Santa Isabel in the west, and Guadalcanal and Malaita in the east. SE Solomonian languages are spoken on Guadalcanal and the Florida group, Makira, and Malaita. A single SE Solomonian language, Bugotu, is spoken on the south-eastern tip of Santa Isabel, where it is clearly represents an intrusive settlement from the Florida group or Guadalcanal within the last 1000 years. NW Solomonian comprises the Oceanic languages of Santa Isabel (other than Bugotu), the New Georgia group, Choiseul, Bougainville, Buka and the small Nissan island group which lies between New Ireland and Buka.

The few surviving non-Austronesian languages in the Solomons Archipelago are plainly the residue of a larger number that were present in this region when speakers of Oceanic Austronesian arrived. The surviving languages are genetically very diverse (Ross 2001; Dunn et al. 2002). According to Ross (2001), Bougainville contains two families of non-Austronesian languages with four members each. There are two non-Austronesian languages in the New Georgia group and two occupying the small islands of Russell and Savo to the northwest of Guadalcanal.<sup>3</sup>

Presumably, non-Austronesian languages were once spoken on all the main Solomon islands at least as far east as Guadalcanal, and possibly on Malaita and Makira as well. The pre-Austronesian populations were probably mobile foragers and this mode of life, in combination with the rugged and densely forested nature of the islands, and the lack of large terrestrial animals to hunt and, in some islands, the scarcity of fringing reefs, would have severely limited their numbers and distribution.

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<sup>3</sup> The non-Polynesian languages of Santa Cruz, and Äiwoo of the Reefs, have sometimes been classified as non-Austronesian but recent work has strengthened the case made in Lincoln (1978) that they are Oceanic languages that have undergone an unusual amount of phonological and morphological change. It is likely that they fall together in a single first-order subgroup of Nuclear Oceanic (Ross and Næss 2007).

## 5.2 Southeast Solomonic and its subgroups

### 5.2.1 Southeast Solomonic

The existence of a SE Solomonic (SES) subgroup is uncontroversial. Milke (1958) and Grace (1959) observed that this group is defined by the merger of POc \*l and \*R, an unusual merger in the Austronesian family. A larger body of morphological innovations defining SE Solomonic was set forth in Pawley (1972), e.g. development of a special suffix marking inanimate 3<sup>rd</sup> person plural pronouns: Proto SES \*-ki (direct object), \*-ni possessor; replacement of POc preverbal subject markers \*ku '1SG', \*ko '2SG', \*na '3SG' by Proto SES \*u, \*o and \*e; replacement of the POc possessive pronoun \*-da '1inc.pl.' by the independent form \*-kita, used as a possessive.

However, the quantity of shared innovations defining SES is quite small. This indicates that the period of unified development of SES after it diverged from other Oceanic languages was no more than a few centuries, after which its two primary subgroups, Makira-Malaitan and Guadalcanal-Gelic, began to diverge.

### 5.2.2 Makira-Malaitan

Makira-Malaitan (MkMI) consists of some 13 languages. Seven are spoken on Malaita and its satellites (including Ulawa and Ugi, lying between Malaita and Makira), four on Makira, and two at the eastern end of Guadalcanal (the latter are both clearly intruders from Malaita or Makira). This subgroup is marked by a number of changes to the Proto SES sound system (Lichtenberk 1988, 1994; Pawley 1972; Tryon and Hackman 1983): \*t was lost in Proto MkMI, \*s > \*t except before high vowels, \*k > glottal stop in most cases and there was accretion of a prothetic consonant \*y- before initial \*a. There are also a few irregular changes in particular grammatical forms. POc \*-kita '1inc.pl.' in Proto MkMI reduced to \*-ka (presumably via \*kia, after regular loss of \*t). The Pre MkMI 1st inclusive trial form \*kita-tolu reduced to \*kaolu, and the 1<sup>st</sup> exclusive trial form reduced from \*kami-tolu to Proto MkMI \*ʔamelu.

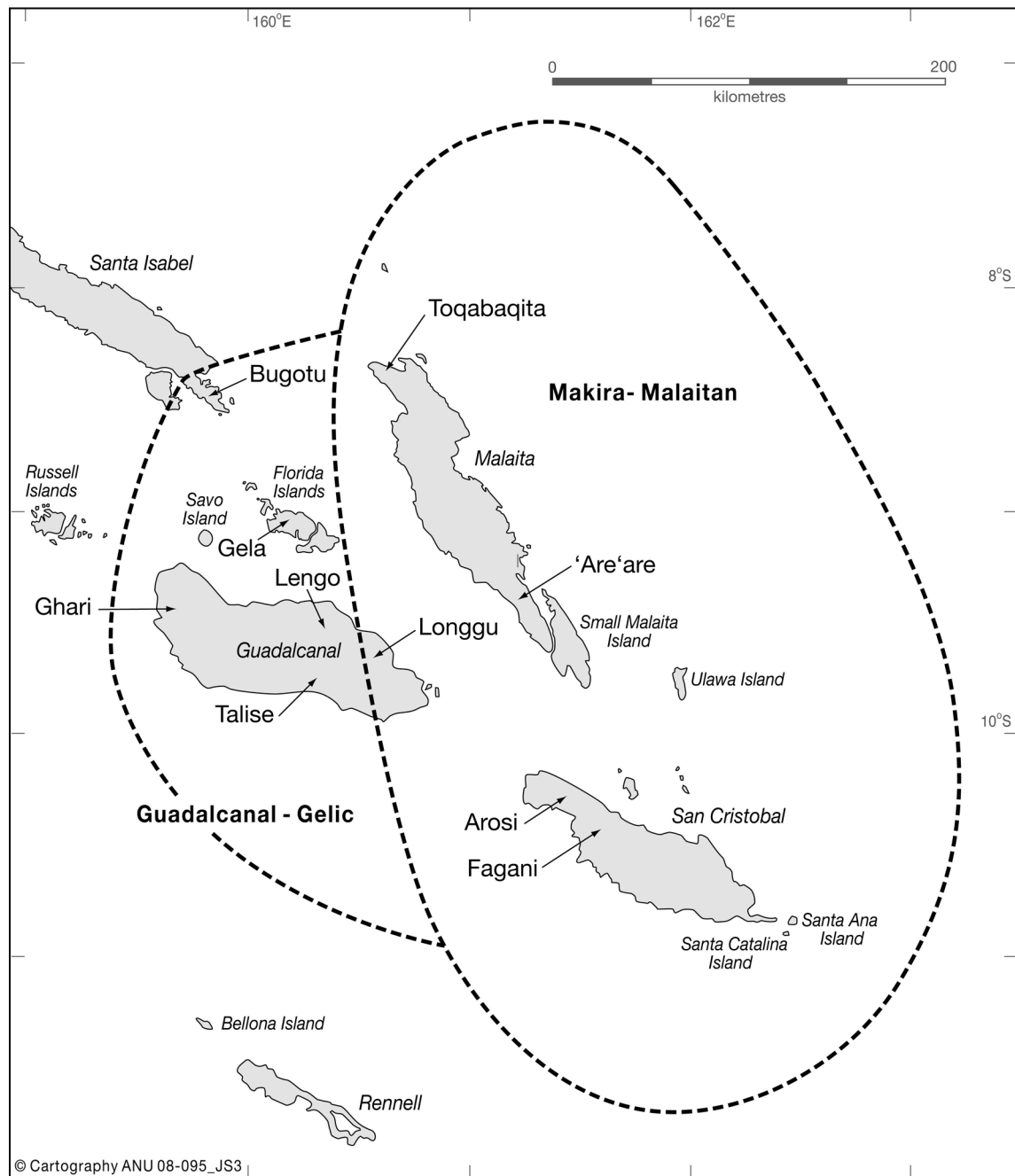
From the pattern of overlapping isoglosses it is pretty clear that Proto MkMI persisted for many centuries as a chain of dialects extending over both Malaita and Makira (Lichtenberk 1988, 1994). While the geographic extremes in this chain began to diverge very early they remained connected by intermediate dialects. (See §8 for further discussion.)

### 5.2.3 Guadalcanal-Gelic

Guadalcanal-Gelic (GG) contains about seven languages. On Guadalcanal (where dialect chaining complicates the count) there are perhaps five languages. There is one (Gela) in the Florida group and another, Bugotu, is spoken at the eastern end of Santa Isabel.

Two phonological innovations mark GG: POc \*w is lost in word initial position; \*m and \*mw merge as *m*. There are a few morphophonemic or irregular phonological changes, e.g. when certain disyllabic roots are reduplicated the second consonant drops out in the first root, e.g. Gela *taitahi* 'salt' instead of \**tahitahi*. Proto SES \*no- 'marker of general possessive relation' irregularly became Proto GG \*ni-. It is clear that Proto GG was spoken on Guadalcanal and probably also on Florida.





**Figure 3:** The primary subgroups of SE Solomonic, with languages mentioned in text

### 5.3 Northwest Solomonic and its subgroups

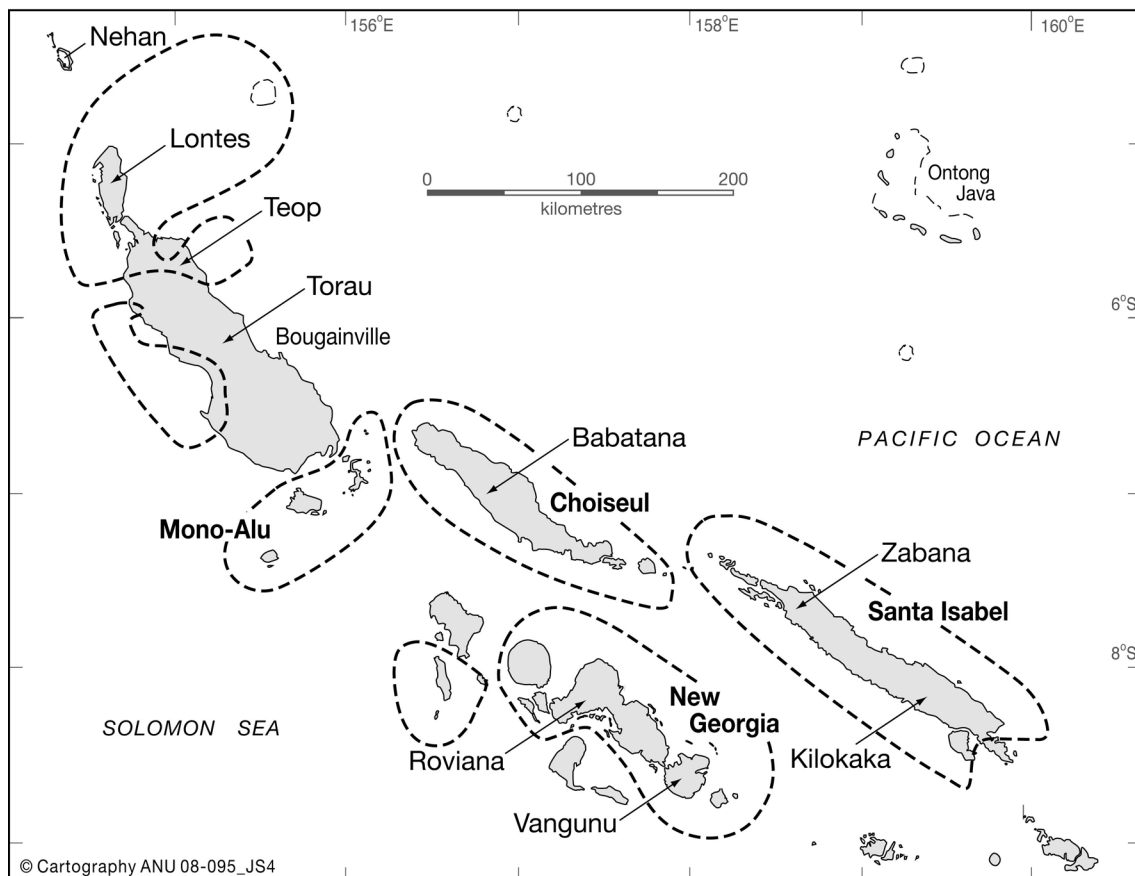
#### 5.3.1 Northwest Solomonic

The Northwest Solomonic group was not recognised until the early 1980s. Tryon and Hackmann (1983) showed that all the languages from the Shortland Islands to Santa Isabel share a few innovations defining them as a single, though very heterogenous subgroup which they called 'Western Solomons'. Ross (1986, 1988) showed that this group also includes the languages of Bougainville, Buka and Nissan.

Three regular sound changes are attributed to Proto NWS: (i) POc \*w is lost in all positions, (ii) an ‘echo’ vowel is added after word-final consonants, e.g. \*onom ‘six’ > PNWS \*onomo, (iii) POc word-final \*q becomes PNWS \*k, whereas initial and medial \*q was either lost or merged with \*ɣ. The POc 1<sup>st</sup> person singular independent pronoun \*au was replaced in PNWS by \*(a)rau. The relatively small number of innovations defining NWS indicates that the period of unified development was quite short.

### 5.3.2 Subgroups of Northwest Solomonic

Ross distinguished five primary branches of NWS: (1) Nissan-Buka-North Bougainville (10 languages), (2) Piva-Banoni (W. Bougainville) (two languages), (3) S. Bougainville-Shortlands (three languages), (5) Choiseul (four languages), and, more tentatively, (5) New Georgia-Santa Isabel (16 languages). Although New Georgia and Santa Isabel are each well-defined groups the evidence for uniting them is slender and any period of common development must have been very brief. For our purposes it is more useful to treat New Georgia (nine languages) and Santa Isabel (seven) as separate primary groups.



**Figure 4:** The primary subgroups of NW Solomonic, with languages mentioned in text.

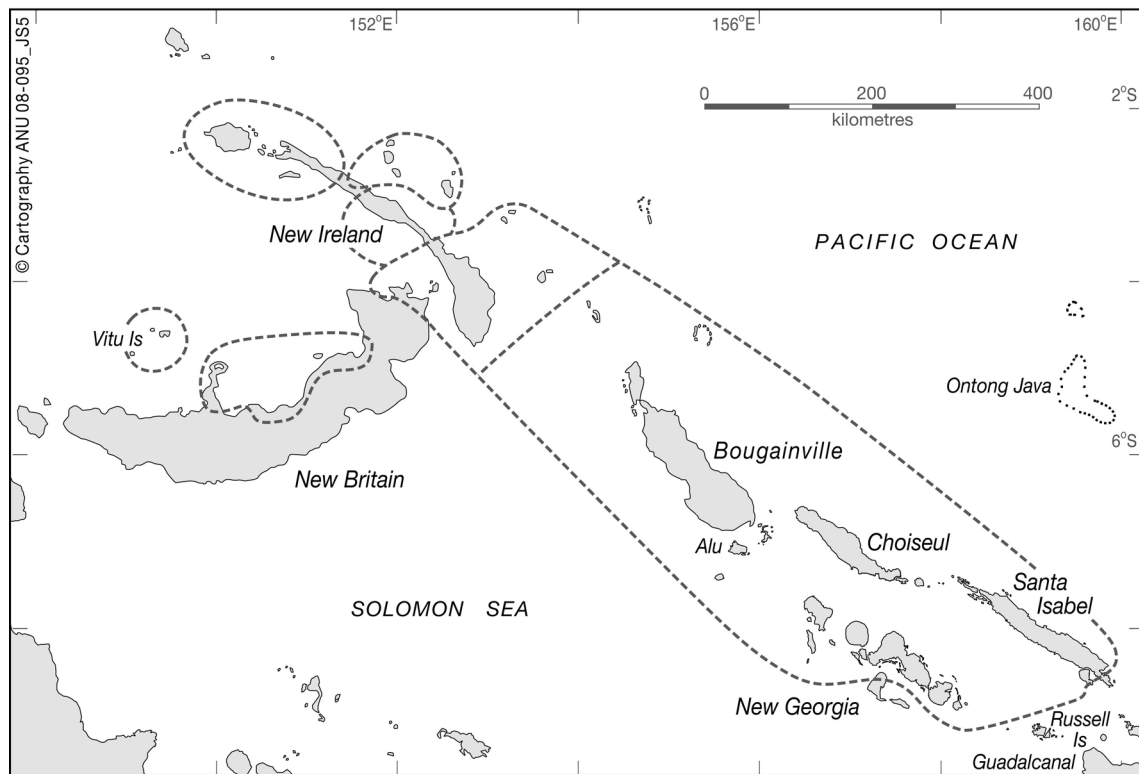
## **6 Why is there a deep boundary between NW Solomonic and SE Solomonic?**

Let us return now to the question of why there is a major subgroup boundary between Northwest Solomonic and Southeast Solomonic. There is no major geographic barrier that would account for this boundary. Ocean gaps between Santa Isabel and Malaita, and between Santa Isabel and the Florida group are on the order of 50 km—i.e. no greater than some of the distances separating islands within the NW Solomonic or the SE Solomonic regions. Oceanic speakers who settled the Solomons certainly had the sailing capacity to maintain regular communication across such ocean gaps. Nor are there other obvious environmental factors, such as periods of explosive vulcanism or the absence of key natural resources, which might account for the boundary.

It seems, then, that we must look for an explanation of this boundary in terms of historical and social factors. An obvious question is: do NWS and SES belong to different branches of Oceanic, each with members elsewhere?

Our understanding of the high-order subgrouping of the Oceanic languages of western Melanesia rests largely on two important studies. Blust (1978b) showed that the 20 or so languages of the Admiralty and Western Is. form a closed subgroup. He also pointed to a single phonological change undergone by all other Oceanic languages except the Admiralties, namely the merger of Proto Austronesian \*j and \*s, and on this basis assigns all non-Admiralties languages to a single subgroup of Oceanic (Blust 1978b, 1998), which I will refer to here as ‘Nuclear Oceanic’. Ross’s (1988) monumental study encompassed all the Oceanic languages in ‘western Melanesia’ (defined as extending as far east as the boundary between NW Solomonic and SE Solomonic). He found evidence indicating that, within the Bismarck archipelago, there was an early two-way split between two primary branches of Oceanic: (i) an Admiralties subgroup, well defined by shared innovations, and (ii) a Western Oceanic (WOc) ‘linkage’, which includes all or almost other Oceanic languages of the Bismarcks and those of Papua New Guinea. A linkage is an imperfect subgroup, defined by innovations that link different sections of the chain, rather than by innovations shared by all members. A linkage derives from a well-differentiated dialect chain rather than a relatively homogeneous ancestor. Ross (1988) also noted the possibility that there was a third primary branch of Oceanic in western Melanesia, consisting of the small Mussau subgroup. He said little about Oceanic languages of the SE Solomons and Remote Oceania. However, he inclined to the view that these languages separated very early from Oceanic languages spoken in the Bismarcks, as the result of a single eastward movement from the Bismarcks through the Solomons and beyond into Remote Oceania.

Ross concluded that the Western Oceanic languages remained confined to the Bismarcks for some time, initially as a complex of dialects represented in parts of coastal north New Britain east of the Willaumez Peninsula, in Bali-Vitu (the French Is.) off the coast of New Britain, and in New Ireland and its offshore islands. At some point Western Oceanic dialects spread beyond this region in two directions: to the New Guinea mainland and to the NW Solomons. He found that the NW Solomonic languages share some innovations with Western Oceanic languages found in the Bismarcks that are not present in the Oceanic languages of the New Guinea mainland. These innovations define an imperfect subgroup that he called the Meso-Melanesian (MM) linkage. The diagnostic innovations are (i) merger of POc \*r and \*R as \*r, (ii) merger of \*d and dr as \*d, (iv) merger of POc \*c and \*s as \*s, (iv) the split of \*k into \*k and \*γ, and (vi) the split of \*p into \*p and \*v.



**Figure 5:** The Meso-Melanesian linkage and its subgroups (after Ross 1988)

There are fragments of evidence indicating that NW Solomonic stemmed from a particular area in the Meso-Melanesian linkage, namely a dialect network centred in southern New Ireland and perhaps extending to the nearby Tanga and Feni groups and to Nissan (Ross 1982, 1988). The evidence consists of a few innovations common to languages of that region and to the North Bougainville members of NW Solomonic. NW Solomonic then developed separately from the S. New Ireland/Tanga/Feni languages. The likely dispersal centre of NW Solomonic is the area consisting of Buka, N. Bougainville and Nissan.

Although Ross' work indicates that the ancestral NW Solomonic language arrived in the western Solomons some centuries after the breakup of POc, it does not explain why the expansion of NW Solomonic stopped at New Georgia and Santa Isabel. As part of the groundwork for tackling this question, I turn now to another vexing question: How intensive were interactions between incoming speakers of Oceanic languages and autochthonous speakers of non-Austronesian languages in different parts of the Solomons archipelago? Some evidence bearing in this question can be found in patterns of lexical replacements.

## **7 Evidence that NW Solomonic languages have replaced basic lexicon faster than SE Solomonic languages**

### **7.1 Identifying the most stable 60 POc words**

It has long been the impression of Oceanicists that SE Solomonic languages are among the most conservative members of the Oceanic group in respect of lexicon and that their sister languages in the NW Solomons have been more innovative. The usual explanation

for this difference is that the NW Solomonic languages have been strongly influenced by contact with non-Austronesian languages whereas SE Solomonic languages have not.<sup>4</sup> However, as far as I know no one has tried to measure rates of lexical replacement in the languages in question, or to pinpoint the periods when particular lexical changes took place. In order to achieve these two objectives, the rates of replacement in 60 highly stable words were investigated for a sample of SES, NWS and other Oceanic languages.

The following procedure was used to identify the 60 most stable POc words, i.e. the words with the highest retention rates in the daughter languages. (i) A first approximation was made by examining a table in Dyen et al. (1967) that ranks *word meanings* (not forms) on the Swadesh list of 200 basic lexical concepts according to how often pairs of languages had cognate forms for these meanings, using a sample of some 200 Austronesian languages. (ii) The 65 meanings yielding the highest percentages of cognate pairs were then extracted and the POc lexical form(s) reconstructable for each of these meanings were listed. (In five cases it was necessary to reconstruct pairs of synonymous forms and to count a retention of either etymon as a plus). (iii) A few problematic meanings were eliminated from the list, reducing it to 60. (iv) Retentions and losses for these etyma were recorded in 40 contemporary Oceanic languages drawn from various major subgroups.<sup>5</sup> (v) From these comparisons an average retention rate for each POc etymon was computed.

This procedure proved to have some flaws. It turned out that at least two of the lexical items that are among the most 20 stable items in Oceanic languages were missing from the variant of the Swadesh 200 word list used by Dyen et al. (1967), namely ‘(woman’s) breast’ and ‘excrement’. In addition, several other etyma that are among the 60 most highly stable items in our Oceanic comparisons have meanings that do not appear in the top-ranked 65 items in Dyen et al.’s list. These included ‘cry’, ‘night’, ‘tail’, ‘moon’, ‘star’

<sup>4</sup> I have found no works specifically addressing the differences between NW Solomonic and SE Solomonic but there is a large literature on the effects of contact between Austronesian and Papuan languages in various parts of Melanesia. See Dutton and Tryon (1994), Pawley (2006), Blust (2005, 2008), Donohue and Denham (2008) for recent discussions.

<sup>5</sup> The 40 languages in the sample used to calculate retention rates were:

SE Solomonic:	Guadalcanal-Gelic:	Bugotu, Gela, Talise
	Makira-Malaitan:	Arosi, Toqabaqita (To’aba’ita)
NW Solomonic:	Bougainville-Mono:	Mono, Teop, Torau, Lontes (Halia)
	Nehan:	Nehan
	Choiseul:	Babatana
	New Georgia:	Roviana, Vangunu
	Santa Isabel:	Kilokaka
Polynesian:	Samoan, Niuean	
Fijian:	Bauan (E. Fijian)	
Micronesian:	Marshallese, Woleai	
S. Vanuatu:	Erromangan (= Sye)	
N. Vanuatu:	Mota, Nguna, Raga	
Eastern Outer Is.:	Malo, Vano, Asumboa	
N. New Ireland:	Lihir, Tigak	
S. New Ireland:	Sursurunga, Kuanua	
New Ireland islands:	Anir	
W. New Britain:	Bali, Nakanai	
Manus:	Kele, Titan	
N. New Guinea:	Manam, Takia, Lote (= Pomio)	
Papuan Tip:	Motu, Galea	

and ‘where?’<sup>6</sup> No doubt these discrepancies arise in part from the different language samples used in the two studies but they are likely to be due mainly to the fact that Dyen et al. dealt with cognate percentages for meanings whereas my study deals with the retention rate of individual word forms. The discrepancies were not noticed until the analysis was well advanced and time constraints have prevented me from redoing the calculations. However, the fact that a few highly stable words were omitted from the list of 60 used in this study does not matter—given a list of highly stable items the important thing is how different languages behave with regard to these.

Average retention rates for the 60 items in a sample of 40 Oceanic languages are shown in Table 1.

**Table 1:** Retention rates for POc reconstructions for 60 highly stable items on the basic vocabulary list, based on 40 languages

POc				% retained	POc				% retained
1	eye	mata		97	31	fruit	puaq		60
2	we excl	kami		97	32	new	paqoRu		57
3	we incl.	kita		95	33	dig	kali-, keli-		56
4	two	rua		92	34	bird	manuk		56
5	father	tama-		90	35	inside	lalom		56
6	you pl.	kam(i)u		90	36	path	jalan		53
7	they	ira		90	37	name	[ŋ,q]ajan		52
8	mother	tina-		82	38	head	qulu, p <sup>w</sup> atu		50
9	louse	kutu		82	39	tooth	nipon		50
10	die	mate		82	40	woman	papine		50
11	five	lima		82	41	to fear	matakut		50
12	thou	iko, koe		80	42	root	wakaR, lamut		50
13	three	tolu		80	43	one	tasa, sakai		50
14	hear	roŋoR		77	44	liver	qate		50
15	four	pati		75	45	blood	draRaq		47
16	tongue	maya		73	46	water	waiR		46
17	I	[i]au		73	47	far	sauq		46
18	come	(lako) mai		73	48	skin	kulit		43
19	ear	taliŋa		72	49	feather	pulu		43
20	nose	ŋicu		70	50	rain	qusan		42
21	eat	kani		70	51	fire	api		42
22	drink	inum		70	52	leaf	draun		40
23	vomit	luaq, mumutaq		70	53	sky	lanjit		40
24	tree	kayu		70	54	thin	manipis		40
25	he/she	ia		67	55	ashes	drapu(R)		37
26	stone	patu		67	56	egg	katoluR		36
27	hand	lima		66	57	day	qaco, raqani		36
28	fish	ikan		66	58	right(hd)	mataqu		36
29	what	sapa		66	59	bone	suRi		23
30	who	sai		60	60	heavy	(ma)mapat		23

<sup>6</sup> Retention rates (in percentages) for some additional stable POc etyma in the 40 language sample: \*susu ‘breast’ 85, \*taŋis ‘cry’ 80, \*taqe ‘excrement’ 75, \*pai, \*pea ‘where?’ 57, \*pituqun ‘star’ 55, \*bonji ‘night’ 52. Percentages for ‘breast’ and ‘excrement’, are based on samples of 34 and 22 languages, respectively, as some wordlists do not include these items.

## 7.2 Results

Retention rates for the 60 POc etyma were then calculated for each of the 40 languages in the sample plus a further dozen or so languages.<sup>7</sup> Table 2 shows retention rates for the NW and SE Solomonic languages in the sample.

**Table 2:** Retention rates for 60 highly stable words in some SE Solomonic and NW Solomonic languages

	Items retained	Percentage retained
<b>SE Solomonic</b>		
<b>Guadalcanal-Gelic</b>		
Gela	52	86
Lengo	48	80
Ghari	47	78
Talise	45	75
Bugotu	41	68
<b>Makira-Malaitan</b>		
Fagani	48	80
Longgu	46	77
Arosi	43	71
‘Are‘are	41	68
Toqabaqita	39	65
<b>NW Solomonic</b>		
<b>Nehan-Buka-N. Bougainville</b>		
Nehan	31	52
Teop	24	40
Lontes	32	53
<b>S. Bougainville</b>		
Mono-Alu	27	45
Torau	34	57
<b>Choiseul</b>		
Babatana	25	42
<b>New Georgia</b>		
Roviana	35	59
Vangunu	33	55
<b>Santa Isabel</b>		
Kilokaka	27	45
Zabana (Kia)	26	44

<sup>7</sup> It is noteworthy that Proto Central Pacific (PCP) retained all 60 of the POc items we are concerned with here. Put another way, the forms for meanings 1-60 reconstructed by comparing just Fijian, Rotuman and Polynesian are the same as those reconstructed by comparing the full range of Oceanic groups. For two POc etyma, \*katoluR ‘egg’ and \*sauq ‘far’, there are reflexes only in Rotuman, not in Polynesian or Fijian. I do not suggest that such a high level of retention would hold for the PCP lexicon as a whole, but this is evidence that the early Oceanic language(s) that reached the Central Pacific region had changed rather little from POc itself. It indicates that the interval between the breakup of POc and the breakup of PCP was at most a few centuries. In PPn six items have been replaced: \*draRaq ‘blood’ > \*toto, \*qajan ‘name’ > \*hiŋoa, \*maya ‘tongue’ > \*qalelo, \*katoluR ‘egg’ > \*fua, \*lalom ‘inside’ > \*loto.

Among SES Solomonic languages the average percentage of retentions is 73, the highest being 86 (Gela) and the lowest 65 (Toqabaqita). Bugotu scores much lower (68) than other GG languages. This is mainly because it has borrowed some basic lexical items from Santa Isabel neighbours which show high replacement rates. It is also noteworthy that the languages of Makira (represented here by Arosi and Fagani) are in general somewhat more conservative than the Malaitan languages (represented by ‘Are’are and Toqabaqita).

Among NW Solomonic languages the average percentage of retentions is 49, the highest being 59 (Roviana) and the lowest 40 (Teop).

It can be seen that all the NW Solomonic languages have replaced more of the POc basic lexicon than any of the SE Solomonic languages. However, there is considerable variation within each group and the most conservative NW Solomonic language, Roviana (59 per cent) scores only a few per cent less than the most innovative SE Solomonic language, Toqabaqita (65).

### 7.3 Determining when lexical replacements occurred in SE Solomonic and NW Solomonic

It is clear that NW Solomonic languages have replaced much more basic vocabulary than SE Solomonic. But can we determine when the changes occurred? To answer this question it is necessary to reconstruct particular interstages (intermediate protolanguages) in order to see which items were replaced between earlier and later stages. This has been done for some interstages.

#### 7.3.1 Lexical changes in Proto SE Solomonic and Proto NW Solomonic

The proto-languages of the SE Solomonic and NW Solomonic groups were both lexically quite conservative. Proto SE Solomonic (PSES) replaced just three of POc items 1–60: \*draRaq ‘blood’ > \*kabu; \*matakut ‘be afraid’ > \*matolo; \*lanjit ‘sky’ was replaced, probably by \*masawa(ŋ).<sup>8</sup> (In POc the primary sense of \*masawa(ŋ) was apparently ‘the open sea, far from land’, with a secondary sense ‘vast open space(s)’.) Proto NW Solomonic (PNWS) replaced just four of items 1–60: \*draun ‘leaf’, \*api ‘fire’, \*papine ‘woman’ (retained only in the sense of ‘man’s sister’) and \*waiR ‘water’.<sup>9</sup>

It is noteworthy that no replacements of POc reconstructions for items 1–60 are shared by PSES and PNWS. This is strong evidence that the two protolanguages had independent histories after they diverged at the level of Proto Nuclear Oceanic. However, in later times some borrowing occurred between certain neighbouring languages across the NWS/SES boundary, and this occurred even in a few items of basic vocabulary.<sup>10</sup>

<sup>8</sup> The same replacement, \*lanjit > masawa(ŋ), is found also in some Vanuatu languages.

<sup>9</sup> For each of the four items replaced it is hard to reconstruct a Proto NW Solomonic etymon because the replacements differ across subgroups.

<sup>10</sup> Evidence for borrowing between Guadalcan-Gelic languages and the nearer NW Solomonic languages is suggested by the following comparisons, among others. In most S. Isabel/Guadalcanal-Gelic languages, POc \*talinja ‘ear’ is replaced by the type of Gela *kuli* and \*pisiko ‘flesh’ by the type of Gela *vinasi*, Poc \*tam<sup>w</sup>ata and \*tau ‘person’ are replaced by the type of Gela *tinoni* in most New Georgia/SE Solomonic languages. See Blust (2007:411–412) for a fuller list.



### 7.3.2 Lexical change in subgroups of SE Solomonian

The proto-languages of the major subgroups of SE Solomonian remained lexically conservative. In addition to the three replaced in Proto SE Solomonian, Proto Makira-Malaian replaced four to five items: \*draun ‘leaf’ > \*ʔa[f,p]a, ʔapa [Toqabaqita has *rau* ‘leaf, leaflet’]; \*api ‘fire’ > \*kiu or \*[d,t]una; \*mataqu ‘right hand’ > \*matolo or \*katolo; \*pulu ‘feather’ > \*(wara)ifu. POc \*mapat ‘heavy’ is lost but a reflex of POc \*(b,p)ita ‘heavy’ is retained in a few languages.

Besides the three items replaced in Proto SE Solomonian, Proto Guadalcanal-Gelic replaced four items: \*taliŋa ‘ear’ > \*kuli; \*maya ‘tongue’ > \*lapi, \*api ‘fire’ > \*lake, \*waiR ‘water’ > \*kolo. In addition, Proto GG lost \*wakaR, the most general term for ‘root’ but retained POc \*lamut ‘root’, a term that probably referred specifically to fibrous roots and root hairs.

The contemporary languages in both SE Solomonian groups, as we saw in §7.2, also remain lexically more conservative than NW Solomonian languages. This relatively small number of lexical replacements strongly suggests that neither Proto GG nor Proto MkMI nor their descendants were much influenced by contact with non-Austronesian languages. Evidently at the time Oceanic speakers arrived in the Southeast Solomons non-Austronesian speaking populations in this region were small and were easily absorbed or displaced.

### 7.3.3 Lexical change in subgroups of NW Solomonian

Once speakers of early varieties of NW Solomonian dispersed across the NWS region each local variety underwent rapid lexical change. Thus, of the 56 POc items retained by Proto NW Solomonian in the 60 item list, Proto Choiseul, as we reconstruct it, retains only 30. That is to say, in the period between Proto NW Solomonian and Proto Choiseul almost half of the highly stable lexicon was replaced, Proto S. Isabel retains 36/56, having replaced more than a third. Proto New Georgia retains 47/56 but this is still a loss of almost 20 percent. I have not calculated percentages for the other NWS subgroups.

This very high rate of replacement in the most stable part of the lexicon indicates extensive borrowing from non-Austronesian sources. A reasonable inference is that in each of these regions the speakers of incoming NW Solomonian languages encountered substantial populations of non-Austronesian languages and that sustained bilingualism, especially in Choiseul and Santa Isabel but also in the New Georgia group, led to many non-Austronesian loanwords entering the basic vocabulary of the NW Solomonian languages. It remains to be seen to what extent putative borrowings from non-Austronesian sources can be associated with particular surviving non-Austronesian languages of the Solomons group.

## 7.4 Comparison with other Oceanic languages

Comparison of replacement rates in Oceanic languages spoken outside of the Solomons Archipelago reveals a pattern consistent with the hypothesis that higher rates correlate with more intensive contact between Oceanic and non-Oceanic languages. Table 3 gives retention rates for the 60 most stable items in a sample of languages from Polynesia, Fiji, Micronesia and Vanuatu. All are spoken on islands in Remote Oceania and probably had no direct contact with non-Austronesian languages after these islands were settled.

**Table 3:** Retention rates for the 60 most persistent words items in some languages of Remote Oceania

	Items retained	Percentage retained
<b>Polynesian</b>		
Tikopia	53	88
Tongan	51	85
Samoan	50	83
Niuean	50	83
Maori	48	80
<b>Fijian</b>		
Bauan (E Fijian)	49	81
Wayan (W Fijian)	49	81
<b>Central and Northern Vanuatu</b>		
Raga (Pentecost Is.)	47	78
Nguna (Efate)	45	75
<b>Southern Vanuatu</b>		
Erromangan	37	61
<b>Nuclear Micronesian</b>		
Woleai	43	71
Marshallese	39	65

The range of retention rates in these particular languages is similar to that found in SE Solomonic. All have retained more of the POC basic lexicon than any of the NW Solomonic languages.

Next is a set of languages also spoken in Near Oceania which, at certain periods in their history, are likely to have had sustained contact with non-Austronesian languages. It can be seen that scores for these languages fall within the range of the NW Solomonic languages.

**Table 4:** Retention rates for some languages of Near Oceania likely to have had fairly high contact with non-Austronesian languages

	Items retained	Percentage retained
<b>North New Guinea subgroup</b>		
Takia	29	48
Sengseng	19	31
<b>Southern New Ireland subgroup</b>		
Kuanua	30	50

## 8 How long have SE Solomonic languages been in the Solomons archipelago?

Let us now return to the hypothesis (Sheppard and Walter 2006, Spriggs 1997) that when the Oceanic-speaking Lapita people first colonized Remote Oceania just over three millennia ago they bypassed the Solomons Archipelago, and that it was another 800 years or so before speakers of Oceanic languages established permanent settlements in the

Guadalcana-Malita-Makira region. The archaeological evidence bearing on this proposal is equivocal, as was noted in §2.

Historical linguistics could throw light on this matter if a way could be found of dating the nodes on the SE Solomonic branch of the Oceanic family tree. The chief absolute dating method developed in linguistics is the much-maligned ‘(lexicostatistical) glottochronology’, which uses cognate percentages in basic lexicon to date the length of time since particular related languages diverged.<sup>11</sup> In the foundation research on glottochronology the mean replacement rate for items in the 200 list was initially calculated to be about 19.5% per millennium. Rounding this to 20% yields the following predictions for a single language: 80% of the original 200 items will be retained after 1000 years, 64% after 2000, 51% after 3000, 41% after 4000. When estimating separation dates from cognate percentages between contemporary languages, the equations based on 20% replacement per millennium are: 64% cognates = 1000 years separation, 41% = 2000, 28% = 3000, 17% = 4000.

In the case of Austronesian languages, these estimates can be tested against an independent chronology that can be established for particular intermediate proto-languages (the ancestors of particular subgroups) by correlating linguistic and archaeological events. Austronesianists have a valuable external point of reference when estimating the dates at which particular subgroups broke up, namely, several cases where archaeological dates for the settlement of a particular can, with high confidence, be matched with the arrival of a particular language in that region, a language ancestral to a large subgroup. Thus, one can date the breakup of Proto Malayo-Polynesian to about 4000 BP, because the emergence of the Malayo-Polynesian branch of Austronesian can be connected with the movement of people from Taiwan across the Bashi Channel into the Batanes Is. and Luzon at about that time (Bellwood pers. comm.; Bellwood and Dizon 2005; Ross 2005). The breakup of POc can be placed at between 3400 and 3100 BP (see §3). We can be confident that the Central Pacific languages (Fijian, Rotuman and Polynesian) diverged from both the NW Solomonic and SE Solomonic groups no later than about 3000 years ago. This is because the foundation settlement of Fiji and Tonga is rather securely dated to about 3050–2950 years ago. An earliest possible date for the split is that assigned to the breakup of POc itself.

Although it has been shown that Malayo-Polynesian languages vary greatly in their retention rates (Blust 1981, 1999), there is reason to think that the standard glottochronological estimates are about right for lexically conservative Oceanic languages. Assuming that Proto Malayo-Polynesian broke up about 4000 BP, we get results close to the mark for the most conservative Oceanic languages, such as Gela, Samoan and Fijian. Each is known to retain about 40% of the reconstructed Proto Malayo-Polynesian items for 200 item basic lexicon. And although the calculations have not been done for the full range of languages, we can be reasonably sure that quite similar results will be obtained for almost all the SE Solomonic languages, all the Fijian languages and many of the Polynesian languages.

Given this method, it is possible to assign approximate dates to the breakup of Proto SE Solomonic and its daughter subgroups, Guadalcanal–Gelic and Makira–Malaitan. The following account of lexical diversity exhibited by languages in the SE Solomons and neighbouring areas draws on the percentages given in Tryon and Hackman (1983) for the Swadesh 200 item basic lexicon.

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<sup>11</sup> Russell Gray and his associates have in recent years been developing an alternative dating method (Gray 2005; Gray and Atkinson 2003; Greenhill and Gray this volume).

Let us first consider how SE Solomonic languages score with other Oceanic languages that are known to be fairly conservative and compare these agreements with those between Guadalcanal-Gelic and Makira-Malaitan languages.<sup>12</sup> Recall that the split between SE Solomonic and Polynesian is dated to no later than 3000 years ago. Cognate percentages between SE Solomonic languages and five Polynesian Outlier languages in the Solomons region (Rennellese, Tikopia, Sikaiana, Luangiua and Pileni) fall between 25 and 36, with a median of 29.<sup>13</sup> Percentages between Guadalcanal-Gelic and Makira-Malaitan languages fall between 28 and 43, with a median of 36.

The differences between the SE Solomonic-Polynesian agreements and the agreement between Guadalcanal-Gelic and Makira-Malaitan are thus on the order of 7 percent. This is consistent with about 500 years elapsing between the SE Solomonic-Polynesian split, and the breakup of SE Solomonic into incipient Guadalcanal-Gelic and Makira-Malaitan branches.

Next let us consider agreements within the Makira-Malaitan group. The Makira-Malaitan languages are clearly descended from a dialect chain that extended over most of the Makira-Malaitan region. Today the lexical diversity of languages from opposite ends of this region is almost as great as the divergence between Makira-Malaitan and Guadalcanal-Gelic. The most differentiated Makira-Malaitan languages show percentages in the 34–40% range, e.g. Toqabaqita of N. Malaita has the following percentages with Makira languages: 34 with Santa Ana, 35 with Kahua and Bauro, 40 with Arosi. These are about the same as Toqabaqita shares with Guadalcanal-Gelic (32–36%). All this suggests that the opposite ends of the Proto Makira-Malaitan region began to diverge into dialects soon after Makira-Malaitan split off from Guadalcanal-Gelic but that the divergence proceeded gradually because the central dialects of Makira-Malaitan remained in close contact with the extremes.

Guadalcanal-Gelic is more homogeneous than Makira-Malaitan. Excluding Bugotu, the most differentiated GG languages show cognate percentages in the range 50–55% and some pairs of languages score 60–70%. This strongly suggests that the ancestral GG dialect chain remained fairly cohesive for much longer than Makira-Malaitan, with most dialects remaining mutually intelligible until about 1000 years ago. Table 5 gives approximate divergence dates for pairs of groups based on the median percentage, using the standard glottochronological equations.

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<sup>12</sup> Excluded from the intra-SE Solomonic comparisons are Marau and Longgu, two MkMl languages spoken on Guadalcanal, whose percentages are inflated by loans from GG neighbours. Also excluded is one GG language, Bugotu, whose percentages with MkMl and with other GG languages are much lower owing to sustained contact with Santa Isabel languages. Bugotu's agreements with MkMl are in the range 26–32%, i.e. almost 10% lower than other GG languages.

<sup>13</sup> For example, the lexically most conservative GG language, Gela, scores 31–36% with Polynesian Outliers. It scores just a bit higher, 34–43%, with MkMl languages. Its sister language Ghari scores 28–32% with Polynesian Outliers, compared to 33–40% with MkMl languages. The most conservative MkMl language, Fagani (of Makira), scores 28–33% with Polynesian Outliers compared to 36–43% with GG. The least conservative MkMl language, Toqabaqita (of Malaita), scores 25–27% with Polynesian Outliers, compared with 32–36% with GG. The most conservative MkMl language, Fagani (of Makira), scores 28–33% with Polynesian Outliers compared to 36–43% with GG.

**Table 5:** Cognate percentages for inter-group comparisons with approx. divergence dates

	percentages	median	approx. divergence date for median
SES-Polynesian	25–36	29	2900 BP
MkMI-GG	28–43	36	2400 BP
extremes of MkMI	34–40	37	2300 BP

These figures do not, of course, tell us how long the ancestral SE Solomonic language was in the SE Solomons before it diverged into GG and MkMI. However, it is reasonable to assume that the innovations defining SES were accumulated over a few centuries when pre-SES was a single language—no doubt with dialect variants—spoken in a string of mainly coastal and small island settlements in parts of Makira, Malaita and Guadalcanal.<sup>14</sup>

But where was pre SE Solomonic spoken before it was carried to the SE Solomons? Does this group fall into a subgroup with any other branch of Nuclear Oceanic?

From time to time it has been argued that SES falls into an Eastern Oceanic group together with most or all of the Oceanic languages of Remote Oceania, especially those of Vanuatu, New Caledonia and the Loyalties, Fiji, Polynesia and possibly Micronesia. There are a few scraps of evidence supporting such a group but the hypothesis remains highly problematic and this is not the place to review the evidence.<sup>15</sup>

## 9 Conclusions

We are led to the following conclusions.

1. The sharp boundary between NW and SE Solomonic is not the product of *in situ* divergence. The NW and SE Solomons regions were settled independently by two different populations of Oceanic speakers.

2. The position of the NW Solomonic languages on the Oceanic family tree is consistent with Sheppard and Walter's proposal that the NW Solomons was bypassed in the initial movement of Lapita people into Remote Oceania. NW Solomonic is a division of the Meso-Melanesian branch of Oceanic. The centre of diversity within Meso-Melanesian, and its original site is clearly in the New Britain-New Ireland area. At some point speakers of a Meso-Melanesian language moved to the Nissan-Buka-N. Bougainville region. There the language developed the few innovations that define the NW Solomonic subgroup. After a short period of unified development Proto NW Solomonic spread to the Shortlands, Choiseul, New Georgia and Santa Isabel. Linguistic methods do not allow us to date precisely the spread of NW Solomonic. However, it is clear, from the archaeological

<sup>14</sup> Recently Lynch et al. (2002:110ff.) have suggested that Proto SE Solomonic was confined to the Bugotu-Gela-North Guadalcanal region and that its descendants later moved from Guadalcanal into Makira and Malaita. However, this scenario rests on a very flimsy argument.

<sup>15</sup> Re the Eastern Oceanic hypothesis, see Grace (1976), Pawley (1972), Lynch and Tryon (1985). The Oceanic languages of the Eastern Outer Islands region are not known to share any innovations with Southeast Solomonic. Although their histories are still poorly understood it seems likely that the better known languages of Utupua and Vanikoro form a first-order subgroup of Nuclear Oceanic, to which Aiwoo of the Reef Is. may also belong (Ross and Næss 2007). In that case, they are likely to be relics of the first Lapita movement into Remote Oceania. All this does not rule out Greater Reefs/Santa Cruz as a source for pre-SE Solomonic. It simply implies that if it was, pre-SE Solomonic speakers left Reefs/Santa Cruz quite soon after Oceanic speakers first arrived there.

evidence, that the breakup of Proto Oceanic must have occurred between about 3350 BP, by which time Lapita settlements had been established in various parts of the Bismarck Archipelago, and 3100 BP, by which time Lapita settlements had been established in Remote Oceania. The innovations marking off Meso-Melanesian from the rest of Oceanic, and those marking off NW Solomonic from the rest of Meso-Meso-Melanesian are relatively few, and in all, probably took no more than three or four centuries to accumulate. This estimate would place the breakup of NW Solomonic as occurring between about 3000 and 2700 BP.

3. Subsequently, in the course of dispersing across the NW Solomons, the ancestral NW Solomonic language developed regional variants that underwent very rapid lexical change. Many words not known to have Austronesian antecedents entered their core lexicons. A reasonable explanation is that in each locality small populations of immigrant Oceanic speakers came into contact with established populations of non-Austronesian speakers, leading to extensive intermarriage, bilingualism and lexical borrowing from non-Austronesian languages.

4. Over the next couple of millennia Austronesian languages replaced non-Austronesian languages over most of the NW Solomons. An exception is Bougainville, where non-Austronesian languages remain dominant over most of the island.

5. The scenario sketched in 2–4 above does not preclude the possibility that speakers of NW Solomonic were not the first speakers of an Oceanic language to settle in the NW Solomons. However, if there were earlier Oceanic-speaking colonists, they left no surviving daughter languages in the region. This fact suggests that, at best, any earlier Oceanic-speaking populations must have been small.

6. The SE Solomonic languages show few signs of influence from non-Austronesian languages, an indication that the pre-Austronesian populations were sparse in the SE Solomons. However, non-Austronesian languages survive on two small islands near Guadalcanal: Savosavo and Russell.

7. The linguistic evidence weighs strongly against Sheppard and Walter's suggestion that the islands from Guadalcanal to Makira were not settled until around 2300–2200 BP, around the time when the making of ceramics had ceased in the Reefs/Santa Cruz area. Southeast Solomonic is a fairly well defined subgroup of Oceanic, without obvious close relatives elsewhere and it must have separated from the language ancestral to the Fijian and Polynesian groups no later than 3000 BP. The set of phonological, morphological and lexical innovations that define Southeast Solomonic indicate several centuries of unified development in the Southeast Solomons region. The internal diversity of Southeast Solomonic is also considerable. In comparisons of a 200 item basic lexicon the two primary subgroups of SE Solomonic (Guadalcanal-Gelic and Makira-Malaitan) diverge from each other almost as sharply as they diverge from Fijian and Polynesian. This degree of difference points to the two subgroups as having followed separate paths since about the middle of the first millennium BC. Furthermore, the languages at opposite ends of the Makira-Malaitan subgroup differ from each other, lexically, almost as sharply as they do from Guadalcanal-Gelic languages, indicating that internal differentiation within Makira-Malaitan began around the same time (although the rate was slowed by the persistence of a dialect chain). I conclude that the SE Solomonic languages have been present in Makira, Malaita and Guadalcanal for well over 2500 years and probably for around 3000 years.

8. It is uncertain where the immediate ancestor of SE Solomonic came from. There is no decisive evidence to subgroup SE Solomonic with any other branch of Nuclear Oceanic. On archaeological grounds an immediate origin from the east, from the Eastern Outer Islands of the Solomons, or from Vanuatu, is perhaps more likely than direct settlement directly from the Bismarcks. Over the years a number of linguists have pointed to scraps of evidence suggesting a brief shared history with certain other languages of Remote Oceania, especially those of Vanuatu, Fiji, Polynesia and Micronesia but the evidence is far from decisive.

9. If SE Solomonic speakers dispersed over the coasts and offshore islands of Makira, Malaita and Guadalcanal in the first half of the 1st millennium BC one may ask why did they not also settle the nearest parts of the Western and Central Solomons, such as Santa Isabel and New Georgia. I think a good part of the answer is that at that time the latter islands were populated exclusively, or almost exclusively by non-Austronesian speakers and that they remained largely non-Austronesian speaking for many centuries after that. In Santa Isabel and New Georgia, as well as on the small islands of Russell and Savo, non-Austronesian speaking areas for a time formed a buffer between NW Solomonic and SES Solomonic languages. However, once the two subgroups came into contact there was a good deal of borrowing between the languages closest to each other.

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