

考古學與
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The boiling pot: 4000 years ago in the Luzon straits

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Abstract

The current model of proto-Malayo-Polynesian (PMP) holds that a unitary language was spoken in the Luzon Straits roughly four thousand years ago and that this diversified into all the extra-Formosan languages and was responsible for the Neolithic settlement of Island Southeast Asia (ISEA) and Oceania. The paper suggests that this is supported by neither the linguistics, the archaeology nor the distribution of material culture. Archaeology of ISEA after 4000 BP points to near simultaneous settlement in a wide variety of sites, while analysis of individual lexical items points to geographically biased distributions, suggesting they were selectively carried to different regions. Examples of material culture items associated exclusively with Austronesian culture are given, which again show strong geographical biases.

This points to a rather different model of time and place, here called the ‘boiling pot’ which assumes the Luzon Strait was an centre of innovative maritime technology and the starting point for voyages in canoes with multi-ethnic crews, establishing pioneer routes across the entire region and reconnecting with the non-Sinitic cultures of the mainland. This would then see PMP as a network of related subgroups, which can never fully reconstitute a unitary PMP, because no such entity existed.

Keywords: Austronesian; Taiwan; archaeology; linguistics

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ACRONYMS

BC	Before Christ
BP	Before present
ISEA	Island Southeast Asia
PMP	proto-Malayo-Polynesian
WMP	Western Malayo-Polynesian

1. Introduction

The Austronesian dispersal represents one of the great prehistoric expansions of a linguistic phylum. Its inception is usually associated with the Neolithic settlement of Taiwan¹ by 5500 BP followed by extensive movement into Island SE Asia (ISEA) and the Pacific from around 4000 BP onwards. From the point at which the migrants reached the Bismarcks and formed the nucleus of the Oceanic language at around 3200 BP its further course is relatively well-charted, as is the association of Oceanic with finely-wrought Lapita pottery (Pawley and Ross 1995; Lynch et al. 2002; Pawley 2008).

According to the current model, all extra-Formosan Austronesian languages belong to a single subgroup, Malayo-Polynesian (Dyen 1963; Ross 2012; Blust 2013) and thus the reconstructions proposed for proto-Malayo-Polynesian (PMP) can theoretically tell us about the lifestyle, social organisation, material culture and subsistence strategies of its speakers. Blust (1995) represents an overview of what can be inferred concerning the lifestyle of the early Austronesians based on lexical reconstruction. However, cultural transformations that occurred in the period between the migrants leaving the southern tip of Taiwan and reaching Near Oceania remains less well understood. The internal classification of the Western Malayo-Polynesian languages remains disputed (Blust 2013) and the sequence of archaeological dates is only weakly attested (cf. Spriggs 2011).

Part of the problem arises from assumptions about the pattern of migration. According to the model promoted by Bellwood (2013 and elsewhere) the Austronesian expansion was primarily demographic and driven by agriculture. Hence it was sequential; the early Austronesians reached the Philippines, and moved on, both southwest and southeast, gradually settling Island SE Asia and the Pacific. Blust also implicitly accepts this model as it chimes with the hierarchical internal structure he attributes to Malayo-Polynesian.

Nevertheless, this model has been challenged from various quarters,

1. The paper uses ‘Taiwan’ to refer to the island and the modern nation-state and Formosa(n) to refer to the complex of indigenous peoples and languages still present on Taiwan.

both in terms of archaeology and linguistics. Donohue and Denham (2010) summarise the objections to the models of Austronesian classification, while Spriggs (2011) and Blench (2012) argue that the near-simultaneity of early dates outside Taiwan point to a rapid dispersal in different directions, presumably reflecting access to improved maritime technology. Indeed, the early settlement of the Marianas and Palau, remote and small islands in the Pacific, points strongly to this process.

If there was indeed an ‘explosive’ dispersal at this early period, then it might be expected to have consequences for both language and synchronic material culture. The Formosan peoples would not have crystallised into the groups which exist today, but would have been linguistically diverse, exhibiting a mix of subsistence strategies. The absence of obvious signs of agriculture at the lowest levels in both the Batanes (Bellwood and Dizon 2014) and the site of O Luan Pi (I and II) on the southern tip of Taiwan (Li 2000) argues that some of the early migrants were fisher-foragers rather than farmers (see also Bulbeck 2008). It would also account for the puzzling differences between the agriculture of the Philippines, the first presumed stopping point for these migrants, and Taiwan. Essentially the cereal which constitutes the focus of Formosan peoples is millet, *Setaria italica*, whereas in Luzon and points south irrigated rice is now dominant. If many of the peoples leaving Taiwan were not sedentary cereal agriculturalists, then they would not reproduce this cultural strategy in the new islands they settled.

This suggests that we have been seduced by the lure of coherence, that the desire for a tidy interpretation has made the early phases of the Austronesian expansion seem more structured than is probable. Four thousand years ago, Formosan society must have been far more diverse than it is today, with numerous languages and subsistence strategies reflecting the diverse environments of the island. Resource extraction was revolutionised by new maritime technology, and it would have been seized on by multiple groups, often very varied in character. The boats leaving the southern tip of the island are likely to have had multi-ethnic crews and to have carried a range of ideas to different locations. The seas around southern Taiwan would have made movement in almost every direction possible, and the land masses were largely unexplored. It is likely that new voyages and landfalls were undertaken all across ISEA, sometimes in what may now seem unlikely places. In the light

of this, it is no wonder that WMP is hard to classify; it is not the result of sequential diversification, but the fallout from an explosive dispersal.

If this is the case, then this should also be reflected not only in the archaeology, but also in material culture. Dates for early Austronesian presence in ISEA are still relatively sparse, but material culture represents a vast archive which has hardly been exploited. By plotting the distribution of distinctive items, present both among Formosan indigenous peoples and elsewhere, it is possible to get a sense of the routes and destinations characteristic of this early period.

The metaphor which can be invoked to characterise the Luzon Strait four thousand years ago is a boiling pot. Numerous different ethnic groups, with slightly different languages, cultures and objectives, but with access to new types of boat, began to disperse outwards, carrying with the innovative culture and technology. Although the Austronesian world was subject to numerous later episodes of cultural levelling, for example on Java and the Malay peninsula, evidence for this early period can be detected around the periphery, where dominant cultures failed to penetrate.

This paper² combines linguistic and material culture data to develop a preliminary model of the early period of dispersal of PMP. Whether PMP can be regarded as a coherent proto-language spoken at a particular time and place remains an open question. While some linguistic roots are very widely attested across the Austronesian world, others have very restricted distributions. It may also be the case that there was substantial back influence to Taiwan, especially from the Philippines. Iron-working, for example, must have been a later introduction from further south, and whatever group was responsible for introducing it would have brought other associated cultural practices and presumably their language. Much of the innovation in the extra-Formosan zone can be attributed to continuing contact with the mainland at this period, although the disappearance of non-Sinitic languages on the Chinese coast makes this difficult to prove from a linguistic point of view. In terms of material

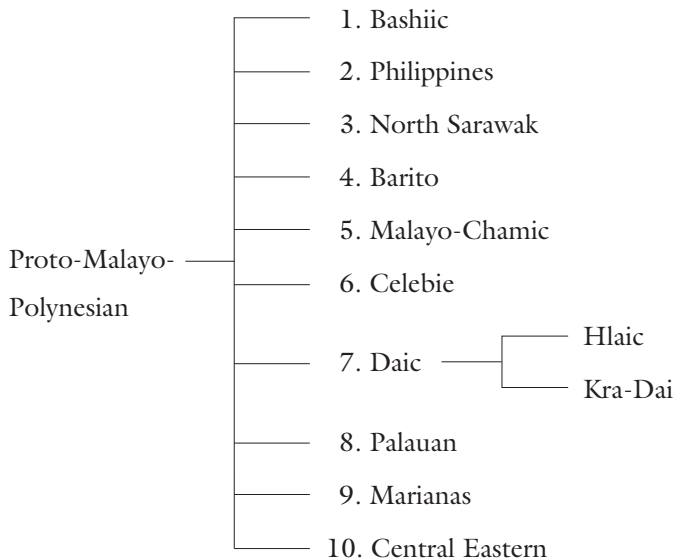
2. A very preliminary version of some of these ideas was presented at the National Museum of Prehistory (國立臺灣史前文化博物館) Taitung on the 28th September, 2015. My thanks to the Museum and Tsang Cheng Hwa for supporting my presence, the audience for discussions.

culture, it accounts for the high diversity of extra-Formosan repertoire, and why so many widespread PMP lexemes have only a single Formosan reflex. One interpretation is that these are not inherited from PAN, but borrowed back into Formosan languages as part of the interaction sphere.

2. Linguistics

The ethnic chaos in the Luzon Strait is reflected in the linguistic uncertainty concerning Western Malayo-Polynesian. WMP is divided into a number of primary subgroups, which have so far resisted hierarchisation. The discussion will no doubt continue, but PMP divides into the well-characterised Oceanic and the rest, i.e. Western Malayo-Polynesian (WMP) whose internal divisions remain disputed (e.g. Blust 1993; Donohue and Grimes 2008). Figure 1 presents a version of the early splits in PMP, bringing together these various proposals.

Figure 1. Primary subgroups of Proto-Malayo-Polynesian



The composition of the subgroups is as follows;

1. Bashiic languages are Ivatan, Itbayat and Tao [Yami]
2. includes all languages of the Philippine Archipelago except the Sama-Bajaw

- (or Samalan) languages spoken by traditionally nomadic ‘sea gypsies’ of the central and southern Philippines and various parts of Indonesia-Malaysia
3. includes languages of northern Sarawak in Malaysian Borneo
 4. includes Ngaju Dayak and Ma’anyan of southeast Kalimantan, as well as Malagasy
 5. includes the Malayic languages of insular Southeast Asia, and the Chamic languages of mainland Southeast Asia, and
 6. includes all languages of Sulawesi south of Gorontaloic, except the South Sulawesi group (whose best-known members are Buginese and Makasarese).
 7. includes all the languages that fall within Tai-Kadai. This is not accepted or even discussed by many linguists
 8. Palau only
 9. Chamorro and other languages of the Marianas only
 10. corresponds to Oceanic. In the view of Blust (1993, 2013) there is a branch ‘Eastern Malayo-Polynesian’, which divides into Halmahera and Oceanic proper.

It is remarkable that even the subgroup in the immediate area of the Luzon Straits, Bashiic, cannot easily be fitted into the WMP substructure. The Bashiic [=Batanic] languages consist of a small group of the northernmost PMP languages, spoken on Lanyu island and by the Ivatan and Itbayat in the Luzon Strait. They have been characterised in Ross (2005) but their placing remain problematic. The languages are very close to one another, which confirms the oral traditions on Lanyu that some villages were founded from the Batanes a few centuries ago. However, the Batanes were settled 4000 years ago (Bellwood and Dizon 2014) and Lanyu has also been occupied for a lengthy period (Tsang 2005). It must be that there were former languages on Lanyu which have disappeared or been assimilated, while the Batanes were in relative isolation from other PMP languages for a long period. The Yami in particular have a strikingly idiosyncratic material culture, including large paddled canoes, which do not resemble any others in the Austronesian world. Green Island, further north, was uninhabited at the time of the first European incursions, but has a long archaeological history, and most likely was settled by the same populations as the earliest inhabitants of Lanyu.

Bashiic is not the only isolate apparently dating from this early period. Although the languages of the Barrier Islands, west of Sumatra, have links

to languages on the Sumatran mainland (Nothofer 1986), it has not been demonstrated either that these languages are related to one another, or that the cognates with mainland Sumatran languages are other than loans. Nias, Mentawai and Enggano in particular seem to have a wide scatter of ‘rogue’ vocabulary with either no Austronesian cognates, or parallels in remote branches much further east, in Sulawesi and Oceanic. This is also reflected in their material culture, which reflects Formosan practice (see §6.1 for the distribution of the leg-xylophone, for example).

In the Pacific, Chamorro and Palauan are also primary branches of PMP (cf. Reid 2002 for Chamorro), but somewhat surprisingly are the results of parallel eastwards migrations. In the case of the Marianas, the archaeological evidence for the first settlement by at least 3500 BP is strong. There are convincing similarities with the ceramics of the Northern Philippines, which show dentate stamping and lime infill. Carson et al. (2013) provide a comprehensive view of the evidence connecting the Northern Philippines with Remote Oceania. Unfortunately much of the other material culture of the Marianas has been displaced by the cultural revolution brought about by the early presence of the Spanish and other occupiers.

Early settlement dates for Palau remain slightly at odds, with archaeology suggesting a date of around 3000 BP and palaeoenvironmental dates, somewhat older at 4500 BP (Clark 2005). Since these earlier dates would put settlement beyond the range of Austronesian migration, they are probably to be discounted. The earliest settlement seems to be identified with flaked stone tools, rather indistinct brown and some painted pottery, and human burials. The Palauan language has undergone numerous rather exotic sound-changes and morphological shifts, so it has not yet proven possible to identify its nearest relative.

Trees of the WMP languages do not usually include Daic (Tai-Kadai) although a relationship between Austronesian and Daic has long been posited (Benedict 1942). Ostapirat (2005, 2013) has argued for a genetic affiliation between Daic and PAN which is supported with regular sound-correspondences. Norquest (2007, 413) points out that the Hlai branch of Daic shares some striking lexical items with proto-Austronesian which do not occur in the other branches. Sagart (2004, 2005) proposed Daic was a branch of PMP and Blench (2013) supported this with further linguistic and cultural

data, including dental evulsion, tooth-blackening and multi-tongue jews' harps. It is unresolved as to whether Daic is a sister-language to PAN or to PMP. Sagart (2005) says there was 'an early Austronesian language called here 'AAK' (Austronesian Ancestor of Tai-Kadai). This was a daughter language of PAN, and a close relative of PMP: it shared some innovations with PMP, but was more conservative in other respects.'

Daic itself is divided into two major branches, Hlaic and Tai-Kadai, with Hlai spoken on Hainan island and Tai-Kadai spoken inland in China and in the region further south. It is striking that Austronesian shares a relationship with Hlaic distinct from Austronesian in general, as evidenced in Table 1;

Table 1. PAN-Hlaic relationship

Gloss	Pre-Hl	Proto-Hlai	PAN
slap	*pi:k	*phi:k	*pik
weave	*bən	*p ^h ən	*bəl+bəl
pinch	*ti:p	*t ^h i:p	*a-tip (PMP)
seven	*tu:	*t ^h u:	*pitu
three	*tu:ʔ	*t ^h u:ʔ	*təru
sharp	*jə:m	*te ^h ə:m	*təjəm
five	*ma:	*hma:	*rima
six	*nəm	*hnom	*ʔənəm

Source: adapted from Norquest (2007)

An intriguing piece of evidence is provided by the word for 'bird' (Table 2). The PMP **manuk* appears to be cognate with Tai-Kadai, whereas Hlaic languages have innovated. Tai-Kadai languages usually delete the prefix of Austronesian forms, but Lakkia is cited because it preserves the m- prefix inherited from Austronesian.

Table 2. 'Bird' in Austronesian and Daic

Language	Form
PAN	*qayam
PMP	*manuk
Proto-Hlai	*səc
Proto-Tai Kadai	*-nok
Lakkia	mlok

This is likely to mean that there was a primary split in the migrants from the southern tip of Taiwan, with some reaching Hainan and others settling Guangdong and moving inland as pressure from Sinitic peoples intensified.

South and east of Taiwan are a variety of subgroups of PMP, which cover most of the islands now within Indonesia. Some Formosan words, in particular animal names, seem to show strongly split distributions, occurring in the West and Central parts of ISEA and noticeably absent in the Eastern Indonesia. Blust (1995) who carefully notes the distribution of cultural and biological terms, does not draw the conclusion that this is a consequence of early voyaging patterns but re-analysis of the data suggests this. §3 presents a brief sample of animal name and maritime terms which reflect the early dispersal of PMP.

3. Lexical evidence

3.1 Sharks and crocodiles

The name of the shark represents an interesting case. PMP has **buqaya* for ‘saltwater crocodile’ and this has a single Formosan reflex, Puyuma *buaya* ‘shark’. Formosan generally has **qisu* for ‘shark’ which is lost outside Taiwan. Blust (ibid.) assumes there was once PAN **buqaya* ‘crocodile’ reflecting a now disappeared species, and that the remaining Puyuma reflex has been transferred to ‘shark’. However, in the continuing absence of Taiwanese crocodiles, a simpler solution is that the Puyuma word is simply a borrowing from a nearby PMP language, reflecting intensive contact across the straits.

3.2 Pangolins

A curious piece of direct evidence from zoogeography supports a direct link between Taiwan and Borneo. Blust (ibid.) puzzled over the name for the pangolin;

‘Perhaps the best illustration of such a case is **qaRem* “pangolin”, reflected in Taiwan and in Borneo (where it applies to another species of the same genus, *Manis javanicus*), but with no evidence that the animal was ever found in any part of the Philippines except Palawan and the adjacent Kalamian and Cuyo Islands, which, like Borneo, rest on the now submerged Sunda Shelf.’

Table 3 presents an abbreviated version of the linguistic evidence for the name of the pangolin.³

Table 3. Austronesian names for pangolin

Branch	Language	Form	Gloss	Scientific
Formosan	Seediq	ʔaruŋ	pangolin, anteater	<i>Manis pentadactyla</i>
	Thao	qalhum	pangolin, scaly anteater	<i>Manis pentadactyla</i>
	Amis	ʔalem	anteater with long tongue	<i>Manis pentadactyla</i>
Borneo	Kiput	arem	pangolin, anteater	<i>Manis javanica</i>
	Katingan	ahem	pangolin, anteater	<i>Manis javanica</i>
	Ma'anyan	ayem	pangolin, anteater'	<i>Manis javanica</i>

Blust assumes that ‘Austronesian speakers moved south rapidly enough to encounter the new species of pangolin before they had lost their recollection of the *Manis pentadactyla*’, assuming that the migrants were first resident in the Philippines. This is unnecessary; there is no reason to think the voyages from Taiwan did not reach Borneo directly.

3.3 The jellyfish

The Malayo-Chamic languages are spoken in Borneo, on the Vietnamese mainland and have been carried widely across the region in the form of Malay. The proposed PAN term for ‘jellyfish’ is shown in Table 4, which has a curious distribution, since apart from a single Formosan reflex in Kavalan, the cognates are entirely restricted to Borneo languages. Although it is sometimes tempting to analyse Formosan reflexes as late borrowings, the distance between Borneo and the Kavalan area makes this unlikely.

Table 4. Austronesian names for ‘jellyfish’

Subgroup	Language	Form	Gloss
	PAN	*bubuR	jellyfish
Formosan	Kavalan	bubur	jellyfish
Borneo	Miri	bubur	jellyfish
	Bintulu	buvu	jellyfish
	Iban	bubur	jellyfish, sea nettle, swimming bell, <i>Medusa</i> spp.
	Bimanese	bubu	jellyfish

3. Further cognates can be found in the ACD online version

Perhaps also Malay *ubur-ubur* ‘bell-shaped jellyfish with a fringe of feelers’. Jellyfish are found throughout the region, so this may be additional support to a direct link between Taiwan and Borneo.

3.4 The cowry

The name for the cowry, *Cypraea mauritiana*, demonstrates an interesting pattern. Although reconstructed to PMP on the basis of Northern Philippines cognates, these all refer to a manifestly modern technology, the use of lead balls as sinkers. They are therefore most likely to be recent semantic transfers, not ancient inherited cognates. The nearest form meaning ‘cowry’ to the presumed homeland of PMP is in Palau. Otherwise, the distribution of the root is confined to Eastern Indonesia and Oceanic (Table 5). Given that cognates are spread widely in Micronesia, it is most likely that Palauan is a loan *from* Oceanic, as is the case with certain other maritime terms.

Table 5. ‘Cowry’ in Eastern Indonesia and Oceanic

Language	Form	Gloss
PMP/POC	*buliq	cowrie shell: <i>Cypraea mauritiana</i>
Isneg	bulí	lead; lead sinker of a fishing net
Ilokano	bulí	lead; wharve, whorl; sinker
Palauan	búi?	cowrie shell: <i>Cypraea mauritiana</i>
Ngadha	vuli	large cowrie shell used for war necklaces; the necklace itself
Rotinese	fuli	kind of shell; shells or bits of lead used as sinkers for a fishnet
Yamdena	fuli	kind of shellfish
Fordata	vuli	porcelain shell, egg cowrie
Yapese	wul	type of shell, large cowrie
Nggela	mbuli	generic for all cowries
Lau	buli	white cowrie, <i>Ovula ovulum</i> , ornament for canoes and men
Sa'a	puli	cowrie shell, used as sinkers for nets
Pohnpeian	pwili	cowrie, any species of sea shell
Puluwat	pwil	cowrie shell scraper, as for green breadfruit
Woleaian	u-bili	white shell, cowry
Fijian	buli	the cowrie shell <i>Cypracidae</i>
Tongan	pule	kind of shellfish, the cowrie; be marked with spots or coloured patterns

Language	Form	Gloss
Niue	pule	cowrie shell
Samoan	pule	molluscs belonging to the genera <i>Cypraea</i> (cowries) and <i>Ovulum</i> . Cowrie shells are used as sinkers and for making squid lures.
Tuvaluan	pule	shellfish sp. <i>Pila conica</i>
Maori	pure	bivalve mollusks: <i>Notovola novaezelandiae</i> and other <i>Pectinidae</i>

The data suggests that this term is in fact not PMP at all but was innovated somewhere in Eastern Indonesia and, was carried into the Oceanic area and then back into Micronesia as part of the backscatter which created Yapese. The apparent cognates in the Northern Philippines are then simply borrowings reflecting the introduction of lead sinkers in a much later era.

3.5 The typhoon/cyclone

The name for ‘typhoon’, ‘cyclone’, ‘strong wind’ also shows a highly skewed distribution. Typhoons are extremely common on Taiwan, and it is no surprise they are attested in Formosan languages. The earliest settlers of the Marianas must have been familiar with typhoons, as were the seagoing peoples of the Philippines. However, the word was clearly only transmitted along the west coast of the Philippines, as it becomes ‘strong wind’ in the languages of Borneo and is not attested elsewhere and strikingly not in the open seas east of the Philippines (Table 6). The term is completely replaced by the Oceanic term *mana*, ‘storm’, ‘big wind’, which has strong spiritual connotations throughout much of the Pacific.

Table 6. Austronesian names for ‘typhoon/big wind’

Branch	Language	Form	Gloss
	PAN	*baRiuS	typhoon
Formosan	Saisiyat	bal’yof	typhoon
	Favorlang	bayus	storm
	Amis	faliyos	typhoon; monsoon winds and rain
	Puyuma (Tamalakaw)	vaRiw	typhoon
Micronesia	Chamorro	pakyo	typhoon, storm, tropical cyclone
Philippines	Ilokano	bagió	typhoon

Branch	Language	Form	Gloss
	Tagalog	bagyó	storm
	Bikol	bagyó	typhoon, hurricane, gale, storm, tempest
	Hanunóo	bagyú	strong wind, storm, typhoon
	Aklanon	bágyo(h)	hurricane, storm
	Cebuano	bagyú	typhoon
	Samal	baliw	wind
Borneo	Miri	baruy	wind
	Kelabit	bariw	strong wind, storm wind
	Kenyah	baloy	air, wind
	Kayan	bahuy	strong wind, storm
	Bintulu	bauy	wind

5. Boats and maritime vocabulary

The model depends strongly on the assumption that innovative maritime technology drove the PMP dispersal. There is no evidence that the initial settlers of Taiwan had anything other than bamboo rafts which are still in use today in modified form (Ling 1956; Rolett et al. 2002). However, the peoples leaving Taiwan four thousand years ago had access to more sophisticated watercraft, as they were able to reach the Marianas and return (Hung et al. 2011). The populations in the Luzon Strait today have no such boats; the large seagoing canoes of the Yami of Lanyu island could reach the Batanes, which is around 150 kilometres, but certainly not survive a 3000 km voyage. Similarly the peoples of the Northern Philippines do not today have large outriggers although these must surely have been constructed in the past.

If indeed the Luzon Strait was a ‘boiling pot’, this should also be reflected in the terminology for boats (e.g. Pawley and Pawley 1994). The root **[q] aban* applied to ‘boat’ has a striking distribution (Table 7). Isolated reflexes of **qaban* and **bankaʔ* are found in Formosan languages as ‘canoe’, but the term was subsequently applied to much larger vessels. Based on phonological irregularities, Wolff (2010/2, 947) argues the Formosan cognates are secondary introductions from Malayo-Polynesian languages. In proto-Bashiic, this root applied to a large boat of some type, presumably resembling the large

surf-boats of the Yami. Blust (1995) links this word to the verb **qabaŋ* ‘to float’ which gave rise to the more common Austronesian root for canoe and eventually the large outrigger. However, the same root is also widely attested in the languages of mainland SE Asia, both in proto-Tai-Kadai as **baŋ*, and as perhaps a direct loan into Austroasiatic as Monic *kban*.

Table 7. An Austronesian term for ‘boat’ borrowed into Austroasiatic

Phylum	Branch	Language	Attestation		Gloss
Austronesian	PAN		<i>*qabaŋ</i>		boat, canoe
	Formosan	Siraya	avaŋ		canoe
	Formosan	Favorlang	abaŋtu		boat
	Bashiic	Tao	avaŋ		large boat
	Philippines	Magindanao	kaban		boat
	Philippines	Tagalog		baŋka?	canoe
	Philippines	Sulu	guban		boat
	Ibanic	Iban	boŋ, buuŋ		long, shallow boat,
	Malayic	Moken	kabaŋ		boat
	Malayic	Malay	kəbaŋ		vessel
	Malayic	Sekah	gobaŋ		boat
	Chamic	PC	<i>*bəəŋ</i>		coffin
	Barrier	Nias	owo		boat
	Barrier	Sichule	ofō		boat
	Bima-Sumba	Sawu	kowa		boat
	CMP	Komodo		waŋka	boat, canoe
	CMP	Manggarai		waŋka	boat
	CMP	Rembong		waŋka	boat
	Oceanic	proto-Oceanic		<i>*waŋka</i>	outrigger, canoe
Daic	Tai-Kadai	proto-Tai-Kadai	<i>*baŋ</i>		boat
Austroasiatic	Aslian	Jahai	kupon		boat
	Bahnaric	Biat	baŋ		coffin
	Aslian	Semai, Temiar	kapal ⁴		boat
	Monic	Old Mon	kbaŋ		ship
	Mangic	Mang	ḥaaŋ		ferry, boat
	Nicobaric		kopòk		boat

4. ? < Malay or Tamil.

Table 7 includes terms for ‘coffin’ in some languages, since the distribution of boat-coffins throughout the region makes this a likely polysemy. Almost certainly, *qabaŋ* underwent metathesis to *baŋka ~ waŋka*, either independently in Tagalog, but certainly in Eastern Indonesia where it was applied to large outriggers. As part of the interaction between the Luzon Straits and the SE Asian mainland, the Austronesian term was borrowed into Mon and thence into other Austroasiatic languages. Mangic (isolated in China among Daic languages) could be a direct borrowing from Tai-Kadai rather than inherited from its apparent Austroasiatic relatives. This suggests that when the large sailing boat was introduced, it rapidly spread across the region, and was adopted and adapted by speakers of different language phyla, perhaps reflecting the busy trade in nephrite and other trade goods around the region (Hung et al. 2007). However, once in contact with the mainland the term would be applied to the smaller river boats, without outriggers.

The issue of exactly what technical innovation allowed for the explosive dispersal of PMP speakers has been widely discussed. Some form of outrigger is the most credible hypothesis, but the absence of large seagoing outriggers in the Northern Philippines today makes this difficult to test. The PMP reconstruction **saReman* ‘outrigger float’ is only supported by reflexes in Eastern Indonesian languages, with no Philippines cognates. Interestingly, Chamorro does have a reflex, *sakman*, but this only applies to a large boat, not an outrigger. PMP **katiR* ‘outrigger float’ is supported by Philippines reflexes and is otherwise attested in Western ISEA. This suggests that outriggers were present in the Luzon Strait at an early period, but that the boat builders set off in two distinct directions, southwards down the west side of the Philippines towards Borneo and directly towards Eastern Indonesia and onwards to the Bismarcks.

Blust (1995, ACD) suggests that the sail was already present in PAN. However, this is unlikely. The two Formosan potential cognates supporting PAN **layaR* are given in Table 8. Only one, Kavalan, applies to the sail, suggesting that this is either an independent transfer of the word from ‘cloth’ to sail by analogy, or simply a borrowing.

Table 8. Evidence for a PAN term for ‘sail’

Language	Form	Gloss
PAN	* <i>layaR</i>	sail
Kavalan	RayaR	sail of a raft or boat; cloth around a threshing machine
Paiwan	la-laya	a flag, banner

However, **layaR* is omnipresent in PMP, attested from Nias to Polynesia, surely pointing to a highly visible innovation. As Table 4 for ‘jellyfish’ reminds us, Kavalan is sometimes the only evidence for PAN forms, which makes borrowing more than a possibility.

6. Material culture

Austronesian material culture is wonderfully various and has been enriched by influences from every direction over five millennia. Nonetheless, it is some ways highly conservative, with iconography which is preserved from Luzon to New Zealand (Blench 2012). This section focuses on a few examples of Formosan material culture, which have a patchy distribution in the Austronesian world, pointing to the opportunistic nature of the early dispersal from the Luzon Straits.

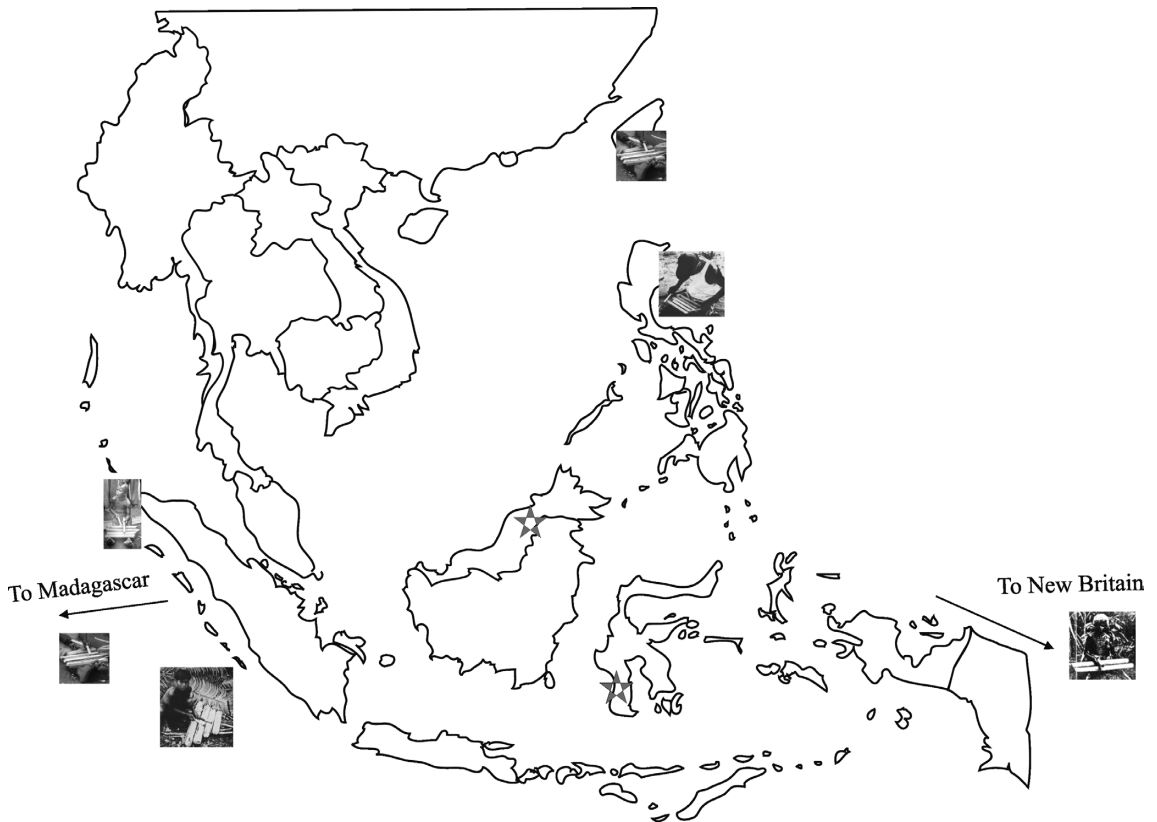
6.1 The leg-xylophone

One of the simplest forms of the xylophone is the leg-xylophone, where the player simply lays a number of bars across his or her legs and beats them with one or two sticks. The leg-xylophone is found in two regions of the world, Africa and the Austronesian region, occurrences that are probably unconnected. The leg-xylophone is known from the Amis people of Taiwan. A photo on display in the Shun Ye museum in Taipei shows the keys laid transversely across the player’s legs (Photo 1). Kunst



Photo 1. Amis leg-xylophone. (Source: Author photo, Shun Ye Museum)

(1940) mapped the leg-xylophone (he calls it ‘thigh-xylophone’) in insular SE Asia as far as the information was available to him at the period, recording it in Nias, Mentawai, Borneo and south Sulawesi. However, it also occurs in the Northern Philippines. The Itneg people in the Northern Cordillera play a five-key leg-xylophone, *talongatin*, probably forming a pentatonic scale (Maceda 1998, 226 and image). Otherwise it is found only at the margins of the primary expansion of PMP, on the barrier islands of Sumatra, in Madagascar and in New Britain, New Ireland, the Duke of York islands, Tami and Morobe province in Eastern Papua New Guinea, although there it is reduced to only two keys (Sachs 1928; Collaer 1965, 102; Fischer 1958, 12; Kunst 1967, 41). Map 1 shows the Indo-Pacific distribution of the leg-xylophone. This suggests that it was carried from Taiwan, but only directly across the Luzon



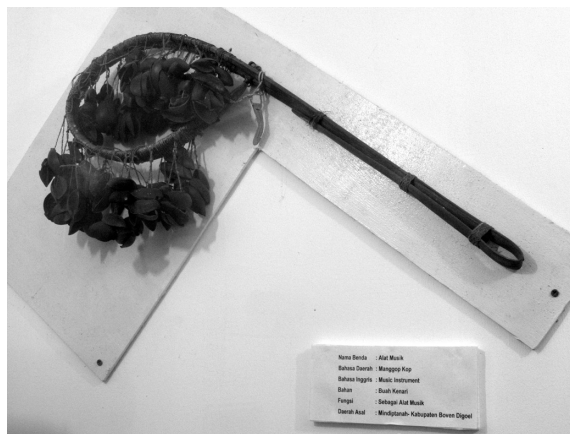
Map 1. The leg-xylophone in the Austronesian area.

Strait, but otherwise to Oceania, and to western Sumatra. This highly selective distribution is characteristic of the early dispersal period, where individual vessels may have reached remote locations directly.

6.2 The shark rattle

We do not usually look to sharks as typical audiences for musical performance, but in one case this is an opportunity that may have been overlooked. Scattered across the Austronesian world, is a very distinctive sound-producer, shaken underwater in a performance intended to ‘call’ sharks. The shark rattle is made of a curved rattan with dried fruit-shells attached by cords, as in the example in Photo 2 from the coast of North Papua. The record nearest to the Austronesian heartland is in the Sulu archipelago, among the Sama (Maceda 1980). Similar implements are found in New Ireland (Photo 5), in Samoa (Hiroa 1930) and probably across much of Polynesia. No records of anything similar are found in either Eastern or Western ISEA, suggesting that these originated with the seagoing populations of the Philippines and were carried directly to the Oceanic/SWHG area.

Photo 2. Shark-calling rattle, North Papuan coast.
(Source: Author photo, Museum Loka Budaya, Abepura)



6.3 Bamboo bird-scarers

A characteristic item of Austronesian material culture found in certain parts of the Austronesian world is the split-bamboo bird-scarer. It consists of a bamboo internode with a rectangular hole cut through one half of the tube.

The tube is split lengthways so that the two halves rattle against one another when it is shaken, either by the wind or by hand. Several may be mounted in a frame or a single instrument held in the hand. In most places, this instrument is used to scare birds from the fields. Photo 3 shows some examples of these bird-scarers, collected among Formosan peoples. The same use is recorded in Sulawesi and more surprisingly in Madagascar (Sachs 1938). However, in the Northern Philippines the same instrument is used by Ifugao priests to ‘cleanse’ houses annually of residual evil spirits (Photo 4). Part of the interest of the split-bamboo bird-scarer is its highly distinctive morphology; such sound-producers are found nowhere else in the world. Since the noise is intended to deter birds from growing millet or rice, it is a characteristic product of a cereal-growing society, evidence that there were some cereal cultivators present among the earliest voyagers in the Luzon Straits.



Photo 3. Shark rattle, New Ireland.
(Source: CC)

Photo 4. Formosan bird-scarers.
(Source: Author photo, Shun Ye Museum)





Photo 5. Ifugao priests with bamboo split-rattles. (Source: Maceda Archive)

6.4 Rattan and coconut fibre armour

The concept of using armour (and helmets) to protect individuals in warfare may seem obvious but is characteristically Eurasian and is unknown in Africa and Melanesia (except in Austronesian-influenced areas). In the Americas, it is only found in the Pacific Northwest. Rattan armour was made in Taiwan (Photo 6) and versions of it are found across much of the Austronesian region, sometimes evolving through the use of different materials and in particular refashioned in metals when these were introduced. The broader concept of this type of armour was known in the Philippines, although by the time of European contact, the fibres had been replaced by metal sheets. Armour extremely similar to the Formosan type is found along the north coast of Papua (Photo 7). The Toraja in Sulawesi used cuirasses which also correspond to the Formosan type, but made of leather (Photo 8). Among the Nias people it was developed into thin metal sheet armour (Photo 9) and in Micronesia fish-skins were used, for example among the Gilbertese.



Photo 6. Rattan armour, Taiwan.
(Source: Author photo, Shun Ye Museum)



Photo 7. Rattan armour, North Papua.
(Source: Author photo, Museum Loka Budaya, Abepura)



Photo 8. Toraja leather cuirasse.
(Source: CC, Yale University Art Gallery)



Photo 9. Nias metal sheet armour.
(Source: CC, Tropenmuseum, Amsterdam)



Photo 10. Taiwan, foot-braced loom. (Source: Author photo, National Museum of Taiwan)

6.5 The foot-braced backstrap loom

An intriguing piece of evidence supporting the Hainan island comes from a subtype of the loom. The backstrap loom is known over much of the Austronesian world, although it is lost in Oceania. However, the form of the backstrap loom in Taiwan is foot-braced (Photo 10), a rare and inconvenient type of loom which has been displaced elsewhere in the region by various types of frame-loom (Buckley in press). The only other place the foot-braced backstrap loom also survives is on Hainan island among the Hlai speakers and in a small zone of the Vietnamese-Laos borderland. The most likely interpretation of this distribution is that the foot-braced loom was carried to Hainan and the mainland as part of the migration of one branch of the earliest PMP dispersal.. An innovative frame-loom from the mainland rapidly displaced it everywhere but Hainan, which was inaccessible in the same way as the interior of Taiwan.

7. Rethinking proto-Malayo-Polynesian

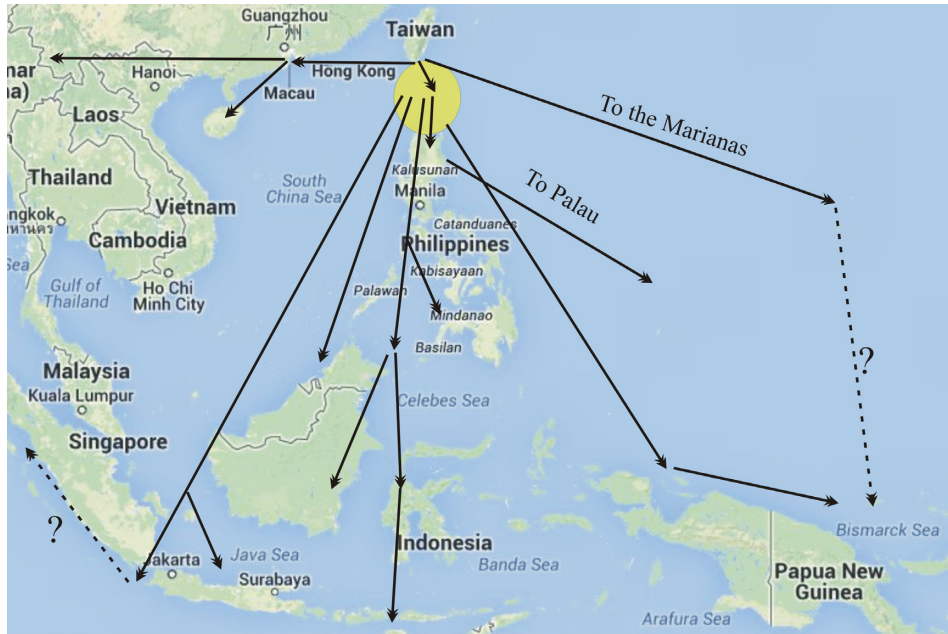
Four thousand years ago both the island of Taiwan and the Chinese mainland opposite would have been extremely ethnolinguistically diverse, with

many more languages present than are spoken today. Most probably those languages could be described in present-day terms as Austronesian. Subsistence strategies would have been comparably varied, ranging from cereal agriculture to specialised fisheries and a foraging lifestyle. At this period, Austromelanesian hunter-gatherers may well still have been present and this may be the source of some of the 'Formosanisms' not attested elsewhere in Austronesian. The only maritime technology would have been bamboo rafts, suitable for crossing protected seas, but dangerous in open oceans subject to cyclones.

In the Luzon Strait, an innovative maritime technology developed which allowed long-distance navigation, and certainly involved the use of outriggers and sails. Seeking natural resources and new fishing grounds, a mix of populations set off in different directions both to explore the open ocean, the islands and to reconnect with the mainland. The technology allowed them to range widely, and rather than settling the Philippines and proceeding sequentially to other locations, they rapidly reached a scatter of different destinations, hence the near-simultaneity of archaeological dates. The multi-ethnic nature of the crews ensured that both different lexical and material culture was dispersed along the routes being newly pioneered. New traffic with the mainland brought innovative cultural practices to the region displacing practices brought from Taiwan, which survived only in peripheral sites.

The PMP hypothesis, analogous to PAN, assumes a unitary culture and language in the Luzon Strait, at a key point around 4000 years ago. Not only is this unlikely to be true on the basis of typically intercultural nature of sea-voyages, but it is not supported by the evidence from either the lexicon or the distribution of material culture. The paper suggests that if the distribution of roots in Austronesian is analysed, many PMP roots have a distinct geography, arguing that they reflect the opening up of sea routes by different groups.

If so, this leads to the inevitable conclusion that there was never a unified culture in the Luzon Strait, to be identified with a reconstructed PMP language. Rather there was a 'common PMP' a fund of related lexemes and related lifestyles which reflect a zone of interaction between Taiwan, the Northern Philippines and unknown languages on the Chinese mainland. This 'boiling pot' in the Luzon Straits was the starting point for exploratory voyages carrying 'word and things' in all directions round ISEA, the mainland and Oceania. A flexible, nomadic seagoing culture with no necessary return to the



Map 2. The dispersal of early Malayopolynesian.

starting point created a series of independent branches of a proto-language, often with borrowings between them and a variety of contact phenomena. Hence the distribution of material culture with its regional biases, the odd distribution of faunal names noted by Blust and the difficulties in classifying WMP.

It cannot be underlined too strongly that this re-analysis is at the earliest stage of rethinking the Austronesian expansion, and much more work needs to be undertaken on both material culture distributions and the history of individual lexemes. With these caveats, Map 2 presents an extremely tentative scheme of the routes that may have been established in the early period when PMP was developing.

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沸騰的鍋子：四千年前的呂宋海峽

Roger BLENCH^{*}

摘要

一般認為約在4000年前，呂宋海峽(Luzon straits)的原始馬來-波里尼西亞語(proto-Malayo-Polynesian[PMP])，是一種單一語言，而後發展成各種超出福爾摩沙語(extra-Formosan)之外的語言，並以此解釋東南亞島嶼(Island Southeast Asia[ISEA])與大洋洲(Oceania)新石器時代聚落形成的原因。

本文從語言、考古及物質文化的分布進行分析，認為並非如此。作者依據考古資料，指4000年以來，東南亞島嶼廣泛的聚落分布幾乎同時發生；從語言個別詞彙的分析，則有地理上不平均的分布趨勢，應是被選擇性地帶到不同區域。而從南島語族文化的物質文化特色看，也顯現出地理上的不平均分布。

本文提出「沸騰的鍋子(boiling pot)」，作為不同時空範疇之原型(model)主張，認為呂宋海峽是海洋技術發明的中心，也是獨木舟(以各地的多元族群水手)開始航行的起點，即建立跨越整個區域、與非中國之大陸型文化再連結的先驅路線。因此，原始馬來-波里尼西亞語可被視為一個關係團體的網絡中心，而從未存在過單一的原始馬來-波里尼西亞語。

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