

# INTEGRATING HISTORICAL LINGUISTICS WITH ARCHAEOLOGY: INSIGHTS FROM RESEARCH IN REMOTE OCEANIA

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## ABSTRACT

*Can one profitably combine historical linguistics with archaeology? For many areas of the world a positive answer has still to be demonstrated, while for others a good case may be made. Certainly in the Remote Oceania part of the Pacific claims for such a positive outcome seem fully warranted as the result of the growing sophistication of endeavours over the last three decades. This review considers those strategies, focusing especially on a growing use of dialect chain along with family tree models, and a close examination of the articulation of proto-lexicons with archaeological and ethnological data. Their development is seen as an indication of the way forward in this enterprise in the Pacific region.*

**KEY WORDS:** Historical linguistics, archaeology, Remote Oceania, dialect chains, proto-lexicons.

## ISSUES TO BE ADDRESSED

Some people say it is not possible to profitably combine historical linguistics and archaeology. Yet a growing literature in Remote Oceania is doing just that. This paper begins with an example of massive historical linguistic semantic innovation supporting archaeological evidence for an adaptive event in the move to New Zealand of Polynesian people from tropical East Polynesia. Then, a dialect chain model with its network breaking splits in East Polynesia is considered. It shows how this approach more realistically models what the archaeological evidence for that region also indicates. Next, a similar model for the Fiji-West Polynesia region is explored. Again, it proves to be entirely compatible with the archaeological evidence. Finally, the archaeologically attested rapid movement by people with Lapita as a

foundation cultural complex into Remote Oceania and then into Western Polynesia is shown to correlate well with their speaking a later stage of a Proto-Oceanic dialect chain.

From these dialects various non-hierarchically arranged linguistic subgroups formed, through chain-breaking splits, in that part of the Oceanic proto-language. More recently it has been observed that an analogous situation occurs in the case of Malayo-Polynesian and the more westerly Oceanic languages of Near Oceania. As Pawley (1997) summarises the situation "I suspect shifts of affiliation within dialect chains have been as common in the history of the Austronesian family, as they have been in, say, the Germanic and Romance families." That certainly proves to be the case in Remote Oceania.

## ALTERNATING MODELS IN LINGUISTIC DISSOLUTION

A long-standing and familiar model, often used in historical linguistics, is that of the family-tree. It is not surprising that in the Pacific this model has frequently been applied to the Austronesian language family when delineating the major branches of Malayo-Polynesian which are found throughout the Pacific Ocean region (Figures 1 and 2). Authors such as Terrell (1986: 38-41, 247-54); Welsch, Terrell and Nadolski (1992); Terrell, Hunt and Gosden (1997) or Hunt *et al.* (1998) dwell almost exclusively on this tree-type model in their discussions. They recite many of its well-known defects as part of their critique of the proposed correlations by others (Pawley and Green 1984; Pawley and Ross 1993, 1995; Green and Pawley in press) of various linguistic subgroups with some common archaeological units, especially in the Oceanic-speaking part of the Pacific Island world (Figure 3).

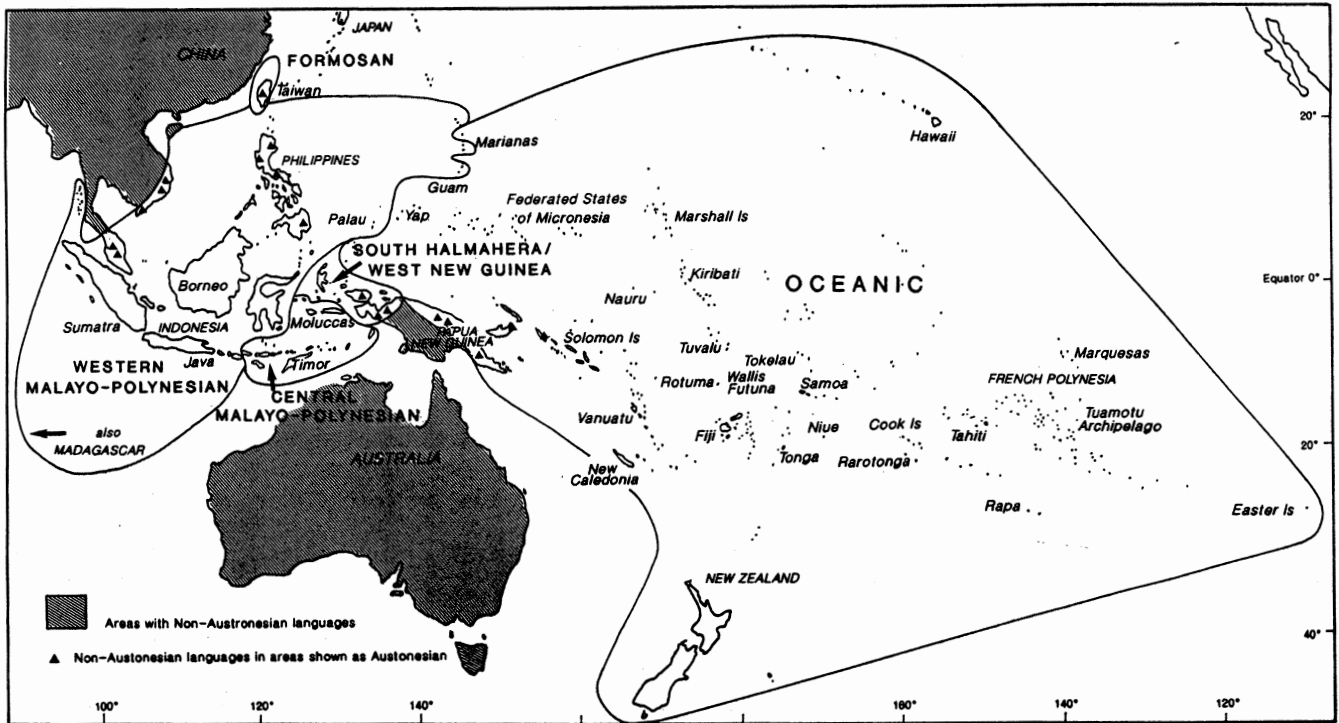


Figure 1. Map distribution of major higher-order Austronesian subgroups in the Pacific region.

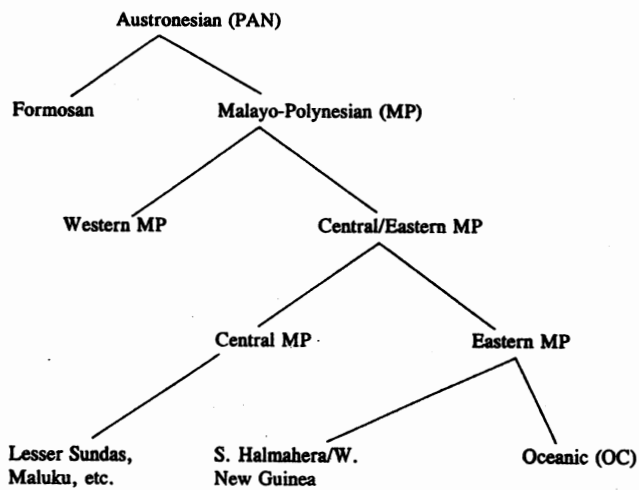


Figure 2. Typical family tree model for major higher-order Austronesian subgroups.

In fact, since the early 1980s, when it was explicitly advanced by Pawley and Green (1984) for general consideration within the Oceanic region, a second model has been increasingly explored as an equally serious

proposition to consider in conjunction with the first. This is a dialect chain/network breaking model which is seen as offering another probable and sometimes more realistic solution to many language/culture situations encountered in the Pacific. Beginning with the use of this concept in the 1970s, it has been argued there was a need for both models in theory and in practice (Pawley and Green 1984: 139 and footnote 30). This remains the situation currently, as Ross (1997) makes explicit in what is probably the most sophisticated discussion of this topic available to date:

The two models are not alternatives, and neither properly captures more than a small portion of the kinds of [‘speech-community events’] that occur (Ross 1997: 211).

Both have their place and advantages, and allow for the fact that yet further kinds of models will undoubtedly prove useful.

Unfortunately, there seems to be a regrettable lack of awareness among quite a few Pacific archaeological colleagues, including those cited above, of the nearly 25 year development of the dialect chain/network breaking model. This is evident in their failure to discuss that option when presenting their various critiques of the use

**Probable Correlations Between  
Proto-languages and Archaeological Entities  
in the Austronesian World**

Ordered from the least to the most secure

**1. Proto-Austronesian-PAN**

*The early agriculture and pottery-using cultures of Taiwan*

**2. Central & Eastern Malayo-Polynesian-PMP**

*The early agriculture and pottery-using cultures of the  
Philippines to Maluku region of Island Southeast Asia*

**3. Proto-Oceanic-POc, & Proto-Broad Oceanic-PBOc**

*Early or Far Western Lapita Cultural Complex*

**4. Higher-order Oceanic subgroups of Remote Oceania:**

*Nuclear Micronesian, North/Central Vanuatu, South Vanuatu,  
Southern Oceanic (New Caledonia/Loyalties), Central Pacific*

*Remote Oceanic Western Lapita Cultural Complex*

**5. Proto-Central Pacific-PCPa**

*Eastern Lapita Cultural Complex*

**6. Proto-Polynesian & Nuclear Polynesian-PPn & PNPn**

*Ancestral Polynesian Culture and its Societies*

**7. Proto-Eastern & Central Eastern Polynesian-PEPn & PCE**

*"Archaic" or Early East Polynesian Cultures*

*Figure 3. Proposed correlations between various proto-languages and various archaeological entities in the Austronesian world, when ordered from those thought to be least secure to most secure.*

of family tree models in Pacific archaeology. An exception for Fiji is Hunt (1987). Here, I will only outline a history of the use of dialect chain models in the Oceanic part of the Malayo-Polynesian language family. I will then focus on that part of this topic where the proposed correlations of archaeological entities with linguistic groupings seem most secure - i.e., numbers 7 to 4 in Figure 3, which involve the part of the Oceanic language world known as Remote Oceania (Figure 4).

**USE OF DIALECT CHAIN MODELS AMONG  
OCEANIC LANGUAGES**

1. Dialect chain models, sometimes with discussions of their implications for culture history reconstructions,

began to be discussed by historical linguists in the 1970s for various sub-groups of the Oceanic part of the Austronesian language family:

Fijian subgroup: Pawley and Sayaba 1971

Proto-Trukic: Bender 1971

Proto-Southeast Solomonic: Pawley 1972

Proto-Central and North Vanuatu: Tryon 1976

The most detailed discussion in this period, however, was that by Pawley (1975: 59-66, 70, 83-86) for the languages of Central and Southeast Papua. In this paper he not only canvassed the issue of dialect chains in subgrouping those languages, but examined in depth, under a set of nine principles, the cultural historical implications of linguistic evidence and the assumptions made in its use.

2. More sophisticated studies by linguists of particular language subgroups appeared in the early 1980s:

Fijian subgroup: Geraghty 1983 [note the PhD thesis of 1978 on which this is based was available to and used by Green 1981 in a study situating the Polynesian homeland]

Proto-Trukic: Jackson 1983

3. Empirical exploration of the correlation of the easterly expansion of the Lapita cultural complex with a late stage more easterly part of the Proto Oceanic subgroup was undertaken by Pawley in 1981. In the same year Green did a similar exercise for the Fiji-West Polynesia area and the association of the Lapita and ancestral Polynesian cultures with the Proto Central Pacific, Fijian and Polynesian subgroups.

4. In 1984, Pawley and Green formally set out and discussed theoretically both kinds of models and their application within the Oceanic sub-group.

5. In 1988, (and again in 1995) Ross discussed dialect chains, his concept of "linkages" where traditional subgroups could not be defined, and the classification and sub-grouping of Oceanic languages as part of a seminal work on Proto-Oceanic.

6. By 1988, the concept of a dialect chain (as in Fiji-West Polynesia) had been extended to Central East Polynesian area by Green (1985, 1988) and Kirch (1986a) in association with the Central Eastern Polynesian subgroup. It was further explored for the Fijian subgroup by Hunt (1987). More important, perhaps, is Rehg's (1995) close examination of the implications of an interaction model for linguists in reconstructing Micronesian prehistory, noting in particular the problems involved in "depicting the relationship of some Micronesian languages in the form of a conventional family tree".

7. In 1995, Pawley and Ross discussed the general issues of linguistic dissolution in fuller depth with respect to Oceanic. They defined two basic patterns and kinds of subgroup. Within the innovation-defined subgroup, all

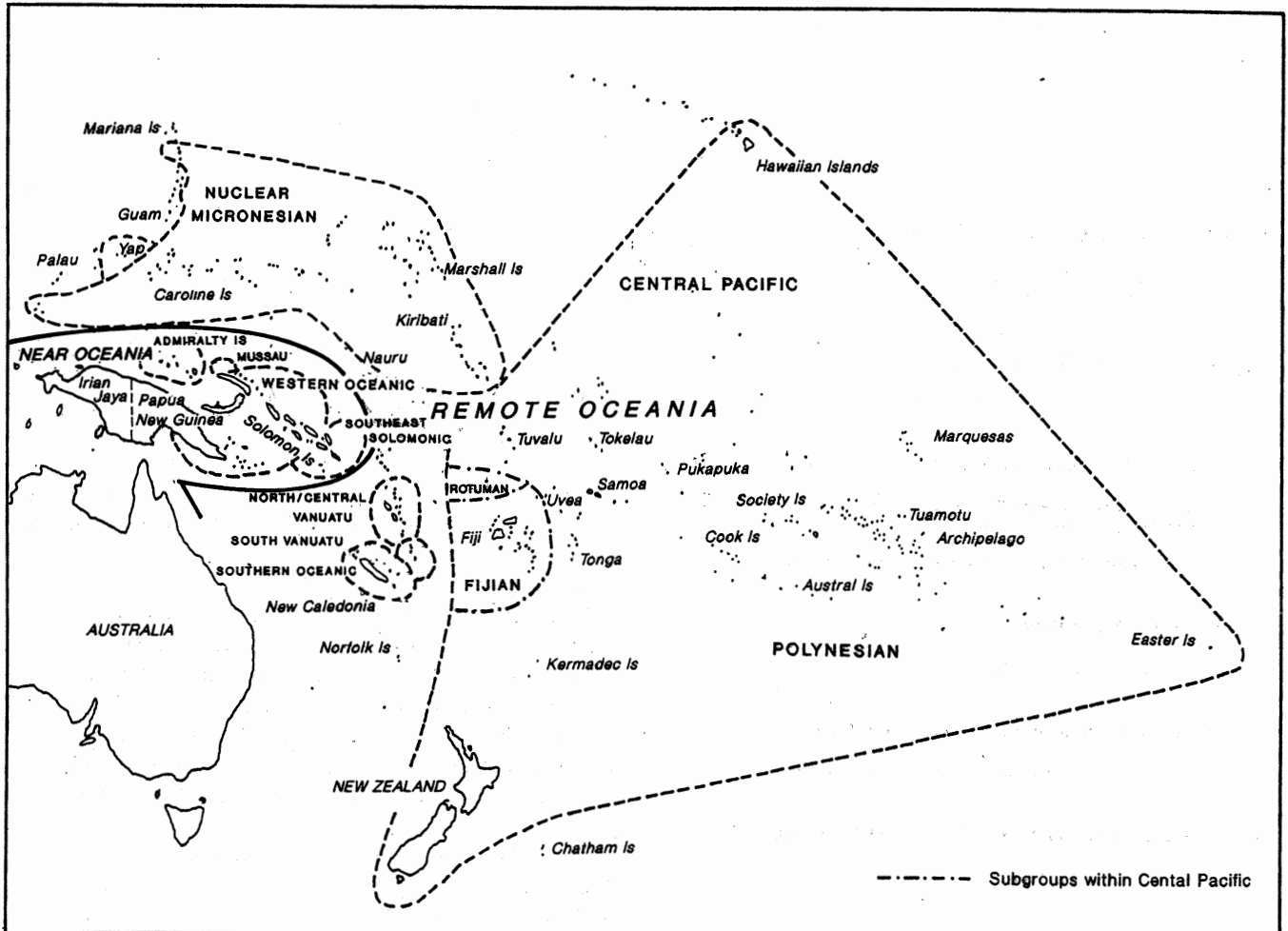


Figure 4. Map distribution of major higher-order subgroups among the Oceanic Austronesian languages within the regions of Near and Remote Oceania.

member languages exclusively share a common set of innovations. In the innovation-linked subgroup, innovations exhibit a non-exclusive overlapping pattern. For the first, geographic and/or social isolation lays the basis for the split into two or more speech communities from an ancestral or proto-language. With regard to the second, innovations occur at various places in the network and spread to other dialects in it, but not to all. Thus, languages of this kind of subgroup once formed a network of related dialects. In time these diverged within the network until they became mutually unintelligible ancestral languages from which the present day daughter languages then emerge. Pawley and Ross (1995:51) conclude:

A family-tree model is often unsatisfactory for making sense of and representing historical relationships among languages. One reason is that it forces these linguistic relationships produced by dialect differentiation (and subsequent breakup of the network) into a distorted scenario, that of the sharp separation model - and in early Oceanic, dialect differentiation and network-breaking were the rule rather than the exception.

Recently, Ross (1997) reviewed the whole issue in a largely theoretical article on "social networks and kinds of speech community event." He (1998) then applied it to the Central Papuan coastal region of New Guinea and its

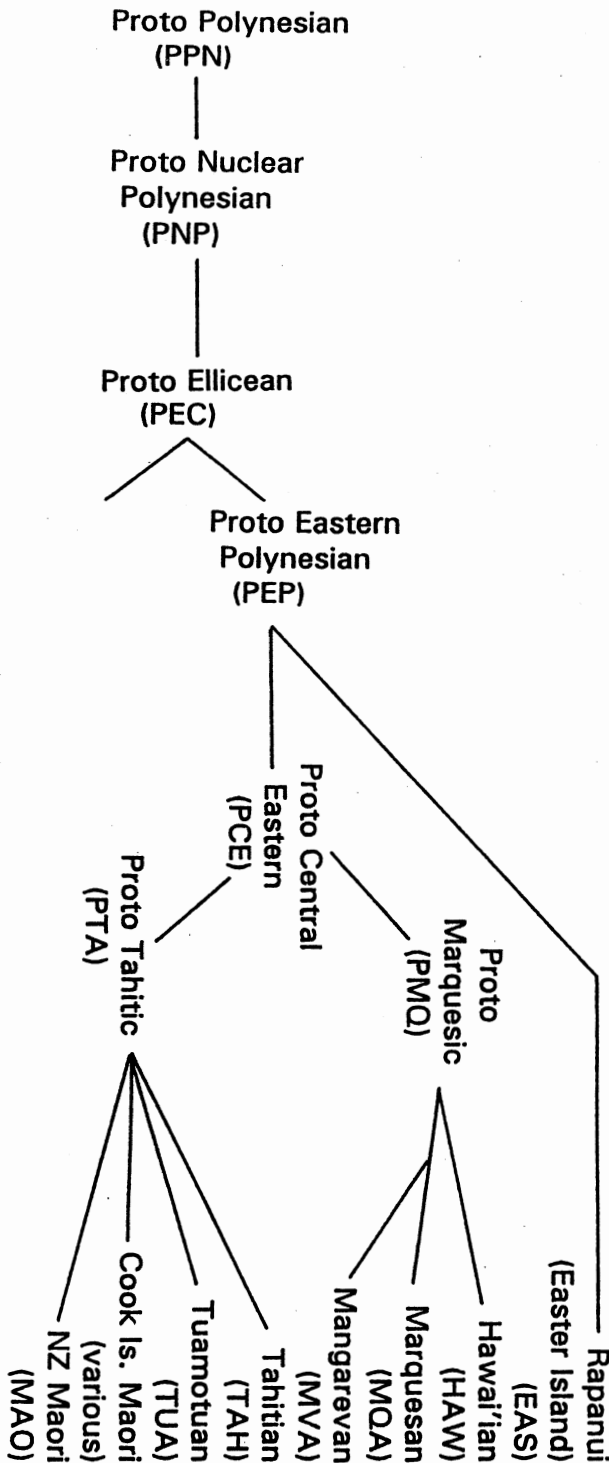


Figure 5. The current family tree model for the Eastern Polynesian languages after Marck (1996).

Oceanic Austronesian languages. Gosden (1998: 341) certainly knows of the former essay and its implications, as he writes in a review of Kirch's book, *The Lapita Peoples*,

However, linguistics is changing fast, and for the Pacific region Ross's recent work is crucial. Using the notion of the social network within which language is spoken and innovations spread, together with the effects of different forms of language divergence and contact on the syntax, sound system, and vocabulary of languages, Ross and others are starting to produce models of language change which look very different from the family tree models with which Kirch works.

The irony lies in Gosden being completely unaware that Kirch is not working solely with a family tree model, but predominantly with models of the dialect chain variety which Ross and Pawley had been developing for some time. It seems that Gosden is unfamiliar with the degree to which the theoretical model offered by Ross (1997) relies on the work done in the Pacific and particularly on the Oceanic sub-group from 1971 to 1995. But, Gosden is not alone - that viewpoint applies to a great many scholars who offer commentary on the combination of archaeology and historical linguistics in the Pacific region. Nor have they taken into account a point made by Pawley and Ross (1995: 65-66 and footnote 9) that dialect chain models are quite different to Indo-European "wave models" perhaps more suited to continental land masses.

#### EXTENSIVE SEMANTIC CHANGE

In Figure 5 the usual representation of the Eastern Polynesian subgroup, as worked out by Marck in 1996, is presented. This can be transformed, as I have done in Figure 6, where it is presented more along the lines of a dialect chain. As Biggs (1994a) observed for Proto-Tahitic, overall it has a rake-like or dialect chain form and no hierarchy is evident or able to be detected within its Tahitic sub-subgroup portion. Thus, Maori is no more related to one language within that grouping than it is to any other. Rather, it was a migration to New Zealand that geographically broke the dialect chain, and then early and large-scale semantic change marked that particular language off as Maori.

An explanation is readily to hand. Archaeologists had already demonstrated that in transferring from tropical East Polynesia to New Zealand early Maori culture underwent major adaptations in their material culture, economy, and settlement pattern (Green 1975a; Davidson 1984). Linguists such as Biggs (1991, 1994b) have now demonstrated a similar adaptation among those Proto-

DIALECT CHAIN/NETWORK-BREAKING MODEL APPLIED TO CULTURAL HISTORY OF EAST POLYNESIA

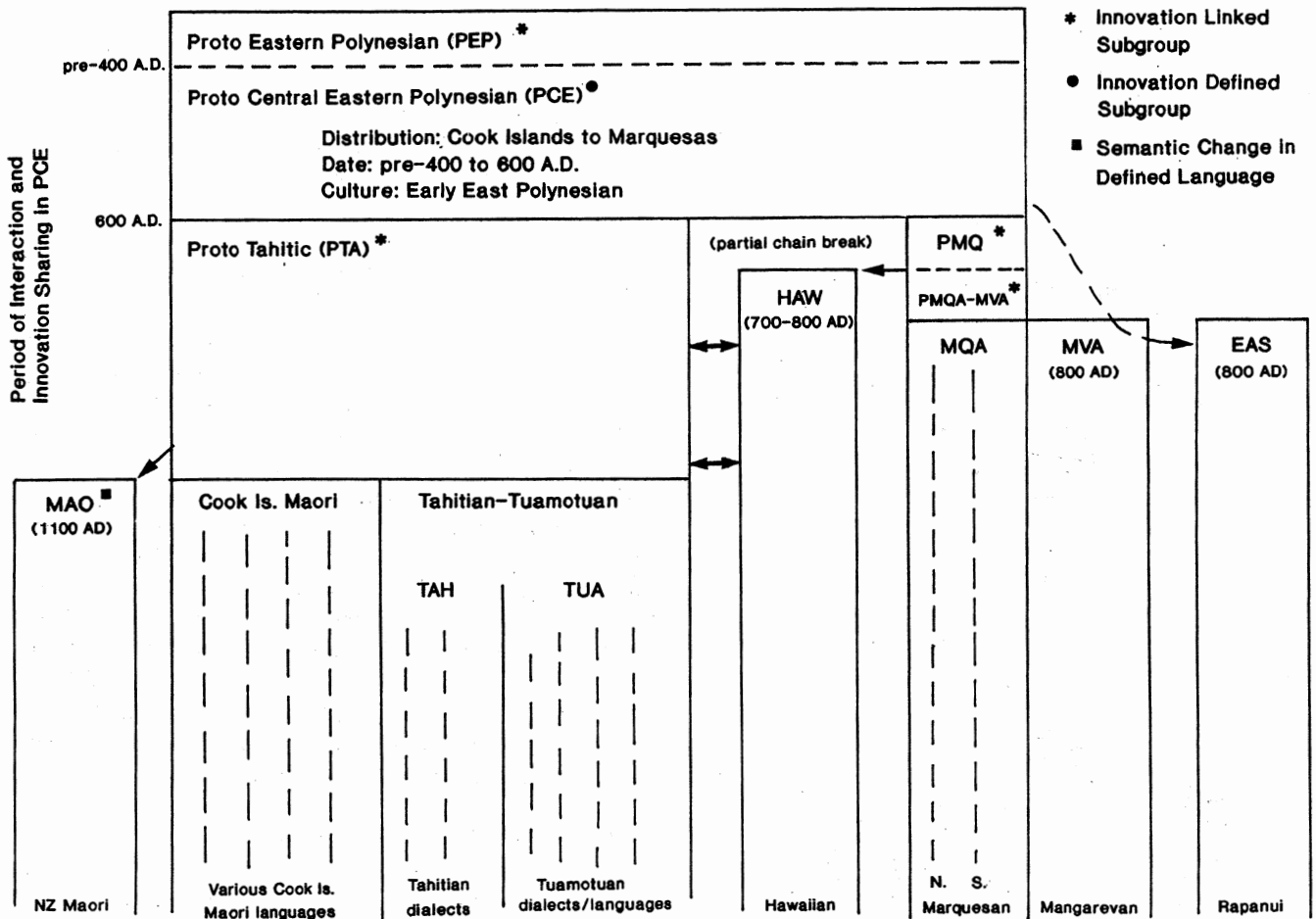


Figure 6. A chain dialect/networking breaking model for the languages of East Polynesia when coupled with its cultural historical context.

Tahitic speakers through a huge range of semantic (meaning) changes in the words they use to reflect their new location on a continental rather than volcanic high island in a non-tropical portion of the Pacific. In this case, the speech community event which has come to distinguish Maori as a series of distinct dialects was the possession of a common set of semantic innovations for words that otherwise retained their Proto-Central Pacific lexical form. That linguistic event has a sound archaeological correlate.

EAST POLYNESIAN AS A DIALECT CHAIN

When a dialect chain/network breaking model rather than a strict family tree one is applied to East Polynesia, Figure 6 (as noted above) illustrates the kind of situation

that results. The contrast, of course, is with the family tree form of Figure 5. Both are valid, though particular, presentations of an underlying reality. Easter Island, which is a linguistic isolate in relation to the rest of the East Polynesian languages, does not share in many of the innovations that define the Central Eastern Polynesian dialect network, particularly in its later stages. It is also an isolate because we do not know the languages of Pitcairn and Henderson, only Mangarevan. Yet it is apparent on all evidence currently available that Easter Island was settled from the southeast interaction sphere of that Mangarevan-Pitcairn region (Green 1998).

Hawai'ian, in contrast, is a Marquesic language, derived from the Marquesas with which it shares numerous uniquely shared linguistic innovations. By the

time that Hawai'ian separated from the Marquesas, the Central East Polynesian dialect chain had already developed a partial network break between the core area Tahitic dialect chain grouping and itself. This is consistent with the voyaging, and *Rattus exulans* mtDNA evidence (Matisoo-Smith *et al.*, 1998), as well as the archaeology. But sufficient contact by Hawai'ians with the Tahitic core was maintained for it to show in the linguistic evidence, in the oral traditions and archeology (Cachola-Abad 1993) and in the *Rattus exulans* data (Matisoo-Smith *et al.*, 1998). Thus, there is a low level of tree-like hierarchy in the Marquesic subgroup, not present in the Tahitic one. But, overall, a dialect chain/network breaking model of the Central Eastern Polynesian linguistic evidence well affirms what we have learned from other lines of information. The archaeological correlations with the linguistic subgroupings shown in Figure 3, under number 7, have continued to be well supported from the time they were first proposed in the 1970s (Pawley and Green 1973).

#### FIJI-WEST POLYNESIA AS A DIALECT CHAIN REGION

Historical investigations of the languages and archaeology in the Fiji-West Polynesian area also respond very well to a dialect chain-network breaking model as Green initially demonstrated in 1981, certainly much better than to any A to B to C island movement and family tree model. In the upper part (a) of Figure 7 the principal current linguistic boundaries are shown (Pawley 1996b:119): note especially the location of the Tokalau-Fijian and Polynesian boundaries or seams.

In the lower part (b) of Figure 7, the proposed pre-Polynesian northern and southern dialect groupings are also shown (Pawley 1996a). They represent one portion of the overall general dialect chain situation in the Fijian-West Polynesian region that constituted the situation at the start. Representing what happened in this region by using the new Polynesian family tree type subgrouping (Figure 8) of Marck (in press), is really not an entirely effective means for portraying its cultural history or the early network breaks within the Polynesian subgroup, or its dissolution from Proto-Central Pacific.

Pawley (1996b, 1997) who has several times considered the general problem for this region in detail, offers an alternative representation of the Fijian-Polynesian situation whose general outlines have been evident to most since 1978 following the linguistic dialect geography work on the topic by Geraghty (1983, 1996). It is definitely one requiring a dialect chain/network breaking model (Figure 9). In a different format I have expanded on Pawley's portrayal to include Marck's proposals for

Polynesian (Figure 10). What we again have is the slow differentiation of languages out of a Central Pacific dialect chain. However, in this case, there is a late stage re-synthesis of Fijian, before it re-divides into a Western and Eastern dialect chain. Once presented in this light, it is an easy matter to make the firm correlation of the Eastern Lapita cultural complex of 900 to 600 BC with Central Pacific dialect chain and its initial differentiation (Pawley and Green 1973, 1984), and the correlation of Proto-Polynesian with the culture of the Ancestral Polynesian societies that develop between 600 BC and AD 100 in the core West Polynesian region (Kirch and Green 1987, in press). At a slightly later stage the early paddle-impressed pottery assemblages associated with the culture of the Fijian societies that develop in that region early in the first millennium AD equate with the remerged Fijian subgroup (for these proposed correlations of proto-languages and archaeology see Figure 3, numbers 5 and 6).

#### DIALECT CHAIN SUBGROUPS AMONG OCEANIC LANGUAGES

Finally, we come to the Oceanic linguistic situation. Both historical linguists and linguistically informed and inclined archeologists such as Bellwood, Green, Kirch, Spriggs and others have long known this sub-group really has a most "rake"-like structure (Figure 11), implying that it formed from an initial chain dialect situation as Pawley initially outlined in 1981. Ross further developed this argument in 1988 and it has become a standard portrayal over the last decade. Moreover, it is well appreciated now that only some of these subgroups (as shown in Figure 11) are innovation defined; the rest are innovation linked (Pawley and Ross 1995: 51-54).

For Remote Oceania, Green (1997) has developed a strong case for the Western Lapita cultural complex as a founding population between 3100 and 2900 years ago throughout this area. As Irwin (1998: 153) puts it: "there was no settlement of Melanesian Remote Oceania significantly before Lapita". Navigationally "Lapita was a single integrated expansion in Remote Oceania". Thus, its correlation (Figure 3, number 4 and Green 1997) with the higher order and easterly late stage Oceanic subgroups of Remote Oceania seems fairly robust and persuasive, especially given the outcome for Proto-Central Pacific and Eastern Lapita discussed above. The extension of the correlation back to the Oceanic and Broad Oceanic subgroups and the Far Western Lapita cultural complex of Near Oceania is probably not as robust as that claimed for Remote Oceania, but at present appears entirely plausible along the lines argued in detail by Pawley and Ross (1993), Spriggs (1997, 1998) and Kirch (1997).

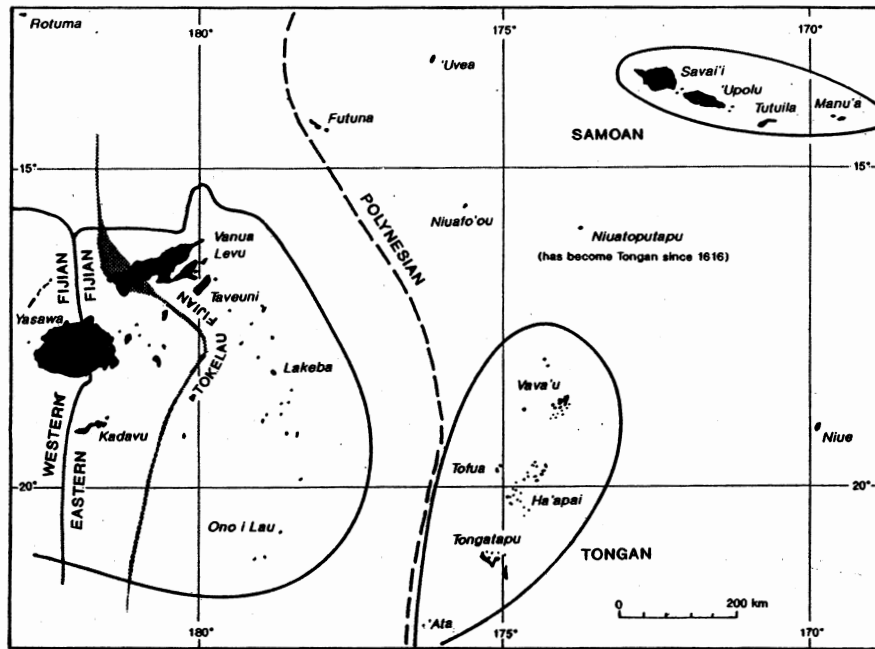


Figure 7a. Some seams and boundaries among the language groupings of the Central Pacific region (after Pawley 1996b).

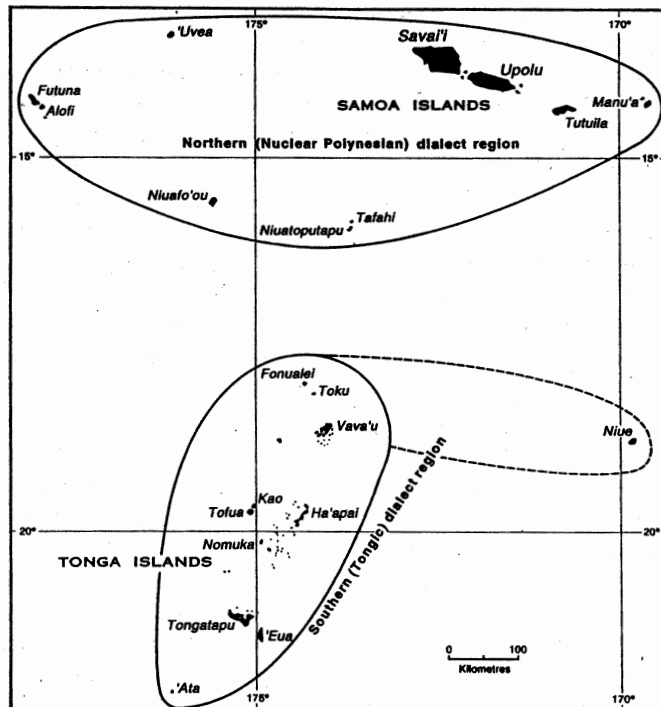


Figure 7b. The proposed northern and southern dialects of Pre-Polynesian that developed into Nuclear Polynesian and Tongic subgroups within Proto-Polynesian (after Pawley 1996a).



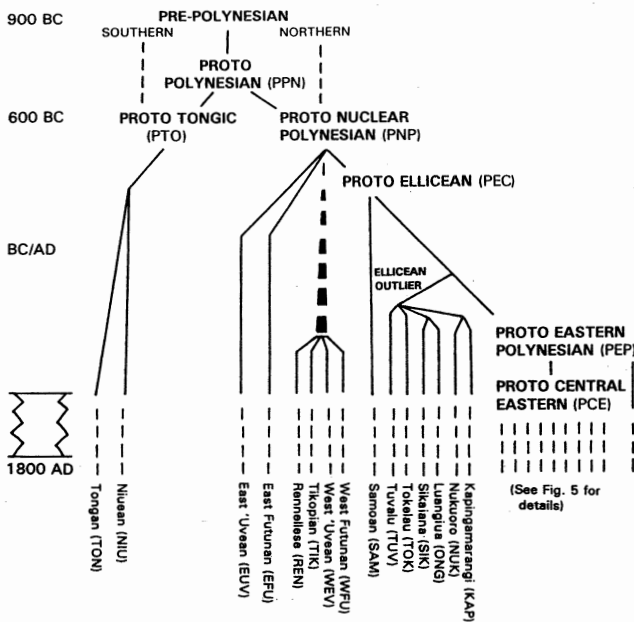


Figure 8. The recently revised family tree model for the higher-order subgrouping of Proto-Polynesian after Marck (in press). [Note - lower order subgrouping within Eastern Polynesia is presented in Figure 5].

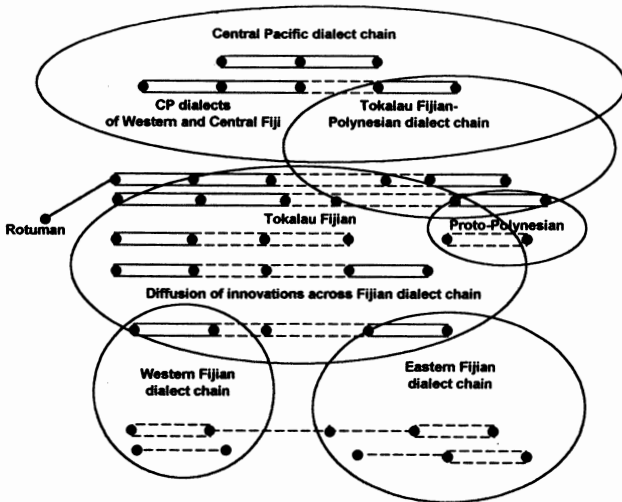


Figure 9. A schematic representation of relationships among Central Pacific languages, which cannot be reduced to a simple family tree (after Pawley 1997). The small black dot-like circles represent local speech communities; parallel pairs of continuous horizontal lines indicate high density contact and diffusion between communities over a period of time; double and single broken lines represent lower densities of contact and diffusion; and gaps indicate negligible contact and diffusion.

Certainly, that is my position also (Figure 3, number 3).

CONCLUSION

Most recently Pawley (1997) has argued that the AN family tree model for sub-grouping among Malay-Polynesian languages is really not as sharply defined as Blust has frequently maintained. Rather, it too exhibits a much more rake-like structure than is presented in the typical tree type diagram of Figure 2. Thus its interpretation is better understood as conforming in large degree to a dialect chain model. This means that from the Philippines and Maluku, right through Near Oceania and out into Remote Oceania as far as the central tropical East Polynesian core, it is often a dialect chain/network breaking model in conjunction with a tree-type one that serves almost all attempts to model the AN family's history, and its correlation with currently defined archaeological entities. Within the Pacific, these lessons have best been demonstrated so far within Remote Oceania, where even the most confirmed critics of such exercises in the combination of archaeology and language have failed in their efforts to offer alternate solutions, or demonstrably better motivated answers.

The next step, now well underway, is to exploit the proto-lexicons of Polynesian (Kirch and Green in press) and Oceanic (Ross *et al.* 1998) to further enhance our knowledge of the cultural history of the region in the same way Blust (1995) has recently done for Proto-Austronesian. Some have called this approach "holistic archaeology" (Trigger 1991) and others "culture history" (Pawley and Ross 1993), but Kirch and Green (in press) prefer to designate it "the anthropology of long-term history" (see also Green 1999). In my view, the way forward lies in that direction, and not in berating the phylogenetic model, which never required just a family tree model, but accommodated both that and a dialect chain/network breaking model as standard analytical procedures from early in the 1980s.

In view of various comments by some authors (Terrell, Hunt and Gosden 1997; Hunt *et al.* 1998) about a supposed need for a high degree of isolation for those seeking to trace phylogeny in human affairs, a final comment is required. This is that family tree, dialect chain and phylogenetic models are all ones that for nearly two decades in the Pacific have been seen as operating within a context of continuous but differentially interacting cultures and societies (Green 1975b, 1981; Irwin 1980: 326; Kirch 1984, 1986b; Kirch and Green 1987: 172; Green and Kirch 1997), not a region of population isolates as they aver. An old and long discarded view "of successive developments in isolation," used by myself and

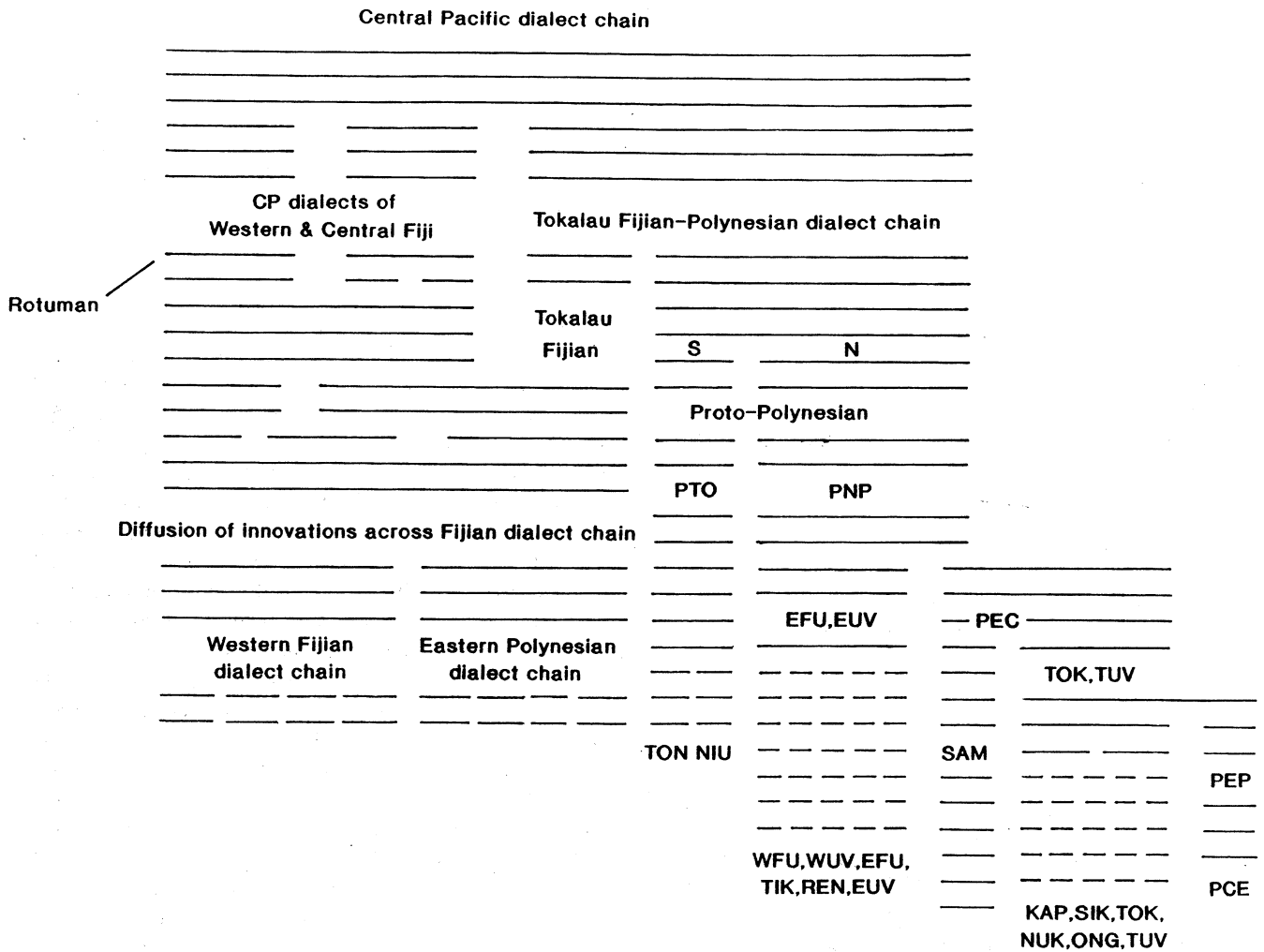


Figure 10. Another schematic representation of dialect chain/ network breaking and linguistic differentiation among the Central Pacific languages of the Oceanic subgroup (after Pawley 1997; Marck in press).

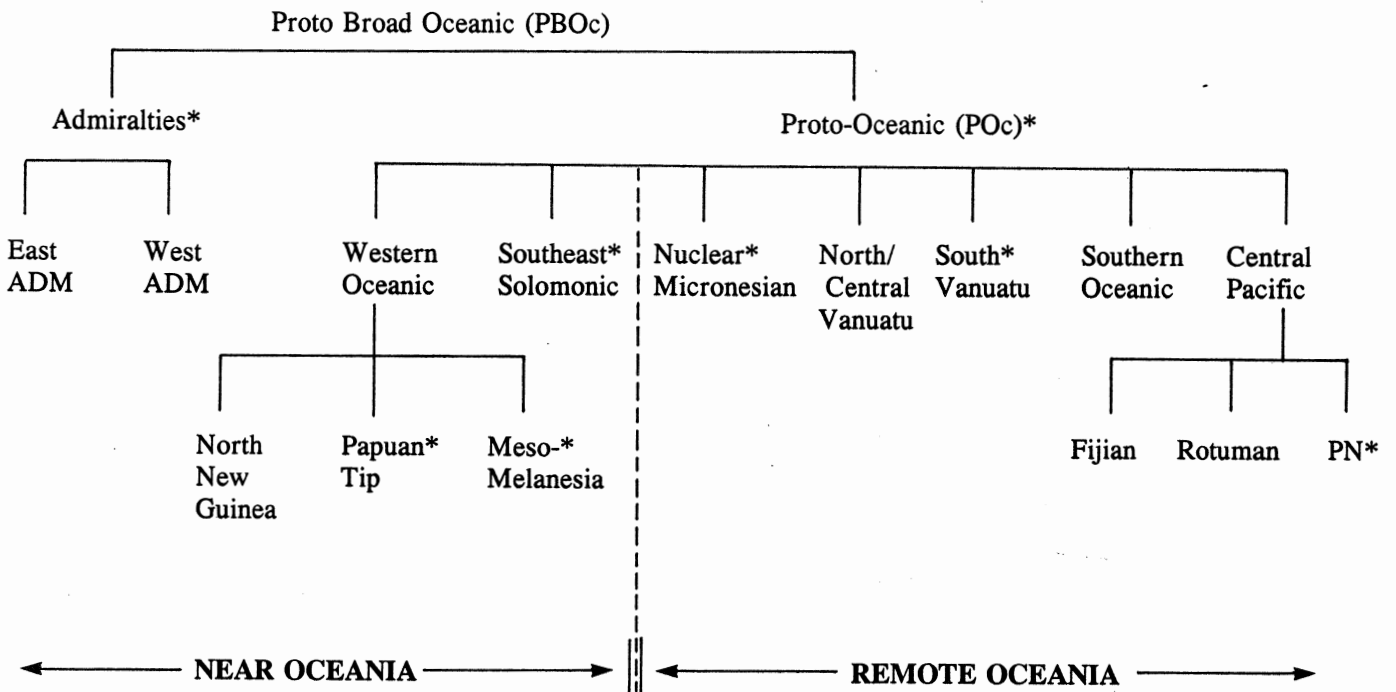
others in the past, was explicitly completely abandoned nearly two decades ago (Green 1981: 144) and replaced by one cogently articulated by Kirch (1984: 629).

While island ecosystems are physically bounded, they are not “closed systems”, and our culture-historical reconstructions must reflect the reality that Oceanic peoples were adept seafarers who frequently extended their ecosystems through regular contact with adjacent and even far flung islands. The number of true cultural “isolates” among Pacific islands is probably very low, including perhaps remote Easter Island and some other Polynesian islands.

This viewpoint has prevailed as an increasingly dominant one for over 15 years as any reader of the Oceanic

literature can easily ascertain (see Weisler 1997 and the volume of papers to which his serves as an introduction). For example, in that volume, Finney (1997: 38) notes that as archaeological studies showing the transport of artefacts back and forth between widely separated settlements increased, faith in the assumption of isolation began to be shaken in the early 1970s. By 1990, demonstrating hard evidence for inter-island and inter-archipelago links had become “one of the most exciting fields in Pacific Island archaeology”.

From the above, it is apparent that the development of dialect chain/networking and interaction based models took place in both historical linguistics and archaeology contemporaneously over a period of several decades.



\* Innovation defined sub-groups

Figure 11. A current view of major higher order subgroups within the Oceanic languages of Austronesian, showing those subgroups which are innovation defined, and the general rake-like structure of their west-east distribution in Near and Remote Oceania.

Moreover, analyses sometimes included within these frameworks provided firm support for a phylogenetic model as one productive way of approaching the cultural history of Remote Oceania. But this conceptual framework was neither conceived of nor forwarded as a model that eschewed contact. Rather it was one that accommodated *relative*, often quite varying, degrees of contact within evolving trajectories of divergence that are commonly encountered in human history, where isolating mechanisms were as often cultural and linguistic, as they were geographic. Hence the need for several kinds of models, from family trees, to dialect chains, to interaction networks, and reticulate structures. Hudson (1997: 847), echoing Bellwood (1996) got it precisely right when he said “both phylogenetic and reticulate approaches are essential for a full understanding of prehistoric diversity.” In contrast Hunt and Terrell’s (1997) reply focused solely on “family trees constructed from language” along with a reluctance to espouse any form of “an interaction-oriented approach.” As I have shown here this is a flawed and too narrow view of the issues involved, misrepresenting what

we have learned from their in depth examination in Remote Oceania in a continuing series of case studies that embrace theory, methodology, and extensive analyses of a wide-ranging body of evidence. If their theory is to prevail, then not only will they have to set out a methodology (something they admit they have not so far done), but they will have to apply it to the ever increasing information from Remote Oceania and demonstrate that it handles that data better than those of us using phylogenetic (as well as reticulate) models which integrate multiple strategies from historical linguistics, ethnology, archaeology and biological anthropology “to infer the history of the region in some minimally certain terms” (Hunt and Terrell 1997: 849).

ACKNOWLEDGEMENTS

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## NOTES

1. For an example of the successful combination of historical linguistics and biological data in Oceania see Lum and Cann 1998.

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