

A Hypothesis for Austronesian Origins

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HOW MANY OF US, when we write as prehistorians, are able to do justice to the immensely complex reality of human biological and cultural evolution? Should we attempt to reproduce all this reality fact by fact in a never-ending quest for some absolute version of truth, or should we seek out incisive and simplifying hypotheses which sort out the structure from the bottomless pit of detail? How many of us are really “objective” in interpreting the past, and how many of us simply use the past to express our often unconscious assumptions about how the world should be in the present?

These questions are, of course, rhetorical. They are relevant for what follows since they are concerned with meaning, precision of expression, and aspects of interaction between investigator and subject matter. They are particularly relevant for the subject matter of this paper, which is the elusive, diffuse, and often acrimoniously debated topic of “Austronesian origins.”

ON AUSTRONESIAN ORIGINS: SOME ASPECTS OF MY CURRENT VIEWS

Elsewhere (Bellwood 1985), I have attempted to present my views at length on this question. I do not intend to repeat here all the relevant details which can be culled from the many years of careful and often quite independent research within the disciplines of linguistics, archaeology, and biological anthropology, and wish instead to clarify some aspects of my overall hypothesis and my strategy of approach to the problem. This clarification is prompted mainly by Meacham’s adjoining article, in which he raises the issue of choice between the polarized concepts of “migration” and “local evolution.” As will be apparent, I differ from Meacham in the stress which I have given to human expansion (rather than large-scale migration) in my explanation for the phenomenon of Austronesian origins, while Meacham wishes to stress local evolution. As I also hope to show, the hypothesis of most explanatory strength for the problem will probably be one which accepts that both factors have operated in the past, via those fruitful processes of within- and between-population interaction to which we all owe our very identities.

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I will begin by presenting some of my previous statements on the issue, drawn from the same two articles which Meacham quotes in his paper. The first set comes from Bellwood 1984:

1. Between about 4000 B.C. and A.D. 1000 the members of a major linguistic group of mankind, the Austronesians, underwent an expansion and dispersal for which there is no parallel in human history. Their descendants now number perhaps 250 million people and occupy Indonesia, Malaysia, the Philippines, parts of southern Vietnam, Madagascar, and most of the Pacific Islands as far east as Easter Island. (Bellwood 1984:81)
2. . . . the basic data for discussing the prehistory of a linguistic category of mankind, such as the Austronesians, are derived first and foremost from linguistics. The Austronesians are not a clearly visible group in terms of race or of ethnographic or archaeological culture in many areas of their distribution, with the important exception of those Pacific Islands which only they settled in prehistoric times. Thus, hypotheses about the ultimate origins and early expansions of the Austronesian-speaking population as a whole can only be supported by the data of biological anthropology and archaeology and not generated from them. (1984:81–82)
3. (Austronesian) cultural patterns have been affected by millennia of local evolution. . . . Physical characteristics have been affected by intermarriage with other residents of the regions. . . . But languages, despite millennia of borrowing from unrelated tongues, will generally preserve traces of family history and expansion, which, in the case of prehistoric tribal societies such as the Austronesians, can be assumed to correlate fairly directly with the expansionary history of their human speakers. (1984:83)
4. Proto-Austronesian (PAN), which appears to have been located in Taiwan, may have shared a remoter common ancestry with some of the Thai languages, and this suggests an ancestry for the (Pre-) Austronesians on the South Chinese mainland even though no Austronesian languages are spoken there today. (1984:88)
5. During the 5th and 4th millennia B.C. early Austronesians with a cereal-based economy (rice and millet) expanded from southern China into Taiwan and the northern Philippines. There, and later throughout most of Indonesia, they had technological and demographic (high population density) advantages that allowed them to replace gradually the indigenous hunter-gatherer Australoid populations. (1984:91)

The second set of quotations comes from the article listed as Bellwood 1983 (written after Bellwood 1984):

6. The Indo-Malaysian archipelago at 5000 years ago appears, therefore, to have been occupied by hunting and gathering societies. . . . Between 5000 and 3000 years ago the major phenomenon of Austronesian expansion changed the whole face of the region. (1983:77)
7. The Austronesian languages have their origins in the region of southern China and Taiwan, and I refuse to believe that they have spread through the Indo-Malaysian archipelago by anything short of a major expansion of their speakers accompanied by assimilation of pre-existing non-Austronesian groups. (1983:78)
8. Thus, by 5500 years ago expansion had taken place from the rice cultures of southern China into Taiwan, by 5000 years ago it had continued into the Philippines, and central Indonesia was perhaps well-settled by 4000 years ago. (1983:80)
9. Note here that I am discussing an expansion which took 4000 years to reach completion; I am not talking about ferocious conquering migrants sweeping all before them. The Austronesian story was partially one of assimilation of other cultures, and, in Melanesia, partially one of being assimilated. (1983:80)
10. . . . The source region for Austronesian expansion lies amongst the rice-cultivating neolithic societies of southern China, which is where both the linguistic and archaeo-

logical trails lead us. The expansion was slow and piecemeal, and an initial source through population growth and a need for new land seems to me to be a perfectly adequate explanation for the first millennium or so. As groups expanded so they developed better methods of canoe construction and navigation, and since they almost certainly had a stratified form of society . . . there would perhaps be every reason for younger sons of chiefs, restricted in their inheritances at home, to attempt to found villages and chiefly lineages in newly-cleared areas of land. Much of the resultant expansion involved co-existence with aboriginal hunter-gatherers. . . . (1983:80–81)

The above quotations give a fairly broad view of my opinions on the matter of Austronesian origins and the early millennia of Austronesian expansion. In compiling them I realized how easily certain of them, if taken in isolation, could give rise to reader interpretations quite different from those originally intended by me. For instance, in quotation 5 there is a reference to “early Austronesians” where the precise context requires the term “Pre-Austronesians” (a concept which I will discuss further below). Such a seemingly minor ambiguity can lead to more serious misunderstanding, as I believe may have happened with Meacham’s interpretations of my linguistic views. I have never consciously implied, as I will explain below, that Proto-Austronesian or any of its immediate successors was ever spoken on the mainland of southern China.

The reproduction and qualification of these quotations does not, of course, remove the basic disagreements between Meacham and myself. We still have very different views about the significance of linguistic evidence, and the ultimate role of southern China in Austronesian origins. To reinforce my own views I will repeat here five central points of my own position, as circulated at the Peñablanca conference:

1. The question of Austronesian origins is basically a linguistic question, since the taxon itself is a linguistic construct.
2. My reading of the linguistic literature leads me to two primary conclusions:
 - a) Proto-Austronesian was located in or near Taiwan;
 - b) Austronesian expansion has primarily involved founder movement, and cannot be attributed *solely* to secondary learning (that is, the recent expansion of Malay is perhaps not a good model for language spread amongst Neolithic societies of 5000–6000 years ago).
3. The question of Austronesian origin and early expansion is related to factors of population growth and instability promoted by agriculture, based mainly on cereals (rice, and probably millet). There is no archaeological or linguistic evidence which allows us to posit trade as a major factor in the early days of Austronesian expansion (Lapita and some later Pacific societies may of course be exceptions).
4. The archaeological record per se can tell us little of value about Austronesian origins, and the same applies to the results of skeletal anthropology. However, the comparison of archaeological assemblages with the material elements of early Austronesian protolanguages does allow for estimates of date, even if the correlations are not open to systematic proof. Linguistic reconstructions alone, when based on unwritten languages, do not give reliable age estimates for protolanguages.
5. I conclude that the ultimate region of Austronesian origin lay in the Neolithic landscape of southern China.

At this point, I feel it is perhaps necessary to discuss the precise meaning, if such can exist, of the term "Austronesian origin." Clearly, to derive a modern population of 250 million people from a dot on the map at a precise point in time several millennia ago would be unforgivable simplicity. It is quite obvious that no living speaker of an Austronesian language today can be derived via a sealed "tube" through time going back to, let us say, eastern Taiwan at 4000 B.C. Austronesians as a group have clearly interacted in the overlapping spheres of biology, language, and nonverbal culture with other non-Austronesian populations, and even without this kind of interaction they have been subjected, like all human populations at all times, to continuous and inexorable processes of change, as may be seen most clearly in the isolated prehistories of the remoter islands of Oceania. So the concept of "Austronesian origin" must necessarily be diffuse, not least because many ancient populations totally unrelated to present Austronesian-speakers had a hand in the overall process (for instance, the initial development of a rice-cultivating economy was probably quite independent of any Austronesian-ancestral population).

Diffuse though the reality of Austronesian origins may be, however, the concept still attracts explanatory hypotheses from prehistorians. There is disagreement, not simply about hypothesis content, but also about disciplinary priority in hypothesis formation.

A PRIORITY FOR THE ARCHAEOLOGICAL RECORD IN THE EXPLANATION OF AUSTRONESIAN ORIGINS?

The further we go back in time in the continental and Island Southeast Asian regions here under discussion (and excepting, for obvious reasons, the remote Oceanic islands), the more difficult it becomes to delineate any *specific* archaeological assemblage or skeletal population which can be considered *directly* ancestral to any modern counterpart. For instance, we may never know with absolute certainty whether Taiwanese Neolithic assemblages were made by people directly ancestral to modern Taiwanese aborigines. We are on firmer ground, however, with the assumption that reconstructed Proto-Austronesian represents a linguistic construct (which may or may not have been a single language) directly ancestral to modern Austronesian languages, including those of Taiwan. This firm ground can be exploited, especially if we wish to seek the origins of a family of languages and its speakers.

In his adjoining paper, Meacham states his belief that only archaeology provides the raw material of prehistory, and that linguistic hypotheses must be tailored to the material culture record. I accept this viewpoint if the hypotheses under question are focused on material culture. If they are not, and are focused instead on the origins of a family of languages and its speakers, then I must express some reservations.

Let me expand on this by suggesting that the rather diffuse concept of "Austronesian prehistory" really has three components—languages, speakers, and archaeological assemblages. The languages, according to the modern consensus of linguistic opinion, have spread from a homeland region which incorporates, and which may originally have been confined to, Taiwan. It seems logical to assume that the expansion of these languages took place primarily through an expansion of founder groups of speakers, rather than by a process whereby totally unmoving populations all abandoned their own languages and learned some attractive new early Austronesian lingua franca, all the way from Taiwan to Timor. However, those founder groups undoubtedly intermarried frequently with other non-Austronesian speaking populations in Island Southeast Asia and western Melanesia,

so we clearly cannot speak of an Austronesian gene pool in the same way that we can speak of an Austronesian language family (although even the latter has evolved partially by borrowing from unrelated languages, especially in western Melanesia).

Basically, I view the concept of a family of languages evolving and spreading through time as an attractive one—the component entities (subfamilies, languages, protolanguages) can be defined in terms of linguistic logic, and their evolution can be investigated. Attached to the languages are speakers, but their attachments do not represent a closed system such that one entity cannot vary independently of the other. Also attached to languages, and to their speakers, are assemblages of material culture, again not in a closed system relationship. If we wish to investigate configurations of material (economic or technological) culture, such as rice cultivation or pottery manufacture, we begin with archaeological hypotheses. If we wish to investigate genetic configurations, we begin with biological hypotheses. If we wish to investigate “Austronesian origins” then surely linguistic hypotheses have a major formative role, even if they do not necessarily provide *all* the answers.

Having attempted to clarify my position on the issue of linguistics versus archaeology, I should state that it is not my intention to belittle the value of archaeology, as Meacham and a few other recent commentators argue to be my aim. I need hardly list here the fields of prehistoric investigation for which archaeology can justly claim priority of status. There are, however, other fields of investigation in which the ambiguities of the archaeological record can often outweigh the reliable inferences. One of these fields, and one which has attracted much adverse comment in recent years, is that of artifact-based culture history. When expressed *purely* in terms of archaeological data, this type of culture history can be little more than an intuitive list of assumed cultural relationships (or their absences) between artifact assemblages, utilizing a general assumption that closeness of style is equal to closeness of ethnolinguistic relationship between demarcated human populations in both time and space.

There is, of course, nothing intrinsically wrong with this assumption, and for many present and past situations it is doubtless correct in a generalized way. The archaeological record for southern China (especially Fujian) and Taiwan, however, which is central for Meacham’s antilinguistic viewpoint, is mostly composed of samples too small and too poorly provenanced in time to allow meaningful judgments about presence or absence of cultural relationships during the earliest Neolithic. This generalized observation does not apply to all regions of archaeological endeavor in the Southeast Asian region. But in the specific cases of Fujian and Taiwan I doubt whether the apparent absence of direct stylistic links in Neolithic pottery means a great deal. It may just as likely reflect absence of archaeological knowledge as a real absence of ethnolinguistic relationship, and to use evidence of this kind to reject linguistic explanations of Austronesian origins seems to me to be unwarranted.

A LITTLE MORE ON LINGUISTICS

As indicated, I find myself in disagreement with Meacham’s dismissal of the linguistic evidence for Austronesian origins—I believe he underestimates the logical and robust chain of inference upon which this discipline depends for its historical hypotheses. In addition, by rejecting the constraints provided by linguistic data he is necessarily forced to derive his hypotheses from the shifting sands of archaeological assemblage data, and

these, it seems to me, make an origin for Austronesian languages over the whole of Island Southeast Asia no more likely than an origin in southern China or even Viet Nam. Meacham's corollary and supporting hypothesis, that continuous local evolution is a better explanation for the archaeological facts than an expansion of population, is based on an a priori assumption. Of course, I can hardly criticize Meacham on this point since my own view, which favors population expansion as a result of agricultural development into areas previously settled by hunters and gatherers, may be considered equally a priori. But I also believe, as far as Austronesian origins are concerned, that the linguistic evidence is worth at least as much as any combination of archaeological evidence and a priori judgment; hence my acceptance of Taiwan as the most probable location of Proto-Austronesian.

I find myself also in disagreement with Meacham's interpretation of the linguistic conclusions of Pawley and Green (1984), concerning Proto-Oceanic. In this article, Proto-Oceanic is hypothesized as a widespread chain of closely related dialects, situated in Melanesia, which might have broken up into its daughter languages along the lines of a "network-breaking model." Pawley and Green also make the valid point that it is not necessary for there to be geographic expansion in order for a protolanguage to break up. These are all sound observations that are perfectly acceptable in the case of Proto-Oceanic and its immediate daughter languages in Melanesia. But Meacham uses this article to propose that Proto-Malayo-Polynesian was developed through mobility and communication from an earlier stage of New Guinea like linguistic diversity over the whole of Island Southeast Asia. The mechanisms for this require an intensity of mobility and communication for which there is no evidence in the archaeological record, and it may be salutary to remember that intensive contact between trading communities in Melanesia has not led to any apparent decrease in linguistic diversity in the past millennium or so. I doubt that tribal societies can homogenize their languages over such a vast territory in the manner proposed. It also seems unnecessary for me to add that the linguistic evidence, when considered in detail, gives no favor to such a hypothesis.

Let me now switch my stance to one of agreement. I must concur with Meacham's view that "there is no firm linguistic evidence that Austronesian was ever spoken in South China." A Pre-Austronesian linguistic continuum is, however, a likely probability, probably along the lines of Proto-Austro-Thai as discussed by Reid in this volume. The Austronesian family of languages only came into existence as a linguistically and geographically bounded entity separate from other languages after the breakup of Proto-Austro-Thai. This occurred most probably during and after the initial settlement of Pre-Austronesian speakers in Taiwan. Austronesian languages *sensu stricto* have therefore never been spoken in southern China.

SOME OTHER OBSERVATIONS ON SOUTHEAST ASIAN ARCHAEOLOGY

In favoring local evolution, Meacham also presents various concepts which he associates with the Austronesian "expansion" viewpoint which he wishes to criticize. Two of these concepts, population "pressure" as a reason for Austronesian expansion and "waves" of Austronesian migration involving large numbers of people from southern China, are not ones which I have ever favored myself. I am rather disappointed to realize that Meacham does associate some of my published statements with them, and I would hope that they are not regarded as necessary correlates of any modern stance in favor of a Neolithic expansion of Austronesian speakers into Island Southeast Asia. Indeed, I agree

with Meacham that cultural rather than population pressure, in the form of an urge to explore, settle, and possess new territory, would seem to have been a major factor in the spread of the Austronesians.

The central archaeological section of Meacham's paper is concerned with the prehistory of Taiwan and with adjacent regions of southern China and Luzon, and here I must signal my agreement on several points:

- a) that there is no convincing evidence for population "pressure" in the southern Chinese Neolithic;
- b) that it is scarcely conceivable that Taiwan itself could have been the source of a massive expansion to the south;
- c) that Taiwan occupies a unique and highly important position in the question of Austronesian origins, and that the Tapenkeng culture of the period 4000–2500 B.C. can probably be associated with an Austronesian-speaking population;
- d) that Taiwan has seen a mainly local evolution of cultures over that last 6000 years or more (for instance, the Lungshanoid and Yüan-shan archaeological cultures);
- e) that the Tanshishan culture of Fujian has no convincing parallels across the Formosa Strait in Taiwan;
- f) that there is generally no archaeological evidence to support a coherent migration of people from southern China into Taiwan and Luzon, but diffusion from the two adjacent land masses into Taiwan has taken place.¹

Against the above I must list my disagreements with the following propositions:

- a) that the earliest inhabitants of Taiwan are the direct (and presumably sole) ancestors of the present aborigines;
- b) that movement of any kind into Taiwan can be ruled out for the Tapenkeng culture.

My agreement with six of Meacham's points and my disagreement with only two might suggest that we are close to at least some concurrence. I am not at all convinced, however, that the kind of evidence used by Meacham, which relies mainly on a small number of radiocarbon dates and a few stylistic features of artifacts, is of much significance in the quest for the origins of a specific ethnolinguistic human population such as the Austronesians. The evidence he adduces for diffusion between Luzon and Taiwan could imply just as convincingly that both populations from the Neolithic onwards shared a common origin. The same applies to the evidence for diffusion between southern China and Taiwan, and to explain how I believe "Proto-Austronesians" really operated in the past I will turn to some very different assumptions.

NEOLITHIC EXPANSION MODELS

Let me commence with Polynesia, an area also inhabited by Austronesian speakers, and one known to have been settled by a human expansion involving the use of sailing canoes. I do not regard the Polynesian expansion as a totally unique phenomenon which began entirely in Melanesia, although certain Polynesian voyaging skills could well have developed within Oceania itself. It is my basic belief that the Polynesian expansion was a rather spectacular end-piece to a much more prosaic and sluggish process which began

ultimately (and in a very small way) in the northern latitudinal regions of southern China and Taiwan.

The Polynesian expansion, as viewed through the data of archaeology and linguistics, can reveal two very important facts:

- a) a founder population numbering a probable canoe load (under 50 people?) could easily produce, in isolation and without undue cultural effort, a descendant population numbering tens or even hundreds of thousands over a period of one millennium;
- b) Polynesian founder populations as seen in the archaeological record did not replicate with exactitude any homeland cultural configurations. If they did do so, then the archaeological record is as yet too thin to reveal the fact. Instead, each island group illustrates fairly rapid processes of cultural loss (for instance, pottery in western Polynesia and the Marquesas) and innovation (for instance, Marquesan shell fishhooks, Samoan triangular cross-sectioned adzes), which in combination yielded stable cultural entities with distinct differences from homeland configurations over fairly short periods of time.

This point about imprecise replication may also be made with respect to the island of Britain, separated from France by a channel only one fifth the width of the Formosa Strait. As Case (1969) has noted, initial Neolithic colonists in Britain cannot be traced to specific continental homelands, and by the time coherent and stable cultural complexes (such as Windmill Hill) become visible in the archaeological record they are already quite different from their continental cousins. Simpson (1979:129) has also asked, with respect to the earliest Neolithic colonists in Britain, "Should we expect to find their ancestral material culture perfectly duplicated in the area in which they settled?" The answer, after many decades of archaeological research of an intensity unparalleled in the south China-Taiwan region, still appears to be "no."

The European Neolithic arena also provides useful models of another kind for Austronesian expansion, particularly those which seek to explain the expansion of an agricultural population with western Asian domesticated plants and animals into a Europe settled by bands of Mesolithic hunters and gatherers. The interface here between Mesolithic and Neolithic assemblages is generally quite sharp, as I believe it tends to be in many regions of Island Southeast Asia. One fairly compelling explanatory model is that provided by Ammerman and Cavalli-Sforza (1984), who use mutually-reinforcing genetic and archaeological data to posit what they term a "wave of advance model," based on demic (that is, genetic) and cultural diffusion. The model involves multiple local movements at the basic level, and not a conscious and unified process of long-distance migration. It depends on population growth (not pressure), and on a gradual and centrifugal establishment of new settlements within an expanding frontier zone. The whole process, from Greece to Great Britain, clearly required millennia rather than decades, and almost certainly involved some assimilation of preexisting European populations.

This last point has recently been further stressed for Europe by Dennell (1984), who commences by suggesting that "we should widen our range of explanations beyond the simple ones of diffusion and local evolution that served prehistorians of the last century so well." He then goes on to provide a socially-based model which basically resembles and also expands upon that of Ammerman and Cavalli-Sforza. In a situation without undue population pressure, agricultural (Neolithic) and hunting-gathering (Mesolithic) popula-

tions formed a "porous" frontier whereby each could tap the resources and knowledge of the other, but where the overall trend was for the assimilation of the hunters and gatherers into the agricultural communities. This trend continued to its inevitable end: expansion of the agricultural economy at the ultimate expense of its forebear, but with assimilation of the Mesolithic population rather than its total replacement.

It is perhaps at this point that I should present my own model for Austronesian expansion, using a narrative style which I am gratified to see does have a place in scientific hypothesizing (Landau 1984).

1. By 4000 B.C., the southern coastal provinces of China (Zhejiang, Fujian, Guangdong) were settled in part by agricultural communities with an economic and technological repertoire of domesticated rice and other plants and animals, pottery, polished stone adzes, spindle whorls (and weaving), skilled bone and woodworking traditions, and most probably some expertise in fishing and canoe construction.
2. Sometime during the fifth millennium B.C. members of these communities (probably from Fujian) crossed the Formosa Strait to Taiwan. Presumably they used canoes, and presumably the groups were small—one or a few families. Such movements may have occurred on several independent occasions, and to guess precise individual reasons for their occurrence would clearly be a fruitless exercise.
3. These groups were able, first of all, to survive and probably to establish nonhostile relations with existing hunting and gathering groups, and secondly to establish viable agricultural economies in which cereal cultivation (rice, millet) played a major role. Features of homeland cultural systems which were transferred by these settlers were probably reproduced with rapidly occurring variation caused by cultural loss and innovation², and by the time the Tapenkeng culture becomes visible in the archaeological record of the fourth millennium B.C. there is no remaining indicator of any precise homeland on the Asian mainland. Once viable productive systems were established on Taiwan the population was able to commence a process of agricultural and population expansion which still continues among Austronesian-speaking populations today, as, for instance, at the interface between Filipino agriculturalists and Aeta hunters in northern Luzon (Griffin 1985).

Taiwan was already settled, before the arrival of these rice agriculturalists, by the makers of the Changpin flaked stone tool tradition. I do not believe I am badly misinterpreting the archaeological record if I regard these people as hunters and gatherers, who had maintained very small and probably quite stable populations for many millennia. When confronted by agricultural communities these hunting populations may in many cases have established symbiotic relationships leading to exchange, intermarriage, and their eventual assimilation. Such processes would naturally have strengthened the demographic bases of the agricultural populations, as Dennell (1984:110) has pointed out for Neolithic Europe. It also seems reasonable to suggest that the Austronesian languages of the more numerous agricultural populations would have increased their circulation at the expense of the older languages of the indigenous hunting and gathering populations, each with many fewer speakers.

Many other groups of hunters and gatherers, however, especially those in remote inland situations left untouched by early agricultural expansion, would doubtless have retained their traditional lifestyle. In this context it is important to remember that the

economic shift from hunting and gathering to agriculture requires a lifestyle upheaval of such an order that *unilateral* adoption without a positive stimulus (such as loss of land to farmers) may be regarded as generally unlikely. The ethnographic record of recent Negrito hunters and gatherers in Southeast Asia suggests this to be the case, although I accept that there may be exceptions. Overall, therefore, I believe two quite different options would have faced indigenous hunters and gatherers in the long term: assimilation, or isolated independence. A third possible option—physical extermination—was hopefully not a frequent one.

By 3000 B.C., according to this hypothesis, Austronesian-speaking populations with an agricultural lifestyle had occupied suitable agricultural environments over most, perhaps all, of Taiwan. They may or may not have experienced localized population pressure, and this is, in fact, rather a trivial aside. By 3000 B.C. or before, the process of expansion was repeated again with respect to Luzon and the islands between it and Taiwan, and thereafter it occurred innumerable times, with dramatically less success amongst the already-agricultural populations of parts of western Melanesia. The ball still rolls today—Javanese transmigration, land-hungry cultivators versus remote tribes in the Philippines—and although the reasons for expansion have changed (population pressure really does matter now) the overall result might almost be regarded as the same—an increase in the numbers and geographical extent of Austronesian language speakers.

Basically, therefore, this narrative hypothesis can explain the linguistic evidence, and it can also explain the understandably ambiguous stylistic evidence of archaeology, insofar as it relates to past ethnolinguistic relationships. It also fits the economic evidence which points to southern coastal China as the earliest *known* focus of systematic rice cultivation, and it fits the ethnographic evidence which suggests that, for Southeast Asia, rice cultivation has been a major factor in recent agricultural expansions (for instance, the Iban of Sarawak).

Finally, however, I must reiterate that local evolution does occur in all situations, and acts constantly via both random and directed processes on previously-occurring cultural variation. The cultural variations and past achievements of the Austronesian-speaking populations are obviously due to both internal growth and external linkage, and to try to read the prehistoric record purely in terms of either local evolution or some kind of diffusion model seems to me to be rather pointless, and clearly counterproductive.

NOTES

1. The discovery of what I interpret to be a Yüan-shan site on Batan Island in the straits between Taiwan and Luzon (Kumamoto 1983: site 56) may be of considerable relevance here, although peripheral to the main issue addressed in this paper.
2. The Tāpenkeng assemblage may not be exactly like any mainland assemblage in style details, but it does have the same artifact classes—cord-marked pottery, adzes, stone fishingnet sinkers, slate projectile points, and so forth. Meacham is not, of course, suggesting that such technological classes were invented separately and in total isolation in Taiwan from some presumed Pleistocene cultural forebear, but the local evolution model can sometimes give the impression that this is what is intended.

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