

# ARCHAEOLOGICAL DATES AND LINGUISTIC SUB-GROUPS IN THE SETTLEMENT OF THE ISLAND SOUTHEAST ASIAN-PACIFIC REGION

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## ABSTRACT

*Since 1989 the author has examined the dating of the spread of pottery-using agricultural cultures through Island SE Asia and into the Pacific in a series of papers which examine critically the radiocarbon corpus and its interpretation. Since the last published update on this project a lot of new data have become available, prompting the current review. Considerations of the fit between the archaeological evidence and that derived from linguistics are made and the issue of unrecognised site disturbance as contributing to confusion in constructing regional chronologies is also addressed.*

I have previously examined the dating of the spread of pottery-using, agricultural cultures through Island Southeast Asia and Near Oceania, and their extension, ultimately aceramic, into Remote Oceania in several papers, one of them co-authored with Atholl Anderson. These sought to provide a critical evaluation of the radiocarbon corpus and its interpretation (Spriggs 1989, 1990, 1996a; Spriggs and Anderson 1993).

Since the 1996 update on this chronology, a detailed account of the archaeology of Island Southeast Asia has been published, the second edition of Peter Bellwood's *Prehistory of the Indo-Malaysian Archipelago* (1997; first edition 1985). In addition, work continues apace on the archaeology of the region and so it is time for another look at the issue.

But first I want to point to a crisis in archaeology in our region, the lack of consideration of disturbance factors in our sites. This is leading to major misinterpretations of the cultural chronologies we all rely on. I note this is as much a problem in the Island Pacific and Australia as in Island Southeast Asia; it is as much a problem among "Euro-American" archaeologists as it is among our Pacific

and Southeast Asian colleagues, so I hope my remarks will be seen as referring to everyone equally.

## UNRECOGNISED SITE DISTURBANCE

Most important in examining aspects of regional chronology are questions of site formation processes and post-depositional disturbance. I do not believe that regional specialists, working either in Southeast Asia or the Pacific region have, in general, taken these sufficiently into account in the interpretation of their excavations. I would go further and say that it is my experience in both Southeast Asia and the Pacific that the vast majority of cave and rockshelter sites can be shown to be subject to severe and often unrecognised stratigraphic disturbance. Anyone claiming associations between dated samples and particular assemblages should have to demonstrate why the association is **NOT** the result of disturbance, rather than just assuming that the association is genuine. For the most part, the problem is not one of excavation technique. That is not what I am criticising in this discussion.

In part, I suspect the problem is that much of the visible stratigraphy which we love to record represents post-depositional chemical alteration of the sediments, which is masking disturbance and homogenising the stratigraphy. For instance, leaching of organic content with depth produces colour differences we often interpret as marking different stratigraphic "layers". The result is that pits and postholes dug from one level into a lower horizon or old root or animal burrow disturbance are often invisible during excavation. Richardson (1992, 1996) was able to establish this as the problem at the classic Australian site of Kenniff Cave, Queensland, by re-fitting artefacts using conjoin analysis, the deposition of the flakes struck from a single core bearing little relation at all to the beautifully-clear visible stratigraphy.

Patterns of concentrations of sherds or pig bones in upper horizons with a rapid fall off in number of bones with depth and then a "tail" of often single occurrences

would seem to constitute evidence of disturbance either unrecognised in excavation or masked by post-depositional alteration of the deposit.

White and O'Connell (1982:Table 6.5) present exactly this pattern for supposedly early pig bone at three New Guinea Highlands shelters – Kafiavana excavated by White, and Yuku and Kiowa excavated by Susan Bulmer. At Kafiavana, 58 pig bone fragments from the uppermost horizon are reduced immediately to no fragments in Horizon II, 1 in III and 3 in IV, with none below that. Yuku presents 58 fragments of pig bone in the top horizon, 9 in the second, none in the third, five in the fourth, one in the fifth and one in the sixth. The sixth layer has produced dates of around 10,000 BP interpreted by the excavator as representing the presence of pig in New Guinea at this early date. Taking the date at the bottom of the 'tail' of such distributions as a true reflection of the date of introduction of pig (or any other new cultural phenomenon) would seem to me to be extremely unwise.

Post-depositional chemical alteration seems to be a particular problem in rockshelters but is also evident from open sites with easily-leached or otherwise altered soils in high rainfall areas (cf. Some of the classic Thai Bronze Age open sites such as Ban Chiang: Higham 1989:110). Hughes and Lampert (1977:136) reported that the absence of shell in the lower levels of some sites today is a result of removal in solution by percolating rainwater. This can result in removal of one third of the original thickness of such deposits and presumably creates a lag effect with artefacts of different ages being placed in close proximity by compaction of the sediments.

Secondly, sites with obvious stratigraphic hiatuses – periods of abandonment when all deposition ceases – will present disturbances of lower levels upon reoccupation that are often not apparent during excavation. This can take the form of a scuffage horizon where mixing could easily have occurred in the top 20-30 cm or so of the lower layer. This has clearly occurred at Pamwak shelter (Manus) and Kilu shelter (Buka), for instance, in relation to supposedly early pottery finds (discussed in Spriggs 1996a:43). Detailed pottery sequences established from a number of other sites in these areas were able to place the supposedly early pottery as stylistically similar to pottery dating to 2000-1000 BP. The sherds had been found in levels dating to 5705-4880 BP at Kilu and back to 7220-6187 BP at Pamwak!

Thirdly, the area adjacent to the back or side walls of cave sites is a particular zone of disturbance. In part this is because of the behaviour of sediments during earthquakes which tend to move away from the back wall, thus allowing deep penetration of artefacts into lower levels. In part it is because of the action of water moving down the cave walls and continually churning the sediments, altering them physically and chemically. I would urge everyone to examine contexts adjacent to cave walls with a view to

likely severe and unrecognized disturbance. Vertical displacement of up to 2m next to cave walls is quite possible.

Recognition of the likelihood and extent of such disturbance would lead to greater caution in interpreting rare or singular occurrences of items such as pottery, metal or single pig bones in early contexts. The degree of stylistic continuity in pottery over time spans of up to 5000 years, claimed for northern New Guinea on the basis of small samples from several problematic sites there (Gorecki 1992: 37 for instance) is unprecedented in the Pacific and Island Southeast Asia where recognisable stylistic change is usually identifiable over a few centuries. Such claimed stylistic longevity is frankly unbelievable.

The way forward is by much greater efforts at:

- sedimentary analyses, particularly micromorphology to study depositional and post-depositional conditions,
- critical examination of changes in artefact patterning with depth, particularly dramatic fall-offs and a 'tail' of sporadic occurrences at lower depth.
- dating of many more radiocarbon samples from sites than is usually attempted (not just the classic pattern of one from the bottom, one from the middle and one from the top), as a possible measure of stratigraphic disturbance
- direct AMS dating of organic artefacts (shell, bone) and of faunal materials, claimed as particularly early occurrences for the region,
- charcoal identification of material to be dated to check for factors such as the use of old wood, and/or driftwood producing anomalous dates, and
- greater efforts at re-fitting of artefacts using conjoin analysis to check for vertical and horizontal movement of flakes from the same core, or sherds from the same pot.

I think we should be sceptical therefore of early pigs and early pots in New Guinea, early metal in the Philippines (Ronquillo *et al.* 1993; Thiel 1988-1989), pre-5000 BP red slipped Island Southeast Asian Neolithic pottery (see below), and Lapita pottery in New Britain and New Caledonia continuing later than about 2800 to 2600 BP (Frimigacci 1980; Specht *et al.* 1991).

#### A NEW SYNTHESIS OF ISLAND SOUTHEAST ASIAN NEOLITHIC SEQUENCES

This section is a condensed version of Spriggs (in press). In his 1997 book, Bellwood claims that the major spread of Neolithic culture from Taiwan out through Island Southeast Asia largely occurred in the period after 4000 BP. If there is a link to the spread of the Lapita culture of the western Pacific, as Bellwood, myself and others have suggested, then one is indeed talking of an 'express train' in Jared Diamond's (1988) term, to reach Tonga in western Polynesia in just over 1000 years.

The earliest Neolithic sites in our region are in Taiwan, and links back to China are clear and usually uncontroversial.

sial. The earliest well-dated Tapenkeng culture sites on the island date to prior to 5000 BP, and there is considerable so-far undated early Neolithic activity there which could go back perhaps a thousand years further.

This Neolithic culture subsequently spread south through the Philippines, Borneo, Sulawesi and eastern Indonesia. Its eastern expression in Island Melanesia and Western Polynesia is the Lapita culture, a horizon found from the Bismarck Archipelago to Tonga and Samoa with starting dates across its range of 3300 to 2800 BP.

This spread has long been associated, by Bellwood and others (Shutler and Marck 1975; Spriggs 1989, 1996b, 1997), with the spread of Austronesian languages across this same area, and ultimately as far as Hawaii, Easter Island and New Zealand.

These Neolithic populations were agricultural (clearly reconstructible from comparative linguistic evidence), whereas earlier populations in Island Southeast Asia and western Melanesia may not have been (Spriggs 1996c), or at least did not have an agricultural economy of the type they were soon to adopt from the newcomers. Indigenous populations certainly did not have the suite of domesticated animals which spread with the Lapita culture through Island Melanesia and into the Pacific: the pig, dog, chicken and the commensal Polynesian rat which were all of Asian Neolithic origin. From there being an argument a few years ago about whether the origins of Lapita in western Melanesia were largely indigenous or largely intrusive, even the most dyed-in-the-wool 'indigenists' would now allow at least a major Southeast Asian influence.

The 1997 edition of *The Prehistory of the Indo-Malaysian Archipelago* has important changes from the 1985 edition in relation to the Neolithic, and these deserve some comment.

Bellwood now believes that the spread of Neolithic culture outside Taiwan is associated with the Yuanshan culture and dates in large part to the period after 4000 BP (1997: 219-236). He writes:

The most varied Neolithic assemblages occur in the northern Philippines, which is what could be expected given their closeness to Taiwan. The more southerly sites in Borneo, Talaud, the Moluccas, Sulawesi and Timor show some degree of attenuation of material culture (Bellwood 1997: 219).

Thus, there is an internal hint of directionality of the spread, in the same way that Lapita pottery is most complex early on and at the western end of its distribution in the Pacific. The attenuation included the dropping out of previously important cereal crops such as rice.

There are now a range of pre-4000 BP Neolithic dates from Luzon in the northern Philippines, indeed dates back to about 5000 BP seem acceptable for the beginning of pottery sequences there. But this is not the case as one moves south in the Philippines and Eastern Indonesia.

Bellwood's revised chronology is only contradicted by three previously accepted (Spriggs 1989) pre-4000 BP radiocarbon dates from sites south of Luzon - Leang Tuwo Mane'e in the Talaud islands (4807-4417 BP), excavated by Bellwood, and Ulu Leang 1 in South Sulawesi (5257-4859 BP and 4814-4419 BP), excavated by Glover (1978). These samples may not closely date the beginning of the Neolithic sequence at the sites in question. At Leang Tuwo Mane'e, the date came from a level where there was a dramatic drop-off in pottery compared to higher levels (Bellwood 1978: fig. 6). The few sherds in association might well be intrusive into the preceramic, mid-Holocene deposit, and there was evidence for disturbance of cave sediments at this site (ibid.: 257). Daud Tanudirjo (1998) has since conducted PhD research in Talaud and nearby areas which suggests a date for the beginning of Neolithic sequences there post-4000 BP.

At Ulu Leang 1 in South Sulawesi there was evidence for solution of the limestone bedrock and subsequent collapse of the sediments of some 70 cm in the area of the earlier radiocarbon date (Glover 1979: 309), and so this and similar caves were judged as "highly unstable" by the excavator. The later date came from a remnant deposit cemented to the cave wall above current floor level. It should also be noted that pottery occurred only in the top 30cm or so of the cave deposit and was rare in the lowest spit which provided the radiocarbon samples (Glover 1976: 126; 1978: 87, 93). Downward displacement of pottery by less than 10cm could explain the early dates.

Since my 1989 review of the dating of the Island Southeast Asian Neolithic (see also Spriggs 1996a), new excavations have taken place at Balobok Rockshelter on Sanga Sanga Island in the southern Philippines which have yielded extremely early dates for Neolithic and Metal Age assemblages, associated with uncorrected shell dates of 7290±120 BP and 5140±100 BP respectively (Ronquillo et al. 1993). Ages of this order are completely outside the range of dates for similar assemblages anywhere in Island Southeast Asia. They almost certainly represent an early to mid-Holocene preceramic occupation, with some downward displacement of later artefact types; in this case a maximum of only 20 cm displacement if they were originally deposited on the current ground surface!

It is certainly worth considering the implications of a Neolithic spread starting in the region some 1000 years later than previously believed. From the northern Philippines to Samoa in just over a thousand years is an extremely rapid spread, with important implications for the demography of the migration and for consideration of the nature of interaction with indigenous groups along the route.

In the last few years some clarity has come to the beginnings of the Mariana Islands sequence in western Micronesia. The sequence starts about 3500 BP with red-

slipped and dentate-stamped pottery in an assemblage clearly derived from the Philippines Neolithic (Amesbury et al. 1996; Butler 1994; Craib 1993). The early dates suggest that dentate-stamped pottery in Island Southeast Asia must go back earlier than that so far found.

The sequence from Palau or Belau in the Western Caroline Islands appears to go back to about 3400 BP on cultural evidence, and possibly 4000 BP if palaeoenvironmental disturbance evidence represents human impact on the environment (Wickler 1998).

Lapita assemblages with dentate-stamped pottery in Island Melanesia are arguably now best dated as starting about 3300 BP (Specht and Gosden 1997) - a point I will return to later. Given the distances involved, it would seem most unlikely that there is any direct link between the Bismarcks Lapita assemblages and those in the Marianas, and no-one as far as I know is suggesting an origin for the Marianas assemblages from anywhere but the Philippines area (linguistically the Chamorro language of the Marianas is a Western Malayo-Polynesian language). Settlement of the Marianas would represent an open-ocean crossing considerably greater than any undertaken in the Lapita area, and occurred probably a few hundred years earlier.

Recently proposed genetic affiliations for the Chamorro language suggest that initial settlement may have taken place there even earlier than currently dated archaeological assemblages. If, as Reid suggests (1998), Chamorro represents an early offshoot of Malayo-Polynesian soon after settlement of the northern Philippines, then a 4500 to 4000 year sequence may one day come to light in the Marianas.

The Palauan language is also of Western Malayo-Polynesian origin, but a later offshoot than Chamorro according to Reid. If the current sites there dating back to 3400 BP do represent close to initial settlement (4000 BP is also possible on palaeoenvironmental grounds) then settlement of the Marianas should indeed be several hundred years earlier. It may be time to revisit some very early dates recovered from an inland location on Guam some years ago (Bath 1986).

The early Marianas assemblages are the "smoking gun", arguing for derivation of Lapita from Island Southeast Asia, and considerable sailing ability in the Southeast Asian region. This obviates the need for any specifically Lapita innovations in that regard. The Marianas sites contain many of the artefact types suggested (when found in the Bismarcks) as having derived locally in Melanesia rather than having been brought in from the west. Other Lapita-like pottery and associated artefact assemblages in Island Southeast Asia, with dentate-stamping and Lapita-like motifs, have so far provided dates later than 3000 BP, but the Marianas evidence suggests that earlier assemblages will be found as more work is done.

Noting that the Malay Peninsula is, during the Neolithic, "a completely separate cultural entity from the islands" (1997: 219), Bellwood sees the earliest western Borneo Neolithic assemblages as related not to a spread from Taiwan but to Peninsular Malaysian and Southern Thai assemblages (1997: 236-241). Substratum influences on some Borneo Austronesian languages from Austroasiatic languages would support this model, and Bellwood (1996: 483) also notes possible early Austroasiatic influence in Sumatra and possibly Sumbawa. Thus, we now have Island Southeast Asian **Neolithics** rather than a single-origin Neolithic. For Java and Sumatra the archaeological situation is unclear, with no dated Neolithic assemblages at all.

The Borneo assemblages in question are those at Gua Sireh (5449-4839 BP: Spriggs 1996a: 41) and Niah Cave (dating completely uncertain). Unlike the other Island Southeast Asian assemblages south of Taiwan, they have cord or basketry wrapped paddle impressed pottery. The more usual red slip and/or incised ware is virtually absent. These assemblages are very different to those in the rest of Borneo, in the Philippines and in eastern Indonesia. Later assemblages in western Borneo are more like the usual Island Southeast Asian ones, as are various undated sites in Eastern Java. This suggests a change in cultural affiliation, and on Bellwood's model a change from Austroasiatic to Austronesian languages.

The direct evidence of long-distance movement of obsidian from Island Melanesia to Sabah, and more local movement of obsidian between islands in Southeast Asia during the Neolithic, the settlement of the Mariana Islands across a large sea-gap from the Philippines, and the undoubted connections between Neolithic cultures of Island Southeast Asia and the Lapita culture of the western Pacific give us our best evidence so far of maritime trade and connections. Advances in boat technology, including possibly the development of the double-hulled canoe, are usually attributed to the bearers of the Lapita culture in Island Melanesia, but the journey from Island Southeast Asia to the Mariana Islands perhaps a few centuries prior to the spread of Lapita shows that advanced boat technology already featured in earlier phases of the Neolithic, and indeed show how it was able to spread so quickly from Taiwan to Tonga in a thousand years.

On the basis of the putative find of a Moluccan clove in a Middle Eastern site in Syria dating to 3710-3550 BP and claims for early pottery, betel nut and pigs from northern New Guinea (all of Southeast Asian origin), Pam Swadling (1996) has claimed that there was an early period of contact linking New Guinea and Asia dating from about 6000-5000 BP. She posits an association with the spread of Austronesian languages and claims an "almost simultaneous introduction of pottery across island Southeast Asia as far as New Guinea about 5000 years ago" (1996:51). The dating for early pigs and pottery in north-

ern New Guinea has been challenged on the basis of unrecognised site disturbance (See above, and Spriggs 1996a: 43-44; 1996b: 329-335).

I previously interpreted the spread of pottery through Southeast Asia and the Pacific in a more clinal manner (Spriggs 1989), but now, as discussed above, Bellwood has put forward a convincing case for the spread of Neolithic culture in the southern and eastern part of the region as occurring largely in the period 4000 to 3000 BP. Swadling's suggestion of Austronesian connections as far as northern New Guinea as early as 5000 BP thus seems unlikely on present evidence.

#### LAPITA CHRONOLOGIES

Since 1996 there have been important revisions of Pacific regional chronologies for Lapita and post-Lapita pottery. These include Specht and Gosden (1997) for the Bismarck Archipelago, Bedford and Spriggs for areas of Vanuatu (Bedford *et al.* 1998), Sand for New Caledonia (1997), Anderson and Clark (1999) for Fiji and Burley, Nelson and Shutler (in press) for Tonga, and by extension Samoa. In all cases these new dates and critical reviews of earlier dated assemblages necessitate a revision of Lapita starting dates upwards, that is the start is more recent than previously thought.

Thus for the Bismarcks, Specht and Gosden suggest a beginning to Lapita of 3300-3200 BP. The most commonly quoted age previously was 3500 BP, and before that there was an argument for as old as 3900 BP. Specht and Gosden question Kirch's earlier dates from Mussau, north of New Ireland, of 3550-3450 BP (Kirch and Hunt 1988) on the basis of the similarity of Lapita assemblages between that area and New Britain. But as pointed out in Summerhayes' thesis (1996:53, 58-9), the Arawe Islands Lapita sites in West New Britain remain extremely poorly dated, with no firm sequences for what are stylistically and stratigraphically the earliest Lapita assemblages. These are the ones most comparable to Kirch's early material from Mussau.

Specht and Gosden do not give as detailed consideration to the end of dentate-stamped pottery in the Bismarcks, and on the evidence they present for New Britain one could support a range of possible dates, between 2700 and 2100 BP (1997:186-7). But the more realistic figure is likely to be around 2700 BP, by which time clearly post-Lapita pottery styles are well-dated at a range of Island Melanesian and Polynesian sites on the evidence of the recent dating programs noted above. In addition, White and Harris (1997) date the end of Lapita in the Duke of York Group, between New Britain and New Ireland, to 2700 BP. Sites on New Ireland and on Nissan have also produced post-Lapita assemblages beginning at about the same time there (Spriggs 1990, 1996a).

In 1990 my analysis had been that sites beyond the Bismarcks and Nissan did not begin until about 3200 BP

in the Solomons, Vanuatu and New Caledonia, and 3000 BP in Fiji and Tonga (Spriggs 1990). New dates from the main Lapita concentration on Malo Island in Vanuatu suggest settlement there about 3000 BP (Galipaud 1998), and Sand's re-dating of the Lapita type site, Vatcha and other sites in New Caledonia comes up with the same likely age of settlement (Sand 1997). Also significant here is Sand's contention that Lapita is very short-lived in New Caledonia, finishing by 2800-2600 BP. Previously some scholars had argued that it finished there within the last 2000 years (Frimigacci 1980).

The Vanuatu evidence is pertinent here. The research of Bedford and Spriggs on three islands in Southern (Erromango Island), Central (Efate) and northern Vanuatu (Malakula) suggests that classic Lapita decoration had disappeared to be replaced by plain and incised wares, of Erueti and later Mangaasi styles by 2700 BP (Bedford *et al.* 1998).

Moving over to Fiji and Western Polynesia, the researches of Anderson and Clark (1999) and of Burley *et al.* (in press) conclude that Lapita begins in Fiji at about 2900 BP, and in Tonga, at least in the Ha'apai group, at about 2850-2800 BP and may have been replaced by plainware as early as 2700 BP. Burley *et al.* suggest a similar age for Lapita in Samoa, noting difficulties with the supposedly early dates for plainware in American Samoa reported by Kirch (1993).

Thus for Lapita, the situation is now a sequence beginning in the Bismarcks about 3500 BP, or perhaps only 3300-3200 BP, in the Reef-Santa Cruz Islands of the eastern Solomons at perhaps 3150 BP (Green 1991), in Vanuatu and New Caledonia perhaps 3000 BP, Fiji around 2900 BP and Tonga and Samoa 2850-2800 BP. This would represent a spread out from the Bismarcks over 500 years at most and perhaps only 350 years. Manufacture of dentate-stamped Lapita pottery may have ceased everywhere by 2700 BP as part of the stylistic evolution of ceramics on a regional basis.

#### EASTERN POLYNESIAN DATES

The Eastern Polynesian sequences have produced new dates which seem to confirm Spriggs and Anderson's (1993) late chronology, with claims by Athens and his colleagues that the Hawaiian sequence begins only at about AD 800 (pers. comm.), further indications from excavations on Easter Island that that sequence begins around the same time (Skjolsvold 1994; Steadman, Casanova and Ferrando 1994), re-excavation and re-dating of the claimed early Ha'atuatua site in the Marquesas suggesting it is a comparatively late site (Rolett and Conte 1995), and a complete failure anywhere in East Polynesia to come up with any additional dated occupation sites earlier than those ages accepted by Spriggs and Anderson (1993). Re-dating of the Wairau Bar site in New Zealand, agreed by many to represent the earliest phase of the New

Zealand sequence and the site which produced the usually quoted settlement dates of AD 800, now suggests that it dates to the 13th century (Higham et al. 1999).

Support for a major pause in settlement between Western and Eastern Polynesia has also come from the most recent linguistic analysis (Pawley 1996).

#### DISCUSSION

The calibration of the spread of the Island Southeast Asian Neolithic, Lapita and its successor cultures, compared to the subgrouping and spread of the Austronesian languages seems to be producing an ever closer fit. The time depth is in Taiwan, both in terms of the archaeology extending back well before 5000 BP and the linguistic diversity. There is very little difference between Proto Malayo-Polynesian (PMP), spoken in the Philippines-Sulawesi area, and Proto-Oceanic (POc) spoken in the Bismarcks. PMP has a likely time depth of 4000 BP or slightly later for its break-up and POc has a likely time depth of about 3200 BP, allowing about 800 years at most for the linguistic differences between them to develop (Pawley and Ross 1993).

The linguistic differences between POc and Proto-Polynesian (PPn) are considerably greater, with the number of innovations in Proto-Polynesian of a different order (Pawley 1996:391-9). Proto-Polynesian seems to have existed as a dialect area from initial settlement of that area at perhaps 2850 BP until the move into Eastern Polynesia, perhaps via Tuvalu and/or Tokelau (Marck in press; Spriggs 1998), which took place over 1000 years later. The Eastern Polynesian languages are all closely related, representing a dispersal time which may have been as short as 400 years (800 to 1200 AD), with a maximum time period of perhaps 800 years (between 400 and 1200 AD).

Once one strips away unlikely archaeological interpretations based on poorly-dated sites or spurious associations of dates and artefacts, then a very interesting interplay between archaeology and linguistics emerges. Hypotheses generated in one can be tested in the other as new data emerge, in a way probably impossible in areas of the world such as much of the Eurasian continent with a much more complex Holocene cultural history. Here I do not mean 'complex' in a technological sense, but in terms of the sequence of linguistic and cultural changes which have occurred, each one masking the evidence of earlier periods of migration, culture contact and/or internal transformation.

Arguments over the place of likely origin and patterns of spread of Indo-European languages continue largely because there are so many possible cultural changes in the archaeological record onto which possible linguistic changes can be mapped (Mallory 1997). That this does not appear generally to be the case in the Island Southeast Asian and Pacific regions is, I hope, not merely testimony

to the comparatively small amount of archaeological research yet conducted in this vast area.

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