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**AUSTRONESIAN STUDIES  
RELATING TO TAIWAN**

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## PREFACE

On December 29-31, 1992, a symposium was held at Academia Sinica in Taipei on the topic 'Austronesian Studies Relating to Taiwan.' The central theme of the symposium was the position of Taiwan in Austronesian studies. The symposium brought together Austronesian scholars in the fields of anthropology, archaeology, and linguistics. The three major goals of this symposium were as follows: 1) to explore interdisciplinary questions concerning comparative research in Austronesian studies; 2) to present recent findings emphasizing the position of Taiwan in Austronesian studies, as well as the historical, social and cultural development of the Austronesian peoples in Taiwan; and 3) to chart the course for future research in terms of theory and methodology for Austronesian studies in general.

More and more leading Austronesian scholars recognize the importance of Formosan studies for the entire Austronesian family. Taiwan has unusually rich resources not in the number, but rather in the great diversity of its various ethnic groups. Moreover, it has an unbroken history of anthropological, archaeological and linguistic studies, which took root in the late nineteenth and early twentieth centuries. Such studies will provide crucial evidence for determining their homeland, early migration routes and culture prehistory.

The response of Austronesian scholars from all over the world was encouraging. But due to limited space and funding, only twenty-seven papers were accepted for presentation and discussion at the symposium. Each paper was then revised by the author, reviewed anonymously and revised again by the author, incorporating the reviewers' comments. As a result, only twenty

papers were finally accepted for inclusion in this published volume. They are arranged in three groups: anthropology, archaeology and linguistics.

There was considerable discussion of a formal and informal nature during the three days of the symposium among the speakers, visitors, and local faculty members. The formal discussions were all video-taped, but have not been included in the published record of the symposium.

We would like to thank all those who helped to make the symposium a success, including not only the official participants but many visitors. Generous financial support was provided by the Institute of History and Philology, Academia Sinica, and the National Science Council and the Council for Cultural Affairs of Executive Yuan, the Republic of China. The symposium could not have been held without the active support of Tung-kuei Kuan, the former director of the Institute of History and Philology. Finally, I would like to thank my colleagues Cheng-hwa Tsang, Ying-kuei Huang, Dah-an Ho and Chiu-yu Tseng, who also participated in the editing of this volume.

Paul Jen-kuei Li

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## **The Symbolism of Tombs and Houses in Austronesian Societies with Special Reference to Two Malagasy Cases**

**Maurice Bloch.**

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The paper concerns the symbolism of tombs and houses in Austronesian societies in the light of two examples from Madagascar. Among the Zafimaniry houses are sources of blessing while tombs are seen in negative terms. Among the Merina the reverse is the case. It is argued that this difference is to be understood in terms of the symbolism of the state among the Merina.

This paper is about several ethnographic themes which arise from my studies in Madagascar which I believe may be illuminating for other parts of the Austronesian speaking world including the Austronesian speaking societies of Taiwan. In particular I, like other contributors to this volume, am interested in continuing the fruitful discussions which have been initiated by Lévi-Strauss's notion of house based societies as they relate to South-East Asia (Lévi-Strauss 1979, 1983, 1984). I am particularly concerned with the relation of tombs and houses, a relation which seems of recurring significance throughout the region even where the two are merged as seems to be the case for such people as the Bunun (Huang 1988) or the Tikopia. In Taiwan it is not an accident that the papers concerned with the Paiwan presented here by Matsuzawa and Chiang also see the symbolism of houses as central and that they pay particular attention to the political significance of

this symbolism. Similar themes are clearly involved. If we move from the Taiwan mainland to Orchid island, as represented in the paper by Chen and not surprisingly given the ethnological connection, the similarities are even greater. Perhaps Madagascar and Taiwan represent opposite ends of the Austronesian world but there is not a single theme in what follows which is not echoed in some ways in the Taiwanese ethnography.

Although the language of Madagascar in its various dialects is fundamentally Austronesian, the elements which have contributed to the ongoing creation of present day Malagasy culture are diverse and, although a South-East Asian element is clearly present, this is organically combined with African and other components. The product of such a cultural process and the ongoing cultural creation form a totality which there is no point in resegmenting so long after the event into "South-East Asian" or "African" elements, any more than there is any point in trying to decide what is "Saxon" or "Nordic" in modern English culture. However, unfortunately, much ethnographic energy concerning Madagascar has been wasted in precisely these types of project. Such futile enterprise is all the more unfortunate in that it is often linked with racist concerns which have had disastrous repercussions in modern Madagascar.

This having been said it is nonetheless clear that Malagasy ethnography is easily comparable to that of other parts of the Austronesian world and that the enterprise is worth doing if only as a means to formulate questions and hypotheses.

My concern here is with the symbolic representation of tombs and houses and the relationship of the two. In particular I want to compare the ethnography of the Zafimaniry, a people of the east coast forest and the Merina.

One of the things which most fascinates the people of the east coast of Madagascar about the Merina of central Madagascar is their funerary customs which they find odd and objectionable. Two features are usually picked out. One, which also seems disturbing to non-Malagasy, is the practice of taking out long buried corpses of deceased relatives from of the tomb for various ancestral ceremonies which go under the general term *famadihana*. The other is the fact that the Merina bury men and women on the same stone "beds" in their tombs and that sometimes they even wrap them inside the same shroud.

In this paper I want to show that this apparently minor fact is rightly emphasised since it can help us understand some of the fundamental differences in the political and kinship symbolism of the Merina and some of the east coast forest peoples.

My examples of these east coast groups are two adjacent peoples: the Zafimaniry and the Zafindiamanana. For the purposes of the paper information on the Zafimaniry, who I know well, would largely suffice, were it not for one specific point for which I need information concerning the Zafindiamanana, who I know less well.<sup>1</sup> I have to rely on the Zafindiamanana practices concerning the cult of standing stones since the similar Zafimaniry cult is not carried out any more, at least to any great extent, in the part of Zafimaniry country I know well, as a result of the influence of Catholicism since the war. The Zafindiamanana, on the other hand, still practice this cult, and in a way that, I believe, basing myself on what I have been told by older Zafimaniry, is identical to the way the Zafimaniry did so in the past.

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1 I am thankful for the department of Malagasy civilisation and literature and Professor L-P Randriamarolaza for organising for me a field trip to the Zafindiamanana.

In any case the standing stones of the Zafimaniry and the Zafindiamanana are exactly the same but they differ from other standing stones in other parts of Madagascar.

I am therefore principally concentrating on the Merina and the Zafimaniry. These two groups, together with the northern Betsileo, are culturally fairly homogeneous...for example they speak very closely related dialects and the archaeological record, such as it is, shows them all to have shared a culture in the past which was, in its main features, similar (Vérin 1964).

The terms Zafimaniry and Merina, however, refer to fundamentally different types of entities. The Zafimaniry, and for that matter the Zafindiamanana, define themselves, partly by a very unspecific notion of common descent, but much more importantly, as inhabitants of a specific ecological niche. As groups they are relatively culturally homogeneous.

The Merina, on the other hand are a late eighteenth century creation, a unit formed by the administrative territory of a new kingdom, which grouped together people who were both relatively culturally different from each other and who often seem to share more cultural traits with their non Merina neighbours than they do with other Merina. Indeed, were it not for the accidents of history, it could quite easily have been the case that the eighteenth century rulers of Antananarivo, the Merina capital, could have conquered the Zafimaniry, in which case they would now be considered as Merina.

## The Zafimaniry

The Zafimaniry are a group of shifting cultivators, living in eastern Madagascar who traditionally mainly rely on maize, beans, and taro. They number



approximately 20000. Although living in an area which is classed by the authorities as Betsileo, they are one of many such groups which are sometimes called Tanala and sometimes called Betsimisaraka, however, they differ from any of these because of the very specific environment in which they live. They inhabit a narrow band of montane forest, found on a step of the sharp north-south escarpment which runs almost the whole length of Madagascar (Coulaud 1973) .

Politically the Zafimaniry can be said to have been uncentralised since they have not been much affected by any the various state structures which have sometimes claimed sovereignty over them. This situation continues right up to the present day in that the Malagasy government, outside two small administrative centres, has very little if any control over them. Also, if one forgets about the relatively few slaves they once held, as well inequalities resulting from gender and age, the Zafimaniry can be said, following the loose use of such a term common in anthropology, to be fairly egalitarian.

I start my description of Zafimaniry social organisation with a brief outline of their ideas concerning the house, even though I have dealt with the matter elsewhere, since the importance of houses for them cannot be exaggerated (Bloch 1992).

Zafimaniry marriage and house creation are both very long drawn out processes, not surprisingly since the two are merely two sides of the same thing. For them marriage without a house is a contradiction in terms, simply because the Zafimaniry notion, which I choose to translate as "marriage", is distinguished from other forms of sexual union precisely by the existence of a house. This is reflected, among other things, in the fact that the normal way of asking the question corresponding to the English "Are you married?" is phrased to mean "Have you obtained a house with a hearth?"

Marriages at first are very precarious affairs which develop slowly and uncertainly with the birth of children and this is reflected in the flimsy structures of the houses of new married couples, the walls of which will be woven bamboos or simply mats. However, as the marriage stabilises and produces children, grandchildren, etc....and as the house becomes older it also becomes more permanent since the woven bamboo is very gradually, over several decades, replaced by heavy hardwood. The house is then said to acquire "bones". Particularly significant is the fact that the wood that is used is the heartwood of the hardest wood.<sup>2</sup> This heartwood which is equated with the bone of human bodies since it also forms a harder inner core, except that in trees, unlike in humans, the proportion of "bone" to "flesh" continues to increase over the years and perhaps the centuries, leading to a durability which majestically outstrips the durability of human beings. When used in the house this wood will gradually be covered in low carving which the Zafimaniry say "honour the hardness and durability of the heartwood". Decoration and carving is thus seen as yet a further step in the process of hardening and making last the house/marriage.

With time therefore the house grows, especially if the couple have many children and if these children marry and in their turn produce children. This is so because the people who are responsible for the gradual process of the hardening and beautifying of the house are above all the children and their spouses who, as is found in other parts of Madagascar, are assimilated to children by the kinship system (Bloch 1978). Zafimaniry houses, therefore,

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2 The part of the wood used for making such a house is the dark core of the tree which the Zafimaniry call *teza*, a word which also means lasting. The carvings on the house, which have often been described (e. g. Verin 1964), are seen by the Zafimaniry as a celebration of this "durability".

grow with the marriage of the marital pair, continue to grow as that marriage is productive, continue to grow as the marriage of the children is productive, continue to grow as the marriage of the grandchildren is productive and so on...The process of the growth of the house and in a sense the process of the original marriage should therefore continue long after the death of the original pair as the children, grandchildren, etc.. continue the hardening and beautifying of the house.

A successful house which continues to grow will become the "ancestor" of other subsequent "children" houses and may well become the essential centre of a village. This is because the male descendants of the original couple will live in less permanent houses around the original house in positions which mark their junior status, this means that these "children houses" will be to the south and lower from the summit of the hill on which Zafimaniry villages are always built.<sup>3</sup>

The symbolical importance of the house is especially focused on two parts.

Firstly, there are the three posts which support the ridge pole and the roof. Of these three the central "hot" post is particularly important. This is closely associated with the man of the house and it is where he will normally sit. This central post of the house should be made of the heartwood of the very hardest wood known to the Zafimaniry.

The second symbolically emphasised part of the house is the hearth. This consists of three stones. It is traditionally furnished, at the minimum, with a kettle, a large wooden spoon used for stirring, and a large serving plate. These objects are associated with the woman of the couple.

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3 Practical problems of topography mean that the rule is not always fully followed.

It is the association of the posts, especially the central hot post and the furniture of the hearth which begins the house and the marriage process. This is because at first, the man, before he is married, will begin to build a house by himself, a house of which the only really sturdy part will be the hot post, but such a house may not be used for sex or cooking until a woman has brought, as the main part of her dowry, the furnishings of the hearth.

However it is not these male and female symbols which are central as such but their combination in one living unit, the house, which becomes a kind of productive growing androgenous body with "bones". This idea is often expressed in relation to the roof which brings together two sides both of which should be different in the number of struts (one side adding up to a male number and the other to a female number) and which is often surmounted by a carved wooden bird, a symbol of marital peace.

This idea of the house as a living united androgenous productive and reproductive body, whose power transcends by far those of limited sexually incomplete humans comes to the fore in those houses which become commonly described as "holy houses". These are houses which have successfully reproduced over many generations. Such houses represent the original marriages of people who are by now usually long dead, but, in a sense, their presence is still there, in the central post and the furniture of the hearth and, above all, in the conjunction of the two.

This is best seen in the prime function of holy houses; these are by definition, since that is what the word I choose to translate as "holy" means, places of blessing. Such a house becomes a religious centre for the descendants of the couple and if this is the whole village, it will become the religious focus of the village. Such a house will be used by the descendants

who will occasionally gather to settle disputes, reach decisions of communal importance and above all seek blessings from the founders. When they do this the central post is treated as though it was actually the man of the house since this is addressed as if it were him on such ritual occasions, at the same time the hearth and its furniture also become the founding woman since the descendants must eat food cooked on this hearth if they are to receive the blessing of the original house/couple.

Houses for the Zafimaniry therefore become the centre of cults of blessing though they become this gradually by imperceptibly changing from shelters to temples, a process that we find in other parts of the Austronesian world such as Tikopia or Taiwan. Houses commemorate, or are, also people or rather, and this qualification is extremely important, couples. Couples which continue to grow and to exist long after the death of both partners because their joint productivity and reproductivity continues to manifest itself in the fertility and increase of their descendants. Houses, for the Zafimaniry, are therefore a crucial site of the connection between the living and the dead where this connection takes the form of blessing.

Houses, however, are only one site of the connection between the living and the dead. There are also two others.

One such is the tomb. Tombs among the Zafimaniry are hidden in the forest, they are largely invisible to strangers and are for the most part avoided because the dead in them, unless carefully placated, are frightening and harmful to the living, especially to their own descendants.

The most common tombs consist of a large excavation under a rock with, on either side of a central passage, a number of "rooms" containing wooden platforms on which closely related dead bodies are placed. Once the dead are there they are not disturbed and are only prayed to or addressed

when a new death makes approaching the tomb inevitable.

As for many other Malagasy, Zafimaniry tombs regroup families, but they do this in a very particular way. In the tomb married couples are not united as they are in their representation as ancestors in holy houses but they are separated. This is because both spouses are normally buried in the tomb of their fathers and so, while brothers and sisters who have been separated by patrilocality are reunited in the tomb, husbands and wives, joined by marriage are divided. Indeed the Zafimaniry tomb is not only anti marriage but also anti sex. This is because, in the Zafimaniry tomb, men and women must be buried separately in different "rooms" of the tomb. The reason the Zafimaniry give for this practice is that since the tombs regroup brothers and sisters contact between the two sexes would be incestuous.

There is, however, or rather, in the case of the Zafimaniry, was, yet a third commemoration of the dead and that is as standing stones. It is for this topic that I substitute information which actually refers to the Zafindiamanana, but which would, until recently have also applied to the Zafimaniry.

Some way outside Zafimaniry and Zafindiamanana villages there stand grouping of standing stones. In each grouping there are two kinds of such stones. There are what are called male stones, which are stone pillars said to represent central house posts, then there are female stones consisting of three smaller stones with a larger one on top, said to represent a hearth with a kettle on top. These stones are put up after death to honour the dead in a great ceremony.

One aspect of this ceremony is obvious, these rituals are a second funeral in that the stones are made to rerepresent the corpse and thus the grouping of stones is like the content of the tomb made evident in an acceptable manner. This is actually marked by the fact that, if someone wants to

give a shroud for a corpse but missed the funeral, they can wrap it around the stone instead. These rituals are therefore in some ways the equivalent of the Merina famadihana done with stones instead of with actual bodies.

Of particular interest are two critical elements which the standing stone ceremony shares with the funeral. Firstly it is as much a ceremony of exclusion as of honouring in that the ritual is carried out to stop the dead bothering the living and that the dead are placed outside the village in a "village" of their own. Secondly, like the tomb the commemorative stones mark the opposite of the domestic marital unions represented by the village and the houses since they represent regrouped sibling units of brothers and sisters which implies the breaking of marriages since the women are returned from their spouses to their consanguines. Indeed, I believe it is not too fanciful to see in the appearance of these standing stone petrified but broken villages where the only sexuality which is hinted at is what is for the Zafimaniry that of that most sterile of sexuality: incest.<sup>4</sup>

The contrast between the houses especially the holy houses and the villages of standing stones is also reflected in the cults which take place there. While the houses are sites of blessing for the descendants of the original couple, where the ancestors are invoked, the standing stones, are places where offerings are made so that there will be no interference from the dead. Such offerings may be made by anybody in the locality and totally

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4 This element was interestingly evoked in a discussion I had with a Zafindiamanana mediator with the ancestors (*tangalamena*). He had told me that the male standing stones stood for individual men while the female standing stones often stood for two or three women because women "were less important". I then asked him, if that was so, why the offerings were made on the female stones. His answer was that since they were hearth they could then distribute the offerings to their brothers. The incestuous suggestion comes from the fact that this distribution from the hearth is a paradigmatic image of marital relation.

lack the familial intimacy of what goes on in the houses.<sup>5</sup>

Indeed the different materials of the houses and the megalith is in itself significant. The houses are made of the hardest most long lasting heartwood possible but the symbolism of wood comes from the fact that it is the ultimate product of what was once a living kind, and that it therefore can be seen as an idealised version of a human life which has achieved maximum durability (Bloch 1993)<sup>6</sup>. Stone, on the other hand, is completely permanent but nor has ever been alive, it never grew and multiplied. The megalithic representation of bodies, therefore, obtains absolute permanence though total abandonment of any connection to life, growth and reproduction.

For the Zafimaniry therefore the ancestors embodied in houses are conjoined sexual pairs whose productivity is a source of continuing blessing and fertility but the dead in tombs and tomb representations, that is in standing stone assemblages, represent the non generative reunion of cross sex siblings. While the ancestors as houses have the welfare of their descendants as their prime concern, the ancestors in the tombs as bodies or stones are hostile and sterile.

## The Merina

Zafimaniry notions contrast sharply with that described for the Merina in my earlier work on these people (Bloch 1971 & 1986).

Unlike the Zafimaniry or the Zafindiamanana who each number a few tens of thousands, the Merina number more than a million probably nearer

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5 For further discussion of this point see (Bloch: forthcoming b).

6 Only one aspect of human life is ideally permanent. There are others.



two. Merina society is very varied in all kinds of ways and they are the main inhabitants of the capital of Madagascar which means that Merina are just as likely to be lawyers or shopkeepers as they are to be peasants.

Towards the end of the eighteenth century the Merina developed, with British help, a large kingdom which, by the end of the nineteenth century when the French invaded the island, controlled most of Madagascar. This state, however, was built on the ruins of other earlier and much smaller state structures about which we know very little. It is clear, however, that some form of state has existed in central Madagascar from the sixteenth century onwards.

For most Merina the house as a symbol is, compared to what it is for the Zafimaniry, of minor importance. True, there is a corner of the Merina house, the North-East, which is associated with the ancestors but only the most minimal cultic activities take place there. However, the most stressed symbolic aspect of the Merina house is as a negative entity in the ritual dramas of the second funeral and of the circumcision ceremony (Bloch 1971 and 1986).

In the drama of the circumcision ceremony, for example, the house is made to represent the opposite to all what the ancestors stand for. In this ritual, the central purpose of which is to bring the blessing of the ancestors to the children, the house is broken into and symbolically attacked in a variety of ways.<sup>7</sup>

The house for the Merina is thus, in ritual at least, the antithesis of the

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7 It is true that this is also the case in the Zafimaniry circumcision ceremony but for the Zafimaniry this is only a minor theme to the much more dominant symbolism of the house as a locus of blessing, something which is totally absent in Merina houses.

tomb which contains the ancestors. In sharp contrast to the situation for the Zafimaniry no part of the Merina house is a source of blessing.

The communal family tomb, on the other hand, is the main source of ancestral blessing. The Merina tombs are large stone structures, partly under ground, partly over ground. Merina tombs are proud buildings, standing in prominent places and they dominate the hill sides of Imerina contrasting in their solidity and decoration with the rather shabby and ill kept utilitarian houses of Merina villagers.

Whenever a blessing is sought for bringing to fruition any enterprise or to ensure successful growth and development this must be sought from the ancestors. This is done by first going to the tomb and there asking them for help. Indeed for the Merina the ancestors as dried dead bodies and the tomb as a building form a merged entity from which, through blessing, legitimate fertility and reproductivity flows to the descendants. Thus the process of blessing must always begin at the tomb and often earth or water placed on the tomb is actually used for the aspersion of water which forms the central act of Merina blessing (Bloch 1971 and 1986 *passim*.).

It is not only in its appearance, its location and in the way the tomb is a source of sought blessing that the Merina tomb contrasts with the Zafimaniry tomb. The internal organisation of the Merina tomb is also fundamentally different.

Merina tombs are also organised along a central space with a number of shelves, usually nine, surrounding it where the dried corpses are placed. The Merina are not normally placed on the shelves after death but only after a period during which time the corpse has had time to dry. In the case of a married person this placing on the shelves usually awaits the death and drying of the other spouse. Then the bodies of the married pair are placed

next to each other often wrapped together in the same shroud.<sup>8</sup> This is the practice which is so horrifying to people such as the Zafimaniry who feel that death should have nothing to do with sex and are afraid, as one Zafimaniry put it to me, that "the dead might breed".

When seeking blessing from the tomb and the ancestors in them, the descendants are thus, first of all, seeking blessing from united marital pairs of corpses whose conjoined fertility is passed on them.

We therefore seem to have almost a total contrast between the Zafimaniry and the Merina. While the Zafimaniry see the house as the potential source of blessing and fertility issuing from an ancestral marital conjunction and the tomb and the standing stones as a place of marital and sexual separation and sterility mainly concerned in separating the dead from the living,<sup>9</sup> the Merina see the tomb as a source of blessing issuing from ancestral marital conjunctions, while the house can be a symbol of an entity which must be violently conquered for ancestral fertility to triumph.

How can we understand the occurrence of such a fundamental difference between people who, in many other matters, seem to share an almost identical culture? In searching for an answer it is illuminating to turn to internal variation in the related symbolical representation of the tomb/house pair within Merina society itself.

The house tomb symbolism I have alluded to above refers to Merina of

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8 In the end husbands and wives may be separated when after an interval a woman's body is returned to her natal tomb, usually because her husband intends to remarry. In fact as far as the long dead are concerned, whose names are forgotten, some aspects of the Merina tomb are closer to the Zafimaniry tomb. Such shades of meaning have however to be ignored in a paper such as this.

9 See footnote 8. I am grateful to Dr. Astuti for pointing out the necessity for such a qualification.

the present day and it would also have applied to most Merina of precolonial times. In pre-colonial times however there was one significant exception to the devaluation of the house and the valuation of the tomb as the locus of blessing for descendants. This exception concerned the monarch.

## Royal Merina symbolism

Several pre-nineteenth century royal palaces remain to this day in Imerina and, apart from certain details such as the pitch of their roofs, they strikingly resemble present day Zafimaniry houses (Razafy-Andriamihaingo 1989, Belrose-Huyghues 1983). The palaces are built out of the same symbolically significant hardwoods. This wood is decorated in similar patterns (Verin 1964) which among the Zafimaniry are said to "honour" the hardness and the lasting quality of the heartwood. Above all royal palaces have central posts and prominent hearth inside the house similar to those found in present day Zafimaniry houses.<sup>10</sup>

The great nineteenth century royal Merina palace, which still today dominates the capital of Madagascar, is similarly, at its core,<sup>11</sup> like a Zafimaniry house, but of enormous proportions. The central post in particular is approximately ten foot in diameter and is in fact made up of different trees strapped together. The palace was in fact surrounded by other houses belonging to members of the highest royal demes which were also similar to contemporary Zafimaniry houses.

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10 The hearth of the palaces is placed in the same honoured position in the house as it is for the Zafimaniry while in modern Merina houses the hearth is placed in the least valued position in the house or outside in a kitchen shed.

11 It was subsequently surrounded by a nineteenth century British architect by a more European looking structure.

Royal Merina palaces were also reminiscent of present day Zafimaniry houses in another way. This was because a number of Merina royal rituals were identical to Zafimaniry rituals concerned with the house. First of all we know that Merina monarchs performed various rituals concerning the central post of the palace, such as anointing these posts with a special kind of taro (Bloch: forthcoming a), this is identical to what the Zafimaniry do in the ritual of initiating a house for use today.

Secondly in the great annual ritual of the royal bath (Bloch 1987) we find a central place given to a symbolical meal which had to be cooked on the hearth of the palace and from where it was distributed to all subjects at the culminating point of the ceremonies in a way which is again reminiscent of ritual cooking at Zafimaniry blessings. It would seem therefore that for the Merina palace the central post and the hearth had similar symbolic role to what they have for the Zafimaniry.

There is however an even stronger association of central post and person among Merina royals than anything to be found among the Zafimaniry. One of the ways of referring to the monarch for the Merina is by the word *Andriana*. This is a word which can also apply to members of high ranking demes but the ruler is the epycentric *andriana*. This is because for the Merina, as in other parts of the South-East Asian and Austronesian culture area, as has been argued by Anderson (1972), Tambiah (1976), Geertz (1980) and even more recently by Errington (1989) the realm and royalty are experienced as a centre from which the intensity of power diminishes but is never clearly exhausted. The ruler is thus the most intense Andriana but this character is shared in diminishing degree by his subjects especially his close relatives. Now the word *andriana* is most probably derived from the Malagasy

word *andry*<sup>12</sup> which means house post or support. The symbolism underlying this notion is of course the familiar South-East Asian and more generally Austronesian symbolism of the ruler as the "exemplary centre" of society. It was thus quite common to say that the ruler was both the centre, the *po* (see Errington 1989) of the kingdom.<sup>13</sup> And again, as is found in other Austronesian and South-East Asian cases this centrality takes the form of a central post of the kingdom, either in the form of an actual post, as for example in Thai kingdoms, or a person who, as here, is in themselves and the support, *andry*, of the kingdom (Heine Geldern 1942).

One element, however seems absent in this equation of the symbolism of the Merina palace and the ruler and of the Zafimaniry house. The Zafimaniry house represents a source of fertility which comes from the marital conjunction of male and female while the Merina monarch was a single individual usually male, though sometimes female, and symbolically unmarried (Bloch 1986).

This absence of the image of the productive marriage in Merina royal symbolism is however misleading, simply this symbolism takes on a slightly different form. This is because the crucial symbolism of Merina royalty represents it in terms of gender complementarity. The Merina ruler represents in himself or herself the conjunction of the symbolically male royal ancestors and the symbolically female autochthonous fertile owners of the soil. The monarch is seen as combining complementary opposites in his or her person. The monarch himself or herself is therefore symbolically a complete couple

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12 This became clear in discussion with Hilarion Rakotovololona of the Musée d'art et d'archéologie of the University of Madagascar.

13 The most famous Merina king was called Andrianampoinimerina, lit. the Andriana at the *po* of Imerina.

(Bloch 1987).

Indeed, the idea that authority is linked to this type of gender complementarity is repeated in many ways in Merina symbolism, for example we find that elders are called, irrespective of sex, "father and mother".<sup>14</sup> The Merina monarch is therefore in himself or herself a couple; the equivalent of the two joined founders of a Zafimaniry house.

Finally there is the most obvious connection between the palace and the Zafimaniry house: both are, or should be, the supreme source of blessing. In the Merina case this is most clear in the annual ritual of the royal bath. Of course in the Merina case it is largely subjects rather than descendants who are blessed, but as I argued elsewhere (Bloch 1987), in the rituals of royal blessing the subjects are represented as descendants of the ruler and his or her ancestors, as though the whole kingdom was one family, something which Merina rulers were at pains to repeat again and again in their public oratory.

It is this similarity between the Merina representation of royalty, focused on the palace, and the Zafimaniry house which, I want to suggest, offers the possibility of understanding, both the symbolism of Merina subjects in the past as well as the present day situation in Imerina where the house is devalued and the tomb is the source of blessing.

In the Merina kingdom the ruler is officially represented in royal rituals as the only true fertile ancestral couple, the only true source of blessing and similarly the palace has become represented as the one and only "holy house" of the kingdom, that is it has come to be represented as the only acceptable source of fertility and reproduction which can be located at the heart and centre of the living community. We can say that the Merina, in the royal

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14 *Rayamandreny*.

representations, are shown to have only one house, with only one central post and hearth. This house is the royal palace but in the royal rituals the palace is made to encompass the whole kingdom. All these ideas come together in an ancestral saying recorded by Callet (1908) "He who leans against the central post has a good destiny, this post is holy, it is the post on which the whole house rests...as the ancestors used to say 'he who is drawn to the central post is the ruler since he is the great post of all the subjects'" (my translation p.31).<sup>15</sup>

However, the matter is not so simple. Merina history shows that this symbolical construction of the ruler was not an uncontested and politically neutral Lévi-Straussian transformation. In *From Blessing to violence* (Bloch 1986) for example I showed that the royal taking on of the key role of blessing in the circumcision ceremony away from the elders who previously carried it out had to be backed by laws punishing dissidents with death and that rebels regularly reverted to the old way of doing things. This is because the construction of royal symbolism involved the contested demolition or down grading of other less pretentious symbolical representations of authority and fertility which previously had been in the hands of subjects.

It is in this perspective that we should see the relocation of the source of fertile blessing for Merina subjects, away from the palace like house to the tomb, as a kind of driving underground subjects' locus of symbolical reproduction by the symbolical development of the state. That as a result of their position in the polity the tomb of subjects became their Zafimaniry "house". The only one they were allowed to have. Something which would make their dead more like the dead in the Zafimaniry house present at the

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15 The word for central here *ampovoana* is derived from *fo* or *po*.



heart of the living community conjoined in fruitful pairs.

Several indications point in this direction. The first is the continual equation of the house and the tomb in Merina oratory at *famadihana's* in statements such as "the tomb is the house of our family" or in the common proverb, quoted by Hertz in his essay on death "Living we are one family dead we are one tomb" sentiments which would be horrifying to people such as the Zafimaniry.

Secondly there are the many eighteenth and nineteenth century laws relating to the location of Merina tombs and houses recorded in the *Tantara ny Andriana* (Callet 1908). Unfortunately we do not possess any record of royal laws which state simply that houses cannot be a source of blessing for subjects and that they may only seek blessing from ancestors geographically and temporally removed from the world of the living in the tomb but there are laws which suggest this, although indirectly.

First of all there are laws which insist that the houses surrounding royal palaces must be of the wooden Zafimaniry or palace type with central post and central hearth. This was so in particular in Antananarivo, the Merina capital from the late nineteenth century onwards. At first sight such a prescription might seem to go against my argument in that the multiplicity of such houses could be seen as negating the uniqueness of the palace. This, however, is not so. The point is that the houses which surrounded the palace were those of high Andriana: the close relatives or descendants of the ruler and, therefore, people who share to a lesser degree the character of Andrianhood. The houses of these lesser Andrianas remained clearly dominated by the palace itself which was bigger, higher and placed in the senior position in relation to them. The capital was therefore made by these laws into a heightened centre of powerful blessing, decreasing gradually away from the

central post of the palace, but with the close periphery still marked by the character of the centre in a graduated diminution. This of course is like a Zafimaniry village and it also reflects the character of andrianhood itself which, as noted above, should not be seen as limited to one person but as centred on one person and on a particular point and radiating from there, diminishing without ever being completely exhausted.

Even clearer are the numerous laws relating to tombs.

Lower ranking demes were strictly forbidden to build tombs near the villages. In other words, since for them the tomb was the source of blessing coming from fertile conjoined couples they could not place these "centres" near the political, living and active centres of their lives. Higher demes however, those who were allowed to be qualified by the term Andriana and who could trace descent openly from the royal line were allowed to place their tombs within the village walls. Indeed they had to do so. For them, then, the source of blessing could correspond more closely to the arena of their lives.

The very highest demes, however, those much closer in kinship terms to the monarch, were given an extra much prized privilege, that of building on top of their tombs little houses. The conjoining of the source of blessing and the place of life was therefore for them, as it is for the Zafimaniry, even greater. These houses were called cold houses. The significance of this becomes clear when we compare these cold houses with the houses which the monarch and his or her closest relatives built on their tombs. These were much larger and prominently displayed a hearth from which the population was fed on ritual occasions. These were hot houses therefore but they were more commonly called "holy houses" the term used by the Zafimaniry for their houses. In these very highest tombs therefore the house\tomb became

the source of blessing and feeding of the descendants, no distance existed between the location of conjoined couples and their progeny, and, indeed, there the break between life and death seemed completely abolished as it is in the Zafimaniry house (Callet 1908:249).<sup>16</sup>

This is perhaps best seen in the tomb of the monarch in his or her palace. This palace was an enclosure which contained within it both the houses for the living rulers and for the dead one in one unity. The tombs there were not any more normal tombs in that they violated the most fundamental rule of Merina tombs in that they were for single individuals. Furthermore they could not be called "tombs" but had to be called simply "holy houses". The palace thus united completely the blessing of the dead and the power of the living as clearly as it was separated for the subjects.<sup>17</sup>

## Conclusion

Basing ourselves on the significance of the differences between the locations of the tombs and houses of the different ranks of Merina societies it is possible to argue that it is the growth of the Merina state which explains how a system such as the Zafimaniry one, where the main locus of blessing from conjoined pairs is the house of living people, can be transformed to a Merina situation, where, for commoners at least, blessing has been separated

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16 There are so many references to these matters in Callet that I only give this citation by way of an example. A full discussion of this symbolism is quite beyond the scope of an article such as this.

17 Again a full discussion of the palace is not possible here. The article by Belrose-Huygues attempts such an analysis. Although I agree with his stress on centrality there is also much there that I feel I cannot accept for reasons which will have to be discussed elsewhere.

from practical life, both geographically and genealogically. Where, in other words, the centralisation of the Merina state and the development of the royal symbolism literally has pushed underground the locus of legitimate fertility of the subjects.

It is, of course, quite difficult to know what weight to give such an argument. It can be read in a "weak" mode as merely suggesting a "structural" transformation and the reader may want to see it as such. On the other hand, it can be taken as a suggestion that this is what actually happened. The latter "strong" version is what I intend but I am aware that it relies on many assumptions about the past which still require documenting. What little archaeology we have for central Madagascar is certainly compatible with such a hypothesis but much more work will need to be done before this version of history will approach anything like certainty.

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## Origin Structures and Systems of Precedence in the Comparative Study of Austronesian Societies<sup>1</sup>

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This paper questions the value of typological categories for the study of Austronesian social organization. In its place, it proposes an alternative comparative project that would explore Austronesian ideas of origins and of the resulting 'origin structures' that are based on these ideas. The paper focuses on Austronesian lexical underpinnings of three interrelated notions of origin: as 'base', 'ancestor', and 'growth' and examines the way in which five different Austronesian societies resort to elaborate symbolic devices to link these different terms for origin and thereby create systems of social precedence.

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1 In this paper, I wish to review and extend a number of ideas that I have been developing in concert with students in the Department of Anthropology in the Research School of Pacific and Asian Studies, The Australian National University and with colleagues who participated in the Research School's recent Comparative Austronesian Project. Many of these ideas took shape in the attempt to understand and compare the various diverse societies of eastern Indonesia and, as they developed, were extended beyond the geographical confines of the region in an effort to compare societies of the Austronesian-speaking world.

Much of the crucial literature on the Austronesian-speaking populations of Taiwan is in Chinese and Japanese, which I have no competence to read. Hence the question I pose for discussion here is whether the ideas that I present in this paper have analytic relevance to the study of Austronesian societies of Taiwan.

## Introduction: the Dilemma of Typologizing Austronesian Societies

Since the time of Lewis Henry Morgan, who in founding the study of 'kinship' proposed the notion of a 'punaluan' family to describe the original Hawaiians,<sup>2</sup> the societies of the Austronesian language family have been beset with an extraordinary plethora of typological concepts that purport to define and categorize them. One reason for these diverse typologies is that the different regions of the Austronesian world have been divided among ethnographers from different anthropological traditions who have used their own distinctive ethnographic concepts in their research. But even among ethnographers of more or less the same tradition, there has often been a variety of encapsulating terminology offered to characterize the social organization of the Austronesians. A simple recitation of the variety of these concepts applied to different Austronesian societies is sufficient to make the point. Some Austronesian societies have been described as cognatic, undifferentiated or non-unilinear, while others have been categorized as lineal, bilineal, double unilinear, or quasi-unilinear and, as in other parts of the world, have been differentiated as patrilineal or matrilineal. Whether or not Austronesians have 'descent' groups -- clans, lineages, sibs, or ramage -- has also been

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2 Lewis Henry Morgan introduced the notion of the 'punaluan' family in his founding study of kinship, *Systems of consanguinity and affinity of the human family* (1871); he also referred to this system as the 'Hawaiian' or 'Malayan form of the Classificatory System of Relationship'. In its supposed simplicity, this system represented for Morgan an early stage in the development of the human family. Morgan's terminology was adopted by Murdock (1949) and has continued to be used in anthropology to describe certain forms of bilateral or cognatic kin reckoning.



seen as crucial, as indeed is the nature of those 'groups' as stocks, status lineages or conical clans. Similarly, for Austronesian societies, it has been argued that a critical distinction is whether such societies are or were prescriptive in their marriage arrangements; and for those that were prescriptive, whether they were to be considered symmetric or asymmetric in such prescriptions.

Murdock, in his grand typological formulation of social structures, which he based on limited kinship criteria, argued emphatically that "the most striking confirmation" of his method came from the Malayo-Polynesians (1949: 349). Yet even in his typology, only the Ifugao, Maori, Marquesans, Ontong-Javanese and Samoans had a normal 'Hawaiian' terminology; the Hawaiians along with the Tongans are 'Patri-Hawaiian'; the Tikopians are 'Guinean'; the Trukese are 'Crow', while the Trobrianders are 'Avuncu-Crow'; the Pukapukans 'Duo-Nankanse'; the Tanala and Fijians 'Dakota'; the Dobuans 'Iroquois' and the Batak 'Sudanese'.<sup>3</sup>

The issue is not simply the extraordinary curiousness of these characterizations, but rather the inherent dubiousness of typologizing in the effort of comparison. Following Leach(1961), one can describe such efforts as the equivalent of butterfly collecting and, in the case of Murdock's Malayo-Polynesian typologies, as a classification using only wing-tip colour as a critical defining feature.

Some comparative linguists have taken up positions in support of certain of these typological constructs and have mustered evidence to argue that they describe early Austronesian society. I have argued -- to the contrary -- that we need a better comparative understanding of present-day Austronesian

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3 These different characterizations are given in Appendix A of Murdock's *Social Structure* 1949:323-352.

societies and their range of transformations within and across regions before we can venture to construct a reliable representation of proto-Austronesian society (see Fox 1980a, 1988a).

## Comparisons within an Austronesian Field of Study

There is virtually no limit to the possibilities of comparison that can be drawn among Austronesian societies. One might reasonably compare the sago-gathering strategies of the Penan of Borneo, of the Sakkudei of Siberut, and of the Wai Telu populations of central Seram, but this kind of comparison can equally be extended to include the sago-producing non-Austronesian populations of the Papuan Gulf region. Similarly one might compare Islamic ideals of personal responsibility among the Tausug, the Achenese and the Sumbawane, but such a comparison could just as appropriately embrace the Berber or the Saudi populations. Such comparisons among Austronesian societies may be of considerable value but there is nothing in such comparisons that is inherently defined in terms of an Austronesian framework.

Austronesian comparison here implies more than just purposeful comparisons among Austronesian-speaking populations. It implies comparison that is framed in terms specific to the cultural and linguistic codes of the societies of the Austronesian language family. It is thus inherently a comparison that orients itself within a linguistic mode and is, in varying degrees, guided by the evidence of comparative linguistics. Although by no means restricted to language, the focus of such comparisons must give close attention to the range of linguistic usages by which a society defines itself. Strategic comparisons must also take into account known linguistic relationships between the societies that are compared. Such strategies thus give recognition to historical

linguistic relationships.<sup>4</sup>

Comparisons of this kind follow the trend of a great deal of recent research that has ceased to rely on a set of formal models consisting of predefined elements -- the ready constructs of a previous generation -- in order to concentrate on the careful exegesis of a common set of shared social categories: the metaphors and cultural constructs by which people order their lives. Crucial to this understanding of a comparative method is the notion of a linguistically defined ethnographic field of study which allows the 'mutual interpretation' of categories among related societies (Fox 1980b):

### A Common Set of Social Categories

To date, the focus of comparison has been directed toward a limited number of common categories that regularly recur in the cultural construction of social relations among Austronesian-speaking populations. This set of categories is by no means restricted and each new analysis adds to the repertoire. Present categories are, for the most part, relative relational terms. For many of these categories, proto-Austronesian or proto-Malayo-Polynesian forms can be constructed. This in itself suggests a wide generality for an analysis based on these categories. Other categories have a lesser generality, suggesting regional variations in social organization. The assumption is that there have been notable 'innovations' in social organization in different parts of the Austronesian world just as there have been 'innovations' in Austronesian languages. A goal of this comparative analysis would be to define these

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4 In typological comparisons, societies that are known to be closely related linguistically can be assigned to radically different type-constructs; or, as types, societies can be compared to other societies to which they are only distantly related.

innovations rather than to subsume all Austronesian societies within a single model.

This comparative analysis is not, however, a form of rehearsed linguistic constructionism. The recognition of cognate forms of the same set of categories is used as a critical indication that the comparative analysis is targeted toward a common Austronesian concern. The analysis is not confined by cognate forms. In fact, from a comparative perspective, one of the most interesting features of this research is that even when cognate terms change, the relationship that they originally defined continues. This suggests a deeper metaphoric level at which relationships between categories -- not linguistic terms -- are maintained.

Some of the common categories that have so far been the focus of analysis are the basic terms of relative age, time, place and size such as 'elder'/'younger', 'former'/'later', 'inside'/'outside', or 'large(r)'/'small(er)'; those of spatial orientation and botanic growth, such as 'up'/'down', 'right'/'left', 'east'/'west'; or 'base (of trunk)'/'tip'; and of gender, such as 'female'/'male'. All of these categories are of considerable generality for which proto-Austronesian or proto-Malayo-Polynesian terms can be constructed. Other categories of lesser generality, but of considerable local social importance in different regions, are those of relative birth order ('first-born'/'last-born' or 'first-born'/'other-born'), of cross-sex relationship ('brother' woman-speaking/'sister' man-speaking) or of wife-giver/wife taker. Such a list can be extended.

All of these categories share certain characteristics. They are relative terms, they are complementary, and they are invariably used as internal 'operators' in the ordering of relationships. As dual symbolic categories, they are categorically asymmetric to one another and can be applied recursively to

form an ordered series of relationships. Such an ordered series is referred to as an order of precedence. (For a detailed discussion of these points, see Fox 1989.)

An order of precedence may be based on the recursive use of any single operator and may be represented as follows. The assumption here is that an order of precedence may have an initial point of reckoning but that most individuals or groups in such orders are relatively positioned.

## Two Orders of Precedence

**Precedence based on relative age:**

Elder	>	Younger/ Elder	>	Younger/ Elder
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**Precedence based on asymmetric marriage:**

Wife-giver > Wife-taker/  
Wife-giver > Wife-taker/  
Wife-giver

An order of precedence is a conceptual order that is only as stable as the individuals or groups that maintain it. In most Austronesian societies, such orders are generally both categorically and positionally contested.

## The Concept of Origin Structure

It is purportedly a matter of significance that many Austronesian societies have no 'descent groups' and indeed, the very notion of 'descent' appears somewhat questionable in regard to such societies. 'Descent', as the concept is currently used, becomes a major criterion that would appear to

distinguish two radically different sorts of Austronesian societies. The notion of 'descent' would seem to mark some great divide. Thus a significant number of societies of the western Austronesian area -- the Philippines, Borneo and parts of Sumatra and Sulawesi -- function without 'descent groups' whereas elsewhere, from the Moluccas and the Lesser Sunda Islands into the Pacific, 'descent groups' of varying sorts are a prominent feature of Austronesian societies.

Applying the notion of descent in relation to genealogy, one appears to confront this difference again but in an altered disguise. Some of the Austronesian societies of the Lesser Sundas and of the Pacific pride themselves on genealogies of immense complexity while other Austronesian societies -- not necessarily those 'without descent groups', -- appear to be so indifferent to personal pedigree as to suffer from a kind of 'genealogical amnesia'.

Such considerations might also suggest that the notion of descent may be an inappropriate criterion for distinguishing or indeed characterizing Austronesian societies. The use of the notion of descent may thus inhibit, rather than foster, efforts at comparison.<sup>5</sup>

Whereas a concern with 'descent' may be of variable interest or of complete indifference in Austronesian societies, a concern with 'origins', variously defined, is a matter of the greatest concern. Among the Austronesians, the concern with origins represents a vital orientation, a basic epistemological stance, toward persons and objects in the world. It is for this reason that I would suggest that Austronesian 'origin structures' -- the culturally

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5 For a fuller argument of this point, in a different context, see Fox (1988b); for a forceful, formal critique of the notion of descent in general, see Needham (1971); and for a further critique of descent in eastern Indonesia, see Grimes (1990).

defined and agreed upon categories and relations of origin -- may constitute a basic focus for comparative study.

What is particularly pertinent is the way in which the idea of 'origin' is designated in a large number of Austronesian languages. The category for 'origin' is frequently denoted by reflexes of a term referring to the 'base' or 'trunk' of a tree that both connotes and conflates ideas of 'base', 'trunk', 'cause', 'beginning', 'source' and 'origin'. As a consequence, the idea of origin is conceived of in a botanic idiom as a kind of epistemic development from a 'base' to a 'tip' or, more divergently, to a myriad of separate 'tips'. But this emergent plant-like form is also conceived of as an ancestral stock with the earliest ancestors as its source and originators. Thus when this conception is applied to social groups, the logic of the metaphor would imply that the groups so defined are 'ascent groups' rather than 'descent groups'.

The issue here is one that involves more than a concern with historical linguistic reconstructions. Virtually all present-day Austronesian societies construct notions of 'origin' from a variety of terms whose linguistic derivation can be traced to different proto-forms. Often these terms relate to one (or more) of three interrelated notions: 1) origin as 'base', 2) origin as 'ancestor', and 3) origin as 'growth'. What is significant is the way in which different Austronesian societies regularly resort to forms of folk etymology or other elaborate symbolic devices in order to link these different terms for origin.

The use of these terms and the exploration of the relationships among them, either by historical derivation, by local folk etymologizing or by metaphoric substitution, is what I wish to highlight in this paper. To a remarkable extent, certain metaphoric notions of origin have been retained

throughout much of the Austronesian-speaking world.

Underlying the cultural construction of notions of 'origin' are a variety of recurrent reflexes that would appear to relate to proto-Malayo-Polynesian or Austronesian terms: (1)\***puqun**: 'tree, trunk, base, source', (2)\***t-u(m)pu** (or \***epu**): 'ancestor, master, second generation relative - grandparent, grand-child' and (3) \***tu(m)buq**: 'growth'.<sup>6</sup> Reflexes of these three terms provide the ready resources for the varied cultural construction of 'origins' among the Austronesians.<sup>7</sup>

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6 For eastern Indonesia, it is only by positing the presence of the nasal that \***t-u(m)pu** and \***tu(m)buq** can be conflated since \***p** and \***b** have different reflexes in the languages of the region, whereas \***mp** and \***mb** merge the same reflex. I am indebted to Charles Grimes for noting this point. However, I would also note that whatever the original reflexes of these various nasals may have been, it is often by reference to local folk etymologies that associations are made between these various forms.

7 It is useful to cite a few examples of the use of these various terms in different Austronesian societies. Thus, for example, in the Philippines, Bontok has the term **pu'u**, meaning the 'base' of a plant or tree; from this is derived the verb **pum'un**: 'to develop sprouts from a base'. Kankanay has similar forms: **pu'u**, meaning 'stump', 'stock', 'source' and **pu'un**, meaning 'lower part', 'lower end', 'foot', 'source'; Isneg has **pon**, which, as in many other Austronesian languages, is a counter term for trees, but also has the meaning of 'origin', 'source', 'root' 'base'. Ilokano has **pu'on**, meaning 'trunk', 'origin', 'beginning' and from this term is formed **pu'onan**, the term for 'trading or business capital'.

In many Northern Philippine languages, there is also a term that can be constructed as \***rapu** which has the sense of 'origin', 'beginning', 'source', 'cause' but is not applied to plants or trees. The term is suggestively similar to the term **rapu** among the Toraja (and other Sulawesi populations) where it is the root form of the various terms that refer to the basic ancestral group of the society, **pa'rapuan**. In eastern Indonesia, where the most extensive ethnographic attention has been directed to the explication of the social uses of a term for 'origin', there are a great variety of reflexes such as **pu'u**, **pu**, **hu**, **fu**, and **uf** as well as others that take the forms, **pue**, **puken**, and **kepue**. The distinction and convergence of these terms in particular contexts is itself a subject for special consideration.



## Origin Structures Among the Austronesians

At this point, I would like to provide a sketch of a variety of 'origin structures' in different Austronesian societies. I have selected these examples for their differences which none the less illustrate a common underlying understanding. I begin with a detailed consideration of the origin structures of the Atoni Pah Meto.<sup>8</sup> I then proceed to examine different origin structures among the population of Palau (Belau) and on Tikopia and the near neighbouring island of Anuta. Finally, I sketch, more briefly still, some of the origin structures of the Sa'dan Toraja and the Balinese. These five illustrative cases are intentionally drawn from different subgroups of the Austronesian language family. By necessity, each is no more than a sketch, yet should be sufficient to illustrate the kind of comparative analysis made possible by attention to origin structures and the categories that order them.

### The Atoni Pah Meto of West Timor<sup>9</sup>

The Atoni (Pah) Meto are the dominant population of west Timor. For more than two hundred years, they have steadily expanded westward and northward from the eastern uplands of west-central Timor. Their population now numbers over 750,000 and their social organization shows two modalities that are each the expression of similar organizing principles under different

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8 The notion of 'origin structures' has been most clearly worked in the recent ethnographies of eastern Indonesian societies, mainly by students in the Department of Anthropology at The Australian National University. See references to the work of P. Graham, B. Grimes, E. D. Lewis, A. R. McWilliam and M. Vischer in the bibliography.

9 This section is a shortened version of a more detailed account in Fox, 'Protogenitor Lines of Origin in Eastern Indonesia' (1995).

conditions. In one modality, older political centres endeavour to maintain formal relationships established in the past, while in another modality, newer settlements establish new relationships as expansion continues.

This sketch derives from various sources: 1) my own intermittent fieldwork in southern Amanuban; 2) the excellent thesis, 'Narrating the gate and the path' by Andrew McWilliam (1989) based on extensive fieldwork throughout Amanuban; 3) the thesis, 'Ekologi, persebaran penduduk, dan pengelompokan orang Meto di Timor Barat' by Hendrik Ataupah (1991) on the Sonbai area to the north of the Noil Mina; and 4) the 'classic' studies of the Atoni by P.Middelkoop (1931), C. Cunningham (1966,1967) and H. G. Schulte Nordholt (1971).

The Atoni Meto are divided into as many as 400 separate origin groups, each of which is distinguished and identified by the sharing of a specific common clan 'name', (*kanaf*, or in ritual language, *kanaf ma bonif*). This 'name' defines the clan and its segments and membership. Implied in the possession of this common name is a common origin from an ancestor identified by the term *u(f)*, which is a cognate of the terms, *fu/pu/hu*, encountered among related populations of the Timor area (Fox 1988b, 1995). The place of origin of the first ancestor is generally associated with an unusual rock outcrop, (*fatu*, or in ritual language, *fatu ma hau*, 'rock and tree'). Andrew McWilliam describes this botanic metaphor brilliantly but succinctly:

[The Atoni Meto] conceive of the name group in a botanical idiom whereby the founding ancestor is considered the trunk (*uf*) and his descendants are the small branches (*tlæf*), the tips (*tunaf*), or the flowers (*sufan*). The name group is therefore considered as a tree (*hau uf mese* - one tree trunk) in which there is an unbroken and organic link to the ancestral 'trunk' father (1989:142).

Despite their emphasis on a common trunk, individual segments of a named clan exist as fragments scattered over all of west Timor, clustering in greater concentrations in certain areas but still scattered. Certain clans hold political dominance over particular territories and have gathered other clans around them in particular ritual relationships. Knowledge of past genealogies is limited. Instead of tracing social origins by means of a succession of genealogical names -- as among the Rotinese -- Atoni Meto trace their origins spatially as the journey of their clan, described as a named ancestor who moves through a landscape of place names.

The scattering of segments of the clans has given rise to the spectacular expansion of the Atoni Meto but it does not of itself provide a basis for the structure of the society. The real genius of the system is the way in which these fragments are structured by means of precedence based on progenitor lines of origin.

Like their neighbours, the Rotinese, the Atoni Meto use the same metaphor of 'trunk' to describe origin structures of relatively short duration. Every Atoni settlement must have a *kua tuaf* who, as 'lord of the settlement', is referred to as its *uf*, 'trunk' or 'origin'. In theory, this figure represents the *kanaf* or name group, whose original ancestor founded the settlement, the right to do so having either been delegated from a political centre or from a clan with higher authority in the area. To gain admission to the settlement and to rights to land around it, each incoming member of another *kanaf* has to secure a relationship to the settlement's *uf*. Those who join a settlement are 'those who come wandering' (*atoin anao amnemat*) or the 'strange-eyed [hawk-eyed] people' (*atoin mata teme*).

A *kua tuaf* becomes the *atoin amaf*, the ultimate protogenitor of the settlement. Generally a *kua tuaf* establishes his position as protogenitor by

giving a woman to the first, and possibly the second, incoming member of a different wandering name-group fragment. These groups, in turn over time, give women to other in-coming name groups so that -- in theory -- a well-ordered settlement is based on a clear line of precedence emanating from a single *uf*-protogenitor. In contrast to the group of the *kua tuaf*, the rest of the settlement are 'in-marrying people' (*atoin asaot*) (see McWilliam 1989: 143).

To understand the complexities of this system, it is necessary to indicate the complementary categories, or operators, by which this system is structured. One set of categories is, as might be expected, 'earlier'/'later' (*nahun* /*namuni* -- *na-hun* being based, I believe, on an earlier form of the term, 'trunk'). As the *kua tuaf* group develops, it segments along 'elder'/'younger' (*tataf*/*olif*) lines, with the *tataf*, or elder line, retaining the position of *atoin amaf*. This means in effect that members of an *olif*, or younger line, may marry in ways that do not maintain precedence, but do not necessarily jeopardize the overall order of precedence in the settlement that is maintained by the elder line. Relations of precedence based on a uni-directional flow of women from the *atoin amaf* are phrased in terms of the categories of 'male'/'female' (*mone*/*feto*). These categories are used as relational terms to define precedence. Protogenitors are 'male people' (*atoin amonet*) as opposed to the 'female people' (*atoin amafet*), whom they engender. The *atoin amaf* as ultimate protogenitor of the settlement can be described figuratively as the 'male' or 'bull' (*mone/keso*) of the settlement.

Although there are established areas on Timor where bridewealth is important, in the expanding domain of Amanuban and especially at its southern and western periphery, bridewealth was previously not recognized and is still only of minor significance. Formerly, a child was returned to the

wife-giving *kanaf* in exchange for the gift of a woman. As a result, any *kanaf* group, but particularly the *kua tuaf* group in a settlement, may include its own returned progeny. By the logic of the system, these returned progeny and their offspring are categorized as 'female'. Thus a *kua tuaf* group may have not only elder/younger lines but also an internal 'female' line. This creates a certain ambiguity. The 'male' line of a *kanaf* group may marry with its internal 'female' line. The group as a whole, however, also marries with its initial in-marrying 'female' group from which its internal 'female' line is often derived. Thus the local *kanaf*, or name group, of the *kua tuaf*, in particular, engenders 'female'-classified progeny both in the name groups to whom it gives women and also within itself. In established settlements, these two 'female' groups/lines may merge so that it may be difficult to distinguish members of the *kanaf* classified as 'female' from members of the initial in-marrying *kanaf* who -- as is customary in Timorese tradition -- act on behalf of their protogenitor *kanaf*.

Only the directionality of the flow of women determines who is classified as 'male' or 'female' in this situation. Thus a line of precedence is never permanent. By reversing the direction of marriage, which is possible in the Atoni Meto symmetric marriage system, a *kanaf* group or a line can alter its relative position of precedence. 'Female' can become 'male'. This can occur at any position within the protogenitor line. Any *kua tuaf* who takes a wife from a female line or group in his settlement ceases to be *uf* since he must acknowledge his protogenitor as the new *uf*, 'trunk' or 'origin', of the settlement.

## The Palauan (Belauan) Islands<sup>10</sup>

Palau, it is claimed, has one of the most baffling social systems in the Pacific. Palauan society is defined in terms of its constituent (clan-)houses. These houses are physically a symbolic template of social and cosmological ideas. They are identified with female groups but are headed by elder males. Important houses are 'titled-houses' to which individuals, wherever they might reside, trace their relations and in which they gather to perform common rituals. Such houses (*blai*) contrast with communal houses (*bai*) which were, and still are, a prominent feature of Palauan social life. Each village of standing had a chiefly communal house together with a number of lesser communal houses. Villages were divided into exogamous halves, or sides (*bitang*). The chiefly communal house, however, occupied the centre of the village but was in turn divided into four parts, each with a corner post associated with a particular ranked chief. The leading chief was male and was said to stand foremost; his complement was identified as 'female' and was referred to as 'mother' of the village. Other communal houses also had ranked positions, generally ten in number, with each rank consisting of a complementary set of positions.

In the language of Palau, as in many other Austronesian languages, the word for origin, *uchúl*, refers to the 'base' or lower 'trunk' of a tree; by implication, it also means 'reason', 'cause', 'basis'. *Uchúl* reflects \**puqun* with unexplained ultimate stress.<sup>11</sup> The noun formed with obligatory posses-

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10 This discussion is drawn from my review of the recent studies by Celio Ferreira (1987) and by Richard J. Parmentier (1987) on Palau (Belau). See Fox, 'Origin and order in a Micronesian society: a comparative assessment of two books on Palau' in *Canberra Anthropology* 15(1): 75-82 (1992).

11 I am grateful to Dr Robert Blust for pointing this out in his written comments on the draft of my paper presented at the Conference.

sive from *uchûl* is *uchelêl*, which means 'beginning', 'start', 'origin' and 'ancestors'. Folk etymologies relate this root to the term for 'foundation' of a house, *uchûtem*, and the term for 'land', 'earth', *chutem* (McManus 1977: 328-329). Thus for the Palauans, the associations between land, the base of a tree, the foundations of a house, origins and (female) ancestors are metaphorically encapsulated in a set of related terms.

Ferreira (1987), who has written a recent reanalysis of Palauan ethnography, suggests a further etymology that extends the Palau understanding of origins. He argues that the term for elder brother/chief of a titled house, *obukul* (McManus: *obekul*), derives "from *oba*, to possess and *okul* (McManus: *uchûl*), meaning the trunk of a tree, the main part of a family, or the cause of a thing" (p.77). By this etymology, the titled chiefs of the matrilineal clans of Palau are the "trunks/bases of the land". On formal linguistic grounds, this would appear to be a spurious etymology. McManus (1977:217) derives *obekul* ('elder brother') from the root, *obāk*, which also produces *rubāk* ('chief, elder'), and *klobak* ('council of chiefs'); he does not, however, relate it to the term for origin or base of a tree (*uchûl*). It is quite possible, however, that Ferreira's derivation is itself a Palauan folk etymology. This etymology would link with a set of other associations that define the most exclusive -- normally the north-east -- corner of the enclosed half of the traditional house that is known as the *uchûl a orengodel*. This corner -- the 'origin' of the *orengodel* -- is the point where the roof-beam is first laid on the cross-beam (*immuul*), thus fixing it to the foundation of the house. This is the part of the house that is inhabited by the elder brother/chief and in which the clan's most precious valuables are stored. On Palau it is the male gods and female groups that are explicitly identified by the term *uchûl*, ('origin').

In Palauan terms, a path is defined by its origin (*uchul*: 'beginning', 'base', 'trunk') and its end point (*rse*: 'tip'). Thus a primary concern of the initial narratives is with 'the origin of Belau' (*uchul a Belau*). According to Parmentier (1987) who has also written a recent ethnography of the island focusing on its narrative orders, the "schema of paths involves a series of homologous elements tied together in a linear thread, beginning at a spatiotemporal origin point and concluding at a terminal point" (p. 109). Although he does not develop this notion, Parmentier clearly recognizes the importance of paths as a means of establishing an order of precedence:

linked elements can be viewed in terms of sequential precedence, with the origin point outranking all other points, according to a logic which stipulates that priority in time implies seniority in ceremonial precedence ... [Paths] created by some precedent-setting action in the past ... imply the possibility of repeated action within prescribed confines (1987:109).

Thus paths identify continuing relationships between persons or groups tracing lines of precedence within an idiom of origin and tip.

According to the crucial Palauan narrative, after the flood that destroyed the first creatures of the Palauan islands, a woman, Milad, was revived by the foremost deity and gave birth to four children who became the four corner posts of the new Palauan era. In Palauan terms, the narrative of Milad is a narrative of origins: Milad is the source/origin (*mechud*, from *uchul*), and the place of the occurrence of this event, in Ngeremlengui, is entitled Uchuladebong: Origin Point From Which We Go Forth (see Parmentier 1987:157-159, 181-182 and 238-240). These four children were the beginning of a new title system. They gave rise to the four principal villages of Palau and their fourfold relation to one another is iconically represented in the four corner



post positions of all chiefly communal houses. Of the four children, the first-born or eldest remained with his mother and thus retained what in Palau is referred to as 'the sacredness of the sacred' (*engal er a meang*). The first-born child was Imiungs, the founder of Ngeremlengui, and it is thus the narrative of Milad that establishes the pre-eminence of Imiungs as the capital village of Ngeremlengui.

Whithout elaborating beyond this point, one can see how on Palau, as on Timor, origin structures can be used to illuminate a comparative ethnography within a recognizable framework of Austronesian metaphors.

### The Islands of Tikopia and Anuta

Tikopia has been accorded 'classic status' among Pacific islands through the extensive ethnographic writings of Sir Raymond Firth. Anuta is the nearest neighbouring island to Tikopia and the language and culture of the island closely resemble that of Tikopia. Anuta has been ably studied by Richard Feinberg, whose writings on Anuta social organization and epistemology are particularly pertinent to an understanding of its origin structures.

Both Tikopia and Anuta have societies that are concerned with defining and tracing origins. The categories that refer to such origins are themselves interesting from a comparative perspective.

A key term is *tafito* (Anuta: *tapito*). According to Firth's *Tikopia-English Dictionary* (1985:466-467), *tafito* means 'base', 'basis', 'origin', 'reason', 'cause'. *Tafito* is the principal term used to identify social or ancestral origin; *tafito* can also refer to a person who is a principal figure in any formal proceeding or a major participant in an exchange transaction. According to Firth, the notion of *tafito* that applies to ritual officiants takes its reference from the gods:

Each god was regarded as having his basis (*tafito*) in a special ritual officiant, who himself might have several titles (*rau*) by which he addresses the god in different contexts: by his temple in Uta; in his canoe yard; for curing illness. Like the botanical principle of postulating the origin of a species near where most of its varieties are found, the 'owner' of a god often has more titles than other men do (Firth 1970:144).

Thus the notion of origin has direct relevance to the Tikopian system of titles. It is also relevant to a sacred geography of the island since it points to the places where rituals are performed. From the term *tafito* is derived the word *tafito-anga* ('place of origin') and *tafito-ranga* ('beginning').

Another important term for origin is based on the verb *tupu* ('to grow'). *Tupu-anga* has the sense of both 'growing point' and 'origin', and *tupu-ranga* of 'growing stage' and 'generation' (Firth 1985: 555-556). According to Firth, the word for 'ancestor', *tupuna*, is also related to *tupu* (p.556-557). The alternative term *puna*, which also means 'grandparent' or 'ancestor', and the title term *pu*, used in reference and address to seniors, ancestors and certain deities, suggests a more complex derivation.

That all of these notions are closely intertwined is evident in Firth's ethnography, but it is made explicit by Feinberg (1978) in his discussion of Anuta ideas of knowledge and power which reflect local conceptions and are based partially on folk etymologies:

Ultimately, *manuu* ['power', 'efficacy'] is inherited through a line of males from the line's founding ancestor, a person known as the *tapito* 'source', 'base', 'cause', 'basis', or 'reason'. This individual, as is true of all ancestors from the grandparental generation back, is also known as his descendant's *tupuna*, which is, itself, a modification of the word

tupu 'grow', and implies that the founding ancestor is the source of 'growing' or 'growth'. In our terms, "power" and "intelligence" and their corollary, "knowledge", are passed down from the ancestors. In the Anutan conceptual framework, on the other hand, they grow from the 'source', much as a tree grows from its *tapito* or 'base', and thus, we may refer to the ancestors and deities as constituting the 'roots of knowledge', or better still, 'the roots of knowing' without doing violence to the Anutans' cultural schema (Feinberg 1978:134).

With this as the basis for an understanding of Tikopian and Anutan ideas of origin, it is not difficult to appreciate Firth's adoption of the term 'ramage', which he first used as a direct translation of the Tikopian term *paito*, or 'house', to suggest "by its etymology the branching process by which these groups attain individuality and keep their connection with the parent stem". As Firth went on to explain in the same passage, his adoption of the term 'ramage' "is also consistent in metaphor with the expression 'genealogical tree'" (1936 :371).

This "branching process", as Firth has shown in his massive ethnography, involved a complex system of precedence based on groups with either autochthonous ('earth-derived': *afukere*) or immigrant origin that was structured by derivation from particular ancestral gods whose rituals were maintained and by genealogical priority within these origin groups.

### The Sa'dan Toraja

The Sa'dan Toraja have been studied by a succession of excellent ethnographers and therefore present a rich and varied source for analysis. Here I confine myself to the work of two ethnographers of note, C.H.M. Nooy-Palm, whose research spans more than two decades, and H. Roxana Waterson who

has written with considerable insight on the specific issue of Torajan origin structures.

Nooy-Palm was the first to describe the Torajan origin group, which is referred to in her area of Tana Toraja as a *marapuan*, as a 'ramage' whose structure was "reminiscent of ramage in Polynesia" (Nooy-Palm 1979:22). Without fully realizing the common underlying metaphoric basis for the resemblances she noted, Nooy-Palm has consistently used the term 'ramage' for this higher level origin group and its component structures, which are simply referred to as *rapu*.

Although justifiably skeptical of the borrowing of Firth's term, 'ramage', Waterson has, however, effectively focused on the distinctive features of the Torajan origin group, the relational structures that they imply, and their relative applicability. She has also noted the critical importance of the *tongkonan*, or 'house of origin', as the mediating structure through which origin is reckoned. For the Torajans, as Waterson indicates, the category, *rapu*, combines both botanic and ancestral ideas of origin:

Those who trace their descent from a common pair of founding ancestors, man and wife, are called the *pa'rapuan* or *rapu*. *Rapu tallang* in Torajan means a 'stool of bamboo'. The family is compared to the bamboo whose many stems sprout from a single clump. The *tongkonan*, especially when being referred to in the most general sense of an origin-house, regardless of rank, is often called the *banua pa'rapuan* or 'house of the *pa'rapuan*'. From the same root is derived an adjective, *marapuan*, which means 'having a great many descendants' (Waterson 1986:96).

As Waterson argues, the group associated with, or defined by, the term, *rapu*, is quite variable within Tana Toraja: "Depending on which ancestors

are chosen as its starting point, a *rapu* may contain members of more than one house of origin, while a single origin-house may have more than one *rapu*" (1986:102). The value of this case is in the way in which it demonstrates the variability of the *rapu*. A *rapu* among the Torajans may be given a lineal cast in noble status groups where titles tend to follow the male line (Nooy-Palm 1979:26-27) or, as is more common, may be defined in entirely bilateral terms. The case also points toward the situation in various Northern Philippine societies where a term constructable as \**rapu* is used to define 'origin', 'source', and 'base'.

### The Island of Bali

Bali presents another Austronesian society which, like Palau, in its complexity and elaboration of social forms defies simple generalizations. Yet in spite of these elaborations and the island's remarkable Hindu traditions, Balinese society still retains 'origin structures' that resemble those of other Austronesian societies.

As in other Austronesian societies, there are various critical terms for defining 'origins'. One term is derived from *mula*, meaning 'beginning', 'cause' or 'basis'. It is probably of Sanskrit, rather than of Austronesian, derivation. In the form *kamulan*, this term defines the 'origin point' of a series, the 'first' in a progression, the 'beginning' of a line of precedence. On Bali, the original household from which other households have developed is generally referred to as the *kamulan* of a localized household group.

The more important term for 'origin group' is *kawitan* which derives from the Balinese word for 'stem', 'trunk' or 'tree' (*wit*). Thus the Balinese idea of a *kawitan* carries with it much of the botanic imagery associated with the notion of origins in other Austronesian societies.

In their monograph *Kinship in Bali*, Hildred and Clifford Geertz describe a *kawitan* as an 'origin group'. A *kawitan* may refer to a variety of different kinds of groups with differing points of origin. The focus for all such groups is invariably a temple:

The 'origin-point' is a locus which is both historical (an ultimate ancestral progenitor) and spatial (a particular temple location)... The origin group, correspondingly, is the group of living persons who all actively support and worship at the same origin-point temple (Geertz and Geertz 1975:64).

Origin groups may thus be of varying size and complexity based either on traceable or entirely putative genealogical connections: from the *sangghah*, or 'shrine-temple', of a cluster of households to the major temples of island-wide title-groups. In the view of the Geertzses, the notion of origin-point and its attendant distinction "of commencement, of place, of precedence and of exemplar [is] the master image by which people and groups regard themselves as ancestrally related to one another ..." (1975:160).

The notion of origin and origin-point has proved to be particularly useful for comparative research in analysing different social formations on Bali. In a recent paper, Jean-François Guermonprez has linked the notion of origin-point and the principle of group (*seka*) unity to what he calls the "hierarchy of precedence" on Bali, describing these concepts as "indissolubly related to one another" (1990:64). However an element of caution is necessary in approaching a society with as much social elaboration as Bali exhibits. In Bali, not only are there a variety of terms used to describe what are in effect sociologically constituted origin groups, but there is also a tendency to mistranslate certain Balinese terms to mean 'origin'. Thus, for example, the Balinese term *puseh* ('navel') is frequently translated as 'origin' especially

when used in reference to the *pura puseh*, or the 'navel temple' of a village. Without proper attention to such distinctions, the subtlety and complexity of the Balinese discourse on origins can be obscured.

## Conclusion<sup>12</sup>

In this paper I have questioned the value of the typologizing that has been imposed upon the study of Austronesian social organization. In its place, I have proposed an alternative comparative project that would explore Austronesian ideas of origins and of the resulting origin structures that are based on these ideas. I have also attempted to identify a vocabulary of recurrent terms for 'origin' that appear to form a lexical network. While the terms in this lexical network can be shown to be etymologically related, each society also develops specific folk etymologies to embellish its metaphors of origin. The five cases that I have cited to illustrate my argument are sketches that form part of a larger study that is presently well under way to examine Austronesian ideas of origin. All of these cases point to a notion that defines social origins not in terms of some narrow concept of quasi-biological relationship but rather in terms of the possibilities of participating in a group's celebration of its origin.

My question for scholars and ethnographers doing research on aboriginal Taiwanese societies is whether any of these ideas resonate with similar notions among the original Taiwanese populations. A starting point for such

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12 I would like to thank Robert Blust, Charles Grimes and Andrew Pawley for their critical comments on earlier drafts of this paper. I would also like to thank Laurie Reid for the information on origin terms in Philippine languages which he provided. Finally, I would like to thank Katy Bellingham for her assistance in the copy-editing of this paper.

a discussion might perhaps focus on Paiwan since Paiwan has a single term, *qa-pule*, which embraces a range of meanings denoted by similar terms in some of the other Austronesian languages discussed in this paper: 'trunk', 'stem', 'place of origin', 'working capital', 'founder', and 'earliest ancestor' (Ferrell 1982:204).

It is essential to extend these explorations of 'origin structures' and the distinctive linguistic idioms in which they are phrased in a range of societies of the Austronesian language family. It is equally important to attend to the subtle metaphoric distinctions made in these idioms of origin and to recognize their transformations from one Austronesian society to another.

Other non-Austronesian societies also make use of notions of origin and often recount these origins in botanic metaphors. The English notion of 'descent', for example, which formed the basis for early anthropological constructions of 'descent' -- along with similar notions of 'descent' in many continental European legal codes -- reflects a botanic metaphor based on the image of a genealogical tree (Fox 1988b). This English use of the metaphor of a tree is, however, often quite different from the various botanic metaphors used in Austronesian societies. Hence 'descent' in the anthropological definition of this term can be at variance with Austronesian notions of origin and, when it is applied, may actually obscure an understanding of local Austronesian categories. Botanic idioms can also be identified in early Chinese and Japanese ideas of origin and among Austro-Asiatic language speakers. It is critical therefore to distinguish among these different origin structures and their metaphoric foundations as well as to recognize the similarities that exist within related linguistic systems.



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## The "Great Men" Model among the Bunun of Taiwan\*

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Compared to the Melanesian, we find the Bunun are closer to the great men system rather than the big man system. However, there are some basic differences: Lacking male initiation and any great ceremonial exchange, the Bunun are also noted for their monogamy (rather than polygamy as in Melanesia), Omaha kin terms and complicated prohibition rules of marriage (rather than the prescriptive marriage as in Melanesia), etc. More important, the Bunun have a quite different idea of "equivalence" from that used by M. Godelier in his model, which is infused with Western cultural value. These major differences are related to the Bunun concept of the person. In this case study, we maintain that the discussion of big man or great men should go beyond the typology of society or the nature of political power. Like the concept of social logic, the concept of the person is fundamental to understanding Bunun culture and society.

According to M. Sahlins (1970), a big man is a political leader who achieves his social status with his personal power, which he in turn acquires through merits, not ascription. This personal power refers to his talents, including magical powers, oratorical gifts, courage in war, competence and efforts in agricultural work, etc. Moreover, the decisive factor is the capacity

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to know how to amass wealth and distribute it with calculated generosity (Sahlins 1970:207). This type of power or political leadership does not appear by chance, but is rather related to "certain acephalous tribal societies without central power, composed of a certain number of local groups which are equally matched in the political sphere" (Godelier 1982:4). In certain circumstances, the big man can become a supralocal leader through his ambition and initiative, as well as by means of some social activities, such as war, organization of religious ceremonies, and exchange with distant tribes. This kind of big man, however, needs more stable support, which allows him to receive without repaying. This will then undermine the social basis of his power and constitute a contradiction.

M. Godelier (1982, 1986, 1991) has contended that Sahlins's model of the big man is not prevalent in Melanesia; it constitutes one variation among others (Godelier 1982:3) or is only a variation of a more general model-- the "great men" of Melanesia. "Whereas a big man is certainly a Melanesian great man, not all Melanesian great men are big men" (Godelier 1986:166). In addition, he seems to think that economic and social changes may have contributed to the transformation of great-men societies into big-man societies even though he does not clarify the logic of this socio-historical transformation process (Godelier 1991). To him, big men and great men are quite similar, since their social and political status are achieved with personal power. Nevertheless, there is a striking feature distinguishing great men societies from big men societies: the absence of a direct link between power and wealth in the former (Godelier 1986: xi). When power and wealth are directly linked, people equate women with certain forms of wealth and accumulate goods in order to accumulate wives or, alternatively, accumulate women in order to accumulate goods (Godelier 1986:25). Then, by distri-



bating wealth with calculated generosity, people can compete with one another to become political leaders. This is the essential condition for a big man's power (ibid).

As a result of the absence of a direct link between power and wealth, women in great men societies can not be obtained by wealth but only by the exchange of women themselves. In addition, great men gain their prestige by their special capabilities (such as a great warrior's bravery, physical prowess or extraordinary virtuosity in battle, or the magic power of the great shaman among the Baruya), rather than by their wealth (Godelier 1986:106-7). In fact, they can not be wealthy (ibid:107, 123). Furthermore, there is no accumulation of the warrior and shaman roles in Baruya thought (ibid:140); different kinds of great men have their respective social functions and individuals tend to be differentiated according to their life-style (Godelier 1982:29). Finally, all great men are satisfied with their social roles without the accumulation and spectacular redistribution of wealth (ibid:30).

In other words, in big men societies it is necessary to produce wealth in order to exchange it for women, to compensate for enemies or allies killed in war, or to make the sacrifices needed to stay on good terms with the spirits of the dead and other supernatural powers (Godelier 1986:171). There is no equivalence of a life for a life, a woman for a woman, a warrior killed for a warrior killed (ibid). "The fundamental principle underlying the workings of the big men societies is the exchange and/or sacrifice of wealth in order to reproduce life and society" (ibid). By contrast, in great men societies (like the Baruya), only a woman (or a life) may be regarded as "equivalent" for another woman (or a life) (Godelier 1986:170). Exchange between groups and individuals depends on principles of equivalence and on mechanisms designed to restore rapidly the equilibrium between the exchangers (ibid). In

this way, Godelier regards "equivalence or non-equivalence" in the exchange of persons and things as the key principle that first appears to radically distinguish whole societies.

Godelier's model has been further discussed in a recent book, *Big Men and Great Men* (Godelier & Strathern 1991). In this book, M. Strathern concludes that "[b]ig men are produced in systems that promote competitive exchanges, the transfer of women against bridewealth, and war compensation procedures that allow wealth to substitute for homicide. Great men, on the other hand, flourish where public life turns on male initiation rather than ceremonial exchange, on the direct exchange of women in marriage and on warfare pursued as homicide for homicide" (1991a:1). As Godelier has done, Strathern also recognizes that equivalence or non-equivalence in exchange is the fundamental criterion distinguishing these two kinds of society. Also of significance is whether the unit of exchange is a group or an individual and whether things substitute for human life. Moreover, Strathern stresses that the implications of Godelier's case study are more important since it goes beyond the nature of exchange: he has attempted to "reconstruct the mechanism and the internal logic of the social practice and ideas" (Godelier 1986: 227) and to demonstrate or reveal "the existence of a global social logic among the Baruya" (Godelier 1982:3). In M. Mosko's words, Godelier has called "our attention to novel relationships between Melanesian leadership, marriage, economy, gender and ritual" (Mosko 1991:114) and has already moved our "understanding" in precisely the required direction. With these recognitions, Strathern (1991c) maintains that different social logic of different kind of society can point up different way of representing its major image.

On the other hand, Godelier's case study has also been criticized.

Besides the issue that the principles of equivalence and non-equivalence are not mutually exclusive but can coexist in a society, the major critique concerns the systemic nature of the differences and similarities between societies, which renders problematic our understanding of cultural forms (Strathern 1991b:xiv). And interestingly, we can find in *Big Men and Great Men* itself many studies (especially in part III) which question some related concepts used by anthropologists. For example, R. Wagner (1991) doubts whether the totality of the individual implied in the Western concept of the person can help us understand the "fractal person" in Melanesia. G. Gillison (1991) gives an example in which the Gimi have a different concept of the person from that of the West, and this seems to blur the distinction between equivalence and non-equivalence in that, for the Gimi, a body part (such as the head) can be detached from its original location and then attached to another. Similarly, Strathern (Strathern 1988; Ingold 1990) would like to replace "society" with "sociality", since the former term is permeated thoroughly by Western cultural concept.

Using the above discussion as a point of departure, I will present in this paper the Bunun case in an attempt to further elucidate the great men model.

## General Background of the Bunun

### 1. Identification and Demography

"Bunun" means "person". The Bunun use this term to refer to themselves as persons; they also use it to refer to other peoples as non-persons. The Bunun are known to have divided themselves into six sub-ethnic groups (Taketodo, Takevatan, Isbukun, Takebaka, Takebanuan and Takepulan), each

characterized by differences in dialect and culture. There are no longer any Bunun who identify themselves as belonging to the Takepulan sub-ethnic group, and scholars have suggested that the Takepulan have been assimilated into other sub-ethnic groups. The largest of the remaining sub-ethnic groups is the Isbukun. T. Mabuchi (1951:44) estimates that in 1932 the population of Isbukun was 7,700 or 42.5% of the total Bunun population (18,113). That is why the Bunun Bible was translated into the Isbukun dialect. In 1978, the estimated population of the Bunun was 32,000, or 0.3% of the total population of Taiwan. Their number has been slowly increasing.

## 2. Linguistic Affiliation and Location

The linguist Heng-hsiung Jeng (1977:3) classifies the Bunun language as belonging to a branch of Proto-Northern Indonesian, which is a branch of Proto-Hesperonesian. The latter is thought to belong to the Proto-Western Austronesian language, which is in turn a branch of Proto-Austronesian. Most of the Bunun are scattered in the mountainous area of central Taiwan between 23° and 24° north latitude and 120° and 121° east longitude, an area that includes Yu-shan Mountain, the highest mountain in Taiwan. The climate is sub-tropical. Annual rainfall is about 2,000 mm. Most precipitation falls in the summer months from July to September, when typhoons are frequent. There are now some temporary migrants in cities, but most Bunun still live in the mountainous area.

## 3. Settlements

The Bunun, who are the third most populous of Taiwan aboriginal groups, occupy the second largest area. They have been the most successful of Taiwan aborigines in the expansion of their territory through migration. The average size of a Bunun settlement is quite small compared to those of

other Taiwan aborigines. A 1938 survey (Okada 1938:13) reports that the average size of a Bunun settlement contained 13.67 households with 111.22 persons. Also, Bunun settlements are located in the higher elevations of Taiwan. A 1929 survey (Kano 1938:771) reports that 68.2% of all Bunun settlements were located above 1,000 meters. Bunun settlements can be classified into three types that are distributed in different parts of Taiwan: (1) large settlements in the north; (2) smaller and more isolated settlements in the east and the center; (3) scattered and isolated aggregates in the south which, except for state-imposed administrative divisions, lack clear spatial boundaries.

#### 4. Economy

Like many other Taiwan aborigines, until the end of World War II the Bunun lived on a "traditional"<sup>1</sup> subsistence diet consisting mainly of millet, maize and sweet potato produced by shifting cultivation. This subsistence economy down-played the importance of commercial activities, even though commerce had long been practised. The Japanese colonial government successfully forced the Bunun to cultivate wet rice instead of millet before the end of World War II. Since about 1965, when the Bunun began to cultivate cash crops, wet rice has been gradually given up. These crop substitutions have contributed to an increase of other commercial activities to obtain food and other consumer goods. After 1968, market mechanisms began to dominate the economic sphere among the Bunun. Since then, the economic exploitation of the Bunun by Han Chinese middlemen through the marketing process has occasionally provoked sharp inter-ethnic conflicts.

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1 In this paper, "traditional" refers to the culture and society of the Bunun from 1909 to 1945.

## 5. Division of Labour

Traditionally, men were in charge of hunting, while women and children were responsible for food gathering. Women carried out daily agricultural tasks, while men undertook the heavier work of land-clearing and crop-harvesting. More important, agricultural rituals had to be performed by men only. In addition, men assumed the important traditional socio-political roles (such as military leader and public shaman), whereas women performed domestic work by contrast. This traditional division of labour has gradually given way in the face of increasing social differentiation. Moreover, the market economy has reinforced a pre-existing traditional emphasis on personal performance. A capable woman can now take any job or attain any social status.

## 6. Kinship

In comparison to other Taiwan aborigines, the Bunun are noted for their complex clan system. The smallest unit is the lineage or subclan (*gauduslan*). Each lineage/subclan is distinguished from others by name. Lineage/subclan names are now used for surnames. All members of a lineage/subclan are descendants of a common patrilineal ancestor, though the exact genealogical relationship is sometimes unknown. Lineages/subclans are grouped into clans (also called *gauduslan*). All clan members are, again, descendants of a common patrilineal ancestor, but their exact genealogical connections to that focal ancestor are usually unknown. The lineages/subclans of a clan are hierarchically ordered on the basis of the birth order of the various focal ancestors of the separate lineages/subclans. Each clan is associated with a unique clan origin myth, describing the birth order of the focal ancestor of each lineage/subclan. Related clans are grouped together on

a higher level (*gavian*). Only some *gavian* are named, and the genealogical relationships between the clans may be either assumed or mythical. Kin groups thus emphasize a centripetal solidarity with their assumed or mythical patrilineal descent and birth order. In contradistinction to these ascribed kinship features, however, equalitarian and competitive tendencies are also manifest in Bunun kinship activities in that status is achieved and manipulatable by individuals. Counting on his own achievements, any male can split from his original lineage/subclan and found a new one if he can attract enough followers. Sometimes he can change the hierarchical birth order in his clan, or switch his clan's *gavian* affiliation. These kinship activities are inherent in their concept of the person: Everyone not only inherits his/her *hanido* (spirit) from his/her father and gets his/her ascribed status in his/her patri-clan according to his/her generation and age, but can also increase his/her *hanido* power by his/her own effort and transmit it to his descendants. In the latter manner, a person can change his status in his patri-clan or found a new patri-clan with his great contribution to this patri-clan. In this sense, the concept of the person underlines, and is more salient than, the patrilineal ideology. Thus, we can say that the Bunun clan system is a kind of representation and practice of their concept of the person (Cheng 1990).

Since the end of World War II, the Bunun clan system has gradually lost most of its social functions (such as the ownership of hunting grounds, the obligation of blood feud, etc.). Now, the major social function of the clan system is to act as an exogamous unit. However, the concept of the person is still being reproduced through the performance of life-cycle rituals under new social circumstances. Kin relations also conform to the Bunun concept of the person. This can be attested to by the usage of Omaha kin terms. Up

to the present, the Bunun still use *madaigan* (old man) to address all members of mother's patrilineage without regard to their generation and age. To Mabuchi (1974a), the use of this kin term is based on their *hanido* belief in the spiritual predominance of the mother's brother over his sister's children. This belief is a part of their original concept of the person.

## 7. Marriage

A Bunun often remarries after losing his/her spouse, but otherwise observes strict monogamy (Huang 1988:53). Residence is tradition-ally patrilocal and descent patrilineal (ibid), and, since the end of World War II, both rules have been strengthened by Han Chinese influence. Marriage is in principle arranged by parents, though in practice a person is allowed some latitude of choice. Before the end of World War II, there was a preference for settlement endogamy (Huang 1988:54), with prohibitions on the following types of marriage: (1) within the same *gavian*, (2) with a member of the mother's patri-clan, (3) with someone whose mother was from ego's mother's patri-clan. With an average of 13.67 households per settlement, the number of *gauduslan* and *gavian* in any one settlement was rather limited. Preferential settlement endogamy and clan proscriptions left very few choices of marriage partners; therefore, proscriptive marriage rules acted in effect as prescriptive ones (Mabuchi 1974b). With the increase of external contacts since the end of World War II, marriages outside the settlement, including those with members of other ethnic groups, have increased; nevertheless, traditional marital prohibitions are still observed.

## 8. Domestic Unit

The Bunun refer to their domestic group as *lumah*, which includes both the house and all members of the domestic unit regardless of kin ties. Earlier



studies (Okada 1938; Chen 1955; Mabuchi 1960) emphasize the "extended family" as a major feature of the Bunun. Recent studies (Huang 1984, 1988) have found, however, that the domestic unit is not necessarily a kin unit, but rather has its own logic allowing inclusion of members who do not have consanguineal or affinal ties. This characteristic has been reinforced by the traditional Bunun rule of inheritance, whereby the property of the domestic unit is inherited by its members according to past contributions to the domestic unit without taking into consideration kin relations or ascribed status. This makes it possible for domestic unit property to be inherited by non-patrilineal members.<sup>2</sup> On the other hand, the domestic unit and the settlement were homologous in structure, yet complementary in function (Cheng 1990). This feature was strengthened by the fact that, without age grades or age sets, Bunun socialization was traditionally carried out by the domestic unit and the settlement as a normal part of the practical activities of everyday life. Since the end of World War II, the presence of churches and Christianity, and of the state educational system and state ideology, have diluted, or even obliterated, some original Bunun cultural ideas. As a consequence, Christianization and Sinicization now also play a role in socialization.

## 9. Religion

The traditional "religious" beliefs of the Bunun are based on their *hanido* belief. *Hanido* means the spirit of any living creature or natural object in this world, including the animate and the inanimate, such as animals, plants, land or rocks, etc. The *hanido* of any natural object has its

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2 It is also related to features of house societies in Southeast Asia. However, in this case, it is quite complicated not only for its variation in different Bunun areas but also for Bunun special features in contrast to those of house societies in general. I will discuss this in another paper.

own special innate power. The strength of *hanido* power varies among living beings or objects of the same category. When a living being dies or an object vanishes, the *hanido* spirit leaves and transforms or disappears. In this respect, human beings are like other living beings and objects, except that humans have two *hanido* instead of one. A person's *hanido* influences what a person wants to do, and the final success of any activity depends on the *hanido*'s ability to defeat another living being's or object's *hanido* with greater strength. With this belief, the Bunun can explain the usual problems of everyday life.

Another important religious concept is *dehanin*. *Dehanin* refers to the sky, though its meaning is more ambiguous. Traditionally it referred to the power of various meteoric and celestial phenomena, such as wind, rain, thunder, lightning, the moon, the sun, the stars, etc. Since the power of *dehanin* was inactive in ordinary life, attention was paid to *dehanin* only during times of disaster. In traditional times, rituals had to be held to express gratitude to the celestial bodies or *dehanin* for relief from disaster. After Christianization, Christian beliefs were assimilated into the traditional *dehanin* and *hanido* beliefs. *Dehanin* is now used to refer to the Christian god, and *hanido* to the devil or Satan.

## 10. Rituals and Ceremonies

In earlier times, any person could perform a ceremony for him/herself or for others if his/her *hanido* had enough power. Hence, religious practitioners were not a special social category, and potentially any person could serve in any ritual role. Traditional ceremonies can be classified into two categories: life-cycle rituals and calendrical rituals. Generally speaking, the former continue to be practiced with an overlay of Christian features (Huang

1988, 1991). In the mortuary ritual, for example, the dead was buried in the house if this person died of illness or natural cause. The Bunun regarded this kind of death as a kind of "good" death (*idmemino madai*), and if the dead had made a major contribution to the society, their bodies would be buried near the door of the house so that the *hanido* of the dead could protect the surviving members of the domestic unit. This kind of *hanido* would finally go to *maiason* where the spirit of their great ancestors lived forever. At the same time, all members of the settlement have to observe the taboo of not working for several days according to their social relationships with the dead. Usually, members of the same house as the dead can not go to work for 5 days, members of the same patrilineal clan for 3 days, and members of the same settlement for 1 day. If a person died of violence or accident, such as being killed by an enemy or any wild animal, the body was buried on the spot and the death was regarded as a kind of "bad" death (*ikula*). Now, with Christianization, the dead are buried in graveyards at the entry of the settlement instead of inside the house. The same distinction between good and bad death is maintained and the bereft still observe the same taboos; however, *maiason* is also used to refer to the Christian paradise.

By contrast, the traditional calendrical rituals have been abandoned with the demise of shifting cultivation; they have been now replaced by seasonal rituals with Christian features, such as those on Christmas, Thanksgiving, etc. Whatever the type of ritual, the Bunun usually held them privately and did not go through complex processes. Even the major traditional agricultural ritual, the *Mapulaho*, was initiated by public shaman (*Lisigadan lus-an*) in his field without the presence of other members. After his performance, each domestic unit would choose a member to perform it privately. In short, in traditional Bunun society, we do not find male initiation rites or any great

ceremonial exchange.

## Traditional Socio-Political Structure

To a certain degree, the clan system offered the Bunun a framework of traditional local organization. Since the hunting ground was owned by the patri-clan and the land for shifting cultivation was inherited by male descendants or lineage/subclan of the first person who successfully performed the ritual of *Mapulaho* (opening the land),<sup>3</sup> Bunun local organization tended to be organized according to patri-clan or lineage system. In other words, the clan or lineage/subclan tended to be localized. In fact, we also find that local organization tended to be dominated by a particular patri-clan or lineage/subclan. For example, before the end of World War II, Taketonpu was dominated by a patri-clan, Islitoan, which in turn was dominated by the lineage, Takesidahoan, whose ancestor was the founder of Taketonpu.

At the same time, the Bunun thought that an ideal settlement consisted of a single patrilineal family including all the members of the clan. The positions of family head, clan head and political leader of the settlement tended to be invested on the same man. He was the oldest man of the oldest generation in the clan or lineage/subclan. Social status was ascribed. In the settlement, each social action was controlled by the patri-clan. Actions outside the settlement were guided by the cooperation of patri-clans according to their affinal relationships. In this way, the patri-clan was localized and had its influence on every aspect of social life (Mabuchi 1974b: 24). Even now, most

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3 *Mapulaho* is a general term referring to all rituals related to agricultural production. Each stage has its own special term. On the other hand, *mapulaho* also refers to the ritual of opening the land.

Bunun still believe that in earlier days this kind of Bunun settlement existed extensively. In fact, according to past studies (Chiu 1966; Wei 1956, 1957), this practice was also followed to a degree by the North Bunun before the end of World War II.<sup>4</sup> This tendency caused local organization to be girdled by an ascribed hierarchical order comprising all residents and operating under the rule of patrilineal descent. Everyone was bound to act collectively. The localization of the clan and clan solidarity also made the local unit centripetal.

On the other hand, like most peoples practising slash-and-burn agriculture in Southeast Asia who tend to move about in search of new virgin land, such as the Hanunoo (Conklin 1957), the Ilongot (Rosaldo 1980), the Chewong (Howell 1984), the Buid (Gibson 1988), the Bunun had the same tendency to be mobile. Especially in the Bunun colony in southern Taiwan, they still had a vast space to move about. Because they were so dispersed, Mabuchi (1951:47) describes them as "lacking a clear-cut local organization". This tendency had been reinforced by the fact that everyone in Bunun society was encouraged to seek the satisfaction of personal desires and to demonstrate one's capability. Under these circumstances, all the members of a local unit were competitive. Everyone had to use one's own capability and effort to achieve higher social status in the local organization. If someone was not satisfied with his individual achievement in a settlement, he would leave and set up a new settlement or move to another settlement in order to attain greater achievement. As with segmentation in the clan system, division in local organization was unavoidable and could happen frequently. This kind

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4 On the contrary, this thought was not adopted by the Bunun in Southern Taiwan, since there was no settlement or formal local organization in this frontier area.

of ego-centered, achievement-oriented, competition-rife and centrifugal tendency contradicts the features of the local organization mentioned above.

To the Bunun, these contradictions could be resolved by endeavors in which they moved frequently, looking for virgin land to attain greater achievement. At the same time, the ownership by the patri-clan or lineage/subclan of hunting grounds and land for shifting cultivation provided favourable conditions for the clan system to remain dominant in the local unit. These led to a common phenomenon: Each local unit was usually composed of several major patri-clans or lineages/subclans, but none of them could permanently dominate or control local organization. Clan members were widely dispersed in several separate settlements through the "segmentation" process. The patri-clan could be dominant but not really localized. Local organization was so frequently divided that the size of Bunun settlements was the smallest among Taiwanese aborigines. On the other hand, the Bunun had the greatest spatio-social mobility among the aborigines; this made it more likely for individual Bunun to express his/her various capabilities and attain greater personal achievements. These features were also reflected in their political life.

The political organization of the traditional Bunun is relatively simple. In the following, I will use the case of Taketonpu as an illustration. There were two political offices: the *Lisigadan lus-an* and the *Lavian* (Huang 1982: 332-4).<sup>5</sup> The former was in charge of social order within the settlement. The *Lisigadan lusan* was a shaman whose duty was to direct all agricultural rituals. He was required to have much more knowledge about ritual and magic, and to be better informed about agricultural and meteorological matters than

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5 The Bunun in Southern Taiwan did not have these two political offices since they did not have settlements or formal local organizations.

anyone else in the settlement. In addition, as a leader, he had to have the ability to mediate between quarrelling parties and resolve differences in the settlement.

The *Lavian* was a political leader who dealt with relations with other settlements or other tribes. He had to be the bravest and most skillful warrior in leading his people to defend their settlement from invasions by outsiders. Sometimes he took charge of military retaliation in blood feuds. He had to have great military ability and geographic knowledge about hostile settlements. Here, we can see that both offices required a lot of special knowledge and skill. As previous studies (Chiu 1966; Wei 1957, 1972) indicate, even if the Bunun had the idea of supporting the ascribed clan head as the political leader, they had to choose these two leaders according to their abilities instead of their ascribed status (Mabuchi 1974c:293). For example, the last *Lisigadan lus-an* and *Lavian* in Taketonpu belonged to Ispalakan clan, rather than to the dominant Islitoan clan. However, members of the dominant clan or lineage/subclan had much better chances to hold these posts. This fact has also been pointed out in Chiu's study (1966:159). In other words, the Bunun in practice tended to consider a candidate's abilities as well as his ascribed status when they chose their leaders. Mabuchi notes that it is "not hereditary, the background of the family and clan is still important. But, personal capability and prestige are the most important prerequisites for a political leader" (1974c:293).

Furthermore, there was not any formal ritual of installation for the posts. The investment of these offices was the result of the recognition of the leader's past successful performances and the consent of all settlement members. A division of the settlement could easily take place when disagreements arose. Usually, a *Lisigadan lus-an* was replaced when he failed to direct

a successful harvest and a *Lavian* for a defeat in warfare. Dissent was usually caused by different opinions regarding the leader's capability. If someone else was thought to have greater capability for one of these posts while the current leader could still get enough support from the members, a division of the settlement was inevitable. A group of people would follow the new leader and move to another place and form a new settlement. Sometimes, if a person who considered himself more capable than the current leader could not get enough support from other members in the settlement, he would choose to leave and settle in a new site. This not only means that the maintenance of the relationship between the leader and the subordinates required the continual and successful practice of leadership, but also pinpoints the importance of obtaining consensus among all members without dissent. In this way, the Bunun could resolve the conflicts between individual achievement and collective advantage, as well as that between hierarchy and equality.

The evidence presented above suggests several major features of traditional Bunun local organization and political life (Huang 1988:48-49): (1) The settlement was the major local and political unit.<sup>6</sup> (2) This unit had a tendency to structure its organization according to patrilineal descent principle, which was noted for their ascribed hierarchical order and centripetal solidarity. On the other hand, Bunun society also had a divisive tendency whereby more capable individuals were allowed to break off from their original settlement in pursuit of greater achievement. It stressed ego-centeredness, competition, achieved status, and centrifugality. These two contradictory and yet complementary features were also reflected in the

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6 Without formal local organizations or settlements, the Bunun of Southern Taiwan tended to act according to the household unit.



requirements for political leadership. (3) The above contradictions were resolved through practical performance, and this practice made Bunun political life characterized by several features: (a) The position of the leader was granted more on the basis of personal capability than on that of ascribed status. (b) Everyone's capability was recognized through his continual and successful practice. (c) The recognition of the leader's capability resulted from the consensus of all members of the unit without dissent; otherwise, the unit would divide. These features can also be seen in the smaller but more fundamental unit -- the domestic unit (Huang 1988:50-55).

Here, we can see that the traditional Bunun political leader has some features common to Sahlins's big man. Sahlins (1970:206) has a good description of the big man:

...the indicative quality of big-man authority is everywhere the same: it is personal power. Big-men do not come to office: they do not succeed to, nor are they installed in existing position of leadership over political groups. The attainment of big-man status is rather the outcome of a series of acts which elevate a person above the common herd and attract about him a coterie of loyal, lesser men.

This does not mean that the traditional Bunun political leader is a kind of big man. In fact, there are some basic differences. First, for a traditional Bunun political leader, the capability to amass wealth and distribute it with calculated generosity is not decisive. He need not be rich. In fact, the prerequisites are not linked to wealth. Sometimes, a rich man is regarded as selfish. Second, there are two kinds of traditional Bunun political leaders requiring different kinds of capabilities, skills, and knowledge. Their social functions

are different and complementary, but not accumulatable. Like the great men of the Baruya, the *Lisigadan lus-an* and the *Lavian* are two kinds of social category. Third, the position or social prestige of the leader is derived not only from his continual and successful practice but also from the consensus of all settlement members. These basic differences make traditional Bunun political leaders more akin to great men than big men. This point will be discussed further in the following section.

### Exchange and Political Power

As mentioned above, traditional Bunun political leaders did not go through the formal ritual of installation to justify their position in the settlement or society. They obtained the power through their continual and successful practice in daily life, such as mediating quarrels among settlement members, leading head-hunting in blood feuds, defending the settlement from outside invasion, etc. In addition, some exchange activities allowed the political leader to establish, justify and strengthen his political power. In other words, besides the practice of daily life, exchange was a mechanism by means of which the leader obtained political power. There are, however, many types of exchange among the Bunun. Some of them are very important, the exchange of food being one.

In the exchange of food, the leader had to organize the ritual of *Malahodaigian* by collecting animal meat from followers and distribute animal meat and maize seeds to every male of the settlement. He could not miss a single one; otherwise, as the Bunun believed, it would lead to misfortune (such as death). In such an event, another person would replace him to perform his role at the next event without waiting for the next *Malahodaigian*. The

Bunun call this action of distribution *isibasipul*. Since the *Malahodaigian* was the only ritual regularly held once a year by the whole settlement (Huang 1988:142) and its major function was to recognize or justify settlement membership (ibid:149), the organizer of this ritual and the distributor of the animal meat and maize seeds was regarded as the *Lisigadan lus-an* by the participants. However, the number of settlement members was not stable. Anyone could organize another *Malahodaigian* in the same settlement for competition if he could recruit enough followers. When this happened, it would lead to the division of the settlement. On the other hand, the ritual of *Malahodaigian* was not a formal installation since settlement members could support another person as the *Lisigadan lus-an* in another ritual (such as the *Mapulaho*) or another practice at the next event without waiting for the next *Malahodaigian*.

Similarly, in game-hunting by burning, a leader had the responsibility of distributing to every household the meat of the animal killed in the hunt (Sayama 1919:71). If he missed one household or distributed the meat unfairly, another one would take over his role at the next event without waiting for the next game-hunting, and this replacement happened automatically without any formal process. In other words, when settlement members accepted a political leader's food distribution performance, they had to regard this person as the *Lisigadan lus-an* or the *Lavian* as the repayment for his service at first and then "obey" his orders in practical collective actions afterwards: actions such as head-hunting, military defence, or the mediation of quarrels among settlement members or between settlements. In this way, the performer received recognition from settlement members as the political leader and strengthened his political power.

Another kind of food exchange occurred in the feast offered by each

household at the end of a ritual. Since each household, as the separate and independent unit of ritual practice, had to offer the feast to other settlement members for completing the ritual (including calendrical rituals and life-cycle rituals) in a set period, all households in the settlement were immediately involved in this kind of exchange. So, as a settlement member, a Bunun received food from other households during the ritual period (almost 70-130 days in a year). By the same token, he/she had to offer food to others. Moreover, being a political leader, the *Lisigadan lus-an* or the *Lavian* had to offer much more food (especially animal meat and millet wine) than other households; otherwise, he would lose social prestige and status. To the Bunun, the ritual feast is held to reach the stage of "*sinpakanasikal*", meaning all guests are satisfied with the abundant food and are blessed. All this means that when a household head is able to offer more food in a feast, he must have a more powerful *hanido* enabling him to procure that greater amount of food. And, eating the offered food, other people receive blessings from him. In other words, through the immediate exchange of feast meals, people can obtain greater social prestige and higher position in the eyes of others by offering more food. By contrast, people who can not provide the equivalent amount of food as a repayment in feast have to concede that the initial giver has a stronger *hanido* power, and regard him as the leader. Moreover, since households which could offer richer feasts usually had surpluses, other households not so endowed could ask them for food when they faced a shortfall in food supply. This "non-equivalent" exchange would reinforce the leader's position.

Another type of food exchange is related to the *hanido* power. Each Bunun household had a person (usually the household head) to perform the *Mapulaho* ritual of agricultural production. In this ritual (*Inholawan*, held at

the time of weeding), the ritual performer would promise to sacrifice a pig as a reward to the millet spirit if it helped to bring forth a good crop. If a good harvest indeed ensued, the ritual (*Andagaan*) performer would kill a pig when the millet was being stored in the granary. In a sense, we can say that there was an exchange between the ritual performer and the millet spirit. However, each household had its own representative making this exchange, and not every *Inholawan* officiant was successful in his supplication to the millet spirit. In fact, households' agricultural production could be so unequal that a differentiation between the rich and the poor was inevitable. Moreover, one of the ritual performers had to be the first person to announce the beginning of the cycle of cultivation. The choice of this person was determined by the fact that his was the best agricultural productivity of the settlement in the past. Since this person had to decide the proper time to plant the millet, he had to have much more agricultural and meteorological knowledge as well as the knowledge about ritual and magic than anyone else in the settlement. Sometimes, he had to rely on his dream omen for making his decisions (Sayama 1919:78; Mabuchi 1974c:296). In addition, after offering a pig at *Andagaan* as the repayment to the millet spirit for the good harvest, he had to distribute to each household a piece of pork as his blessing (Sayama 1919:40). In other words, this person would engage in exchange not only with the millet spirit but also with other settlement members. When he was successful, other people would recognize his leadership in return; otherwise, someone would replace him at the next event without waiting for the next *Mapulaho*. We can see here that, regardless of the type of food exchange, one could obtain and strengthen his political power through the exchange of food. Moreover, it is a foundation of Bunun beliefs that a person who is successful in procuring more food or distri-

buting food more fairly than anyone else has a more powerful *hanido* than anyone else in the settlement. This belief, as we shall see, becomes more prominent in another type of exchange.

Besides food exchange, there is another type of exchange having to do with *hanido* or magic power, as already mentioned above. For example, like the *Lisigadan lus-an*, this leader had to bless other people for good harvests by giving each a piece of meat offered to the millet spirit. In other words, he used his magic power to guarantee the productivity of others in the settlement. As a result, others would recognize his leadership capability in return. In this way, he was engaged in an exchange process whereby the dispensation of magic power brought about the accrument of political power. Also, in the *Malahodaigian* ritual, the *Lisigadan lus-an* used his magic power to bless every male with hunting skill. The latter believed that the former's blessing could attract many more animals to the hunting grounds. In this case, the blessed hunter recognized the *Lisigadan lus-an's* political power in exchange for the blessing received. The latter maintained or strengthened his leadership as the reward for his magic services or using his *hanido* power. However, if his magical efficacy was not in good standing, another person would replace him by taking his role at the next event without waiting for the next *Malahodaigian*. Such is also the case in matters related to head-hunting.

As military leader, the *Lavian* had to guide head-hunting activities even though he did not have to be the nominal leader of the head-hunting expedition. First, he had to decide whether the expedition was auspicious. Second, he had to choose a person as the leader of the team. When the team returned safely with hunted heads, the *Lavian's* power was enhanced and his position strengthened. In all this, the *Lavian's hanido* power was the determi-

nant factor since his dream would predict the result of the expedition. If he was not accurate in his prediction, some warriors might die as a result. When this occurred, another person would replace him at the next event without waiting for the next expedition. During the *Makavas* ritual celebrating the success of a head-hunting expedition, the *Lavian* would command the killed to cause more of his/her kins or friends to be killed in the battle. In this bargain, the *Lavian* used his *hanido* power in dream omen and magic power in *Makavas* to guarantee the success of expedition. In return, other settlement members would recognize his leadership first and then "obey" his orders for collective action afterwards. In other words, the *Lavian* used his *hanido* and magic power in exchange for other settlement members' recognition of his leadership. As in the case of food exchange, this kind of exchange was possible because of the Bunun belief that the successful *Lavian* or *Lisigadan lus-an* had much more powerful *hanido* and greater magic strength than others in the settlement.

Of related significance is the exchange of women. This is related to Bunun marriage norms. Exchange marriage is quite specific and common among the Bunun in comparison to other Austronesian peoples in Taiwan. According to Mabuchi's (1974a:266) estimate, in 1933, 29.34% of the married Bunun were mates of exchange marriages. In the past, most interpretations (including the Bunun's) stressed that exchange marriage was cheaper. As a matter of fact, this interpretation is too simple and superficial. The key point is related to the Bunun concept of the person.

The Bunun believe that a strong mother would give her children a better chance of survival because members of her patri-clan would have stronger *hanido* to protect the married-out women's children (especially the body) from the invasion of the (*makwan*) *hanido*. That is why parents took

their newborn baby back to its mother's natal household several days after its birth to obtain the blessing from the members of the mother's patri-clan. And, when a child grew up, the parents had to send a big pig to the mother's natal household to repay the blessing given by the members of the mother's patri-clan. Until recently, this ritual (*Magalavan*) has always been observed. For this reason, a Bunun male tended to choose his mate from the clan which had had the most famous and successful *Lisigadan lus-an* or *Lavian*. Even though this involved an unequal relationship between the wife-giving and the wife-taking clans, this type of marriage was still preferred. This practice would lead to the concentration of power and prestige in the hands of very few clans and the stabilization of the hierarchical order among clans. Moreover, the exchange of women became the best way to safe-guard mutual benefits. In other words, by the exchange of women, people could more easily concentrate political power in only a few hands. This is not only related to their concern about *hanido* power but also related to the obligation of *mavala* (affines). To the Bunun, everyone has to offer the necessary help sought by his affines as repayment for the debt incurred as a wife-receiver. Both sides (families or patri-clans) are bound by the long-standing obligation of offering the necessary help to their affines. This help includes support for political leadership. It means that the exchange of women also serves as a means of acquiring political power.

Moreover, the leadership roles of *Lisigadan lus-an* or *Lavian* required different types of exchange of women. We know that the *Lisigadan lus-an* was responsible for the social order within the settlement, while the *Lavian* was in charge of matters between settlements. The former tended to engage in the exchange of women inside the settlement and the latter in the exchange of women between settlements. We have yet to marshal relevant ethnographic



data to support this point, but most scholars would agree that the ability of a leader to mediate in strifes or quarrels is partly a function of his affinal relationships with the parties concerned.

However, the limiting factor of the complicated Bunun rules of marriage must also be considered. As mentioned above, there are three rules of marital prohibition. These compel the children of parents who are mates of exchange marriage to find their marriage partners outside their parents' patri-clans. These patri-clans are thus prevented from amassing political power in their own hands by the exchange of women in the next generation. On the contrary, as required by Bunun rules, the second generation have to find their affines in other patri-clans. Thus, the hierarchical relation between wife-giver and wife-receiver is not replicated. The restriction on exchange of women as the mechanism to secure political power is highlighted by the fact that no person or patri-clan can control the operation of exchange of women. From ethnographic data, we know that a person can control only his daughters or sisters in the exchange of women. He can not make decisions for other females of his patri-clan since the household or family is more autonomous and the patri-clan is not localized. On the other hand, the patri-clan itself can not control the exchange of women because although it is the exogamous unit, it is not the unit practising prescriptive marriage. Thus, the exchange of women is carried out on the level of family or household. It is controlled neither by the patri-clan nor by a person.

In short, the exchange of women does provide the Bunun a way of attaining and reinforcing political leadership even though it is not a generalized mechanism because of certain restrictions. In addition, this exchange, like other exchanges, is related to the Bunun concept of the person since everyone wants to find marriage partners from the patri-clan

with strong *hanido* power and the exchange of women is beneficial to both sides.

At the same time, we have to say that the existence of exchange of women or exchange marriage does not imply that the Bunun observe the principle of equivalence without paying wealth for the bride. In fact, even in the exchange marriage, they still need to give at least one pig to the members of the bride's settlement for the wedding feast and give gifts to the bride and her natal family. And a rich household usually has to give much greater amounts of gifts, food and pigs for the wedding than a common or poor household. Still, the exchange of women or exchange marriage does express the relative importance of equivalence among the Bunun. As Mabuchi (1974b) says, even those who did not engage in exchange marriage had to marry a woman from a quite limited number of patri-clans because of the strict limitation of marital prohibitions and the tendency toward settlement endogamy. It made the proscription almost tantamount to prescription. This re-orientation toward prescription by the marital prohibition not only resulted in a kind of delayed exchange of women, but also makes many scholars (Chiu 1966; Wei 1956, 1957) think the Bunun had a kind of dual (or moiety) organization in earlier times. However, notwithstanding being direct exchange of women or delayed exchange of women, this marriage norm and the social organization behind it really expressed a principle: the exchange of a woman for a woman. And, this equivalence principle had been reinforced by Bunun "law", according to which a killing had to be avenged by a killing (with the exception of intra-patri-clan or intra-settlement homicide). This "law" expressed the same principle of equivalence: a life for a life.

This principle of equivalence in the exchange of women does imply that wealth could not be substituted for a woman. It also implies that wealth did

not play a decisive role in Bunun society in the past. So, even though we find that the political leader could gain and strengthen his political power by the exchange of food, this does not mean that leadership was based on wealth; rather, it was based on one's *hanido* strength and related knowledge or skill of agricultural production. This point will be discussed further on.

The various exchanges discussed above can be classified into two types. The first kind of exchange concerns the transaction of "objects" between two "symmetrical" units. In the *Mapulaho* ritual, for example, the millet spirit brought forth a good crop as payment and the *Lisigadan lus-an* would sacrifice a pig as repayment. These two subjects are two individual units even though they are of two different categories. At the same time, the two objects used for the transaction are of two kinds of category, so it is difficult to judge whether they are equivalent in the quantity aspect. However, this kind of exchange is not a major one; it is usually an accompaniment of the next one.

The second kind of exchange has two levels. First, like the first kind of exchange, it is a transaction of "objects" between two individuals through the process of payment and repayment. We see that the *Lisigadan lus-an* or the *Lavian* offered his services of redistributing animal meat, maize seeds, etc., and gave his blessings for productivity in agriculture or in game-hunting, or for the success of military expedition. On the other hand, as the receiver, a settlement member had to recognize the leadership of *Lisigadan lus-an* or *Lavian* as repayment. In this way, the leader could obtain and strengthen his political power. The "objects" in the transaction are of different categories, but this kind of exchange implies another level of transaction: the *Lisigadan lus-an* or the *Lavian* are regarded as symbols of the settlement or the society. In this sense, the units engaged in transaction are not two individuals;

rather, an individual as a settlement member transacts metaphorically with the collective or the society as a whole. This point is elucidated more clearly in the distribution of maize seeds in *Malahodaigian*.

In the exchange in the *Malahodaigian*, the *Lisigadan lus-an* offered his services by giving every male settlement member a maize seed, and the receiver recognized his authority as repayment. At the same time, the *Lisigadan lus-an* had the authority to confirm a man's membership in a settlement; he could also define the boundaries of his settlement. In this process, the *Lisigadan lus-an* himself was an individual searching for political power; at the same time, he also stood for the collective to the extent that he was the one who granted settlement membership to every Bunun male. And, in this kind of exchange, the "objects" in the transaction were of quite different categories. The same situation obtains as well in the exchange of food feasts and the exchange of women.

In feasts, we find that a person offered another settlement member a feast as payment and received entertainment from this person as the repayment. From the difference in the quantity aspect of food between the two feasts offered by these two persons, people could judge who had greater *hanido* power and hence higher social prestige and status. Factually, in the feast, one had to offer food to all settlement members, not just to a person. At the same time, one who engaged in the exchange of feast foods did so on the basis of his settlement membership, not his personal relationships. In this sense, it is a kind of transaction between a person and the collective, not between two individuals. Similarly, in the direct exchange of women, it is really a transaction of the same kind of "object" between two symmetrical units (households). However, in the delayed exchange of women, a unit (household) which received a woman from another unit without repayment

of woman had to marry its woman of the next generation to one of the other households in the settlement according to marital prohibition rules and the norm of settlement endogamy. It is still a kind of transaction between one unit (household) and other units (households) in the settlement. So, when we talk of the exchange of women among the Bunun, it is a transaction not only between two symmetrical units but also between one individual and the collective.

Here we find that the second type of exchange is more common and important to the Bunun. This kind of exchange usually involves two levels. One is the transaction between two symmetrical units, the other between an individual and the collective. More importantly, the first level is usually subsumed under the second level. By this kind of exchange, the Bunun can transcend the absolute distinction between the individual and the collective. In addition, except for the exchange of women and the exchange of food in feasts, the "objects" used in the transaction are not of the same category. These two major features not only are related to the Bunun concept of the person but also distinguish their exchanges from those in Melanesia to some degree. On the other hand, we also find that the Bunun could obtain and strengthen their political power through exchanges. Nevertheless, their political leaders seemed to be interested more in fulfilling the whole society's needs rather than in putting other individuals under their domination. Furthermore, the leadership authority needed to be frequently justified in the eyes of the common people through each practice of exchange itself. We will discuss these issues later.

## The Great Men Model and the Concept of the Person

Based on the above description, we find that traditional Bunun political leaders stood out by virtue of their competence through continual and successful practice in daily life, such as the capabilities of mediating quarrels among settlement members or between settlements, of agricultural and meteorological knowledge, ritual knowledge, warfare skills and courage, magic or *hanido* power, etc. Thus, they acquired leadership through merit, not ascription. Moreover, by the exchange of food, magic power, and women, they could obtain and strengthen their political power. At the same time, we find that the capability to amass wealth and distribute it with calculated generosity was not decisive. Wealth and power were not closely linked. Moreover, there were two kinds of leadership, the *Lisigadan lus-an* and the *Lavian*, in charge of different social functions and roles. They were required to have different kind of capabilities, and they were separate. Furthermore, in Bunun exchanges, we find that the principle of equivalence, a woman for a woman or a life for a life, was relatively dominant in traditional Bunun society. In this sense, we can say that the traditional Bunun political leaders were great men.

However, this does not mean that Godelier's great men model can really help us understand the Bunun better. In fact, there are many related concepts used in his model which are specific to Western culture. This prevents us from achieving "understanding" from the native's viewpoint. For example, in Godelier's model, equivalence or non-equivalence in the exchange of persons and things is the key principle. To the Bunun, however, the concept of equivalence or non-equivalence is quite ambiguous. When

anthropologists use this concept, it contains two aspects: quality and quantity. In terms of quality, wealth does not equate with woman; they are categorically differentiated from each other. In terms of quantity, different quantities are unequal; they are different in degree. The Bunun have quite different views on this issue.

The traditional Bunun recognized some basic differences between different categories. The animate was different from the inanimate; an animal from a plant; a dog from a pig. A woman of course was different from a piece of land or a pig. On the other hand, the Bunun recognized in their myths the capability of a person to transform into other animates, such as birds, deer, monkeys, mice, trees, etc. They also believed that after death a person transformed into other kinds of animals. In this sense, the distinction of categories is not absolute. On the contrary, they would construct classification systems for different occasions and practical reasons. Thus, they had a quite different classification system of animals for eating (Huang 1988:155):

	inedible	edible		edible with restrictions
		domesticated	wild	
restrictions on the living space of animal	no restriction	restricted to the space outside the house		restricted to the space outside settlement
social distance	near	intermediate		distant
types of animals	dog,mouse, cat, frog, snake,etc.	pig, goat, chicken, ox,etc.	wild boar, deer,roe, pheasant, monkey,etc.	bear, leopard, etc.

Then, for a different situation and reason, they preferred to construct and

use another kind of classification system. Under these considerations, the Bunun would regard women as a unique category and could not equate them with the other categories. They expressed this view by direct exchange of women in marriage. On the other hand, they did not totally deny the possibility of equating woman with others. In fact, more Bunun engaged in marriage by paying wealth instead of exchanging women, even though this kind of marriage still acted as a delayed exchange of women by the mechanism of strict marital prohibition. That is why we can only say that the equivalence principle was relatively dominant, not strictly observed. Of course, it may be said that the Bunun way of thinking does not completely conform to the law of contradiction.

Moreover, the Bunun concept of the person does not refer to sex; the distinction of sex only gradually develops in the process of growing-up. In other words, a social category (such as the male or the female) is the result of the practice of essential *hanido* in the same way that the expression of various capabilities of a person is derived from the practice of the same *hanido* power in various situations. In addition, categories or classification systems are used by the person for various situations and practical reasons; the person is the focal center of all categories or classification systems. In this way, we can understand why the Bunun stressed the distinction of social functions between the *Lisigadan lus-an* and the *Lavian* for their different qualification requirements on the one hand, while, on the other hand, accepting a man to be the *Lisigadan lus-an* and the *Lavian* at the same time because this person had a greater *hanido* power than anyone else in the settlement. Of course, this kind of "confusion" in social categories or classification systems is also related to another issue: the transformation between "objects" and "subjects" (Munn 1970). This issue needs further study.



With regard to quantity, the principle of equivalence is more confusing to the Bunun. This issue is related to their concept of the person. The Bunun believe that everyone has his/her own *hanido* with unique power. Even siblings who inherit *hanido* power from the same father and receive *hanido* protection from the same mother's brother, still have *hanido* with unequal power since everyone can enhance his/her *hanido* power through efforts after birth. In this sense, everyone is different from others as regards *hanido* power. When the Bunun measure payment against repayment or the transaction between two persons, what is at issue is not objective criteria but the relative capabilities of the persons concerned (Sayama 1919:185). In other words, when a person repays someone, he/she does not need to pay the same quantity of things; that person only has to offer what he/she is capable of. To the outsider, this is a kind of "non-equivalent" transaction, but to the Bunun, this transaction is really "equivalent". That is why we are usually confused and think many "primitive" peoples do not have economic rationality. This point can be elucidated by the example of the Bunun feast.

As mentioned above, each household has to offer a feast for other settlement members at the end of major calendrical ritual or life-cycle ritual. In the feast, the household has to provide enough food (in traditional times, particularly animal meats and millet wine) to satisfy all settlement members and to have the feast reach the stage of *sinpakanasikal*. In actuality, almost no two households can offer food of the same quantity, even though people are equally satisfied. This is so because people will estimate the amount of food a household can offer in relation to its labour power, the quality of its land, the quantity of millet stored in its granary, the number of its pigs, etc (Mabuchi 1974c:299-300; 1974d:353). If a household provides less than it is deemed capable of, social criticism of its stinginess will ensue. On the

contrary, if it offers much more than what it can offer, social criticism of its luxury also arises (*ibid.*). So, for the same ritual, the rich household can offer a feast for 3 or 4 days, while the poor just one day. But to the Bunun, these two feasts are "equivalent" even though 3 or 4 days is not equal to one day. The same idea still applies in modern situations.

At present, the Nationalist government has imposed a new land tenure system on the Bunun. In this system, each piece of land is "owned" by a person. Under this new rule, everyone has to register the land he/she has inherited after the division of the household. Since the Bunun inherit land on the basis of an individual's record of production on specific pieces of land, the elder or the more capable sibling can inherit much more land than the other siblings. Very often, siblings "unequally" inherit their land from their parents, but in the Bunun way of thinking this is still a kind of "equal" division. This "equivalence" is measured in reference to the relative capability of a person, not in reference to the universal criterion of the outsider.

The same can also be seen in the Bunun's everyday life at present. For example, they learn how to play table tennis from Han people, but they play it in their own special way which I could not make sense of at first. In their way, a player does not lose points even if he/she does not return a ball served by the opponent when he/she does not think he/she can hit this ball properly. Only when a player attempts to return a ball but misses it, can then the opponent score points. In their thinking, people can not keep score by a universal and objective standard; relative abilities of the players have to be considered. Otherwise, the competition is not fair and the game is not interesting.

From the above example, we can see that "non-equivalence" (in the quantity aspect) in exchange actually means "equivalence" in the Bunun's view.

However, this meaning of "equivalence" is "non-equivalence" in the original anthropologists' concept.

Besides the issue of equivalence or non-equivalence, there are some basic differences between Godelier's "great men" model and the Bunun case even though both are of great men type: (1)The Bunun do not have male initiation rituals or any great exchange ceremonies. (2)The Bunun are noted for their monogamy rather than polygamy as in Melanesia. (3)Complicated rules of marital prohibition are another unique feature of the Bunun in contrast to prescriptive marriage as in Melanesia. (4)Omaha kin terms are another noted feature of the Bunun. More important, these basic differences are related to the Bunun's concept of the person.

Unlike peoples in Melanesia or other Austronesian peoples in Taiwan, the Bunun do not have any great exchange ceremony or male initiation ritual. These are related to their concept of the person. To the Bunun, "being a person" is a long process (Huang 1989a): At the moment of birth, the baby gets its own *is-ang* (self). After the ritual of *Indohdohan*, the baby is introduced to all settlement members as a social being. After the ritual of *Magalavan*, this child begins to be autonomous and from then on does not need to depend on the *hanido* protection from his/her mother's patri-clan members. Afterward, *is-ang* is more active. As a person grows old, *is-ang* tends to keep a balance between *makwan hanido* and *mashia hanido*, or between the individual and the collective. After death, a person is released completely from the burden of the body. If this person has made enough contributions to the collective before death, his/her *hanido* can reach *maiason* (the place where the *hanido* of the Bunun's great ancestors or heroes live) and stay there forever. All rituals and everyday life are just part of a process of being a person. It is very difficult for the Bunun to point

out which ritual or which period of the life cycle is more important than the other. Sometimes, even in their rituals, we can not clearly point out the boundary between ritual and everyday life. In viewing personhood as a process, the Bunun do not like to use rituals or similar undertakings to separate different stages of life. In addition, their rituals or ceremonies are very simple, so that sometimes the observer will be confused. In this sense, the absence of male initiation rituals is not very strange. To the Bunun, various people "grow up" at different stages of life. It is thus very difficult to hold a collective ritual for the initiation of youngsters at the same age. That is why the ritual of *Magalavan* is held by each household for every grown-up child at different age. The same reason will help us understand their monogamy and Omaha kin terms.

At first, to the Bunun, a person has to take charge of his/her social obligations according to social norms; otherwise, this individual can not be regarded as a *bunun* (person). In fact, there are many Bunun myths in which people who do not fulfilling their social obligations are transformed into animals or trees. For example, a mother who does not take care of her children is changed into a bird (myth 22 in Sayama 1919); a girl who does not cook food for her household members is transformed into a mouse (myth 62 in Sayama 1919); a man who is too lazy to do his agricultural work becomes a bird (myths 20, 25, 26, 27 in Sayama 1919).

Next, to the Bunun, marriage is a kind of long-term exchange between two households or two patri-clans. At the beginning, it is the bridegroom's household which offers the necessary gifts or "bride price" to the girl's parents. These include two pigs and clothes. The latter are for the bride, but the former for the patri-clan of the bride and members of her settlement. All clan members (including *baitzilan*, married-out women) will share one

pig. After eating the pig, all clan members have the obligation to protect the children of their married-out woman. So, after the birth of a baby, his/her parents would bring this baby back to the mother's family of orientation to receive blessings from her brother or any other clan member. Before undergoing the *Magalavan*, this child had to go back to the mother's home for curing his/her illness. That is because the Bunun believe that the mother's brother or any other member of her patri-clan has predominant *hanido* power to protect the married-out women's children. It is also related to their belief that the body of a person comes from the mother, in contrast to *hanido* which is inherited from the father. This is why a Bunun respectfully calls all members of his/her mother's patri-clan *madaigan* (old man). It is a Omaha-type kin term. However, if the child died before growing up, this child's parents would find another clan member to give blessings to babies born in the future. They did not use Omaha kin terms to address the person who failed to live up to his protection obligations. However, after the child safely grows up, parents have to hold the ritual of *Magalavan* to express their gratitude to the mother's clan. This does not imply that the mutual obligation between these two households or patri-clans is over. In fact, when affinal relationship has been established after marriage, both sides are involved in mutual obligations to help each other. For instance, a grown-up child still has the body derived from the mother. In other words, after marriage both sides begin a continual and long-term exchange. This exchange is only brought to an end by death on one side, as when a person is released from the burden of the body after death. In other words, the exchange initiated by marriage is a life-long process.

Because marriage entails life-long social obligations which require one to fulfill wholeheartedly, it is impossible to engage in another marriage without

neglecting one's social obligations to the first marriage. Under these considerations, the Bunun are prohibited from polygamy. In fact, they regard polygamy as a kind of *masamoo* (taboo) and have a myth (Sayama 1919:199) in which people are transformed into monkeys, deer, birds, and trees because they fail to observe incest taboos or "monogamy". In other words, as a "person", everyone has to fulfill social obligations (including those to affines) and observe the norm of monogamy. Otherwise, this individual is not a *bunun* (person), at least metaphorically or culturally.

Similarly, their concept of the person allows us to better understand the Bunun's rules of marital prohibition. To the Bunun, a baby is created by father and mother together; they are complementary (Huang 1989a, Yang 1992). This means that a baby is composed of two major parts derived from two different sources. Furthermore, in the inheritance of *hanido* from the father, all clan members have *hanido* of very similar strength, since their *hanido* come from the same source even though everyone can increase his/her *hanido* power by postnatal efforts. On the other hand, a baby gets its body from its mother, who transforms the *hanido* inherited from her father or her patri-clan into the baby's body (Yang 1992:26). When mothers are of the same patri-clan, their children's bodies are derived from the same source (ibid:35). With these understandings, we know better why people of the same patri-clan can not inter-marry since they have the same source of *hanido*. One can also not marry any member of a mother's patri-clan, for their bodies are derived from the same source. Moreover, we can see better why a Bunun (ego) can not marry the daughter of *baitzilan* (married-out women) (Mabuchi 1974b:26), for her body comes from the same source (being transformed from mother's patri-clan *hanido*) as the *hanido* of the ego, even though this is not included in the rules of marital prohibition.

From the above discussion, we can still recognize that traditional Bunun political leaders fit Godelier's great men model. On the other hand, from the Bunun's view of equivalence or non-equivalence, we doubt whether the great men model can really help us understand Bunun culture and society better. This question is beyond the issue of whether "two principles (equivalence and non-equivalence) coexist or combine two separate levels" (Godelier 1991: 302), but related to our understanding of other cultures using our own concepts. Besides the concept of equivalence, the concept of "political power" is another basic issue. When anthropologists use this term, it quite often refers to a kind of domination-subordination relationship between two persons. In some respects, this kind of concept was still valid among the Bunun: political leaders could "order" others in collective actions and the latter had to "obey" the former's orders. Factually, to the Bunun, the leader usually had to justify his authority by the consensus from all group members first in each practice. They called this process *mabeedason*. When dissent arose, the action unit split or disorganized. In some respects, the Bunun obeyed their own orders rather than the leader's orders. More important, as Mabuchi (1974e:152) stresses, the Bunun thought that superiors with greater *hanido* or magic power had to protect as well as show sympathy and love to inferiors. The political leader would also maintain social order not by forcing other people to obey his orders but by stressing that everyone had to fulfill the whole society's need for reaching a stage of *sinpakanasikal* in which all people were satisfied and got blessings from each other. This kind of "political power" is related to their thought that being a *bunun* (person) requires balancing the individual and the collective.<sup>7</sup>

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7 It is also concerned with the issue of power in Southeast Asia in general (see Anderson 1972; Wolters 1982; Errington 1989, 1990), such as "spiritual potency"

The same question can be asked about "exchange" itself. From the above, we find that among the Bunun "exchange", as a transaction process through payment and repayment of objects or persons, tended to occur between a person and other settlement members or the society as a whole rather than between two individuals or two independent collective units. This kind of "exchange" seems to transcend the distinction between the individual and the collective. This feature is inherent in the Bunun concept of the person -- being a *bunun* is to achieve a balance between the individual and the collective. Also, it is related to the concept of sharing, another important socio-cultural feature in Southeast Asia (Gibson 1985, 1986; Huang 1988, 1989b). In addition, from ethnographic data on the Bunun, we can see that the "exchange" process is not as obvious or important like in Melanesia. In this sense, we have to raise a question: Is the discussion of big man or great men or even the issue of exchange a legitimate topic in the study of "cultures" and "societies" of Austronesian peoples in Taiwan? This is related to the uses of anthropological knowledge.

However, in the present case, there is a more worthwhile pursuit of examining the concept of the person in relation to the various issues discussed above, so that we can better understand Bunun culture and society. In this paper, we find that the basic differences between the Bunun case and Godelier's "great men" model are related to the Bunun concept of the person. The Bunun concepts of "equivalence" and "political power" or even "exchange" are also subsumed under this concept. I would maintain that the Bunun concept of the person is a key to the understanding of Bunun culture and society (Huang 1989a). In addition, its importance goes beyond

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in contrast to secular ideas of power in western Europe. This issue is not my focus in this paper though. I hope to discuss it in detail in another paper.



its mechanical role for understanding Bunun culture and society. We know that Bunun concept of the person is expressed and reproduced through their life-cycle rituals even though now these rituals have been filled with Christian features (Huang 1988, 1989a). Like the ritual of initiation of the Baruya, these rituals and their concept of the person behind them reveal to us a means for grasping the social logic of the Bunun. In this sense, Godelier and Strathern are right in maintaining that the discussion of big man or great men is beyond the typology of society or the nature of political power. However, a fuller account of the Bunun global social logic must await another occasion.

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## **Social and Ritual Power of Paiwan Chiefs: Oceanian Perspectives**

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The aim of this paper is two fold: to analyze the political and ritual power of Paiwan chiefs, and to compare leadership among the Paiwan with that of Oceanian societies.

Paiwan chieftaincy has been equated with the "ramage" system common in Polyesian societies. Yet, unlike Polynesian chieftainship, which prefers male primogeniture, the Paiwan firstborn succeeds to and inherits a chiefly household regardless of sex. In Oceania, normally male siblings head chiefly households, and the households are ranked according to the birth order of the heads.

I will argue that among the Paiwan, equal recognition of the sexes of the first-born operates against the formation of ranked kinship organization.

Paiwan chieftainship has drawn the interest of many historical researchers and anthropologists since an initial survey was carried out by Japanese colonial government researchers early in 1905-15. Two initial ethnographic reports on Paiwan society (Kojima et. al. 1920-1922; Sayama, 1920) described it as a stratified society with a hereditary ranking system and two distinguishable social classes, namely aristocrats and commoners. Scholars since then have accepted, more or less, the stratification system without differentiating analytically the concept of social class from that of social status. Failure to separate the two concepts for analytical and comparative purposes has caused a misunderstanding of Paiwan political and kinship structures.

Recently, scholars of Borneo societies have attempted to clarify these concepts, and demonstrated the social structures of stratified societies in Borneo (Rousseau 1979, 1990; King 1978, 1985; Armstrong 1992; Alexander 1992).

The most classic anthropological definitions of 'class' and 'status' is Sahlins' (1958). Sahlins proposed to reserve the term of social class for market-dominated societies. He states: "... status inequalities in primitive societies are not accompanied by entrepreneurial enterprise, and the complete separation of producers from the factors of production (ibid:2-3)." It is not my major concern here to discuss on problems of Sahlins' definition. However, as pointed out by Rousseau (1979:215-216) and King (1985:12),<sup>1</sup> analytically separable kinds of inequality exist or existed in the stratified societies in Borneo such as the Kayan, Kenyah, Maloh and others.

In this paper, I will follow King's definition of class, which is: "classes are taken to be essentially economic phenomena generated by the economic processes of production, distribution and exchange and expressed in the differential possession and/or control of productive resources such as land, labour, agricultural equipment and other property (ibid:13)." This definition is useful for analyzing social stratification in simple societies and comparing different dimensions of rank. King recognizes that "entrepreneurial enterprise, private wealth and the separation of producers from the means of production may not figure in relations of domination and subordination

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1 The definition of class is not exactly the same in Rousseau and King, but differs in emphasizing different dimensions of ranking. Rousseau does not clearly distinguish the concept of class from that of status. He argues that classes represent the effect of the whole social structure, but that the 'estate' system, which defines the political structure of stratified societies, plays most significant role (1979:231).

(ibid:14)." He proposes that systems of inequality in those societies must be understood in economic terms mentioned above.

In terms of status, it is primarily concerned with socially differentiated hierarchical positions relative to one another. King considers status as a subjective evaluation of individuals (ibid:16). However, as he mentions, social status is often ascribed by kinship relationships in those societies, and therefore not always subjective. In analyzing status, power must be taken into consideration. Individuals who hold status in dominant rank in a society control their subordinates politically, economically and religiously, and impose their values on their subordinates. In many societies, various kinds of social and ritual privileges and associated symbols are attached to high status. Paiwan chiefs' households boasted elaborate symbols (wood-carvings with ritual pictorial designs, heirlooms, clothing, tattooing, etc.). These are significant elements of status, but may not be associated to social class. Such is the case of the Paiwan.

The three dimensions of ranking systems are analytically separable in terms of class, status and power, as proposed by King (ibid:17). They are closely related to the economy, politics and ideology of a given society. In this paper, I will analyze the traditional Paiwan ranking system in comparison with those in Borneo and Polynesia, and discuss what is unique in the Paiwan ranking system.

## Historical Background

The crucial difficulty in the study of Paiwan chieftainship is that the traditional chieftainship was greatly disrupted by Japanese colonial force early in 1900's. Unlike stratified Borneo societies where in the 1970s the

traditional rank systems still operated to a certain degree, the native societies in Taiwan were under the direct control of the colonial administration. Therefore, no researcher observed how Paiwan chieftainship functioned on the villages. I tested data on traditional social organizations against information recorded by Japanese government officials and scholars, and collected more information from chiefs and villagers, while observing villagers' behavior in contemporary situations. At the time of my initial fieldwork in Paiwan villages in 1971, I met only one chief who had actually held the office in pre-colonial times. Furthermore, early in the 1900s, punitive expeditions were carried out against villages who resisted against the colonial administration.

After the pacification of the native peoples, their villages were often relocated or amalgamated into administrative units for the purpose of direct control. By 1920, most of the Paiwan villages came under firm Japanese police control, and the villagers were forced or encouraged to abandon their traditional customs under the government policy of so-called development assistance. In particular, the abolition of headhunting must have radically changed inter-village relations among the Paiwan. Therefore, we must take this radical historical transformation into consideration in analyzing and interpreting the data on traditional social systems.

## The Paiwan

Traditionally the Paiwan occupied the southern area of the central mountains in Taiwan. The total population in the 1920's was about 30,000, scattered among approximately 160 villages. Falling death rates during the Japanese occupation caused a population increase, but the increase was

balanced by loss of Paiwan lives in the turmoil following the Japanese invasion of their territories. Therefore, we can assume that this figure represents roughly in pre-colonial times.

Traditionally a Paiwan village was politically and economically an autonomous unit. It was comprised of a residential compound, farming fields, fishing streams if any, and hunting grounds. Across each path into the village, there was a gate of bamboo, a stockade and/or a stone wall to protect the villagers against surprise raids by headhunters. In the village, houses were arranged in terraced rows, one above another, with narrow stairs here and there connecting the lower and upper rows.

With regard to the size of a village, according to the 1929 census data (Kano 1938:60-62), a large number of villages consisted of about 50 households. The largest village in size was Kulaulau, with 302 households. It was composed of three hamlets, each of which had the chief's household (Kojima, et al, 1920:95-96). Presumably the village had gone through the similar process of fission and amalgamation to that of Village K shown in Figure 1.

According to Mabuchi's study (1974b II:359-392), the Paiwan seem to have migrated from their ancestral homeland gradually toward the south and the east across the Central Mountains. On the way south, they established new settlements in their colonial lands, and further migrated to the south and east, possibly absorbing non-Paiwan populations into their own before the Dutch occupation in the 17th century.<sup>2</sup> Major villages which had existed

2 The names of important villages throughout the traditional Paiwan territory appear in Dutch census reports in 1647, 1650, and 1655 (Mabuchi 1974b II:366-67). During the Ancestral Festival '*maluvuq*', their ancestral spirits travelled east and south, according to the shifting festival dates from one village to another. The routes ancestral spirits travelled largely coincided with the directions of migration (Mabuchi *ibid.*)

from the Dutch times with more than 100 households were all located on the west side of the Central Mountains. Many villages in the colonized Paiwan lands in the eastern areas were small in terms of numbers of households (see Fig. 2). The Paiwan homeland was the most densely populated area, next to the Ami, who occupied plains regions. Many villages in this area had experienced processes of amalgamation and fission even before the Japanese colonization.

The subsistence economy of the Paiwan was primarily based on slash-and-burn agriculture on mountain slopes. They cultivated millet, barn millet, sorghum, and root crops such as taro and sweet potatoes. The Paiwan, compared with the Bunun, the Tsou, and the Ami, largely depended on root crops rather than millet or rice for staple foods, though millet was considered the most important ritual crop as was the case with other native groups. Moreover, the cultivation of rice was believed to be a taboo, because the spirit of millet would get so angry and cause the Paiwan to lose a good harvest. Large amounts of harvested millet were used to make wine which was the most important item in ceremonial occasions. According to data supplied by elderly villagers, there was no surplus of millet kept for the following year, but rather became shortage always before coming to the following harvest. There was no communal ceremony during this season except if an unexpected accident happened. The Paiwan did not desire to display their wealth by piling up harvested millet in their houses, as has been reported among the Bunun (Mabuchi *ibid*:95).

Sweet potatoes were a most reliable food crop. They were harvested in small portions anytime needed, and kept growing in the fields. Next to sweet potatoes, taro was another important staple food. It was harvested in winter. In the western villages, they dried taro over an oven built outside of a house

or in the field, and preserved them. In the eastern villages, such technology was unknown. Besides these staple crops, a variety of beans, cucumber, and some greens were cultivated just for individual household consumption. Villagers also engaged in collecting mountain products for their own use. Rattan, herbs and *ngat* (a kind of grass for making mats or baskets) were trade goods to the people in the plains.

Farming was supplemented by animal husbandry and hunting. The most common domesticated animal was the pig. Each household kept one or two pigs on average (Segawa 1954:52). Hunting, for food or ritual purposes, was a prestigious male occupation. Wild pigs (as ceremonial food) and deer (probably as trade items) were most important game animals. Judging from reported information, however, hunting never exceeded farming activities among the Paiwan.

As to the trade between the Paiwan and Chinese and sinicized natives in the plains, there is no data available except a few scattered accounts in some local Ch'ing gazetteers (Matsuzawa 1990). During the Ch'ing dynasty, the native peoples were kept isolated in the mountains. However, some Chinese or sinicised native traders must have engaged in trade with the Paiwan. People must have obtained salt from the plains, which was the most necessary item for everyday life. At the time of Japanese occupation, each household owned many foreign items such as guns, iron implements (swords, knives, pans, sickles, etc.), a pottery, woolen blankets and cotton cloth used for clothing, though quantities were limited (Kojima et. al. 5-3:428-9). These must have been obtained from the plains. The plains natives must have played an important role as traders with the Paiwan.

## The Paiwan Ranking System

In my view, traditional Paiwan society was stratified into three status levels: chiefs, chiefs' siblings (extended to cousins) and ordinary villagers. There is some disparity, however, concerning the number of levels of stratification in the reports of scholars who carried out fieldwork in different Paiwan villages. I suspect that such disparity concerning levels of status is not all due to local variation but rather to some degree of confusion at the time of data was collected.

### 1. Political Dimensions

The Paiwan term for "chief" is *mazazangilan* (*mamazangilan* in the eastern area), which is related to *zangil* (meaning "powerful"). The Paiwan chief was recognized socially as the direct descendant of the original household settled in a given village. Generally speaking, a village was a self-contained political unit organized around the chief's household. Paiwan refer to a village as a *qinalan*, which means a physical aggregate of houses or a settlement. The Paiwan have no term to imply "chiefdom" as a political unit. Each village has its own name. When villages moved to different sites, the original names of respective villages were maintained. The village name is also used in identifying people. Even if a new village as an administrative unit consisted of four traditional villages after World War II, the villagers still identify themselves to others by using the name of their earlier villages. It appears that they have had a clearly defined "we" consciousness concerning the bounds of their village settlements.

In each village, the chief was the central pivot of the polity. The office of chief was succeeded by his or her firstborn child, regardless of sex, and



not elected as in stratified societies in Borneo. In theory or in ideology, the Paiwan inheritance and succession systems had two distinctive features: 1) All absolute rights of inheritance to the head of a chief's household went to the firstborn, regardless of sex; and, 2) These rights became effective at birth. In the case of the death of this firstborn, the secondborn automatically became the chief. This system of succession and inheritance also operated among villagers for their household headship. Neither jural prodedures nor ceremonies of installation for the chief were performed such as reported elsewhere in Polynesia. The tranfer of rights was thus implicit, at least to outsiders. Usually in practice, however, the office of chief was assumed by the firstborn upon marriage but transmitted gradually, unless the chief died, to the younger couple, even though the former chief remained influential in decision-making.

Paiwan chiefs exercized political and ritual leadership as a married couple. Both the husband and wife of chief were called *mazazangilan*. Firth writes of Polynesia, "The political roles of men, in administration of assets and in particular in war, are usually far more important than those of women, and give a patrilineal bias to any ambilateral system." (1963:36) Among the Paiwan, however, balance between male and female sides was kept through recognition of the chief as a couple, and appointing one or many edlerly villagers as advisors to the couple. The question might be raised, however, as to just how a married-in-husband of the female chief could take leadership in inter-village affairs which might affect the interests of the entire village -- in particular, headhunting expeditions. According to villagers, for a female chief, a man with strong leadership skill and respectable personality was likely to be chosen as her husband. In addition, elderly village men played an important role as superintendents in the expedi-

tions.

The jural, economic, and cultural status differences between the first-born and other children were very clear among the Paiwan. It must be noted here that the social and ritual superiority of a firstborn within the Malayo-Polynesian world is reported for societies in Polynesia (Koskinen 1972), Melanesia (Chowing 1978) and Borneo (King 1985), but preference is given there to firstborn males. Paiwan practice primogeniture in the most strict sense, that is, without sex specification.

The younger siblings of a chief had no rights to the household property of their natal houses, but the eldest sibling had a social obligation to prepare for his or her younger siblings' marriages. At the time of marriage, these younger siblings, either male or female, had to leave their natal household and marry into their spouses (if the spouses were the firstborns in their households) or establish new households respectively with their spouses (who were non-firstborns) as couples. This pattern of marriage residence does not conform to existing anthropological patterns of residence, because it is neither sex discriminant nor optional. We may label it as "primogenitary" residence.

The political organization of the Paiwan was composed of the chief as the central pivot and the "elders" appointed by the chief, who consulted with some influential villagers. They were chosen not only among the chief's siblings, if any married in the village, but also from among villagers. In some villages, it is said that close kin of the chief were preferred, but generally leadership and personality were more important than ascribed status. Ideal capabilities were listed by the chiefs in the villages I studied as the following: knowledge of ancestral law, personal characteristics commanding great respect by villagers, fluency of speech, fair-mindedness and generosity, and bravery

in headhunting. The number of elders appointed in each village differed from one to several men, presumably according to the size of a village. There was no common name for the office of elders in Paiwan. They were variously called *kalaingan* (leader; head), *vuluvulungan* (elder) or *arasudjan* (those who settle disputes), terms which could be applied respectively to a leader of any kind.

The elders managed intra-village and inter-village politico-jural affairs under the chief's authority to maintain peace. They assumed leadership in intravillage polity, mobilizing villagers for community enterprises such as building a new chief's house (probably once in a few generations), repairing the chief's house, putting up shelves for heads at the chief's house, making or repairing village roads, or doing all sorts of tasks concerned with community feast, or farming for the chief's household. Furthermore, it was the elders' responsibility to collect tribute gifts for the chief and supervise the presentation of the gifts to the villagers.

As for inter-village political concerns, the elders played important roles as deputies. An elder was sent to the chief of aligned villages or to the village involved to find some means for reconciliation in inter-village disputes over hunting grounds or on offenses resulting from headhunting. The other most important inter-village political concern was marriage arrangements between two chiefs' households. The elders of two villages concerned were sent to the village in question for negotiations on the marriage, the bride-wealth, date and so on. Selection of the spouse was first discussed by close relatives of the chief (generally, the chiefs of other villages due to rank endogamy). The elders were always called to such a meeting. After the final decision was made by the parents of the chief, the matter was announced to all villagers. If the parents of the chief were dead the elder made the final

decision.

The elders were usually under subjective of the chief. However, if the unmarried chief lost his or her parents all decisions were made and enforced by the elders or one of the elders under nominal authorization of the chief. Despite their influential power over decision making, the elders received very few economic rewards,<sup>3</sup> and no privilege of wearing cloth or ornaments symbolizing high rank was allowed.

Another office of Paiwan chiefdom was the position of communal priest(s). The communal priests were called *parakalay*, and two, male and female, were appointed by the chief.<sup>4</sup> The common way to appoint a priest was by selection of a proper person from among all villagers, with preference given to the chief's kinsmen, by the chief and village elders. The will of their ancestors' spirits was determined through divination, asking whether this was a correct selection. All communal rituals were organized with the chief's household, the chief's couple, as the nucleus. The rituals for hunting game animals and head-hunting were organized and led by male priests, while the agricultural rituals centered around millet growing by female priests. The priests, too, received small amounts of tribute gifts given to the chief, but in the case of the village elders enjoyed no other privileges.

The chief's power in village polity was ideologically considered absolute, and therefore everyone had to obey his or her orders. Their power was

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3 The earliest report states: "A small portion of *kazulo*, the tribute of agricultural products to the chief, was exempted." (Kojima et. al. 1921:32) Since tribute itself was quantitatively small, then the reward must have had symbolic meanings. According to the information I collected in several villages, five to ten bundles of millet were given to the respective chief.

4 In a few villages, such as Su-Paiwan and Kapiyan, there were several appointed priests. (Kojima et. al. 1922:54-55)

strongly supported by the belief in ritual supremacy of the firstborn of the firstboms, *ta vusam* (one seed), transmitted over generations from the original household. On the other hand, the chief had to observe *sikudakuda* (ancestral law or customary law). He or she, assisted by the elders and priests, could informally tap the opinion of influential villagers in order to reach village concensus.

So far I have treated a village as the political unit, namely chiefdom. Some scholars of Paiwan will argue that this must not be the case in the western villages. The terms of "Federation of villages" and "lord/vassal relationship" were applied to some of the chiefdoms in the west. I agree that such relationships existed only in ideology but not in politics. Such a chief as the lord appears not to have had political power to control his or her vassal chiefs. Here I do not have space to demonstrate my analysis in detail, but will propose that such relationships among chiefs should be examined in terms of marriage, siblingship (the eldest and younger ones), and the main/branch households resulting from building a chief's household, and the political power of great chief over the other chiefs.

An example must be given here (see Fig. 3). Raotsu of the Baborongan Chief Household was the most powerful, influential chief, dominating several neighboring villagers in the west. First, we must understand his superiority over several chiefs in other villages in terms of siblingship and marriage relations. It is not uncommon among Paiwan chiefs to practice the marriage of the eldest of a chief to the eldest of another chief. As a result of this marriage, the chief's household whose eldest married the eldest of another chief's household and moved into the spouse's household was considered to have inferior status in Paiwan ideology, because of elder and younger sibling relations in the two households concerned. This marriage was practiced when

the chief of a small village intended to ask for the protection of the chief of a large village from head-hunting expeditions, establishing an alliance between the chiefdoms. On the other hand, the chief of a large village often desired to have influential power over others chiefs.

The chief's office of the married-out eldest was succeeded by his or her younger sibling as the chief of that village. The villagers considered him or her as the chief of the village. From the perspective of the chief's household who brought in the eldest, however, that chief was a deputy or *pual*, because the land owned by the chief who married in, was then owned by the chiefs as couple. The chief as a deputy was obliged to present some tribute gifts to the superior chief and to entertain the chief when the couple visited the village. The superior chief could exercise some influential power over village polity, but did not have right to punish the chief for any decisions of the inferior chief's village polity.

The Baborongan was very successful in negotiating strategic marriages over several generations as shown in Figure 2. The chief Raotsu had deputies in several villages and was considered the great chief *ka-mazazangilan* (a real chief) in the area. It must be noted that since the marriage within the second cousin degree was prohibited, such an allied relationship was weakened over generations.

As for hereditary ranks, there is some confusions in the previous studies. Paiwan have no distinctive terms for their ranks, except *mazazangilan* for chiefs. The term for chief families (the siblings and cousins of a chief, including some other close kin) used by villagers is *mare-vetjuvetjuk nua mazazangilan* (chief's kinsmen) or *mare-kakakaka nua mazazangilan* (chief's siblings). The two terms were/are used interchangeably. Suenari (1973:63) and Ferrell (1978:387-88) report respectively the terms *talaborongan* (elder

one) or *tja-lalak-an* (younger one). None of these terms are used exclusively for that rank. Therefore, we may name the rank "chief family" for convenience.<sup>5</sup> The term *pualu* reported as a distinctive rank between chief families and commoners by Suenari (ibid.), Ferrell (ibid.) and Shih (1971:84-85) must be a political status, as discussed above. The other rank referred to *naitsu a n'numax* by Wei (1955:106) and *terter* by Shih (ibid.) cannot be precisely identified in my study.

The rank of chief family includes mainly of the siblings and first cousins of a chief. Whether the second or the third cousin of a chief was very ambiguous and subjective, depending largely upon the number of surviving sibling of the present and/or the previous chief of a village and the village size. No chiefdom had the fixed number for the status of this rank. The people who belonged to this rank enjoyed some privileges in terms of special insignia and behavior attached to the chief, but had any hereditary right in the political domain. As mentioned above, however, they might have a chance, compared to the commoners, to be elected as an elder or a priest in the village or to marry a chief in another village and then become chiefs as a couple. The strong tendency to endogamy within the privileged rank has been observed throughout Paiwan society. A distant kinsman of a chief might try to marry a close relative of another chief to re-establish kin ties to the chief. Restoring kin ties is referred to as *tsemekel djamup* or literally "returning blood." Social mobility for a chief family, therefore, was possible only by marrying a chief. The status distinction between the firstborn and

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5 The Paiwan distinguish the household (*ta-umaqan*) from the family (*tastekelan*). The former is a corporate domestic group, and the latter relational, though the conjugal pair is the focus for both. The relational concept of family is extended into larger categories including siblings and cousins, though not indefinitely.

non-firstborn was essential among the Paiwan.

Commoners are referred to by status terms *atitan* or *kakutitan*, with some local phonetic variations. Other terms such as *sikatakalan* or "persons of one village", *tsautsau* or "human beings", *tjalalakan* or "younger ones" are also used, but probably refer to all people who "belong" to the chief of a village. Commoners with exceptional ability or an exceptional personality often had opportunities to marry a chief or a member of a chief family. His or her commoner's origins were always recognized, but such a person could share the privileges associated with his or her spouse. Generally speaking, there seems to have been less competition among the Paiwan for social mobility, traditionally, than is reported for the Maloh of Borneo (King *ibid.*) or for some Polynesian societies (Douglas 1979). This characteristic of the Paiwan may be associated with the rigidly defined hereditary statuses and strong autonomy of a village.

## 2. Economic Dimensions

The Paiwan chief as the firstborn of a chief held title of ownership over his or her territorial lands, including the village site, all cultivated fields, hunting grounds, streams for fishing and so on. The chief, however, did not have the right to dispose of land for his or her personal interest. No private land ownership was found among the Paiwan, but their ownership can be understood in terms of magico-religious land ownership, as pointed out by Mabuchi (1974a:309).

It is common throughout the world that first settlers in frontier areas hold proprietary rights over land and are believed to have magical power to control the fertility of the land. Therefore, those who use the land must offer a tribute gift to the land owner. Mabuchi specifically notes that, among



the Bunun, people vaguely admit that the members of a land owning group (a patrilineal descent group) have a certain kind of innate link with that portion of land their ancestors initially occupied or cultivated. Mabuchi writes: "Presumably, along this line, blessings and curses of the members of the land-owning descent group are thought to result in the good and ill fortune of non-members who exploit the land for either hunting or farming (ibid:290-91).

Paiwan chiefs received two kinds of tributes from their villagers: one was a portion of meat from game animals, slaughtered domestic pigs and some fish caught in his streams; the other a portion of the crops harvested from the fields and any products from the mountains. The former was termed *vadis*, and the latter *kazelo*. The proportions of *vadis* and *kazelo* differed greatly from one village to another in the informant accounts and reported information.

Among the Paiwan, the most important game animals, wild boar and deer, were hunted in communal hunting, which was carried out on ceremonial occasions and sometimes in small-scale group hunting. The portion of *vadis* for deer and wild boar appears to have been well-defined throughout Paiwan villages; the right hind leg in the east or both hind legs and some portion of the liver and intestines. As to other game animals such as water deer, mountain goats, birds or fish, there was no consensus among chiefs interviewed, but the amount of *vadis* seems to have been nominal. It is interesting that deer skins, the most important trade goods, were not taken by the chief but by the hunters. Some portion of meat of a pig slaughtered by a villager's household was also given to the chief. When game animals were chased to and then hunted in another chief's territory, the *vadis* was given to the chief who owned that hunting ground.

The land was not free, as reported in Borneo. Villagers could open land for cultivation only with the permission of their chief. Some households whose labor force was large could cultivate larger farm land. Once the land was cleared for farming, usufruct rights were granted to the persons or households who cleared the land. Any harvest crops from their farming lands had to be give to the chief. However, millet was considered to be the most important crop for *kazelo*. According to Kojima's report, the portion differed from one- fiftieth to one-tenth or 2% from one village to the other in the western areas. My informants assumed that ten to five big sheaves were a proper portion, but they have not heard of any fixed protion.<sup>6</sup> Judging from the ceremonial calender of the Paiwan, a large portion of tribute gifts of millet must have been consumed in communal feasting. Tribute from root crops, vegetables, and forest products appears to have been nominal. In the eastern villages, whenever a villager had a good harvest or extraordinary large crops or large amounts of forest products, some were presented to the chief.

The two kinds of tribute were traditionally institutionalized among the Paiwan. The chief, receiving tributes, could ensure his or her authority through the redistribution of food stuffs to the villagers. On the other hand, the chief was regarded as having responsibility for the welfare of the village and was thought to control, with his or her ancestors, the prosperity of the village. The chief's household, therefore, took care of the single elderly and orphaned children. Guests from other villages were also entertained by the chief's household. Judging from the facts, tribute seems to have little impact

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6 The circumference of a small sheaf of millet was measured by making a circle with the thumb and forefinger of one hand. A big sheaf of millet is measured by making a circle with the thumbs and forefingers of both hands.

on the chief's household economy.

Another kind of tribute collected by chiefs in the western foothill zone must have given economic privileges to the chiefs' households. As Kojima reported (1921:18), the chiefs collected tribute gifts from Chinese who utilized their territorial lands to collect firewood, logs for building, some herb plants, and any other products. This tribute gift was called *tsala*, translated as "savages' tax" in Chinese. The chief's households in these large villages owned large numbers of Chinese pots, iron implements, swords, guns, clothing, and various kind of ornaments, which were undoubtedly acquired from the Chinese. The economic status of these chiefs' households must have been distinctive compared with any other villagers. I assume, however, that such a trade between Paiwan chiefs and Chinese must have been established in the late of Ch'ing dynasty, and therefore did not result in the transformation of political institutions. My assumption is based on a case study of the Baborongan Chief's household, but it is necessary to carry out further historical research. It must be added here that local commoner villagers also engaged in trade with the Chinese and obtained the same items as those of chiefs. However, the quality of the villager's items was not comparable to those in the chief's possession.

Paiwan chiefs did not need to be engaged in farming or hunting individually, though it was not prohibited. Male chiefs usually led communal head-hunting or hunts. Raotsu of the Baborongan, mentioned above, was known for his extraordinary powers in these activities. Female chiefs participated in the communal farming of respective villages, but not in daily farming activities. The farmland of a chief was cultivated mostly by villagers working collectively. Informants stated that farmland of a chief's household was much larger than any other households in the village. Members of chief families

had no rights to mobilize commoners for their subsistence activities, and they worked the same as the commoners.

As mentioned above, the elders, under the chief's authority, mobilized villagers for farming, collecting forest products, for cleaning, and organizing the chief's house. Such work was considered by the villagers as community enterprises for the prosperity of their village. Every chief was regarded as having responsibility for the welfare and the fertility of the village. The hard living of villagers was considered for the chief's responsibility. If a chief failed to fulfill these roles, villagers might even desert the village. Some actual cases of this were stated by elderly villagers during my fieldwork. There is no way to estimate how many days a villager worked for the community, including work for the chief's household per year or per month. I can only assume that the chief could not mobilize the villagers only for the purpose of personal interests. The economic interests between the chief's household and the villagers' did not conflict, and the prosperity of chief household was thought, at the same time, that of villagers.

The most valuable material objects among the Paiwan were heirlooms such as ancient pottery jars, glass beads, bronze dagger handles. They were believed to have been transmitted in a chief's household from generation to generation. The origin of these heirlooms has not yet been identified. There are some arguments among scholars about whether heirlooms were obtained from the Dutch or at a time considerably earlier than the Dutch occupation of Taiwan; or, whether they were brought to Taiwan when the Paiwan migrated to the island in ancient times (Kano 1946:188; Ferrell 1969:41; Miyamoto 1957:308; Chen 1969). The heirlooms, particularly bronze dagger handles and ancient pottery jars were found only in influential chiefs' households, and presumably did not circulate widely among chiefs' households of

the Paiwan. On the other hand, the glass beads were used as money for bride prices or indemnities among chiefs and chief families associated with inter-village politics. The beads were more widely distributed among the Paiwan the Puyuma, and the Rukai. Beads were classified and given distinctive names among these peoples. The most valuable beads were possessed by chiefs' households. The accumulation of these heirlooms was regarded as the symbol of great authority.

The payment of bride wealth between chiefs' households involved transactions of heirlooms. Therefore, negotiations for bride wealth between two chiefs' households involved serious political trickery. As noted above, the Paiwan practiced "primogenitary" residence. Whether a male chief was bringing his wife into his household or marrying out (even though this rarely happened) into his wife's household, whatever the residence, the bride wealth had to be paid from the groom's household to the bride's household. Particularly, when a chief's younger brother of a village married the female chief of another village, the negotiation, concerning which heirloom items must have included, became sensitive political issues. With these most valuable items, the large amount of material wealth obtained by trading and production in the village must be also included. Moreover, if a man of a chief's or chief households married a commoner woman, the bride wealth was not necessary but a commoner male marrying a female chief of a village (which seems to have been not uncommon in my geneological studies) must have given a large amount of valuable material goods in order to compensate for the value of heirloom items. The system of bride wealth payment associated with the ranking system of the Paiwan functioned to regulate the circulation of heirloom items among chiefs' households.

The differences of wealth between the chief's household and the chief

families, as well as the commoners', was not only quantitative but also qualitative. There was not significant wealth difference between chief families and commoners. Traditionally, the rights of Paiwan chiefs were bestowed exclusively to the firstborn of a chief's household, but the chiefs did not belong to the same category as their younger siblings. Therefore, the stratification and ranking of Paiwan society must be understood in terms of status differences, but not class differences as reported in Boneo.

### 3. The Ideological and Ritual Dimensions

Among the Paiwan, the firstborn of any married couple was not distinguished as "eldest" *tjaravuluvulungan*, but instead was given a symbolic designation, *vusam* or "millet seed," which was/is commonly used throughout Paiwan society. *Vusam* is a word meaning grain, generally, but it particularly connotes millet seeds. Millet was the ritual crop par excellence among the Paiwan as well as other native groups in Taiwan. Paiwan agricultural rituals were centered around a series of rituals marking the growth of millet. Traditional Paiwan communal rituals were abolished under Japanese control, because Japanese policemen thought that people lavished food in ceremonial occasions. The post-harvest millet festivals are still common among the people.

A firstborn was regarded as a millet seed having its power of multiplication. A chief is often referred to as *ta-vusam* (one millet seed), and therefore seems to have possessed symbolically magical power to control a good harvest and rich game animals, which were believed to cause the happiness of a household and a village. As the first-born presented millet seed at the time of each marriage of his or her younger siblings, so the chief gave millet seed to the villagers at their marriages in olden days. In return, each house-

hold in the village presented tribute gifts to the chief. just as younger siblings in a household presented gifts to their eldest each year after harvesting millet as reported from the western areas of Paiwan. For each these gifts to the chief, villagers carefully selected the best parts of the harvest of millet, and appropriate parts of game animals, so as to please the spirits controlled by their chief.

The other word *tjalavuluvulungan* for an eldest implies magical power. *Vulung* in Paiwan means not only being old in age, but also venerable or respectable. The word is used for anything which has awesome, supernatural power. The sacred snake can also be termed *vuluvulung*, and is considered to be the ancestor of chief's household in some villages. Smallpox was also called *vuluvulung*, because it was powerful enough to kill many people. As *vusam* and *tjalavuluvulung*, a firstborn was venerable, respected, ritually powerful and potent.

As mentioned earlier, the jural and ritual status difference between the firstborn and non-firstborn siblings regardless of sex was salient among the Paiwan. The importance of parallel and cross-sibling relationships in Oceania has been discussed by many scholars (Mead 1934; Mabuchi 1974a:161-178; Kelley 1977; Marshall et.al. 1981,etc.). However, I have not found any society in which the significance of the eldest to the younger siblings regardless of the sex of the elder has been so prominent.

The chief of a given village was recognized as the direct descendant of the original household (*qapulu*, meaning "tree trunk, stem, origin") in a given village, and held the title of ownership over his or her territorial lands. Among all the varieties of land held by a chief, the hunting grounds seem to have been most important to the Paiwan. This is the reason why any chief's household newly established from the original chief's household often lacked

hunting grounds, and then was not considered a real chief (*ka-mazazangilan*).

In his or her house, the chief was surrounded by objects which signified his or her power. A distinctive feature of a chief's house was not so much its size, but the large attached courtyard with a slate paved platform and a Banyan tree, which served as a meeting place for the villagers. A monument or carving of a human statue and sacred snakes was carved in slate or wood and erected in this courtyard. The Banyan tree signified fertility and seniority and was the monument the original household. Most communal rituals also took place in the courtyard.

The major two posts inside the house were carved human statues, male and female, and the sacred snakes. They were considered as ancestral figures. Wooden posts, walls and lintels were elaborately carved with pictorial motifs of the sacred snake, humans, deer, and other objects. The same motifs were carved on wooden chairs, pillows, cups, spoons, boxes, mortars, millet tubs, knife and sword handles, and tobacco pipes. They were also embroidered on ceremonial dress. All such items were used by the chiefs as a couple.

The heirlooms possessed by chiefs' households were believed to have some magical powers. In some villages, it was believed that villagers were forbidden to see the real heirlooms of the chief's households. When they were taken out of the house for airing and cleaning purposes, the villagers had to stay home, covering the doors and windows of their houses. The heirlooms were believed to enhance the spiritual power of chiefs, who played ritually significant roles in communal rituals with the assistance of priests.

The belief in a chief's power was expressed in the behavior of the villagers. Respect extended to the seating privileges of chiefs. At one time (it has almost been forgotten today) honorific forms of language were used to



address the chief. When the chiefs as a couple travelled to another village, the female chief was carried in a palanquin made of bamboo, guarded by village men. If by accident the head of a chief was hunted, it was believed to have caused unthinkable misfortune for the village in question.

It seems that Paiwan ranking systems were sustained by their cultural ideology and beliefs in magico-religious powers of the firstborn of a chief's household. It has been more than three-quarters of a century since the Paiwan chiefs lost both political leadership and economic privileges. However, villagers often talk about their chiefs with deep awe and respect. The high achievement of the chief's household in the secular society is explained in terms of the manifestation of their spiritual power, and thus proof they are the "real chiefs."

## Concluding Remarks

The analysis of Paiwan ranking systems has made clear that no social class but statues in three vertical ranked strata existed. It also suggests that the primacy of the firstborn regardless of sex is paramount in understanding Paiwan social stratification. In many previous studies, economic and political domains seem to have been overemphasized. The magico-religious power of chiefs justified his or her power in politics.

Paiwan social structure was often thought to be similar to the ramage system in Polynesia. An important contrast to Polynesian societies concerns structural features of the primacy of firstborn, *regardless of sex*. In addition, the conjugal pair as a unit in the Paiwan kinship system differs remarkably from Polynesian societies. In a ramage system, hierarchical rank order exists between chiefs, from paramount chiefs to lesser chiefs, and is defined in

terms of the seniority of descent lines from an ancestral set of brothers. For the Paiwan, this type of system cannot exist for even one generation since both eldest and younger sibling relationships are recognized from the point of view of a conjugal pair as a unit. Sibling ties are recognized by each member of the couple equally: both on the husband's side and father's side, and on the wife's or mother's side. Such pure bilateral recognition does not create either lineage or descent groups. A ramage system, such as that reported by Sahlins (1958) for Polynesia can be organized either ambilineally or unilineally.

The Paiwan perceive superior and inferior relationships in terms of seniority of siblingship, and recognize it equally through both a husband's and wife's siblings. Siblings and their marriages change in the following generation, and therefore the same superior and inferior household relationships do not continue. Instead, the chief's households expand alliances through their sibling ties and their children in each generation. I propose that any understanding of traditional Paiwan chieftainship requires analysis of the historical processes of the expansion of chiefs' households and their siblingship.

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Figure 1 The Process of Fission and Amalgamation in Villages--The Case of Village K.

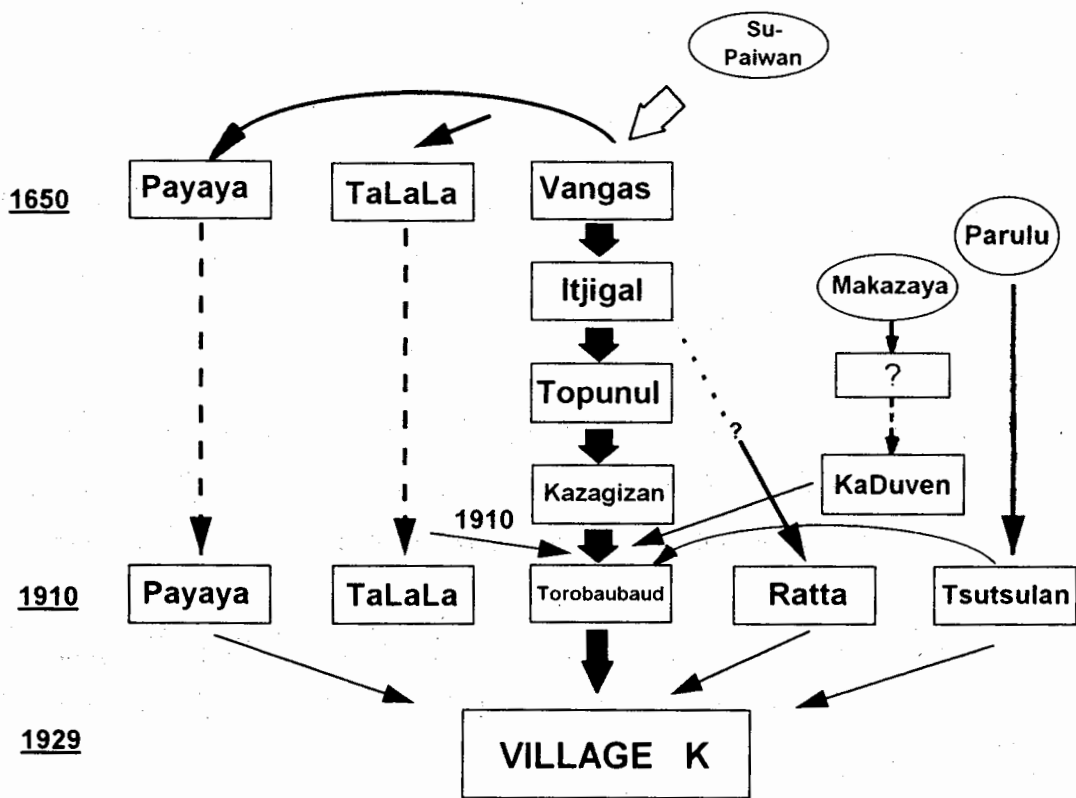
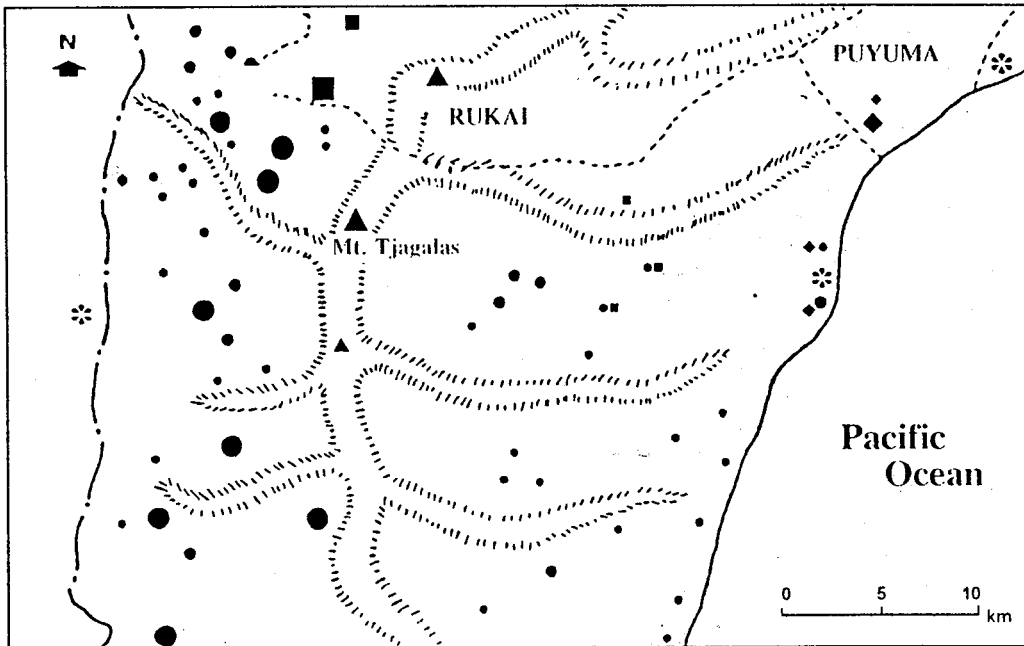


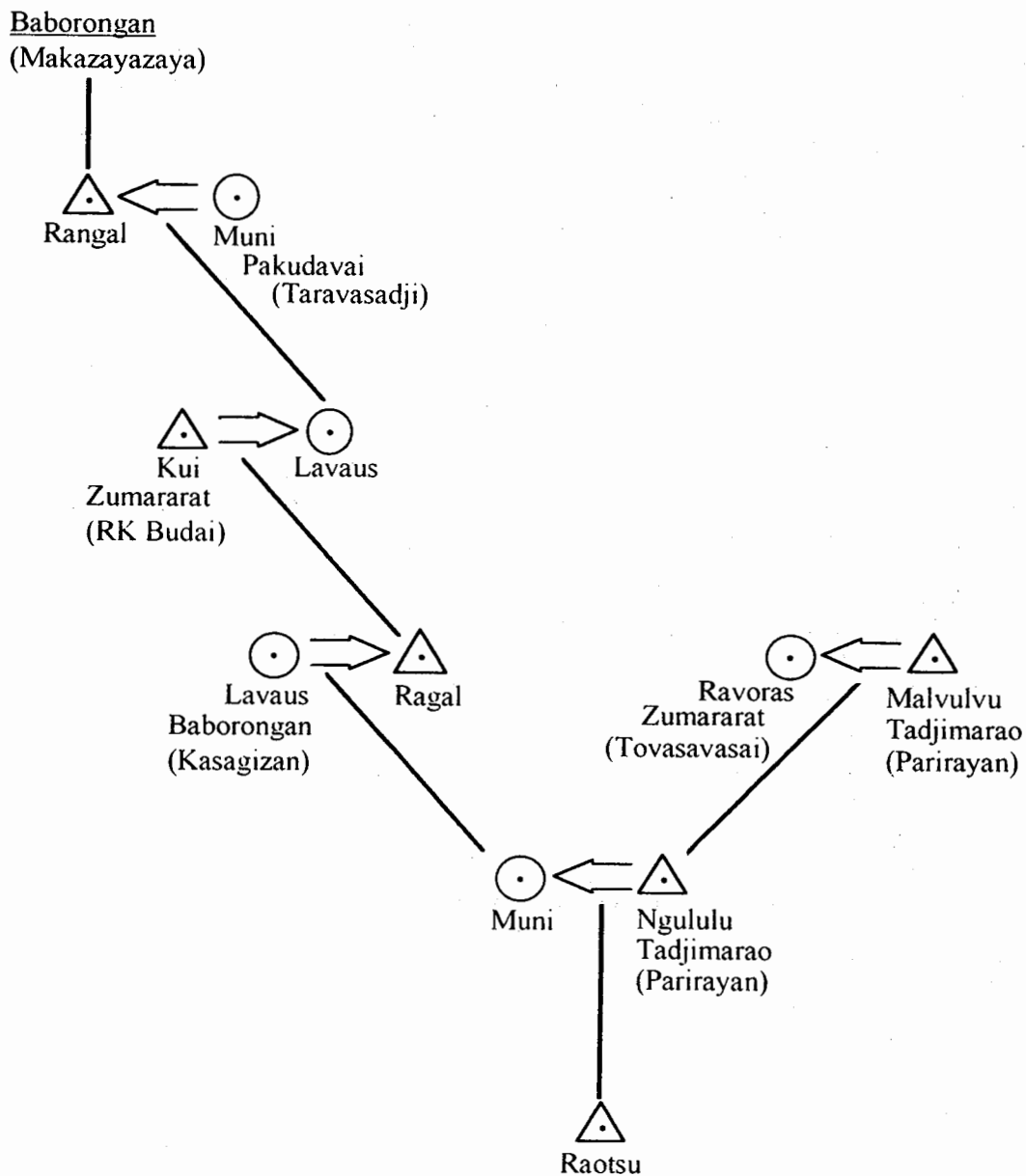
Figure 2 Distribution of Villages by Size in 1929



Geometric Shapes Encode Village Size and Ethnic Distribution

- |  |                   |
|--|-------------------|
| ■ ◆ ● 100 or more Households or more   | ● Paiwan Villages |
| ■ ◆ ● 50~99 or more Households or more | ■ Rukai Villages  |
| ■ ◆ ● 49 or less Households            | ◆ Puyuma Villages |

Figure 3 Amalgamation of Baborohan Chief's Household Through Firstborn Marriages





## **Sinicization and Descent Systems -- The Introduction of Ancestral Tablets among the Puyuma and Saisiyat in Taiwan\***

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This paper discusses how two aboriginal groups in Taiwan adopted the custom of worshipping ancestors by setting up ancestral tablets from their Chinese neighbors based on my field data.<sup>1</sup> It will throw light on the process of culture change among Oceanic groups with different descent system instigated by outside influences.

Two groups were chosen for four reasons. Firstly, I have field data on them. Secondly, they both adopted Chinese culture to a greater extent than any other aboriginal groups except those already sinicised in the last century. Thirdly, the influence of Christianization has been weaker than in other groups,<sup>2</sup> which provides

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1 The data was collected during field research (Dec.1966-June 1968) and a short stay (Feb.1983) survey among the Puyuma at R village, and from short surveys among the Saisiyat (August 1977, March 1983, and Dec. 1991). Major issues and background on the Puyuma are discussed more fully in Suenari (1994).

2 This is based on my field experiences among the Puyuma, the Ami, the Paiwan, the Rukai, and the Saisiyat. For example, one can find many buildings of churches no longer used after the period of distribution of food and clothes by church

a condition favorable for the formation or maintenance of an ancestral cult. Lastly, their descent systems are different from Chinese system. The Puyuma's ambilateral system differs completely from the Chinese patrilineal descent, while the Saisiat's patrilineal system also varies from the Chinese system.

Has sinicization produced an effect at a deep level, wiping away features of their traditional kinship system? Do the Puyuma with bilateral kinship have difficulty in adopting a Chinese patrilineal system, while the Saisiat with a patrilineal system adopt it much more easily and quickly? Has the elastic Oceanian kinship system<sup>3</sup> made adaptation to the Chinese patrilineal system easier?

## The Features of the Cult of Ancestral Tablet

### (1) The Puyuma

The Puyuma are aborigines on the east coast of Taiwan, with a population of six thousand (Suenari 1968: 137). Traditionally they have extended families, daughters remaining in their natal families usually taking husbands from families of the same village. Personal kindred is important in daily life. They also have a cult group whose members are chosen through ambilateral descent. Their age grade system is centered around several men's houses in a

missionaries among the Puyuma and the Saisiat, while churches are still used as religious centers among other ethnic groups. Table 9 shows the flow of the number of worshippers in a Puyuma village.

Table 9. Year of Conversion to Christianity in R village of the Puyuma																	
Year		53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	total
Catholic	whole family			9	1	5	3		1			1		1			21
	a part of family			1	1	4	2		4	1		1				1	15
	total			10	2	9	5		5	1		2		1		1	36
Protestant	whole family	3	2		2	6			1	2	9	8	3			1	37
	a part of family	1	2			1	1	2	1		6	1	1				16
	total	4	4		2	7	1	2	2	2	15	9	4			1	53
Figures refer to numbers of family																	

3 I mean by this that optional factors is frequently found in the tracing one's ancestors or in the free way of adoption.

village.<sup>4</sup>

Living in the plains, they have had more contact with the Han Chinese (both Hokkien and Hakka) since early times, than other aborigines living in mountain areas. Since the Ch'ing dynasty a few Chinese have married into Puyuma families. Even though their descendants have full Puyuma identity, it is such families that introduced ancestral tablets first. However, this influence should not be overestimated, since traditional ways of worship continued intact even among these families. It was after the end of World War II that their traditional culture was shattered drastically. Rapid Christianization was one of the most important factors which weakened their belief system. And the Chinese style ancestral cult became gradually popular with the retreat of Christianity, as seen in Table 1.

TABLE 1. Number of tablets set up among the Puyuma						
year	1940-	1950-	1960-	1970-	1980-	total
tablet(s)	1	1	7	7	2	18
Source:Suenari(1983:135)						

Data on ancestral tablets are listed in Table 2 and Table 3. The analysis will follow in four sections dealing with tablet contents, tablet management, tablet ritual participation, and change.

#### a. Tablet contents

(i) Generation depth is shallow. Most cases go back only one generation, the furthest being to great-grandparents.

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4 Suenari (1983:06) and Chiao (1989) deal with this topic. For other detailed information on the Puyuma social organization, see the reference works listed at the end of this paper. Only Furuno (1945), Mabuchi (1960) and Suenari (1979) describe the Saisyat. An example of tablet cult among the Han Chinese is found in Suenari (1984).

TABLE 2. Relationships between ancestors worshipped in tablets among the Puyuma (1968)						
tablet	generation	"houeselateral" ancestors only		Non "houeselateral" ancestors only		total
		lineal only	collateral included	the adopted	the in-marrying	
one	1	7	2	2	4	15
	2	3	1		3	7
	3	4	1			5
	none	1				1
two	1	4			1	5
	2	2				2
	none	1			2	3
total		22	4	2	10	38
Source:Suenari(1983:119)						

TABLE 3.Relationship of ancestors contained in the tablets of the Puyuma (1983)						
tablet	genera- tion	"houeselateral" ancestors only		Non "houeselateral" ancestors only		total
		lineal only	collateral included	the adopted	the in-marrying	
one	1	9(4)	1(1)			10(5)
	2	12(3)	1			13(3)
	3	1(1)			3	4(1)
	-	3				3
two	1	9(2)		1	1	11(2)
	2	1				1
	3	1				1
	4	1				1
total		37(10)	2(1)	1	4	44(11)
The parenthesis ( ) stands for the newly made tablets during 1968 to 1988. Source:Suenari(1983:135)						

(ii) There is neither a patrilineal nor a matrilineal preference. One quarter of the lists in the tablets are of ancestors of in-marrying members, even though the majority are of ancestors born in the house.

(iii) Some collateral kin (4/38) are also included in the tablets.

(iv) There are a considerable number of tablets for ancestors of the natal families of in-marrying members (10/38).

(v) Some of the descendants have been afflicted with diseases which are thought to be the divine will of their ancestors demanding worship. This pattern of spiritual affliction is usually found in decision of membership of their traditional cult group.

#### b. Tablet management

(i) Basically, a tablet is kept and worshipped by a descendant who remains in her (or his) natal house. Among the Puyuma, daughters are traditionally supposed to marry with in-marrying husbands and the eldest daughter is most likely to remain in her natal house. Actually, in roughly half the cases younger sisters inherit tablets. One reason for a woman to take over the responsibility to keep the tablet is that she has many children.

(ii) An adopted child is regarded as able to keep a tablet, so long as he (or she) inherits property from his (or her) foster parent.

#### c. Tablet ritual participation

(i) Tablets in the natal house tend to be worshipped both by members who remain in their natal house and by those who have left their natal house at marriage or adoption.

(ii) Adopted children have an obligation to worship the ancestors in the house into which they are adopted.

(iii) Inmarrying members participate as a sign of goodwill rather than as an obligation. Therefore, it often happens that the in-marrying members

worship in both households.

(iv) Some go to their natal house in other hamlets to worship their ancestors.

(v) Small offerings are often prepared by the host family and consumed together after the ritual. In some cases, however, the Han Chinese style is adopted, that is, participants bring their own formal set of offerings (san seng, or wu seng) and take them back to their house after the ritual.

d. Changes during the period 1966-1983

(i) There was a considerable increase in households with altars for ancestral tablets (38->44). This reflects the attenuation of the resistance against sinicization.

(ii) The motivation for setting up a new altar was to revere one's ancestors, to ask for their favor and protection, and in some cases, as part of the adoption of the Han Chinese style furnishings.

(iii) There was a considerable decrease in the number of ancestors of natal household worshipped in the tablets (10/38->4/44).

(iv) In spite of a decrease in setting up tablets of ancestors of natal households of in-marrying members (4/38->2/44), there was no sharp change in the practice of setting up more than one tablet. This reflects an increase in making a separate tablet for an in-marrying husband until the death of his wife.

(v) Re-shuffling of memories of ancestors occurs through the passing of generations.

(vi) There are few cases in which a group of ancestors are separated off and listed on a new tablet in a new household, or in which a new copy of a tablet is made for another household.

## (2) The Saisyat

The Saisyat have also adopted the tablet worship system from the neighboring Chinese (mostly the Hakka).<sup>5</sup> They usually put altars at the center of the central room of the house. Under the altar we often find a small altar for the dragon god who is believed to protect the building. In contrast with these strong influences from the neighboring Chinese, one also finds picture or statue of Christian origin often with an incense pot in front of it. The tablets are roughly divided into two kinds: (i) a plane type which one can see the names of ancestors on its surface; and (ii) a box type which contains slits of name wood with no information of individual ancestors on the surface of the box. Even though the Saisyat's contact with the Han Chinese was initiated early and tense because of their location, their adoption of ancestral tablets did not begin early as we can see in table 4.

TABLE 4. Number of tablets set up among the Saisyat

year	-1950	1950-	1960-	1970-	1980-	1990-	total
tablet(s)	1	1	4	9	4	1	20
*This table contains only those in which the year of setting up is clear.							

Data on ancestral tablets is listed in Tables 5,6,7. The analysis will follow in sections of contents, management, cult and change.

### a. Tablet contents

(i) Generational depth is shallow, mostly going back only one or two generations, the furthest being to great-grand parents.

(ii) All ancestors in the tablets are related by patrilineal ties with the ego.

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5 In 1930's a researcher wrote, "the Saisyat lost most of their own culture and many imitate the customs of the Han Chinese. (Utushikawa 1:99)

TABLE 5. Relationship of ancestors contained in the tablets of the Saisyat (1977)

genera- tion	"houeselateral" ancestors only		Non "houeselateral" ancestors only		total
	lineal only	collateral included	the adopted	the in-marrying	
0	1				1
1		1			1
2	1	2			3
3	1	1			2
total	3	4	0	0	7

TABLE 6. Relationship of ancestors contained in the tablets of the Saisyat (1983)

genera- tion	"houeselateral" ancestors only		Non "houeselateral" ancestors only		total
	lineal only	collateral included	the adopted	the in-marrying	
0	3	4			7
2	1				1
3		1			1
total	4	5	0	0	9

TABLE 7. Relationship of ancestors contained in the tablets of the Saisyat (1991)

genera- tion	"houeselateral" ancestors only		Non "houeselateral" ancestors only		total
	lineal only	collateral included	the adopted	the in-marrying	
0	1				1
1	4	1			5
2	6	3			9
3	1				1
total	12	4	0	0	16



(iii) There are a considerable number of names in the tablets for collateral kin without offspring or for unmarried children (13/32).

(iv) All ancestors on the tablet are those of people born in the house. Except among mixed households involving Hakka, there are no separate tablets for ancestors of the natal families of in-marrying members.

(v) An ancestor's demand to be worshipped may be a cause for setting up a tablet.

b. Tablet management

(i) A tablet is kept and worshipped by a patrilineal descendant who remains in his (or her) natal house. In some cases, the tablet is taken over by one who is well off and has many children.

(ii) Adopted sons worship tablets of foster parents, even though they are not related by blood.

c. Tablet ritual participation

(i) One participates in ancestral cults at the household where one's brother or other close kin keeps the tablet.

(ii) Adopted children worship their foster parents in the same way as real children do.

(iii) In-marrying members worship at the homes of the families into which they have married. They do not participate in rituals at their natal household.

(iv) Sometimes members of different hamlets gather to participate in the ancestral cult.

(v) They bring offerings, part of which are consumed together by participants, while the rest are taken home back.

d. Changes during the period 1977-1991

(i) There was a considerable increase in households with altars for ances-

tral tablets. Even some of the Catholics set up altars with pictures of Jesus Christ.

(ii) The motivation of setting up a new altar is to revere one's ancestors, to ask their favor and protection, and in some cases, a desire to adopt Chinese style rituals by the younger generation.

(iii) There was a considerable decrease in the number of ancestors commemorated {5.4(1977)-> 3.7(1983,1991)}.

(iv) Tablets with collateral names decreased {4/7 (1977)->5/9 (1983)->4/16 (1991)}, but the number of collateral ancestors in the tablets has not decreased {6/10(1977)->8/9(1983) ->14/16(1991)}.

(v) Shallow generational depth has continued. Reshuffling of memories of ancestors occurs through the passing of generations.

(vi) There are a few cases in which a group of ancestors are separated and listed on a new tablet in new household.

## Introduction of the Ancestral Tablet and Descent System

How are these features related to the traditional descent system? The Puyuma chose members of a *karuma'an* group on an ambilineal principle. This type of descent group was not as important in daily life as the personal kindred, since it included only a part of population and one person could belong to more than a single group. The introduction of the Chinese-style ancestral tablet is not a complete replacement of the traditional system but the addition of a new element. Even though this new element took on a Chinese style in appearance,<sup>6</sup> the contents reflects their traditional descent

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6 Chiao Chien (1989:121-132) concludes from his research in the same village of the Puyuma as mine that the villagers' mode of ambilineal affiliation of the

system. Since the ancestral tablet was introduced primarily as a custom at the domestic level, filiation is more stressed than descent. During the initial period the Chinese unilateral way of tracing back the ancestors was almost ignored and the Puyuma traditional optional principle was applied. Gradually the bilateral tendency changed to a unilateral one. We should notice, however, this is not patrilineal, but "house-lateral".<sup>7</sup> I use this new term for a mode of filiation by which a child chooses the parent who remains in his or her natal household, irrespective of the sex of the parent.

The descent system of the Saisyat is patrilineal, but they have no full-fledged form of segmentary patrilineage such as the Han Chinese, or the Tsou and the Bunun in the central highlands of Taiwan. The Han Chinese have the possibility of forming a lineage tracing ancestors back to more than ten generations. The patrilineal group of the Saisyat is not composed by tracing their descent from remote founding ancestors, but through the accumulation of filial ties. Their solidarity is strengthened by territorial ties from living in the same hamlet. They have poor genealogical knowledge of ascending ancestors, usually three generations at most.<sup>8</sup> This patrilineal group

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karuma'an group has changed to a system of bilateral ascription on ancestral tablets. Though the usage of terms is not the same as mine, this refers to the same phenomenon.

- 7 This concept is convenient and necessary for societies where descent is not decided by the sex of parent but by the residence of parent, or where the locality of birth is important. Japan, the Paiwan, the Ami in Taiwan, or the the Iban might be taken as examples of such a society.
- 8 Their weak interest in tracing back to a remote ancestor might not be a recent phenomenon, judging from the following data. Six out of eight genealogies of the Saisyat in Utsushikawa (2:60-61), go back only two or three generations. The two other cases are rather special, tracing only the direct lines, even though they record ancestors in the 11th and in 14th generations respectively. These are in contrast with full-fledged genealogies of other patrilineal societies such as the Chinese or the Tsou and the Bunun in Taiwan. They make no distinctions in their kinship terminology between patrilineal kin and matrilineal kin.

TABLE 8. Features of ancestral tablet systems in three ethnic groups in Taiwan			
	Puyuma	Saisyat	Han Chinese
<b>a. TABLET CONTENTS</b>			
generation depth	1-3	1-3	1-
collateral (without descendants)	a few	some	few
relatives of inmarrying members	some	none	none
tablet of natal house	some	none	rare
<b>b. TABLET MANAGEMENT</b>			
responsibility	one child	one child	sons equally
joint property	none	none	often
<b>c. TABLET RITUAL PARTICIPATION</b>			
at natal house	some	none	none
divine will	some	few	none
descent group	ambilateral	patrilineal truncated type	patrilineal segmentary type
correlation with ancestral tablets	few	none	close
worship by descent group	held separately	held separately	held jointly

of a truncated type is also in contrast with the Han Chinese lineage in that the cohesion of the patrilineal group is derived more from sharing supernatural beliefs of common welfare and taboos than from sharing common property or secular activities. It also contrasts with the Han Chinese in the incorporation of in-marrying members. Among the Saisyat a bride is also supposed to become a member of her husband's family after marriage, but she may return to her natal family if she is divorced or her husband dies. Among the Chinese a bride is ideally supposed to remain in her husband's house for ever, and to be commemorated by her sons after her death. The spiritual tie of out-married daughters to their natal families is stronger and more active among the Saisyat, as is seen in the ritual of visiting their natal family, while the role and status of the mother's brother is more formal among the Chinese. These difference are reflected in the introduction of the ancestral tablet system among the Saisyat. Though only patrilineal ancestors are worshipped, they are limited to close kin within a few generations. We can find no segmental ramification of lineages, and reshuffling seems to prevent the accumulation of ancestors through the passage of the generations. These are features distinct from the system of their Han Chinese neighbors. Therefore, we may say that the case of Saisyat represents also an addition of the tablet custom of the Chinese, but with a different content.

### Comparison with Sinicized Aborigines

Based on these data and the following cases of sinicized aborigines, we might predict how far sincization would affect tablet systems among the aborigines of Taiwan.

Shimizu's study (1991:209-320) shows another type of sinicization of a

bilateral society. The Kuvalan, a sinicized aboriginal group living on the east coast of Taiwan, have a traditional cult of the ancestors, the palilin ritual held on their new year's day. This ritual is to feed the ancestors who are traced from the ego bilaterally. Participants include the family (or a group of a few families in the case of the Turubiawan). Even though they have been classified as sinicized aborigines since the initial period of Japanese control, they seem to be even slower in the adoption of Chinese-style ancestral tablets than the Saisyat or the Puyuma, who are non-sinicized aborigines. Only one-fifth of the households have Chinese-style altars for gods and ancestors, and only one-tenth (8/70) have ancestral tablets. Shimizu (1991:318) considers that the lack of the factor of inheritance in their ancestor worship is the reason for the slow introduction of the tablet system. The factor of inheritance is firmly associated with ancestor worship among the Chinese. Shimizu (1991) suggests that the Kuvalan found little meaning in making tablets limiting their worship to only a part of their ancestors, since they could worship all of their ancestors in their traditional rituals. The increase of tablets among the Puyuma might suggest, Shimizu (1991) infers, that their traditional ideas of ancestor worship had something to do with inheritance even though it might not be exactly the same as the Chinese case.

Among the Puyuma, the Saisyat and the Kuvalan, the adoption of Chinese-style tablet is not a simple replacement of, nor an intrinsic change of their own traditions, but an addition to their systems with little structural change. If they were to change the contents of their own ideas of descent, this would occur rather suddenly among those individuals who live among the Chinese and have acquired a full-fledged knowledge of the Chinese system, with little interest in the maintenance of their own culture. This seems to be the case among the mixed families of Puli aborigines, where

Chinese ancestors are worshipped by their descendants at the side of the compound strictly in the Chinese way. (Suzuki 1987:223) In this sense, the rapid change of life styles among aboriginal youth living in areas isolated from their home villages seems to be one of the important factors behind such a radical change. The ancestral tablets in their newly-built houses might be little influenced by their traditional culture because of their decreasing knowledge and interest. Also the tablets might not be similar to those of the Han Chinese because of their limited knowledge and experience, but might represent a better starting point for sinicization than one in their home village.

In summary my major points are as follows:

1. The Puyuma still retain their traditional descent systems , that is the ambilateral principle of tracing their ancestors, in spite of the apparent tendencies towards sinicization. The influence of the patrilineal system of the Chinese remains only on the surface level.

2. The Saisyat might have more easily adopted the Chinese tablets system, since their traditional descent was also patrilineal. But a closer look at the process of adoption suggests the conservation of some of their own principles. They do not seem to have switched their patrilineal system to that of the Chinese, even though the sinicization process has been much more radical than among the Puyuma.

3. The cases of the Kuvalan and Puli suggest that degrees of "sinicization" in a general sense is not necessarily related to the degree of introduction of the Chinese tablet system. While among Han Chinese an ancestral tablet has both functions as a means of commemoration and of worship, among the Puyuma and Saisyat ancestors are not so much a symbol of manip-

ulation for group cohesion but an object for commemoration by close descendants.

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## Taiwan Strait Archaeology and Proto-Austronesian

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The significance of Taiwan archaeology in the issue of the origins of the protoaustronesians comes in large part from the apparent continuity from the prehistoric cultures of the island to its modern-day Austronesian inhabitants. This paper examines the pertinent archaeological data from southeastern coastal Chinese mainland -- that is, from the western side of the Strait across from Taiwan -- and discusses their similarities to and differences from the Taiwanese data and their possible bearing on the issue of the protoaustronesians.

In combining archaeology with linguistics to identify and characterize the homeland and the ancestral culture of the Austronesians, there is a general approach and a Taiwan approach. In the general approach, we reconstruct an ancestral language--in this case the Proto-Austronesian--and, using its vocabulary as a base, we characterize a culture of its speakers, and then we look among the archaeological cultures in the presumed area of the language's origin--in this case the coastal regions of East and Southeast Asia--and see which one or ones most closely resemble the reconstructed culture. There have been a number of productive attempts at using this general approach (Kern 1889; Grace 1961; Dyen 1971; Pawley and Green 1973; Blust 1976, 1988; Bellwood 1979, 1983, 1991; J.K.Li 1991). The current limitations of this approach lie in the inadequacies of the archaeological record. The overwhelming majority of the "culture traits" of the reconstructed protolan-

guage consists of specific plants, land animals, reptiles, fishes, crustaceans, insects, and mollusks. Unfortunately, retrieval techniques used by Chinese and Southeast Asian archaeologists are not yet refined enough to recover an adequate range of zooarchaeological and palaeobotanical remains. Only a small handful of the reconstructed plant and animal species have been found to occur in the known archaeological assemblages within the regions of interest to us, and these can hardly manifest a clear pattern. In the reconstructed culture there are only a few general items from the material life of the people, and these are mostly made of perishable materials--wood, rattan, hemp-fabrics, plant fibers, plant poison, and the like--that are not easily recovered archaeologically. Pottery and iron are named by some linguists, who nevertheless have had no way to give us more specifics, such as formal or decorative modes and types, to enable any discriminate identification. Undoubtedly the day will come when more sites and more well-preserved sites are dug, and when sophisticated retrieval techniques are employed, which will disclose a wider variety of specific archaeological "traits" to effect a better fit between archaeological culture and reconstructed language, but we cannot be certain when this will occur, and even then we cannot be sure we will know enough. (On the relative merits of archaeology and linguistics in this issue, see the different opinion in Bellwood 1988 and Meacham 1988).

The Taiwan approach, which does not exclude the concurrent use of the general approach but does not depend upon it, is to determine the earliest archaeological culture that was ancestral to the modern Austronesian-speaking aborigines in Taiwan, and to look for any occurrence of that culture--or of a culture or cultures closely similar to it--outside Taiwan, presumably somewhere along the southeastern coasts of China and Indochina. The use of this

approach is only beginning (Chang 1987, 1989; Tsang 1989), but it can be attempted at all only because of recent archaeological work in the province of Fujian, across the Taiwan Strait.

The Taiwan approach is based on a simple logical reasoning, as follows: Taiwan is an island, and its inhabitants are well confined and defined. Unless large-scale population dislocations are demonstrated in their past, the modern aborigines apparently have descended from ancient populations on the island, whose remains constitute at least a part of the island's archaeological record. Thus, we first make an effort to push the archaeological continuum back in time as far as available data permit, and the earliest archaeological culture or cultures we can reach within this continuum can be assumed to manifest the culture of a people or peoples who spoke a language or languages that are ancestral to the languages of the modern aborigines, namely, Proto-Austronesian. The geographical distribution of this culture or these cultures, outside Taiwan as well as inside, is, thus, apparently indicative of the Proto-Austronesian homeland.

To apply the Taiwan approach, we need to do two things: First, we need to establish a cultural continuum, whose end product is the modern Austronesian-speaking peoples of the island, and to determine the earliest identifiable culture or cultures. Second, we need to examine contemporary archaeological cultures beyond but adjacent to Taiwan to determine if the geographical scope of the culture or cultures so identified can be extended beyond Taiwan, which is to say if the Proto-Austronesian homeland had extended beyond Taiwan.

The issue of the cultural continuum within Taiwan prehistory is a major topic of study in the archaeology of the island, and a detailed discussion of it will not be intended here. If we use the crucial date of 2500 B.C. to

divide Taiwan prehistory into two segments, as is allowed by our current scheme of cultural classification and chronology (Chang et al 1969; Sung 1980), then Taiwan prehistory comprises two major chronological horizons after the appearance of pottery, namely, Dapenkeng and Longshanoid-Post-longshanoid. That cultural continuity can be pushed back from the ethnographical present to the beginning of the Longshanoid horizon in Taiwan is not in serious dispute (Chang et al 1969: 240-247; Tsang 1990: 7-9). The crucial question is whether cultural continuity can be pushed further back to include Dapenkeng within the scope of the Proto-Austronesian.

In the 1960s when the Dapenkeng Culture was beginning to be established as the most ancient island-wide horizon of ceramic cultures, the two most important sites of this culture were Dapenkeng in the north and Fengbitou in the south (Chang et al 1969). At both sites the Dapenkeng stratum was clearly separated stratigraphically from the subsequent cultures, Yuanshan in the north and Longshanoid in the south. A sterile layer of andesite rocks further separates Dapenkeng from Yuanshan at the Dapenkeng site. Furthermore, a comparison between the Longshanoid culture, with its rich inventory of polished stone implements--many for grain farming, including the polished stone harvesting knife--and fine, polished red pottery with tripods and pedestals, and the earlier Dapenkeng, with its few lithic types (no knives) and coarse cord-marked pottery, led to the hypothesis that the Longshanoid culture was that of immigrating populations from across the Taiwan Strait, where similar lithic and ceramic types were found in abundance in comparable time periods (Chang et al 1969). This view of island-wide Dapenkeng-Longshanoid discontinuity came under questioning in the 1970s as the result of new archaeological discoveries. From the extensive research under the Zhuoshui-Dadu River Valleys Interdisciplinary Project of 1971-75



(Chang ed 1977), pottery of the Dapenkeng Culture was brought to light in the coastal area of central Taiwan, where it was difficult to distinguish the pieces stratigraphically from Longshanoid pottery of the fine, red phase. At the Niumatou site, "the presence of a limited number of specific elements of affinity with the [Dapenkeng] culture of northern Taiwan is confirmed as being limited to the earliest levels of the site ... [Those] deposits bear a much stronger affinity with the Level II [Longshanoid] Phase materials than they do with the materials from the [DPK] Corded Culture" (Dewar 158-159). Exactly the same phenomenon was observed at the southern Taiwan Kending site, excavated in 1977, which led K. C. Li to conclude that Kending, a type site of the early Longshanoid culture in southwestern coastal Taiwan, was a "continuing community" or a "persistent development" from the previous Dapenkeng Culture (K.C.Li 1983). The current consensus is that the Longshanoid Cultures in Taiwan were indigenous growths from the Dapenkeng stratum, although they may have received a vast amount of cultural infusion as the result of interaction or contact with the Longshanoid cultures on the Chinese mainland (Tsang 1990, Chang 1989). Consequently, the aforementioned cultural continuity could now be pushed back to the Dapenkeng Culture. The crucial next step in the Taiwan approach to the search for the Proto-Austronesian homeland is, then, to seek to delineate the geographical scope of the Dapenkeng and closely related cultures.

Based on its three most important sites, Dapenkeng, Fengbitou, and Bajiacun--the last in Guiren district, Tainan prefecture (Huang 1974)--Taiwan's Dapenkeng Culture can be characterized, in brief, as follows (cf. Chang 1970):

(1) Sites of this culture are found scattered along the coastal areas of Taiwan, on marine or estuary terraces for the most part. The only

radiocarbon date available from this culture (SI-1229: 5480±30, based on the 5568 half-life) places it close to 4000 B.C. after tree-ring calibration. Since the subsequent Longshanoid Cultures began around 2500 B.C., and since we have agreed that Dapenkeng grew into the Longshanoid upon outside impact, 2500 B.C. can be used as the upper limit of Dapenkeng, and its lower limit cannot be later than 4000 B.C.

(2) Pottery. Fragile and heavily eroded, potsherds of Dapenkeng are usually fragmentary, thick, and gritty. The color ranges from creamy buff to dark brown, and the principal types of the vessels are large globular jars and bowls. Low and perforated ring feet are often found attached to the bottoms of the jars. The rims have medium flare, and many have a circumferential ridge below the lip. The entire body of the vessel is invariably impressed with cord marks, probably applied with a cord-wrapped stick or paddle, but the rim is never so impressed. The rim surfaces and frequently the upper part of the shoulder are decorated with incised designs composed of wavy lines and short parallel strokes, applied with a comb. At the Bajiacun site, the only Dapenkeng site in Taiwan where an extensive shellmound was found, some of the sherds were impressed with the external surface or the edge of molluscan shells, probably shells of *Anadara granosa* (Fig. 1). Objects of clay of similar paste include spindle-whorls and pot-supports.

(3) Pecked pebbles. Only a small number of stone types are known to be associated with the cord-marked pottery; among them, worked pebbles are the most common. These are natural river pebbles, at most 20 cm across, with pecked and flaked ends, sides, or circumferences, or all three. They were probably used as net sinkers.

(4) Bark beater. A fragment of stone bark beater with a polished and grooved surface was discovered from the Dapenkeng stratum of Yuanshan

shellmound in 1953 (Chang 1954).

(5) Stone adzes. Most of the adzes, of a variety of rocks, are highly polished, asymmetrical of edge, and rectangular in cross section. A few have two small notches or depressions on a side, reminiscent of the "steps" of the stepped adzes in the later Yuanshan assemblages.

(6) Points. Small (ca. 4 cm long) points of greenish slate are often found. They are invariably thin, flat, triangular, and perforated at the center.

The archaeological inventory of the Dapenkeng Culture is still very limited, due to the small number of sites excavated and the small size of the excavated assemblages, but it is sufficient to serve as a standard against which archaeological assemblages outside Taiwan could be compared and their affinity determined.

The first archaeological assemblage from the provinces across the Formosa Strait from Taiwan (Fujian, eastern Guangdong, and southern Zhejiang) dating from before 2500 B.C. came to light in 1968, when Taiwan geologist Lin Ch'ao-ch'i dug a single test pit into a shellmound called Fuguodun (originally Oukedun, or Mound of Oyster Shells), on Jinmen Island off southern Fujian. This pit yielded a number of potsherds, a few stone artifacts, and many molluscan shells and animal bones (Lin 1970, 1973). Three radiocarbon dates were obtained from this site: NTU-63: 5460 $\pm$ 320, NTU-64: 5800 $\pm$ 340, NTU-65: 6310 $\pm$ 370. These place the site in the fifth millennium B.C., within the range of the Dapenkeng Culture of Taiwan. Because the assemblage is so small and the sherds are fragmentary, the only defining feature manifested concerns the surface treatment of the pottery. Cord-marking is characteristically present, but the more conspicuous designs were those that were combed with the edge of shells, probably those of *Anadara granosa* (Fig. 2). In 1977, in *Asian Perspectives*, I brought attention

to the Fuguodun assemblage and referred to its pottery as a "new prehistoric ceramic style" (Chang 1977). After pointing out the common ceramic features shared by Dapenkeng of Taiwan and Fuguodun of Fujian, I raised the question, "Are the [Dapenkeng] and [Fuguodun] ceramic styles two ceramic variants of a single culture, or do they represent different cultures altogether?" (Chang 1977: 181). During the one and a half decades since that question was posed, archaeological assemblages of comparable age and comparable ceramic typology have been identified up and down the Fujian and Guangdong coast (Fig. 3), providing additional evidence for the exploration of the all-important issue pertaining to the geographic scope of the Dapenkeng Culture. A brief description of the principal archaeological sites on the mainland coast is given below, from north to south:

(1) Xitou village, Baisha commune, Minhou county, Fujian. The Neolithic site near Xitou village, on the northern bank of the Min River, near its mouth, was discovered as early as 1954, but it was not excavated until 1975 and 1978. Two cultural strata are recognized at the site, the upper stratum, containing pottery of the Tanshishan type, which as of now marks an early stage of the Longshanoid horizon in northern Fujian, and the lower stratum, characterized by pottery with impressed cross-hatches together with "a small amount of gritty pottery neck sherds decorated with rows of comb designs and shell-edge tooth patterns, which had not been seen heretofore but similar to the Fuguodun pottery of Jinmen" (Fujian Provincial Museum 1984; Wang et al 1983) (Fig. 4). The stratigraphical position of the combed pottery at Xitou is important, but quite possibly the potsherds of this type were intrusive into the lower stratum of the site from an even earlier time period.

(2) Keqiutou, Pingtan county, Fujian. Pingtan county is an island off

the Fujian coast, on which several Neolithic sites with Fuguodun type pottery have been located. The most important of these sites is Keqiutou, or Terrace of Shells, on a low terrace (5 m above sea level) at the foothills about 5 km from the present seacoast; it was excavated during a four-month period from the fall of 1985 to the spring of 1986 (Fujian Provincial Museum 1991). The largest of all known sites of this culture, Keqiutou has yielded twenty-one shellmound-garbage pits, a disturbed human burial, more than 200 artifacts of stone, bone, jade, shell, and pottery, and a huge quantity of potsherds. Three radiocarbon dates from the site have been reported: ZK-2336: 4565±100, ZK-2337: 4610±90, and ZK-2338: 4555±105. These dates place the Keqiutou site close to 3000 B.C., near the later end of the Dapenkeng time range (Laboratory of the Institute of Archaeology 1990: 665-666).

The Keqiutou stone types include most of the characteristic Dapenkeng types described earlier: worked pebbles, polished adzes, and points with central perforations (described in the report as knives). There are a number of chipped adzes, choppers, and scrapers at Keqiutou; similar artifacts have also been seen at Dapenkeng. But so far no tapa-beaters are reported at Keqiutou, and the type of mortar-pestle set found there has not yet turned up in Taiwan. The lithic types of Fujian and Taiwan clearly shows that they are comparable and quite similar, indicative of hunting, fishing, wood-working, and possibly some earth-digging activities, which are consistent with the yields of animal bones and molluscan shells on both sides of the Taiwan Strait.

In pottery the Keqiutou assemblage closely resembles Dapenkeng, but exhibits a greater range and variety of designs (Figs. 5 and 6). "Most of the sherds are sandy or gritty, accounting for over 90 per cent of the finds. . .

The color is highly heterogenous, and most vessels are not uniform in color. In general, gray, grayish-yellow, black, and red colors are seen most often, with about half of the sherds being gray. . . . Many of the gritty sherds were tempered with sands and shell powders. The firing temperature was in general low, the paste thick and fragile" (Fujian Provincial Museum 1991: 593). The decorative designs were paddled, impressed, incised, dotted, and punctated. Among the paddled sherds most were corded, but most corded surfaces were smoothed over while wet. The impressed patterns were executed with the edge of molluscan shells. Whole and reconstructible vessels and artifacts are few and include such types as globular jars, urns, pot supports, bowls, ring-footed bowls, and spindle-whorls. Both the varieties of decorative designs and the vessel morphology parallel those of Dapenkeng, although many more shell (comb) impressed samples are seen in Fujian than in Taiwan. The carinated rims of some of the Keqiutou vessels have not been seen in Taiwan, and find affinities in the Hemudu Culture of northern Zhejiang. (Figs. 4-6)

(3) Fuguodun site, Jinmen, Fujian. This site has already been described and discussed. (Fig. 2)

(4) Chenqiao, Chao'an county, eastern Guangdong. A shellmound site was found in the late 1950s at Chenqiao in Chao'an on the coast of eastern Guangdong. The brief report spoke of potsherds "decorated with shell-incised designs", which were "dissimilar with the usual Neolithic sites of Guangdong and adjacent areas" (CRM of Guangdong 1961).

(5) SON, Haifeng, eastern Guangdong. The combed pottery was first recognized at Fuguodun, but similar pottery had been brought to light long before by Rafael Maglioni in the Haifeng (Hoifung) district of eastern Guangdong in the 1930s. Father Maglioni's earlier published works contained

descriptions of a SON site, but it was not until 1975, when his major monograph, with illustrations, was published posthumously by the Hong Kong Archaeological Society, that detailed information about the site became available. According to his description, "a typical pottery common to SON and rare elsewhere is the 'combed pottery'; it is thin, sand-mixed, of reddish colour, and on the smooth or corded surface has irregular and wavy lines, evidently incised with a comb-like instrument. . . But the most characteristic pottery of SON is a black sand-mixed type, with a smooth surface and free-hand incised ornaments on the neck and sometimes also below the neck. . . . The incisions are very shallow, of fine, regular and delicate work, and seem to have been made with sharp points, combs, and shells, only on the rims and shoulders of the vessels" (Maglioni 1975: 32). No excavations were conducted at the site and associated lithic and other industries are unclear. But undoubtedly the SON pottery assemblage contains the same mixture of cord-marked and shell-combed varieties of the other Dapenkeng sites.

There are other coastal sites that have been brought to light and sketchily reported that may very well be classifiable in the Dapenkeng and related cultures category (cf. Dai 1989); but the above information suffices to delineate the geographical scope of a distinctive group of contemporary and closely similar archaeological assemblages--that include the Dapenkeng Culture of Taiwan--as being the coastal areas of Taiwan and its adjacent mainland provinces of Fujian and eastern Guangdong. These assemblages were left by a coastal people whose life apparently was focused upon marine, estuarine, and foothill resources during the several millennia before 2500 B.C. The material culture of this people is--as yet very inadequately--represented by a small inventory of lithic artifacts and pottery vessels; but this inventory will surely be expanded by continued archaeological work in the

coming years, both in Taiwan and on the mainland. Even on the basis of the few data that are available, we already are certain that the people in question sustained themselves by fishing, hunting, molluscan-shellfish collecting, and possibly some gardening or at least the use of some grains (as attested to by the mortars-and-pestles of Keqiutou), and that they made important use of plant fibers and barks, for uses including spinning and, presumably, weaving. For the reason stated earlier, one may be justified in believing that this people of the Taiwan Strait was among the ancestors of the modern Austronesians in Taiwan and beyond.

Now that, using the Taiwan approach, we have determined, preliminarily, the geographical scope of the Proto-Austronesians and their culture, we may come back to linguistics and compare our archaeological inventory--meager as it is--with the reconstructed Proto-Austronesian culture according to linguistic evidence. I shall not attempt here to make item-by-item comparisons with the various reconstructed lists, since these lists are all familiar. It is enough to note that the archaeological culture arrived at by the Taiwan approach does not contradict the historical-linguistic reconstructions of PAN. In fact, archaeology and linguistics are found to reinforce each other significantly. Among the linguistic reconstructions, the latest effort by J. K. Li (1991) is particularly striking in its coincidence with the archaeological prehistory of the Taiwan Strait. The next question is this: What will further research pertaining to the archaeological origins of the Dapenkeng and related cultures of the Taiwan Strait--already a major topic for South Chinese archaeology--mean to the issue of the even more remote Proto-Austronesians?



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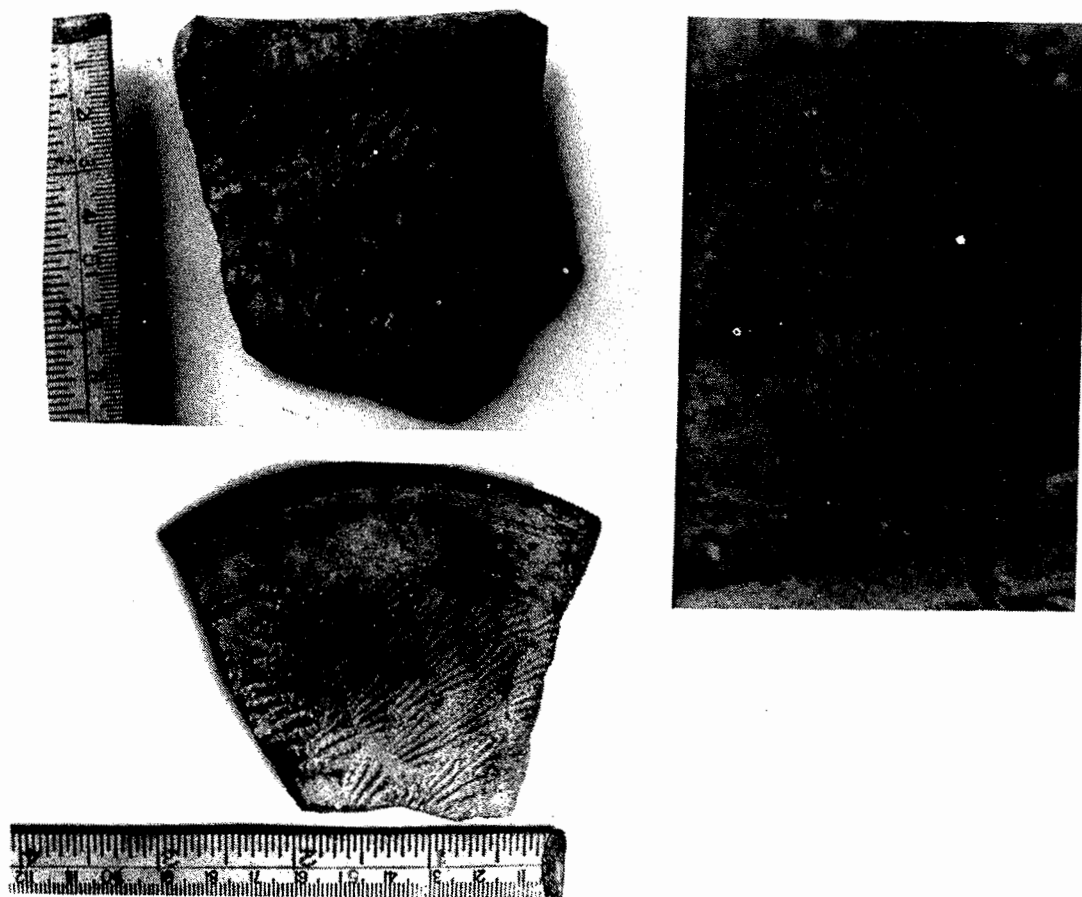


Fig. 1. Bajiacun potsherds. (Collection of the Department of Anthropology, National Taiwan University. Photo by author).

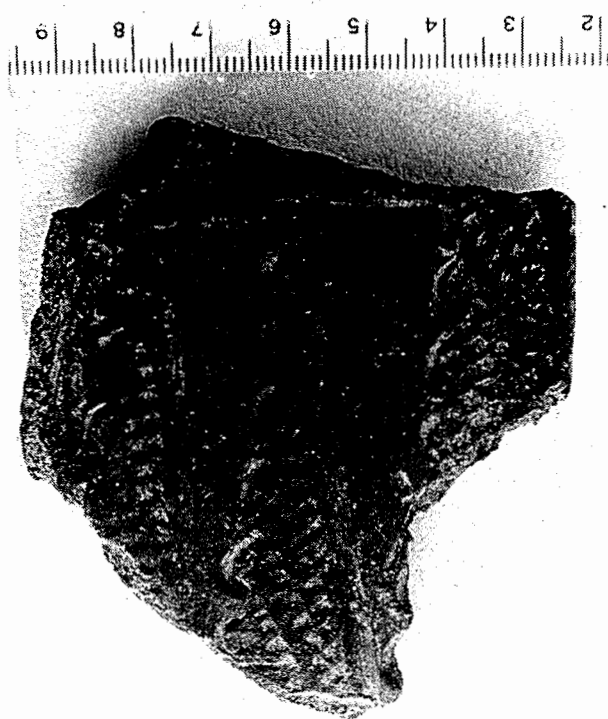


Fig. 2. Fuguodun potsherd. (Collection of the Department of Geology,  
National Taiwan University. Photo by author).

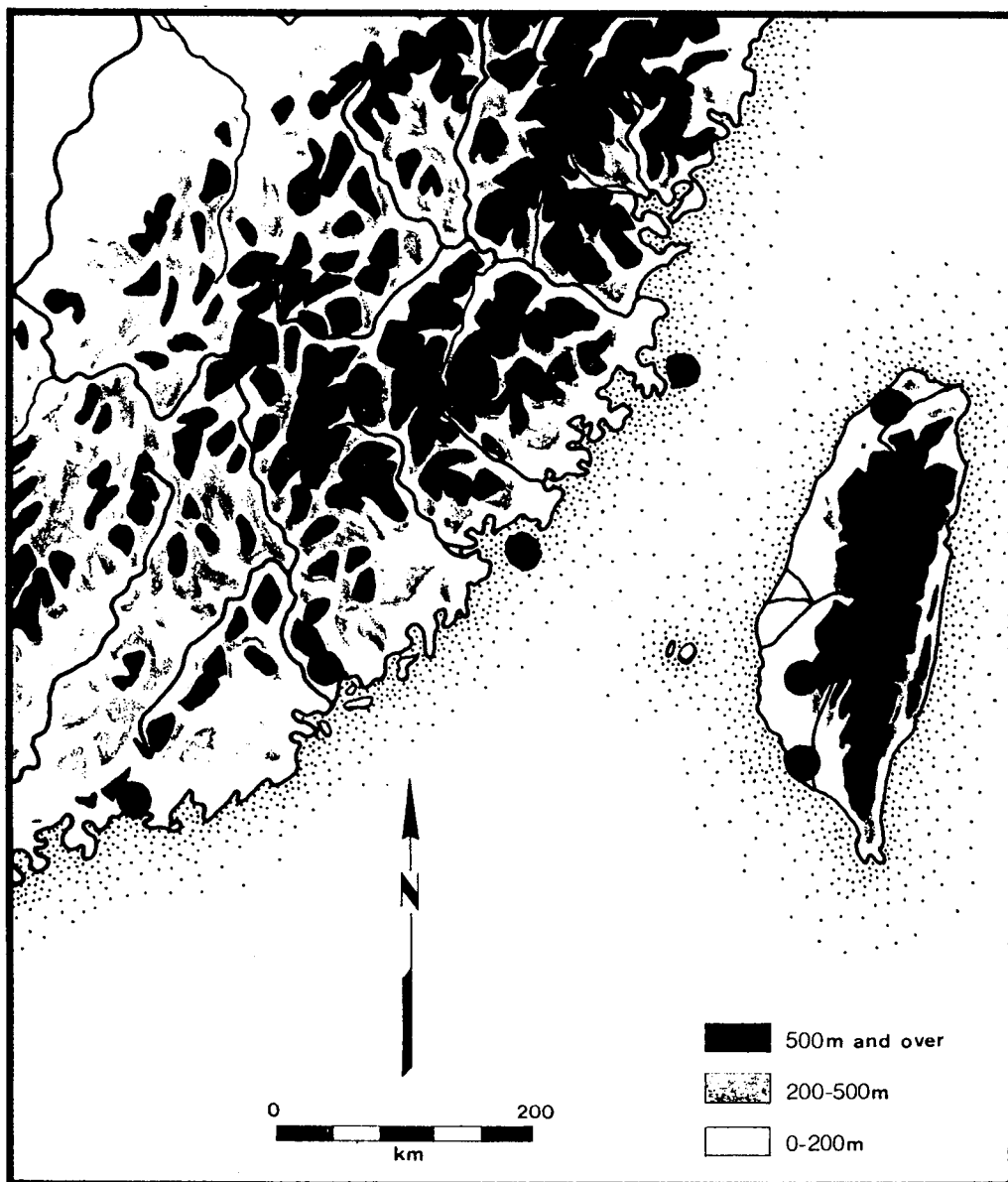


Fig. 3. Fuguodun/Dapenkeng Sites on Both Sides of the Taiwan Strait Referred to in the Text. (west coast from n. to s.: Xitou, Keqiutou, Fuguodun, Chenqiao, SON; east coast from n. to s.: Dapenkeng, Bajiacun, Fengbitou).



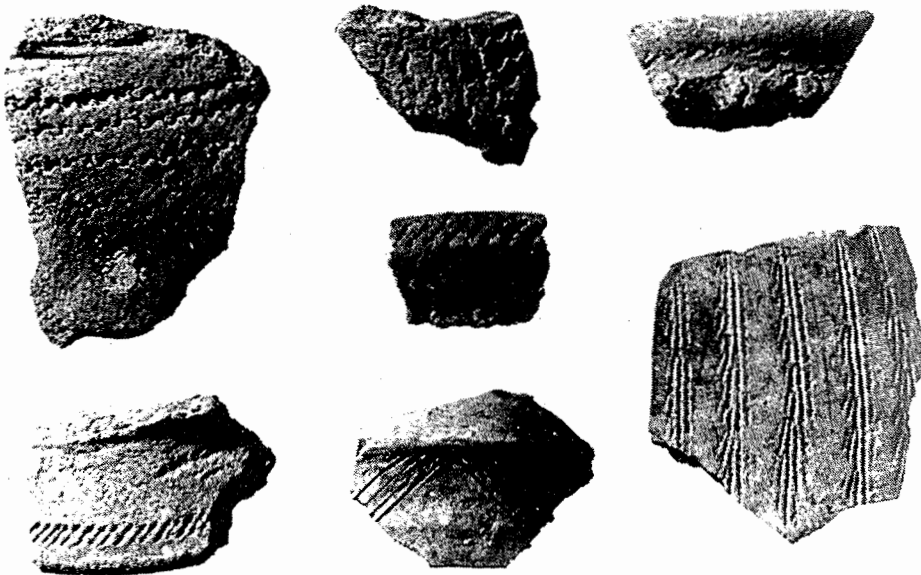
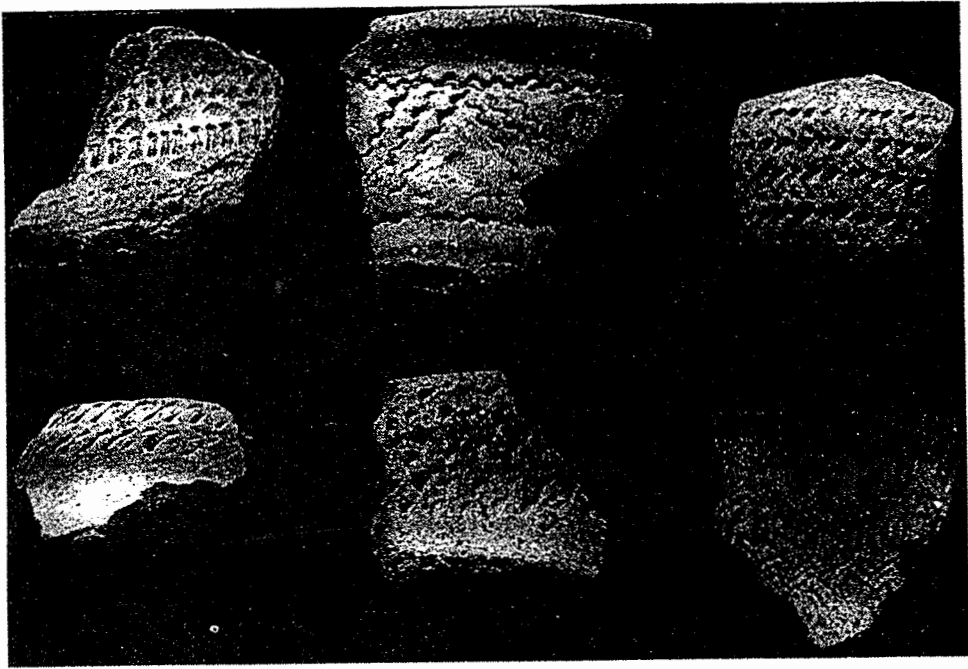


Fig. 4. Xitou potsherds (lower stratum). (Courtesy of Fujian Provincial Museum).

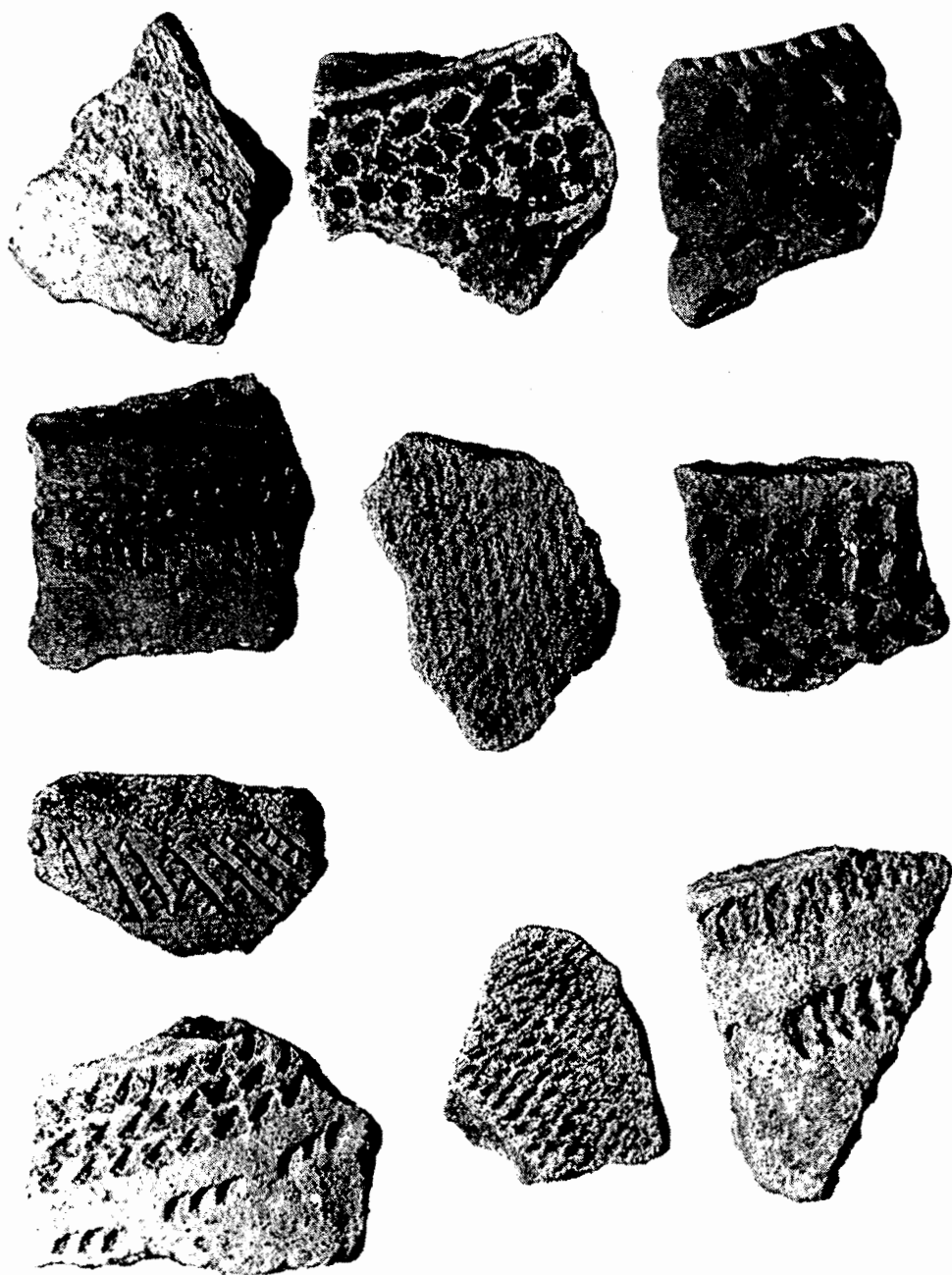


Fig. 5. Keqiutou potsherds. (Courtesy of Fujian Provincial Museum).

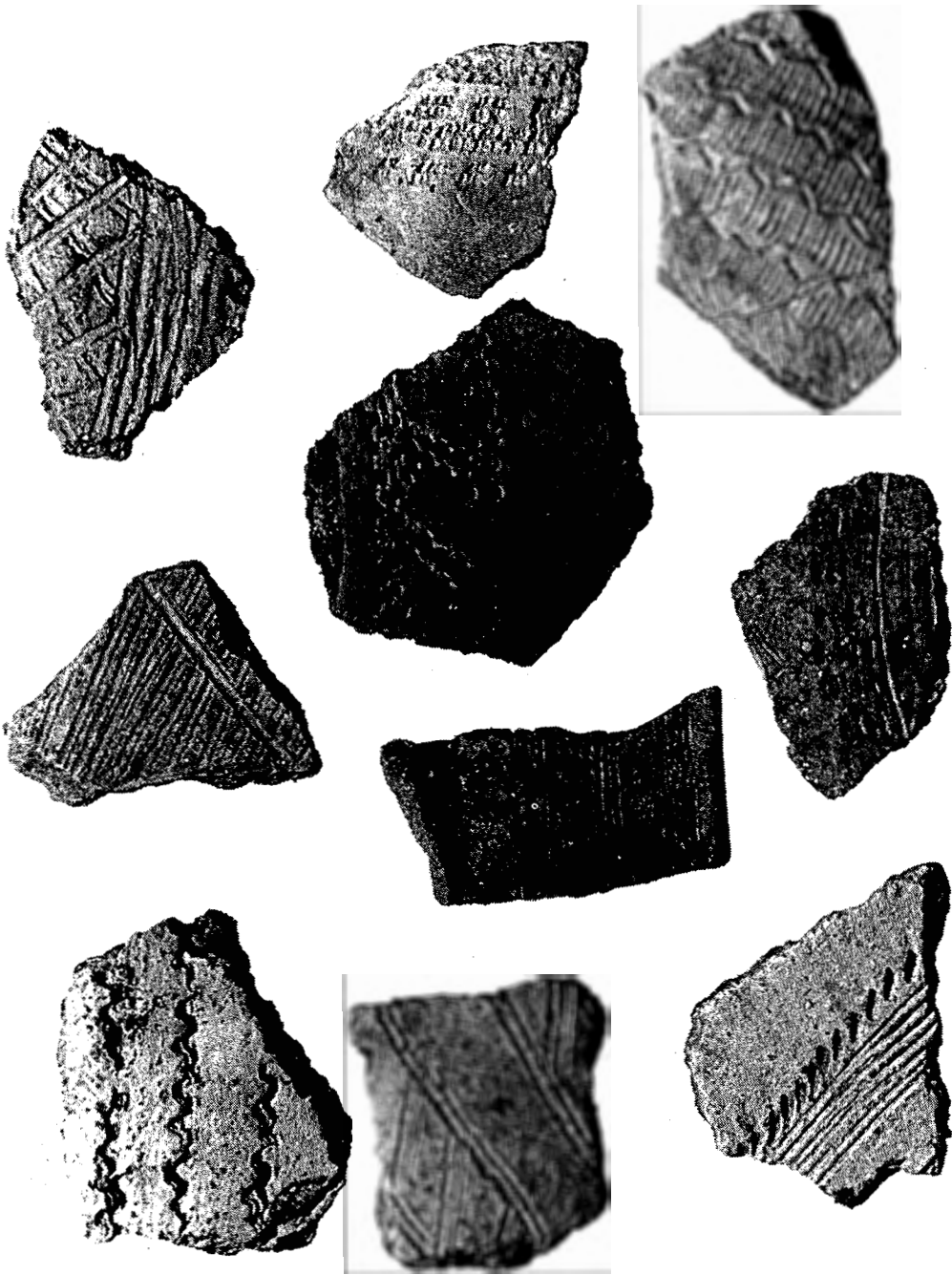


Fig. 6. Keqiutou potsherds. (continued). (Courtesy of Fujian Provincial Museum).



# **New Archaeological Data from Both Sides of the Taiwan Straits and Their Implications for the Controversy about Austronesian Origins and Expansion**

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In this paper, the author examined the newly recovered archaeological data from the southeastern coast of China and Taiwan, and discussed their implications for the controversy about Austronesian origins and expansion in terms of the following four questions:

1. Did the prehistoric cultures of Taiwan evolve locally or did they migrate from other places?
2. Who were the earliest ancestral Austronesians in Taiwan?
3. Where did they come from?
4. Why did they come to Taiwan?

Many hypotheses pertaining to Austronesian origins and expansion have been proposed by ethnologists, archaeologists, and linguists. Among contemporary archaeologists, however, two completely contrary theories prevail. One proposes that the South China-Taiwan region was the area from where the Austronesian originated and spread. The other argues that early Austronesians probably originated in and expanded from the islands of Southeast Asia. For the sake of convenience I shall refer to the former as the "Mainland Theory" and the later as the "Island Theory."

K. C. Chang and Peter Bellwood are now generally recognized as the

major proponents of the "Mainland Theory" among archaeologists. According to Chang, the importance of Taiwan in the problem of the Austronesian homeland lies partially in its role as a bridge between the mainland and the Pacific, as well as in its potential role in the connection between prehistoric cultures and modern Austronesian speakers on the island. Therefore, the island has long been recognized as an area perhaps involved in the transmission of the Austronesian peoples and languages from South China into the Pacific. Chang (1969) has proposed that the majority of modern Austronesian peoples in Taiwan probably descended from two major prehistoric cultures, Lungshanoid and Yuan-shan, and that the ancestral Austronesians on Taiwan probably related to the immigrating Lungshanoid Culture from the southeastern coast of the mainland. In response to the newly available archaeological evidence, however, Chang has revised his viewpoint and proposed that: "if there were major radiations of proto-Austronesians from the Southeast China homeland, they probably began no later than the period of the Ta-pen-keng Culture." (1989a: 95) Recently, Chang has also provided a new explanation: the Ta-pen-keng Culture on the southeastern coast of the Mainland was replaced by the Lungshanoid Culture, which was represented by the Tan-shih-shan Culture of Fukien and was probably closely related to Sino-Tibetan speakers. The Ta-pen-keng Culture that existed on Taiwan, however, gradually evolved into the Feng-pi-tou Culture after being influenced by the Lungshanoid Culture of the mainland (Chang 1989b: 549).

In favoring the southern China-Taiwan region as the area of Austronesian origins, Peter Bellwood has proposed that during the fifth and fourth millennia B.C., early Austronesians featuring a cereal-based economy (rice and millet) expanded from the coastal area south of the Yangtze into Taiwan and the northern Philippines. Some 4500 years ago, these Austronesians

spread into the equatorial islands of eastern Indonesia and gradually replaced the indigenous hunting and gathering Australoid populations. (Bellwood 1980: 178-79; 1983: 80). Therefore, according to Bellwood, population growth and instability promoted by agriculture were probably the major motivating factors behind the Austronesian expansion (Bellwood 1983: 81).

Solheim has long been a leading figure in favor of the "Island Theory", otherwise labelled by him as the "Nusantao Hypothesis". He proposes that Proto-Austronesian developed primarily in Mindanao and northeastern Indonesia and was carried north by a developing maritime population through the Philippine Islands to Taiwan, and from there across to South China and then north and south along the coast (Solheim 1988: 80). Recently, he has advanced a new explanation for the origin and spread of Austronesian: the Pre-Austronesian was carried north through Mindanao, the Visayan Islands and probably southern Luzon by 5000 B.C., and then the Proto-Austronesian developed as the trade language among the maritime Nusantao along the coasts of northern Luzon, southern Taiwan, and South China, between 4500 and 5000 B. C. Austronesian then developed among this maritime people, possibly serving at first as a trade language. Soon after this development Taiwan became relatively isolated and its Austronesian languages evolved locally with relative little input from outside. On the other hand, sub-regionally developing Austronesian languages, now Proto-Malayo-Polynesian, maintained contact with each other through the maritime-oriented Nusantao and evolved away from each other more slowly (Solheim 1988: 80-81).

William Meacham, another proponent of the "Island Theory", has put forward a strong argument that Taiwan has experienced a mainly local evolution of cultures over the last 6000 years or more and the earliest inhabitants

did not come from the mainland. Therefore, "the more likely place of origin of Austronesian would seem to be the broad triangular area formed by Taiwan, Sumatra, and Timor, where the reputedly oldest Malayo-Polynesian languages are found and where no other languages are spoken today" (Meacham 1988: 94-96).

It is clear from these arguments that external relationships with the Chinese mainland, along with the internal development of Taiwan's prehistoric cultures are among the most crucial elements in this debate. It is for this reason that archaeological data from both sides of the Taiwan Strait should be subjected to on-going reassessment. In this paper I will first examine some of the new archaeological data, which may be significant to the problem of Austronesian origins and expansion, on both sides of the Taiwan Strait, and then discuss some of related problems.

## New Archaeological Data from the Eastern Side of the Taiwan Strait

### New Archaeological Discoveries from the Peng-hu Islands

The Peng-hu Islands situated in the midst of the Taiwan Strait have long been regarded as a militarily strategic area and as a stepping stone for the colonization of Taiwan by the Chinese from the southeastern coast of China during the Ming and the Ching Dynasties (Chen 1955:4). In order to better understand the ancient cultures of the Peng-hu Islands, I carried out intensive archaeological research in Peng-hu from 1983 to 1985, locating some 92 sites on 32 of the 64 islands. Among these sites, 52 have been identified as prehistoric sites, while a further 39 are historical. Five prehistoric and three



historical sites were selected for further excavations. As a detailed report of this research has already been published (Tsang 1992), I only intend to make a brief summary of some of the more important findings.

On the basis of the archaeological data obtained from both surveys and excavations, I have been able to construct a cultural chronology of the Peng-hu Islands as follows:

- |                                |                      |
|--------------------------------|----------------------|
| 1. The Kuo-yeh phase           | ca. 5100 - 4600 B.P. |
| 2. The Suo-kang phase          | ca. 4700 - 4300 B.P. |
| 3. The Chih-kan-tou phase      | ca. 4200 - 4000 B.P. |
| 4. The Shih-pan-tou-shan phase | ca. A.D. 900. - 1400 |

Among the four cultural phases, the archaeological discoveries of the Kuo-yeh and the Suo-kang phases are of great importance to the problem of Austronesian origins and expansion.

The Kuo-yeh phase, represented by the Kuo-yeh A site on the eastern coast of the Peng-hu *Tao* (Island), is the earliest cultural phase excavated on the Peng-hu Islands so far. Cultural materials yielded from the excavation of the Kuo-yeh site consist of pottery and stone artifacts, as well as bone, deer antler, shell and coral artifacts. On the basis of color, paste, form, and decoration, the pottery of the Kuo-yeh A site can be classified as Coarse Cord-marked Ware. The exterior surface color of the coarse cord-marked pottery can be roughly divided into two major categories -- reddish-brown and grayish-black -- with some minor variations. The reddish-brown color appears with the greatest frequency, while the grayish-black category appears less than 10%. More than 90% of the total number of sherds were tempered with coarse sand. Since most of the sherds have gray cores and irregularly colored interior and exterior surfaces, I postulate that the pottery was fired in open kilns at low temperatures.

Two major vessel forms, a bowl and a jar, are distinguishable. The shapes of the bowls are globular with sloping plain or flared rims and flat bases, while the basic form of the jars is either globular or biconical with flared rims and ring feet, all of which have perforated holes of 7 to 12 mm in diameter and heights not exceeding 30 mm.

Most of the pottery was smoothed and decorated before firing, with red slip being applied in only a few cases. The major decorative treatment is cord-marking. The cord impressions usually appear on the entire body from the neck down, and include patterns such as straight lines and cross-hatched lines. In a few cases, the cross-hatched lines appear to depict a horizontal band encircling the shoulder of the ware. Sherds with painted decorations accounted for 2.2% of the total number of body sherds. Such decorations appear on the interior surfaces of some rim sherds, shoulder sherds, and on the exterior surfaces of the ring foot sherds. The painting comprising of short strokes, parallel lines, and solid dots is mainly dark brown in color, with very simple designs. Incised decorations of straight and sloping parallel lines appear mainly on the interior of certain rim sherds. There is only one example of an incised feather pattern associated with painted solid dots on a body sherd.

The stone artifacts include pitted pebbles, pounding pebbles, net sinkers, polished hoe-axes, flake knives, anvils, chopping tools, one chipped hoe-ax, one arrowhead, one awl, one polished adz, and one millstone. It is noted that shellfish-cracking and fishing related implements are more numerous than other categories of implements and accounted for 58.9% of the artifacts recovered.

The subsistence-related evidence shows that the major food resources for the Kuo-yeh A inhabitants did not come from the island itself, but rather

from the marine resources found along the shoreline. Shellfish, fish, and presumably seaweed from the intertidal rocks and coral reefs were probably the dietary staples. Plant resources did not play a major role in the diet of the inhabitants.

Compared with the surrounding areas of Peng-hu, the culture of this phase is strikingly similar to the Ta-pen-keng Culture in Taiwan. Particularly noteworthy is that the coarse cord-marked pottery of Peng-hu strongly resembles the pottery from the cord-marked ware stratum of the Feng-pi-tou site in Kao-hsiung. Only a few differences exist between the Kuo-yeh and the Feng-pi-tou pottery, such as the absence of rims with ridges below the lips in the Kuo-yeh phase pottery and the absence of painted decorations on the Feng-pi-tou pottery.

The close relationship between the Kuo-yeh phase and the Ta-pen-keng Culture of Taiwan is also reflected in the stone inventory. The major types of stone artifacts of the Ta-pen-keng Culture, such as notched pebbles, net sinkers, triangular slate arrowheads, pitted pebbles, and roughly polished axes and adzes, are no different from those of the coarse cord-marked ware sites on the Peng-hu Islands. From the overall similarities in cultural manifestations, there is little doubt that the cultural assemblage of the Kuo-yeh phase is part of the Ta-pen-keng Culture of Taiwan. It is my speculation that during this time Peng-hu had not yet been permanently occupied by the cord-marked pottery people, who may have come to visit the islands occasionally or seasonally in order to exploit marine resources.

In addition to Taiwan, we may note that in many respects the coarse cord-marked pottery assemblages in Peng-hu generally resemble those of the cord-marked sites on the Kwangtung and Fukien coasts, such as Chen-chiao-tsun in Chao-an (C. Mo 1961a), Sha-keng in Hai-feng (Maglioni 1975), Chin-

lan-ssu in Tseng-cheng (C. Mo 1961b), Sham-wan in Hong Kong (Meacham 1978), and Ko-chiu-tou in Ping-tan (Fu-chien 1991). The cord-marked, painted and incised decorations on pottery, the predominance of pebble tools, including pitted pebbles, hammer stones, pounding stones, and notched net sinkers, the coastal and sand dune locations of dwellings, the inhabitants' heavy reliance on marine resources, and the approximate contemporaneity, all suggest the close affinity shared between the two sides of the Taiwan Strait.

The Suo-kang phase, represented by the Suo-kang site located on the southeastern coast of Peng-hu Island, is characterized by fine cord-marked pottery. The most predominant ware at the sites of the Suo-kang phase are found to be reddish-brown ware, with its core often being marked by a zone of gray or dark gray, indicating that it was fired at a low temperature. Four types of temper, including coarse sand, crushed shell grain, fine sand, and very coarse sand, can be observed and distinguished. Identifiable vessel forms include mainly jars and bowls. The basic shape of the jars was either globular or unequal biconical with flared or vertical rims and low or high ring bases.

The pottery was generally wet-smoothed before drying and firing and, in a few cases, burnished or coated with a red slip. Uni-directional and cross-hatched fine cord-marked finishes predominate, followed by plain finishes. Much less common still are the sherds decorated with painted and basket impressed decorations. Some of the painted decorations appear over the entire body of the vessel and on the interior surfaces of some rims. The painted patterns consist mainly of short strokes, parallel lines, and diagonal hatched lines. The basket decoration occurred mainly on the body of the vessels.

The tool inventory from the Suo-kang phase consists of large numbers of

stone, bone and shell implements, including chipped and polished stone hoes, stone anvils, stone net sinkers, stone knives, stone adzes, bone fishing hooks, one shell spoon, etc. Numerous stone anvils for cracking shells and net sinkers for fishing are especially distinctive.

Settlements in this phase became much larger in size and denser in distribution. Human burials appeared in settlements that seem to show that people of this phase were already permanently settled on the islands, while an increase in the categories of aquatic and terrestrial resources seems to suggest an economy based on broader exploitation. There is evidence showing that during this period settlers on Peng-hu were trading with peoples on both sides of the Taiwan Strait. Beside pottery and raw materials or finished products of stone artifacts, these settlers would presumably have exchanged other kinds of goods and subsistence resources. Intensive marine exploitation and exchange activities would have certainly stimulated frequent open sea voyaging, and consequently would have resulted in frequent contact and interaction among the peoples of Peng-hu, Taiwan, and even the southeastern coast of the mainland. As a consequence of this, a flow in cultural information and mutual influence between the regions would have inevitably taken place. Rice agriculture was probably introduced to Taiwan from the Mainland during this period.

The fine cord-marked pottery of the Suo-kang phase is similar in style and form to the coarse cord-marked pottery of the Kuo-yeh phase in many aspects. For example, the predominance of the mode C rim shape (some with characteristic painted designs of parallel short strokes on the lip), the cord-marked and painted patterns, and the biconical shapes of jars are strikingly similar. However, differences are also evident: the texture of the fine cord-marked pottery is generally finer; their decoration is mainly fine cord, rather

than coarse cord impressions, and includes a few basket impressions; the rim shapes of the fine cord-marked pottery are more varied, but few have incised designs on their surfaces like those that occur on coarse cord-marked pottery; and the ring feet generally are a little higher. In addition, earthen rings appear at the Suo-kang phase sites, but are totally absent at the Kuo-yeh phase sites.

The stone inventories of these two phases are also very similar, including mainly chipped pebble tools, and roughly polished implements, such as hoes and adzes. Fishing implements, however, are more numerous in the Suo-kang phase, and many jade artifacts were found only at the sites of this phase.

On the basis of these comparisons, we may note that the cultures of the Kuo-yeh and the Suo-kang phases were closely related, and that such a close relationship strongly suggests that the latter most likely developed out of the former.

In Taiwan, following the Ta-pen-keng Culture, the ceramic assemblages characterized by the fine paste cord-marked red pottery occurred both in the southwestern and in central Taiwan. These assemblages have been referred to as the early phases of the Lungshanoid culture by Chang Kwang-chih (1969) or as the Red Corded Ware Culture. The characteristic pottery forms of these phases include bowls, *tou*-pedestaled basins and bowls, large wide-mouth jars, and thin long-necked jars. Associated stone implements include flat polished hoes, stemmed arrowheads, rectangular and saddle-shaped slate knives, and rectangular adzes (K. C. Chang 1969: 220; 1970: 65). The major sites include Niu-ma-tou and Ting-chieh (Dewar 1977) in Tai-chung; Tsao-hsieh-tun (C. H. Tsang 1977) in Nan-tou; Niu-chou-tzu and Wang-liao in the Tai-nan (Kokubu 1962; C. C. Chiang 1965); Feng-pi-tou (K. C. Chang 1969) in Kao-hsiung; as well as O-luan-pi (W. H. Sung, S. C. Huang, C. M. Lien, and K.

C. Li 1967) and Ken-ting (K. C. Li 1983) on the south coast in Ping-tung. It has been said that all of these sites have a cultural stratum containing the fine red cord-marked ware as the predominant ceramic component.

Comparing the fine cord-marked pottery of the Suo-kang phase on the islands of Peng-hu with the pottery of the Red Corded Ware Culture of Taiwan, we find that besides similarities in certain characteristics, such as fine cord-marked impressions and a few vessel forms and rim shapes, there are also many differences. For example, such characteristic forms as the *tou*-pedestaled basins with cutouts on the ring feet, long-necked bottles and *ting*-tripods (mainly from the Red Corded Ware sites of the Fine Red Ware stratum of Feng-pi-tou, Ken-ting, and O-luan-pi) were completely absent from Suo-kang phase pottery. Moreover, the inventories of stone artifacts were also found to be fairly different. The stemmed arrowheads, saddle-shaped slate knives and boot-shaped knives of Taiwan have yet to be found at the fine cord-marked pottery sites on the Peng-hu Islands.

Nevertheless, *some* of the Red Corded Ware sites mentioned above (Niu-chou-tzu, Wang-liao and probably a few other sites on the southwest coast, particularly in Tai-nan) do bear close resemblance in cultural inventories to the fine cord-marked pottery sites of Peng-hu. Unfortunately, no detailed reports of these sites are as yet available. According to my personal examination of the pottery and stone specimens collected from Niu-chou-tzu and Wang-liao, I have found that the pottery from the lowest stratum of these two sites closely resembles the fine cord-marked pottery of Peng-hu. Their close relationship is further confirmed by the fact that a large number of stone artifacts found at these sites are made of olivine basalt of Peng-hu origin, as Kokubu (1962: 64) and Huang Shih-chiang (1981: 62) have long noted. This comparison suggests that the fine cord-marked pottery assem-

blage of Peng-hu shares its strongest affinities with *some* (e.g., Niu-chou-tzu and Wang-liao), but not all, of the Red Corded Ware sites on the southwestern coast of Taiwan. In addition, a carbon-14 date released from the later stratum of the Niu-chou-tzu site is  $3525 \pm 70$  B.P., calibrated at  $3945 \pm 91$  B.P., which indicates that the date for the earlier stratum at this site should be earlier than 4000 B. P. (S. C. Huang and Y.C. Liu 1980: 68). Therefore, chronologically, the Suo-kang phase sites in Peng-hu were probably contemporaneous with the lower stratum of Niu-chou-tzu and Wang-liao.

The fine cord-marked ware assemblages of Peng-hu also seem to share close affinities to sites on the Kwangtung coast. In fact, most of the cultural characteristics mentioned above are shared by both. Especially noteworthy is the resemblance in pottery and stone artifacts of the Suo-kang site on Peng-hu and stratum Cb at the Sham Wan site of Hong Kong (Meacham 1978). The possible connections between Peng-hu and Sham Wan are further supported by their contemporaneous dates. The earliest carbon-14 date for stratum Cb at Sham Wan has been reported to be around 2400 B.C. (Meacham 1978: 115), very close to the date of the Suo-kang phase.

The fine cord-marked ware assemblages of Peng-hu, however, may have even closer connections with the Fukien coast. It is noted that the potsherds, stone artifacts, and faunal remains (mainly seashells from intertidal rock habitats) uncovered from the Suo-kang phase sites of Peng-hu bear a very strong resemblance to those from a recently discovered site -- Ta-mao-shan on Tung-shan Island of Fukien (C. H. Hsu 1988), of which I am going to give a more detailed description later.

In addition, a few pottery forms, especially some characteristic jar rim shapes from the fine cord-marked sites of Peng-hu, may also share certain



affinities with the cord-marked pottery of the early phase of the Tan-shih-shan Culture in the lower Min River valley on the Fukien coast (Fu-chien 1976: Figs. 13, 14). Chronologically, the early phase of the Tan-shih-shan and the Suo-kang phase of Peng-hu occurred in the same period (Fu-chien 1984: 494).

### Prehistoric Cultural Continuity on the Eastern Coast of Taiwan

In addition to the pre-ceramic assemblage (named Changpinian), which is characterized by a lithic industry consisting solely of chipped pebbles and flake tools as well as by the absence of pottery and evidence of farming, and uncovered at a cave site at Chang-pin, Tai-tung, the Neolithic cultures on the eastern coast of Taiwan consist mainly of two parallel groups. The first group, referred to as the Chi-lin Culture, is characterized by a variety of megaliths, including cist coffins, walls, columns, menhirs, dolmens, statues, discs, and so forth. The sites of this culture have been found mainly on the coastal side of the Tai-tung coastal hills. One carbon-14 date places the Chi-lin Culture around the late second millennium B.C. (W. H. Sung 1980: 133).

The second group, referred to as the Pei-nan Culture, and typified by the site of Pei-nan, near Tai-tung city, is distinguished by its use of slate slab columns, slate slab coffins, slate troughs with multiple rectangular depressions, and slate pestles. The Pei-nan Culture was distributed mainly in the Tai-tung rift valley (W. H. Sung 1980). Five carbon-14 dates from the Pei-nan site (C. M. Lien 1989) show an age approximately contemporaneous with, or a little earlier than, that of the Chi-lin Culture.

Pottery and stone artifacts of these two cultures on the eastern coast of Taiwan are very similar (Pearson 1968: 103-8). The most abundant type of pottery has a coarse paste and is orange in color without decoration, one of

the most common forms being a jar with a flaring mouth and two vertical or horizontal handles. The stone artifacts are made up predominantly of knives, sickles, adzes and hoes. The large number of slate knives seems to indicate the presence of grain agriculture. Evidence yielded from hundreds of burials excavated from the Pei-nan site shows that a ranked society may have already developed during this period (C. M. Lien 1989: 190).

Over the last few years, cord-marked and fine cord-marked wares have been found in many of the sites on the eastern coast, including Pei-nan, Lao-fan-she, Chih-hang, Yian-liao, Ta-keng, Hsiao-ma Cave, and so forth. It is clear that a cultural horizon characterized by the corded and fine corded wares existed on the eastern coast of Taiwan. Since the exact nature and its relationship with the Corded and Fine Corded Ware Cultures of the western coast remain still unclear, Chu (1990) and Huang (1991) have proposed to provisionally call it the "Eastern Corded Ware Culture". Stratigraphical evidence from Pei-nan, Lao-fan-she and Hsiao-ma Cave shows that the "Eastern Corded Ware Culture" layer was usually superimposed under the layer of Pei-nan or Chi-lin Culture, and that the frequency of cord-marked pottery declines gradually from the lower Corded Ware Cultural layer to the upper Pei-nan or Chi-lin cultural layer. Many archaeologists now believe that the Pei-nan and Chi-lin Cultures developed out of the "Eastern Coast Cord-marked Pottery Culture", which may have derived from the Corded Ware and the Fine Corded Ware Cultures of the western coast (Chu 1990, Huang 1991).

### **A New Prehistoric Ceramic Assemblage Recovered in the Southern Area of Taiwan**

During the period between 1984 and 1985, the late Professor Li Kuang-

chou of the Department of Anthropology, National Taiwan University, conducted an archaeological investigation at Ken-ting National Park (on the southern tip of Taiwan), and locating about 60 sites (K. C. Li, et al. 1985). Based on the characteristics of the contents and the dates of the sites, Li divided them into 10 cultural phases as follows:

1. The O-luan-pi first cultural phase.
2. The K'en-ting cultural phase.
3. The O-luan-pi third cultural phase
4. The O-luan-pi fourth cultural phase
5. The Kuei-shan cultural phase
6. The Hsing-lin cultural phase
7. The Hiraya cultural phase
8. The Ami cultural phase
9. The Paiwan cultural phase
10. The Han cultural phase

Apart from the Kuei-shan cultural phase, the cultural materials from each of the cultural phases are common to the southwestern area of Taiwan. The Kuei-shan cultural phase is represented only by one site -- the Kuei-shan II site. A carbon-14 date of  $1530 \pm 41$  B. P. (tree-ring calibrated), derived from a sample of shell collected from this site, places the earliest date of this site at around 2000 B. P. (Huang, et al. 1987: 38) According to Li, this site yielded iron implements, glazed hardware sherds, pottery sherds, pottery spindle whorls, earthen rings, earthen animal features, chipped stone hoes, stone hammers, pitted pebbles, notched stone sinkers, as well as shell and bone artifacts. Among these findings, the style of the potsherds is very unusual. Li's description of the sherds is as follows:

The manufacture of the pottery is very spectacular. Generally

speaking, there are several unusual characteristics: 1. The firing is at quite a high temperature, while the external surface and the core are mostly orange-red in color; only a few are gray and black. 2. Identifiable vessel forms found at this site include mainly bowls with ring bases. 3. The pottery was usually coated with a red slip. 4. Most of the potsherds are without any decoration on their surface. The patterns on the decorated potsherds include human figures, human heads, parallel lines, geometric designs, and ribbons. Apart from the parallel lines that were impressed fully on the pot surface, other incised, impressed, or punctuated decorations appear alternatively in horizontal rows (Li, et al. 1985: 121).

The status of this new ceramic assemblage in the southern coastal area is at this time difficult to ascertain (see also K. T. Li 1993, M. C. Yeh 1994). Since the antecedents of this ceramic assemblage have not yet been located anywhere in Taiwan, I suspect that it was probably not indigenous to Taiwan, but rather entered or diffused to Taiwan from somewhere.

## New Archaeological Data from the Western Side of the Taiwan Strait

The earliest Neolithic cultural remains known in Fukien are a small collection of potsherds from the shellmound of Fu-kuo-tun on Quemoy (Chin-men) Island, which has been carbon-14 dated to the fifth millennium B.C. (C. C. Lin 1973: 37; K. C. Chang 1977: 180). Most of these sherds are thick and low-fired. The exterior and interior surfaces of these sherds are red, while the cores are black. The most common decorative patterns are wavy lines, lines of dots, and straight lines, which were impressed by using

the edges of shells or fingernails. The status of this pottery style in the prehistory of Fukien was not ascertained until the discoveries of the sites of Ko-chiu-tou and Nan-tsuo-chang at Ping-tan, and Hsi-tou of Min-hou (C. Y. Wang 1981; K. W. Lin 1989). Archaeologists now know that they probably represent a distinctive earlier coastal Neolithic culture in the Fukien area. This culture, now termed Ko-chiu-tou Culture after the site of Ko-chiu-tou, is characterized by handmade gray, grayish-yellow and red pottery, which has a paste tempered with sands and shell grains, and decorated with paddled, impressed, incised, dotted, and punctated patterns. Small roughly polished or chipped adzes comprise the major type of stone tools of this culture. Other stone tools include choppers, scrapers, points, stone hoes with perforation in the center, and stone knives (Fu-chien 1991). Three C-14 dates of  $4565 \pm 100$ ,  $4610 \pm 90$ , and  $4555 \pm 105$  B.P. from the Ko-chiu-tou sites (CKSKY 1990: 665-666) place the tree-ring calibrated date of the Ko-chiu-tou Culture at around 3500 B.C.

Some similarities in cultural remains between the Ko-chiu-tou Culture and the earlier phase of the Tan-shih-shan Culture, which is so far the best known Neolithic culture in Fukien ( named after the site of Tan-shih-shan on the northern bank of the Min River in Min-hou Prefecture), include handmade red pottery with a fine sandy paste and cord-marked, incised and painted patterns. This indicates perhaps that a developmental relationship between these two cultures existed (Fu-chien 1991).

In addition to the important discoveries mentioned above, it has been reported that a Neolithic shell-midden site was discovered in July, 1986 on the southeastern slope of Ta-mao-shan hill on the Tung-shan Island (C. H. Hsu 1988). Most of the potsherds from the site are grayish yellow in color with fine or sandy paste and fine cord-marked impressions. Identified pottery

vessel forms include mainly pots and jars, which were globular in shape with flared rims and low ring bases. The stone tools collected are all roughly polished adzes, rectangular in shape with a straight but asymmetrical cutting edge. Animal bones and shellfish remains indicate that the inhabitants of the site subsisted mainly on hunting, fishing, and collecting shellfish from intertidal rocks and shallow waters near the shore. Two carbon-14 dates determinations of  $4030 \pm 100$  B.P. and  $3990 \pm 100$  B.P. (dendrochronologically calibrated at  $4590 \pm 145$  B.P. and  $4540 \pm 145$  B.P. respectively) obtained from Ta-mao-shan place the dates of the site in a range close to the Tan-shih-shan Culture.

Neolithic sites have been found widely in Kwangtung, but only a small number of them have been carefully excavated and reported. Thus, our knowledge of the prehistoric cultures in Kwangtung is still very limited. In the coastal areas, the majority of middle Neolithic sites are shell-midden or sand dune sites. Among them, only Chen-chiao-tsun in Chao-an (C. Mo 1961b), Sha-keng in Hai-feng (Maglioni 1975), Chin-lan-ssu in Tseng-cheng (C. Mo 1961a), and Sham Wan on Lamma Island in Hong Kong (Meacham 1978) have been adequately described. Recently, systematic archaeological surveys have been conducted in the areas of Shen-chen, Chu-hai, and Hong Kong, with well-planned excavations also being conducted at the sites of Hsien-tou-ling and Ta-huang-sha in Shen-chen and Tung-wan in Hong Kong. The data yielded from these surveys and excavations have provided us with much more knowledge about the nature and the chronology of middle Neolithic sites on the Kwangtung coast (C. T. Shang and S. L. Chen 1990).

Ceramic items at these sites are generally characterized by plain, cord-marked, basket-marked, shell-edge-impressed or painted coarse sandy pottery which is red or gray in color. Stone artifacts include mainly chipped pebble

tools and roughly polished axes, as well as adzes, chisels, pestles, notched net sinkers, and grindstones. Bone and shell tools were also widely used at some of the sites. Faunal remains and a large number of fishing related artifacts indicate that marine resources played an important role in the subsistence of the inhabitants. Their settlements were mainly distributed on sand dunes near the bay. The rather patchy and intermittent nature of the occurrence of cultural layers seems to reflect temporary or seasonal occupation patterns. Carbon-14 dates obtained from the sites in Hong Kong and Shen-chen have placed them at around 6000 B. P. or later. (C.T. Shang and S. L. Chen 1990: 59)

### Implications for the Controversy about Austronesian Origins and Expansion

As I mentioned at the beginning of this paper, among those archaeologists concerned with the problem of the Austronesian homeland, there exist two completely contrary theories. One believes that the South China-Taiwan region was the area in where the Austronesians originated and from where they spread. The other argues that early Austronesians originated in and expanded from the islands of Southeast Asia. No matter which theory they support however, most scholars agree that Taiwan holds a key position regarding the question of Austronesian origins and expansion. In the following section, I intend to discuss the implications of the above-mentioned archaeological data in terms of the following four questions 1. Did the prehistoric cultures of Taiwan evolve locally, or did they migrate from other places? 2. Who were the earliest ancestral Austronesians in Taiwan? 3. Where did they come from? 4. Why did they come to Taiwan?

1. It is well-known that the prehistoric cultures of Taiwan present great variations, both in terms of time and space. Since the 1940s, archaeologists have postulated that prehistoric cultures came to Taiwan in waves. Kano Tadao (1955) stated that the substratum of the prehistoric cultures in Taiwan is the mainland cultures of China, which came to Taiwan in several waves.

In 1969, the most comprehensive synthesis of Taiwan's prehistory at that time was made by Chang Kwang-chih. Based mainly upon the excavations of Ta-pen-keng and Feng-pi-tou, Chang proposed a general time-space framework for the prehistory of the western coast of Taiwan. The earliest cultural stratum was a Corded Ware Culture, followed by the Lungshanoid Culture in the Southwest, and the Yuan-shan culture in the North. Chang then made a comprehensive comparison in order to seek external affinities for each culture. Although his synthesis fitted the archaeological data at the time very well, more new data, especially as a result of radiocarbon age determinations on the mainland and Taiwan becoming available in the early 1970's, has made archaeologists reconsider the origins and development of Taiwan's prehistoric cultures.

Concerning the relationship between the Ta-pen-keng Culture and the Red Corded Ware Culture, Li Kuang-chou argued that the Red Corded Ware Culture was basically an indigenous development of the Corded Ware Culture of Taiwan, rather than an early Lungshanoid Culture which expanded from the eastern coast of the mainland (K. C. Li 1983: 103).

This problem has been largely clarified by the new evidence from Peng-hu. It shows that the Red Corded Ware Culture was essentially a continuous development of the Ta-pen-keng Culture, but that the change from the former to the latter took place as the result of a complex process that



involved the interplay of several factors, such as environmental changes, man-land relationships, regional interactions and cultural information flows, as opposed to any single internal or external mechanism.

Developing mainly from the Ta-pen-keng Culture, the Red Corded Ware Culture then became one of most important and widely distributed prehistoric cultures in Taiwan. The sites of the Red Corded Ware Culture can be seen all around the island of Taiwan and the major islands of Peng-hu (Tsang 1990). Stratigraphical and chronological evidence yielded from Niu-ma-tou and Ting-chieh in Tai-chung (Dewar 1987), Ting-kan-tzu in Nan-tou (Tsang 1984), Feng-pi-tou in Kao-hsiung (Chang 1969), and the aforementioned Pei-nan, Lao-fan-she, Yen-liao, Chih-hang and Hsiao-ma Cave on the eastern coast (Huang 1991) shows that the various local cultures of Taiwan between 4000-2000 B. P., such as the Ying-pu Culture in the central region, the Ta-hu culture in the southwestern region, and the Chi-lin and Pei-nan Cultures in the eastern region all developed from the Red Corded Ware Culture, but during the process of development they also received influences from the Chinese mainland and/or Southeast Asia.

At the same time that the Red Corded Ware Culture existed in most parts of Taiwan, two distinctly different Cultures --the Yuan-shan and the Chih-shan-yen -- appeared in the Taipei Basin. The origins of these two cultures and their relationships with the Ta-pen-keng Cultures have not yet been made clear. Chang Kwang-chih has suggested that, in addition to continuities from the aboriginal Corded Ware Culture of the island, the formation of the Yuan-shan Culture perhaps lies in the direction of the South China seacoast and the Gulf of Tonkin, as well as the Lungshanoid (K. C. Chang 1969: 239). Since the antecedents of this culture have not yet been located anywhere on Taiwan, Huang Shih-chang believes that the Chih-shan-yen

Culture was probably not indigenous to Taiwan, but rather spread to this island from the southeastern coast of China (S. C. Huang 1984).

Although archaeological assemblages after 2000 B.P. in Taiwan are scattered over widely divergent locations, they share certain common traits: hard or soft paste pottery stamped or incised with geometric designs, the appearance of glass bracelets and beads as well as iron implements. Although these assemblages were most likely descended from the earlier cultures on the island, their respective developmental relationships are still uncertain. It is noteworthy however that many cultural remains yielded from the sites of this stage, such as glass bracelets and beads of foreign origins as well as Chinese porcelain, provide very solid evidence that the people of this period were probably engaging in extensive maritime trade with people from China and Southeast Asia.

The above discussion clearly shows that apart from a few cultures, the origins and development of which are not clear, the local evolution of Taiwan's prehistoric cultures can be traced back largely to the Ta-pen-keng Culture. Between 5000 B.P. and the arrival of the Chinese, especially during the latter half of this period, however, the prehistoric inhabitants of Taiwan may have had extensive contacts with the populations of adjacent regions, such as the southeastern coast of China and Southeast Asia. As a consequence of this, a flow of cultural information and occasional movements of populations among these regions would have inevitably taken place. The recently uncovered new ceramic assemblage from the Kuei-shan II site in southern Taiwan probably reflects such a situation.

2. The earliest inhabitants of Taiwan, as far as we know, are represented by the pre-ceramic assemblages uncovered from the cave site at Chang-pin on the eastern coast, and the sites of O-luan-pi II and Lung-keng on the

southern coast of Taiwan (W. H. Sung 1969; K. C. Li, et al. 1985). They are characterized by the pebble industry consisting of chipped pebbles and flake tools dating from 15000 to 5000 B. P. or even earlier. Sung Wen-hsun and Li Kuang-chou have suggested that this industry is different from those found in the Philippines and in Japan, but quite similar to those on the Mainland. It is most likely that these people migrated from South China to Taiwan during the late Pleistocene period. At present, however, we do not have enough evidence to prove that they are the earliest ancestral Austronesians on Taiwan. Currently available evidence seems to suggest that the earliest ancestral Austronesians of Taiwan are most probably represented by the Neolithic cultures on the island.

In order to trace the earliest Austronesians on Taiwan, we have to carefully classify the modern aboriginal cultures and linguistic divisions, and then correlate them with the variations and developments of archaeological cultures. This has been proved a difficult task. I quote here a portion of the discussion of this problem that I presented in my recently published book (Tsang 1992: 281-285)

Several attempts have been made to classify the Austronesian languages of Taiwan since the early twentieth century, such as Asai (1936), Nikigawa (1953) and Loukotka and Lanyon-Orgill (1958), but a more scientific study was not made until 1963, when Isidore Dyen conducted a lexicostatistical study on several of the aboriginal languages of Taiwan. He made a three-division classification of these languages, with F1 including Atayal and Sedeq of northern Taiwan, F2 including Tsouic of central Taiwan, and F3 containing the remaining languages of Bunun, Rukai, Paiwan, Ami, Puyuma, Pazeh, and Kavalan (Dyen 1963: 263).

Based mainly upon this classification as well as his own ethnological and linguistic research on Taiwan, Ferrell tried to correlate a tentative classification of Taiwan aboriginal cultures of three major groups: Atayalic, Tsouic, and Paiwanic, with the three linguistic divisions. He then compared these major groupings with the three major archaeo-logical cultures known thus far and made the following conclusions:

Archaeological data point clearly to a direct South China derivation for the overwhelming majority of the Formosan peoples and cultural traits. Close examination of cultural and linguistic data, which show the present-day tribes to fall into three distinct groupings, also gives surprisingly explicit clues as to the possible affinity of each of the major groupings with one of the three prehistoric cultural traditions on the island. This in turn permits us to assign a tentative area of origin on the South China mainland for the speakers of the various present-day Formosan languages. The Atayalic/Cord-marked Pottery Horizon shows clear affinities with the South and Southwest China region, and the Tsouic/North Formosan Proto-Lungshanoid (Yunshan) Culture has unmistakable northern elements, and may represent the more northerly of the Austronesian mainland peoples who earlier occupied the entire eastern coastal region of China and probably extended as far northward as modern Japan and Korea. The Paiwanic/South Taiwan Lungshanoid-Geometric Horizons are probably from an area between the Atayalic and Tsouic areas on the mainland. Their culture was basically that of pre-Han Southeast China, and their spread to Formosa was part of the large-scale movements of Lungshanoid agricultural peoples from the Northwest China nuclear area into mainland Southeast Asia and the Pacific islands during the first and second millennia B.C. (Ferrell 1966: 124).

In 1969, the most comprehensive synthesis of Taiwan's prehistory was made by Chang Kwang-chih, based mainly on the excavations of Tapen-keng and Feng-pi-tou. Chang found a remarkable coincidence of

the archaeological picture with the reconstructed separation of ancestral groups of Taiwan Austronesian languages.

At about 2500 B.C. two major cultures emerged in the Taiwan scene --the Yan-shan in the north and the Lungshanoid in the south. At about the same time, moreover, the Lungshanoid culture had already experienced several divergent phases, each one of which could be traced to a cultural group on the Mainland. Since the glottochronological results suggest that at exactly this same time the ancestral Atayalic and Paiwanic had just begun to separate, whereas the two prehistoric cultures already showed sharp contrasts, it would not be possible to identify the two ancestral linguistic groups with the two prehistoric cultures. It appears more likely that both Atayalic and Paiwanic split from a single prehistoric ancestor (Chang 1969: 246).

Based on this, Chang (1969: 247-252) concluded that the majority of the modern Austronesians of Taiwan probably descended from the two major prehistoric cultures, Lungshanoid and Yan-shan, and that it was probable that the ancestral Austronesian on Taiwan was probably related to the immigration of the Lungshanoid Culture from the southeastern coasts of the mainland.

In the same year, 1969, however, Ferrell changed his hypothesis that the three main present-day language groupings could be equated with the three archaeological horizons on Taiwan, and raised an argument in his monograph *Taiwan Aboriginal Groups: Problems in Cultural and Linguistic Classification* that the diversity of Taiwan aboriginal languages was not necessarily indicative of many separate waves of migration. He suggested that "four to five thousand years in situ would be ample time to produce the difference seen in the present-day languages, even had the ancestral Formosan all arrived at once and spoken one single language" (1969: 73). In consideration of the archae-

ological evidence to date, however, he further suggested that:

If the archaeological evidence were not what it is and indicated more uniformity in the early stages of Taiwan's prehistory, we might indeed believe that present linguistic difference could be merely the result of divergence from a single ancestral language after its arrival in Taiwan. However, the archaeological pictures of Taiwan, after the very early period characterized by the Cord-marked Pottery Horizon, indicate the fairly sudden appearance of not one but perhaps three main cultural complexes (*ibid.*).

Apparently, in order to take care of both linguistic and archaeological evidence thus far, Ferrell could not but suggest four possibilities that could be used to explain the present-day aboriginal language situation:

(1) all of the Formosan languages developed from one common ancestor in Taiwan; (2) two separate migrations, proto-Atayalic and proto-Paiwanic-Tsouic; (3) three movements, proto-Atayalic, proto-Tsouic, and proto-Paiwanic; and (4) four migrations, proto-Atayalic, proto-Tsouic, proto-Paiwanic I, and proto-Paiwanic II (Ferrell 1969: 74).

It is clear that one of the crucial points that may help to interpret more precisely the evolution and the interrelationship of Formosan languages is the clarification of one of the most controversial problems in Taiwan's prehistory: whether or not the later prehistoric cultures, especially the Lungshanoid Culture that occupied a major place in the prehistory of Taiwan, were a continuous development from the earlier Corded Ware Culture.

As I mentioned earlier in this paper, based on the newly yielded evidence from Peng-hu, it is now believed that the Red Corded Ware Culture or the earlier phase of the Lungshanoid culture most probably derived from the Corded Ware (Ta-pen-keng) Culture, and was influenced by the Lungshanoid and various other cultures of the southeastern coast of

China.

Although such a situation does not necessarily mean that all of the Formosan languages developed from one common ancestor on Taiwan, it does indicate that the bearers of the Ta-pen-keng Culture were very likely among the earliest ancestral Austronesians on the island.

3. The confirmation of the possible association between the Ta-pen-keng Culture and Proto-Austronesians, based on the evidence from Peng-hu, undoubtedly bears great significance for the problem of the Austronesian homeland.

The Corded Ware Culture is the earliest Neolithic cultural stratum that has been found in Taiwan. As early as the 1940s, Kano Tadao suggested that the earliest cultural stratum on the island of Taiwan was characterized by the cord-marked pottery (1955: 110-111). The clarification of its characteristics and the formal establishment of the Corded Ware Cultures as a cultural horizon, however, were not achieved until the excavations of the sites of Ta-pen-keng and Feng-pi-tou conducted by Chang Kwang-chih in 1964-65. This new culture was named Ta-pen-keng by Chang after the site that was studied in detail (1969).

Concerning the origins of the Ta-pen-keng Culture, Chang Kwang-chih (1969: 225) proposed that possible cultural affinities existed between the Ta-pen-keng Culture of Taiwan and those in Japan (the Jomon), South China (Hsien-jen-tung and other sites), and Southeast Asia (the Kalany complex in the Philippines). The scarcity of comparable data at the time, however, made it impossible to determine the origin of this culture. As new data and new carbon-14 dates from southeastern coast of China and Taiwan increase, we may now have to reconsider the problem of the origin of the Ta-pen-keng Culture on Taiwan.

Current data shows that Corded Ware Horizon in South China involved a long period of development and various types of sites. Generally speaking, the earliest cord-marked ware sites, which have been dated at approximately 10000 to 7000 B.P., were found mainly in the limestone caves of the hilly inland regions of Kwangtung, Kwangsi, and Kiangsi. Among them, the most typical sites include Ching-tang of Ying-te (originally Weng-yuan) (J. T. Peng 1961) in Kwangtung, Tseng-pi-yen of Kuei-lin in Kwangsi (Kuang-hsi 1976), and Hsien-jen-tung of Wan-nien in Kiangsi (Chiang-hsi 1963; 1976). The cultural remains from these sites reflect a subsistence mode based mainly on hunting and gathering (L. C. Chiu 1985; C. Mo 1981; T. Y. Chiang 1981).

The later cord-marked ware sites, dated from 7000 to 5000 B.P., are distributed mainly in the coastal areas. As mentioned above, typical sites include Fu-kuo-tung and Ko-chiu-tou (Fu-chien 1991) in Fukien, Chen-chiao-Tsun and Shih-wei-shan of Chao-an (C. Mo 1961b), Chin-lan-ssu of Tseng-cheng (C. Mo 1961a), Sha-keng of Hai-feng (Maglioni 1975), in Kwangtung, Ya-pu-shan, Ma-lan-tsui-shan, and Pei-chiao-shan of Tung-hsing in Kwangsi (Kuang-tung 1961), and Sham Wan in Hong Kong (Meacham 1978), as well as many of the recently reported sand dune sites, such as Hsien-tou-ling and Ta-huang-sha of Shen-chen and Tung-wan of Hong Kong at the mouth of the Pearl River (C.T. Shang and S. L. Chen 1990).

The relationship between the Ta-pen-keng Culture of Taiwan and the corded ware cultures in South China remains unclear. A major difficulty is the paucity of comparable data from the two major Ta-pen-keng Culture sites on Taiwan: Feng-pi-tou and Ta-pen-keng. As a result of this William Meacham has recently argued that the Ta-pen-keng Culture of Taiwan is clearly distinct in style from the contemporaneous middle Neolithic cultures



of southeastern China, and that there was no movement of people or even significant contact across the Formosa Strait during the time of the Ta-pen-keng Culture (Meacham 1988: 97).

The coarse cord-marked site of Kuo-yeh A on the island of Peng-hu is so far the only site of the Ta-pen-keng Culture that has been systematically excavated in the area of Taiwan apart from Ta-pen-keng and Feng-pi-tou. Thus, the archaeological evidence excavated from this site has greatly increased our knowledge of the contents of the Ta-pen-keng Culture. For example, the painted pottery, a variety of stone tools such as pebble choppers, stone hammers, flaked knives, and millstone, as well as implements and ornaments made of bone, antler, and shell which were not excavated from Ta-pen-keng and Feng-pi-tou now appear in the Kuo-yeh A site.

On the basis of the newly excavated cultural materials from the Peng-hu Islands, we can see that the characteristics of artifacts and dates of the Ta-pen-keng Culture in the Taiwan area are actually very similar to those found in the sand dune sites on the Fukien and Kwangtung coasts. Their apparent affinities seem to indicate that the origin of the Ta-pen-keng Culture of Taiwan most likely lies in that direction.

4. As I mentioned earlier, Chang Kwang-chih has proposed that the Ta-pen-keng related culture on the southeast coast of the mainland was replaced by the Lungshanoid Culture, which was represented by the Tan-shih-san Culture of Fukien and was probably closely related to the Sino-Tibetan speakers. Peter Bellwood has also suggested that population growth and instability promoted by agriculture were probably the major driving forces behind the expansion of the Ta-pen-keng culture from South China to Taiwan and the islands of Southeast Asia and the Pacific (Bellwood 1983: 81).

In light of the data currently available, I feel that there is a need to further discuss Chang's and Bellwood's ideas. The newly uncovered archaeological data from Peng-hu has shown that the Ta-pen-keng Culture of Taiwan was most likely one of a series of regional cultures of middle Neolithic of South China, which were perhaps mainly derived from the early Neolithic as represented by the interior cave sites of Tu-shih-tzu and Huang-yen-tung in Feng-kai and Ching-tang in Ying-te. By 7000 years B. P. or later, these cultures, characterized by cord-marked, basket-marked, shell-edge-impressed and painted coarse sandy pottery as well as chipped pebble tools, and roughly polished axes and adzes, were formed on the coasts of Kwang-tung and Fukien.

The cultural remains uncovered from these coastal sites reflect a subsistence strategy directed towards intensive exploitation of marine resources. An important consequence of such marine exploitation was probably the development of seafaring. Therefore, subsistence zones were probably enlarged by coastal boat travel and the extension of marine-exploitation out to sea. It was probably under such circumstances that Taiwan was first colonized by these marine oriented inhabitants from the southeastern coast of China. These people brought with them a cord-marked pottery tradition, and probably spoke a language ancestral to certain groups of the present day Austronesian languages in Taiwan. Thus, as suggested by Dahl, the Austronesian languages in Taiwan probably represent "the first offshoot from the main Austronesian" (1973:125). Presumably because the northward ocean currents flow along both east and west coasts of the island, and the ocean floor drops immediately to a depth of 9800-13500 feet on the Pacific coast (C. M. Hsieh 1964: 292), these people seemed to be incapable of expanding further to the islands of the Pacific and the South Seas. Therefore, these languages were to

some extent isolated on the island for a relatively long period of time, and became "aberrant" compared to other languages of the Austronesian family, as is evident in linguistic classification (e. g. Dyen 1965; Dahl 1973).

On the basis of new evidence from Peng-hu, it is now known that the Ta-pen-keng Culture in Taiwan evolved into a Fine Corded Ware Culture at about 4500 years B. P. Similar developmental processes can also be seen on the southeastern coast of China. The developmental relationship between the Ko-chiu-tou Culture and the Tan-shih-shan Culture (Fu-chien 1991) as well as the close similarities in cultural materials shared between the Ta-mao-shan site of Tung-shan Island in Fukien and the Fine Corded Ware sites of Peng-hu in Taiwan seem to indicate that the Corded Ware Cultures on the southeastern coast of China were not replaced but rather gradually assimilated by the Lungshanoid Culture from the north. Before they had undergone a process of complete assimilation, their languages and cultures were gradually transmitted to insular Southeast Asia and the Pacific Islands along the coast of the South China Sea.

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- BIE* *Min-tsu-hsüeh Yen-chiu-so Chi-kan* [Bulletin of the Institute of Ethnology]. Taipei: Academia Sinica.
- JHKAS* *Journal of the Hong Kong Archaeological Society*. Hong Kong.
- KK* *Kao-ku*. Peking: Science Press.
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# Austronesian Origins and the Peopling of Taiwan

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This paper is a discussion of the Austronesian homeland issue, with particular attention to the unpopular possibility of an origin in Luzon instead of South China. It is suggested that Island Southeast Asia is more likely to have seen the development of navigational skills and canoe technology which led to maritime travel and contacts between Taiwan and the mainland. The site of O-luan-pi provides some evidence for continuities from Late Paleolithic to Neolithic. The Neolithic in Taiwan may therefore not be due to an influx of settlers from the mainland, but rather to the diffusion of ideas arising from sea travel.

## Introduction

In a lecture given at the Taiwan Historical Research Society of National Taiwan University in 1978, Sung Wen-hsun described the beginnings of anthropological studies and debate on the origins of the Taiwan aborigines. In the early decades of this century, Japanese scholars focused on the relationship that had been documented between the languages of the aborigines and the Malayo-Polynesian language system. Sung (1980:88) noted that the "Malay language theory was very influential during the Japanese rule, as Taiwan was on the northern margin of the Malayo-polynesian language zone. This made most scholars concentrate on the possibilities of migration and cultural influence from the south, neglecting that of mainland China."

This focus began to shift in 1940, when Kaneseki called attention to the relation between the prehistoric cultures of Taiwan and those of China. By the 1960's, the mainland-Taiwan relationships in the Neolithic period had come to dominate discussions of the prehistory and origins of peoples of Taiwan. K.C. Chang (1964:197) was confident that "it is now solidly established ... that each ceramic horizon of [the west coast of] Taiwan is a local facies of a corresponding and identical horizon of the South China coast." Chang (1964:249) concluded from this perceived identity of material culture that several waves of people and culture had crossed the Formosa Strait : "we now know with considerable certainty that the first ceramic horizon of Taiwan was probably an eastern offshoot of the Corded Ware Horizon of the Chinese Southwest... and the extensive colonialization of the island was accomplished during the first phases of the Geometric..."

With the publication of the "Special Taiwan Section" of *Asian Perspectives* in 1964, of K.C. Chang's *Archaeology of Ancient China* (2nd edition) in 1968 and his *Fengpitou, Tapenkeng and the Prehistory of Taiwan* in 1969, a high watermark of sorts was reached in the consideration of Taiwan's prehistory as basically an extension of the mainland's. In the 1970's, however, radiocarbon dates from China began to unravel some of the hypotheses and grand syntheses on which Taiwan prehistory had been built. Its relations with the mainland were, in any event, never "solidly established" or "known with considerable certainty". A strong case could be constructed, using essentially the same data (Meacham 1983:156-165 [written in 1978]) for local evolution being much more important than the wholesale movements of people and culture which were being imagined to have swept across the Taiwan Strait. New archaeological data from Taiwan itself in the 1970's and 1980's was leading increasingly away from the tight linkages that had been proposed for



the various Neolithic phases with those in Southeast China, not to mention those of the more distant Central Plains or the Southwest.

The question of the Austronesian languages presumed to have been spoken by the early people of Taiwan, and of the important regional implications that an origin in China would have, had been relegated to a somewhat minor position in the interpretive schemes: it was a "complication" or a "contradiction" -- a problem that needed further study. There were suggestions that movements from Taiwan into the Philippines might have taken place, and that these migrants may have been Austronesian speakers, but no one put the archaeological and linguistic evidence together into a grand expansion of Austronesian speakers (or their forebears) from China to Taiwan, Luzon and the rest of island Southeast Asia. Not until Peter Bellwood in 1983-85.

## The Current Debate

In various articles Bellwood (1983, 1984) has painted what must be admitted to be an elegant and attractive scenario for the spread of Austronesian-speaking peoples from an ultimate homeland in South China. He has combined the archaeological evidence of contacts between the mainland and Taiwan with the linguistic evidence indicating that the languages spoken by Taiwan aborigines today derive from ancient offshoots of the earliest stock of Austronesian speakers. My dissent from this scenario has been recorded in two papers (Meacham 1988; 1992) and Bellwood has replied to some of the issues raised (Bellwood 1988). I will not attempt to summarize all the points of dispute, but hope to take a fresh look at some aspects of the question of Austronesian origins without going over old ground. The debate has served

to narrow the differences between us somewhat, and to sharpen the focus on the crucial issues. As I hope will be immediately apparent, these are major issues in the interpretation of archaeological data and the role of linguistic constructs in the reconstruction of the prehistory of the region.

Bellwood (1988:109) states for example that "the question of Austronesian origins is basically a linguistic question, since the taxon itself is a linguistic construct" and then remarks that the linguistic data indicates to him that: "Proto-Austronesian was located in or near Taiwan". Blust (1988) states more precisely that : "If Taiwan was not the Austronesian homeland it was certainly settled from the adjacent coast of China during the initial dispersal of Austronesian speakers [ca.4000 B.C.]" Such statements cannot be made on the basis of linguistic data alone, but incorporate information from history, archaeology and ethnography, with of course a large pinch of conjecture thrown in. It is only from archaeology that we have any evidence to show that Taiwan was inhabited 1000 or 3000 or 5000 years ago, or that these inhabitants might be ancestral to the aborigines of today; it is a hypothesis mainly generated from archaeological data that Austronesian or Proto-Austronesian languages were spoken on the island at those times. Bellwood (1988:113) acknowledges this fact indirectly in his concurrence that the Ta-p'en-k'eng (hereafter TPK) culture estimated at 4000-2500 B.C. can probably be associated with an Austronesian-speaking population and that "Taiwan has seen a mainly local evolution of cultures over the last 6000 years or more..." If we did not have this general indication from archaeology we could not claim with any confidence whatever that the Austronesian-speakers did not migrate into Taiwan at various times in its history, and displace or absorb earlier non-Austronesian groups. Indeed, one cannot be dogmatic on this point even now, and the possibility remains that the ancestors of some

of the present Taiwan aboriginals entered Taiwan at widely differing times.

Shorn of archaeological and historical data, and lacking independent evidence about the homeland of Proto-Austronesian, we could not rule out the possibility that the pre- or proto-Austronesians did reach Taiwan from the Yangtze Basin, Vietnam or Japan in a long distance, Polynesian-style migratory founder movement. Surely we should recognize that prehistoric linguistic taxons cannot be placed in time and space without the assistance of other disciplines. When we attempt to reconstruct the prehistory of a specific area we are referring to a population that has been identified archaeologically, and furthermore has been to some degree defined by archaeology in the manner described above for Taiwan over the last 6000 years. If we can link that population to a probable language then linguistic studies obviously will be of considerable importance, especially in shedding light on the many aspects of society and culture either absent or poorly reflected in the archaeological record. But in seeking the origins of the people represented by a culture as distant in time as the TPK, we should not rely solely or mainly on linguistic reconstructions. Squabbles over turf seem futile, since of course we are all on fairly thin ground !

The attempts at reconstruction of Proto-Austronesian life and society based on word studies are naturally of great interest to the archaeologist, and detailed multi-disciplinary consultations will eventually sort out the obvious problems, e.g. the presence of iron in Proto-Austronesian. The correlation of a hypothetical Proto-Austronesian society with a particular archaeological culture and chronological niche must both align and be aligned with the archaeological interpretations. That is, the hypothesized Proto-Austronesian society is now taken to be closely related in time with TPK, but the material evidence from the next phase, what used to be called

the "Lungshanoid", has more points of agreement, especially regarding rice cultivation. The possibility that Proto-Austronesian equates with a later phase such as Fengpitou or Yuanshan needs to be kept open and continually scrutinized. All of the data obtained in recent decades suggests that rice cultivation appears around 2000-1000 B.C. in Taiwan -- considerably later than in Bellwood's hypothesized transmission from the mainland via pre-Austronesian migrants with intensive development on Taiwan in the Proto-Austronesian/TPK period. If Proto-Austronesian does equate with the later Neolithic phases on Taiwan, then it would be logical to take TPK as "pre-Austronesian". The suggested remote links between Proto-Austronesian and an "AustroThai" language family on the mainland may well derive from contacts and influences which undoubtedly would have come with the spread of cereal agriculture and perhaps other aspects of neolithic technology and lifestyle at approximately the same general time frame.

## The Spread of Neolithic Culture

The reconstruction of Proto-Austronesian vocabularies make it clear that the speakers of the protolanguage(s), whenever and wherever they were, were probably Neolithic, possibly (but extremely unlikely) early Metal Age. As suggested above, however, it may not date back to the earliest Neolithic in China, Taiwan or even in the Philippines, if it was spoken there. Mainland China is still seen by most archaeologists as the likely source of the earliest neolithic traits in Taiwan, and those traits which do originate in China may have been picked up by Proto-Austronesian or pre-Austronesian contacts with the southeastern coastal areas without any migration into and colonization of Taiwan. If the ultimate ancestors of the Taiwan aborigines came from

the islands to the south, then they would certainly have had some contact with the coastal areas across the Strait, and these contacts would have led to the exchange of ideas and the movement of certain new neolithic traits.

There is a strong tendency in recent years to see the mainland as the source of most of the material culture of Taiwan. This *may* be true, but I believe that caution is as necessary in discussing any broad unidirectional movement of culture as it is when speaking of "migrations" --- subjects I have discussed elsewhere in some detail regarding Taiwan (Meacham 1992). This caution is especially appropriate when the origins and spread of the Neolithic in Luzon are still only very dimly perceived.

It is worth reiterating here that the C14 dates do *not* show a pattern of neolithic culture movement from Taiwan to Luzon and points further south, in spite of the tenuous and rather subjective arguments of Spriggs (1989; 1992). After agreeing that the Pa-chia-ts'un date for TPK is not reliable, Spriggs (1992) continues to maintain that the C14 dates still suggest "considerable Neolithic action" in Taiwan prior to 4500 BP in spite of the inconvenient fact that the only two sites on the island with older dates (5600-6000 BP) are both palaeolithic. Spriggs seems to have confused the hard data with his own beliefs. This confusion is seen again in his claim that in Luzon "the earliest Neolithic dates ... can be taken as fair approximations of the beginnings of the Neolithic...Unlike Taiwan, what you see is what you get." For the entire land mass of Luzon, as of the time of Spriggs' summary, there were only two open Neolithic sites which have been dated; all the other dates came from cave sites. It is absurd to claim from this extremely limited sample of the archaeological record that "what we see" can be taken as a good indication of the ultimate reality.

One example of a neolithic artifact and custom which may have come

from the south, or from Taiwan itself, is mentioned by Chang (1985): a fragment of a barkcloth beater which he excavated in 1953 from the TPK cultural stratum at Yuanshan. This artifact, which Chang remarks "is probably the oldest find of a barkcloth beater anywhere, brings the barkcloth to Southeast China..." and may be a reflection of an Austronesian tradition of barkcloth rather than woven clothing. There are a number of excellent examples of tapa-beaters from Guangdong, including one from Shen Zhen near Hong Kong, which are invariably called "pottery beaters" by the local archaeologists. The Shen Zhen specimen was from an excavated context dateable by pottery typology to around 4000-3000 B.C. There are three examples from Hong Kong, one published (Ward & Chiu 1979), and one recently excavated from a context dated to 4100-3600 B.C. (probably the oldest securely dated barkcloth beater in the world). Of course one might argue from this evidence that tapa-beaters originated on the mainland, but their relative rarity and the great preponderance of spindle whorls suggest otherwise. At least we can say that bark cloth was a minor element in the southeast coastal neolithic culture, whereas it became a major tradition in Island Southeast Asia.

Assuming that at least some if not most of the neolithic technological traits did indeed come to Taiwan from the settled rice-cultivating communities of the southeastern coast of China, is there any reason to resort to migrations, however incremental, to explain the phenomenon ? Bellwood believes that small groups -- "one or a few families" ---crossed the Strait and established one or two small colonies on Taiwan, which eventually multiplied and expanded onto most of the suitable land on the island. The most serious and basic problem that I find with this view is that it posits an actual migration and colonization where none is required, or justified by the data.

Applying Rouse's criteria (cited favourably in Chang 1964:198), clearly no migration can be said to have occurred. But the type of micro-migration hypothesized by Bellwood -- one or few canoeloads of people carrying all the traits of the Neolithic in almost Noah's Ark manner -- is below the level of detection of Rouse's conditions, and indeed of archaeology generally, as Bellwood himself points out. The material culture of the new colonizers would have very quickly adapted and evolved into a new entity not identifiable with its mother culture, perhaps in the space of a few generations.

But do we need to assume a movement of people, in the sense of one-way migratory movement, to explain the transmission of rice cultivation and other possibly related neolithic traits ? Clearly we do not; contacts between the mainland and Taiwan would be sufficient to account for the movement of new ideas and their subsequent development on Taiwan. Of course the same applies in the reverse direction, and between Taiwan and Luzon. Bellwood (1988:113) agrees 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." Bellwood and others still opt for the direct movement of agricultural settlers over diffusion for two principal reasons:

1. It is the Neolithic agricultural setting which provides the impetus for expansion, and
2. Conversion of hunter-gatherers to agriculture induced by diffusion is unlikely; the probable mode of diffusion of agriculture is through the gradual expansion of the population it supports, and assimilation of hunter-gatherers.

I would dissent from both of these propositions, especially as regards an expansion across the Taiwan Strait. We are not in a position to be dogmatic

about how agriculture expanded during the Neolithic, and analogies with the resistance of some modern hunter-gatherers to take up the sedentary farming life are of course of very limited value. It is clear that during the Early Neolithic hunting-gathering groups did make the transition to agriculture as the idea spread, and there is every reason to believe that this process was repeated many times in the Middle and Late Neolithic, and after. There must have been several grades of interface, with some groups relying more and others less on domesticated plants and animals.

The evidence from Taiwan and indeed from the entire southeastern coast of China and from Luzon as well is that gathering of shell foods and fishing continued to play a significant role throughout the Neolithic and into historical times, even among peoples who had a developed agricultural system. It is not hard to imagine the people of TPK in such a transitional mode, with fishing, shell-collecting, hunting and gathering of plant foods supplemented by some horticultural activities and the tending of small numbers of chickens and pigs. The extent to which any subsistence activity dominated over the others varied from site to site and from phase to phase, but even after several thousand years we do not see a completely rice oriented economy and dense population anywhere in the Taiwan landscape. This picture (but without the domestic animals) agrees with the interpretation of Li Kuang-chou (1983) for the three Neolithic phases at O-luan-pi from ca. 4000 to 2500 BP. Chang (1986:231) describes the TPK culture as even less 'neolithic': "The evidence shows beyond question that the inhabitants' principal mode of subsistence remained hunting, fishing and collecting, but the probability of some form of gardening is also very strongly indicated." These appraisals of the archaeological record simply do not support the idea of a major colonization of the island by rice cultivators during the TPK period.



## Impetus for The Spread of The Neolithic

Bellwood and before him Chang and many others have seen the rise of cereal agriculture in China as the source of major expansive movements of people into other areas believed to have been sparsely inhabited by hunter-gatherers. The distinctive feature of Bellwood's scenario is that, as mentioned above, he does not actually propose a coherent migration of people, but rather an almost invisible micro-migration that does however transport the technology necessary for the few hardy souls who set out to conquer new territory. For Chang, van Heekeren, and Heine-Geldern, to mention but a few, the rise of agriculture was accompanied by population growth and pressure and the inevitable expansion into undeveloped areas. For Bellwood, the impetus also relates somehow to population growth : "The question of Austronesian origin and early expansion is related to factors of population growth and instability promoted by agriculture, based mainly on cereals..." But with a subtle difference clarified in our exchange : "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" (1988:109.113).

For agriculturalists to spread gradually into contiguous regions poses no difficulty on the East Asian mainland, and indeed we can see the spread of Chinese farmers in historical times as far as Korea and Vietnam -- by thousands of micro-migrations over the next hill and down the next valley. The really perplexing, and I think vulnerable, part of any proposed movement of people across the Taiwan Strait comes with the capacity and willingness to set out on a journey of nearly one hundred miles over perilous water such

as the Strait is, with the high probability not only of never returning but also of a complete break with the society left behind. The fact is that Taiwan remained beyond the pale of the water-dwelling Bronze Age Yueh -- Huang Shih-chang's (1985) detailed and rather fanciful arguments notwithstanding -- and then outside the bounds of historical Chinese civilization for almost two thousand years. Taiwan's relative isolation from developments on the mainland from at least 2500 B.C. until the 17th century A.D. bear eloquent witness to the unlikelihood of the coastal lowland population, especially the communities engaged in the sedentary pursuits of cereal agriculture, ever having produced the dynamic to push people out over large expanses of water. Indeed, it seems fairly well established that no significant overseas movement of people from south China is known until the Han Chinese colonization of Taiwan -- almost six thousand years after the conjectured movement of the "one or a few families" of pre-Austronesians across the Strait.

Surely it is more reasonable to look to the island population in the archipelagoes to the south, where the distances to be traversed were hundreds of times greater than the crossing of the inlets, bays, river mouths, or the journey out to fishing grounds, along the southeast coast of China. And surely it is this population of inter-island sea-farers who perfected the canoe construction and knowledge of currents and winds to the stage that sailing out of the sight of land did not create any fear or anxiety in them. I have elsewhere (Meacham 1983:151-156) described how the rise of sea level in the early Holocene, with its attendant flooding of land bridges, the break-up of large land masses into archipelagoes, and the separation of communities all must have provided a stimulus to improved sea communications in insular Southeast Asia. It is completely unfathomable to me how Bellwood (1983:81) could propose that "as the [rice-cultivating southern Chinese]

groups expanded so they developed better methods of canoe construction and navigation..." and not mention in the same breath the probable time depth of tradition of canoe construction and design in Island Southeast Asia. Did not the later development of ocean-going canoes and sea-faring skills take place in the islands of Southeast Asia, providing the means for long-distance sea journeys into the Pacific ? At least there is a consistency and continuity in positing the development of sea-faring skills and ocean-going canoes in this area rather than in southeast China.

Capacity for extended sea journey does not in itself provide for the spread of neolithic culture traits, but it could set the stage. Let us assume for the sake of argument that the Southeast Asian sea nomads/sailors were still at a hunting-fishing-gathering stage, and that their increasing mobility and widening resource base made it unlikely that their native cultures would ever develop on their own beyond that stage. Yet this wider ranging life-style would bring them into contact eventually with various peoples who had horticulture, cereal agriculture, pottery, and domestic animals. The contacts, spread of ideas and trade that would certainly have happened on many occasions constitute I believe the crucial element in the spread of neolithic traits throughout the region, and not in a unidirectional flow from the mainland to the south. Indeed the complex of traits that we call "neolithic" must have been derived from many different peoples in East and Southeast Asia, and it is not unreasonable to suppose that the idea of pottery came from one direction, that of polished stone/shell tools from another, spinning and weaving from a third, cereal from elsewhere, other crops and domestic animals from every quarter (once the idea of plant and animal manipulation got around). Surely, the mobility of these sea-farers played a very important role in the rise of the Neolithic along the coasts and through the islands of East and

Southeast Asia. Solheim (e.g 1975) of course developed this idea many years ago, and coined the term "Nusantao" for Austronesian-speakers who moved out of a homeland in eastern Indonesia and the southern Philippines and played an important role in the transmission of neolithic traits.

## The Early Occupation of Taiwan

Could the pre-war Japanese scholars have been right after all about the origins of the Taiwan aborigines in the Philippines ? I strongly suspect that they were, at least in part, for two main reasons : the language link, and the geography. When all is said and done, Holocene prehistoric Taiwan was part of Island Southeast Asia in terms of climate and setting. Pre-16th century Taiwan was part of this world linguistically, with an enormous body of Austronesian-speakers to the south, whereas to the north no historical or ethnographic traces of Austronesian can be found in all the vastness of continental China. Even the Philippine Negritos and the hill tribes of the remote hinterlands of Indonesia spoke Austronesian languages. The replacement there of native languages by Austronesian ones is said to have been total, by those who believe that Austronesian-speakers moved into the island chains. But is it not a logically more efficient argument to propose that this area is actually the Austronesian homeland, and that Proto-Austronesian was a string of related languages aboriginally spoken somewhere in region ? If the Taiwan Austronesian languages represent "ancient offshoots" from the Austronesian evolutionary tree, could this fact be explained by an isolation from subsequent linguistic developments which spread over the rest of the homeland area ?

These are the linguistic qualms and queries of a layman; linguists with

an inclination towards an island Southeast Asian Austronesian homeland could frame the questions and generate the hypotheses more elegantly and technically. But regardless of whether the early Austronesian-speaking inhabitants of Taiwan came from the mainland of China or from the islands to the south, it is clear they must have been cut off from and unaffected by subsequent developments in the homeland and in languages in the Austronesian mainstream.

It is believed that some movement of people into the Taiwan area did take place from the south in more recent times, notably the Yami of Lan Yu, and possibly several other groups at different times as suggested by Paul Li (1995). It would not be unreasonable to see this northward migration pattern as a reflection of the initial peopling of, or let us say, the significant population increase in Taiwan, which probably took place around 4000-3000 BC. This is the first millennium after the sea reached and stabilized at its present level, and it is tempting to relate these geological events to the occurrence of neolithic traits in Taiwan, Luzon, Sulawesi and Timor at around this time. But is it necessary once again to resort to a large scale migration/ colonization, or even a small scale one, to account for the "peopling" of Taiwan which the rise of the TPK culture appears to represent ? My instincts and bias toward local evolution say no.

Taiwan was of course inhabited in earlier times. Sung Wen-hsun (1969) relates the Changpinian culture to the paleolithic of continental China, though similarities with the Tabon pebble and flake industry of Palawan have also been noted. There are problems with the one early date of > 15,000 years obtained on an undersized charcoal sample, while the other four samples from Changpin and two from the paleolithic stratum at O-luan-pi all fall into a tight cluster around 6000-5500 BP. It could be argued that the

earliest inhabitation of Taiwan dates to around 6000 BP, and if this were so, it would be of some significance in terms of the post-Pleistocene rise of sea level and related sea-faring activities discussed above.

But there are other reasons for putting the dates of Changpin at 15,000 + BP to 5500 BP. One may note that this period also marks the geological revolution of Taiwan as an island increasingly distant from China, and, by the end of the period, culturally more akin to the island Southeast Asian sphere. At 15,000 BP the Changpinian represents one of many late Paleolithic assemblages in South China at a similar technological stage. By 5500 BP Changpin stands out as unique if compared with sites of that period anywhere on the East Asian mainland. But it is one of many paleolithic assemblages known at that date from Island Southeast Asia. While it may be technologically distinct from them, it does illustrate the fact that Taiwan by that time was isolated culturally as well as physically from the mainland.

The small groups of hunter-gatherers who occupied the Changpin and O-luan-pi sites at ca 5500 BP. clearly had no means of contact with the mainland. The population must have been extremely sparse and semi-nomadic -- clearly in no position to defend territory or inhibit the settlement of the island by more efficient and mobile hunter-gatherers, who were probably practicing some horticulture. The stage would seem to be set for a migration into Taiwan to explain the subsequent culture change and population increase. Or could the Changpin people have been the immediate precursors of the (relatively) advanced, early neolithic, hunting-gathering horticulturalists of TPK?

There is a wide consensus, perhaps unanimity, among archaeologists familiar with Taiwan that TPK represents a new people, and that there are no continuities between Changpin and TPK. Could I beg the reader's indul-

gence for a moment to think in new, perhaps untenable directions : Could TPK have evolved -- with considerable outside stimuli of course --from Changpin ? There is hardly a shred, not to mention a sherd, of evidence, but my instincts say yes.

In 1976 I put this possibility to Sung Wen-hsun, and he said there was no evidence at all. For perhaps half an hour, I asked him about some theoretical possibilities, after which I believe his patience finally ran out, and he suggested a snack. For those readers who know the materials intimately, please forgive the impudence of a rank outsider even to raise the question. I have not studied the Changpin or TPK materials first-hand, except for those objects on display in various exhibits. I have only visited a few of the hundreds of sites in Taiwan, and only Yuan-shan and Ta-p'en-k'eng of the TPK culture. But I have read the literature on Taiwan, and there are occasions, admittedly rare, when an outside observer might call attention to a trait or create a hypothesis that has validity.

My discussion with Sung did not reveal any lines of evidence that seemed rewarding, but I wonder now whether all the possibilities have been exhausted. The questions I posed then are still relevant :

- Have for example all the stone tools and stone debitage from all the TPK sites been examined closely, and by several archaeologists, for even distant reflections of the Changpin industry ? From the drawings and plates in various publications (especially Li 1983) there would seem to be possibilities.
- Are there any sites which do not quite fit the TPK pattern, with a stone industry that has more primitive features?
- Are there any reliable dates yet for TPK ?

The appearance and initial spread of TPK may have been quite sudden,

judging from the reported degree of similarity of assemblages from various parts of Taiwan. Until we have 10-15 radiocarbon dates from secure, excavated contexts, we cannot say much about its origins and dating, but even minor clues could suggest a new direction for hypothesizing. O-luan-pi may have such clues.

A "local evolutionary" model naturally would not require local origins for every new trait, or necessarily for any of them, but rather assumes that a stable population was incorporating new ideas from outside, giving them local characteristics, innovating on a small scale, and using new technological and other culture traits when and if it suited their traditions, adaptive strategies and whims. It is not difficult to imagine transition within a few generations to new subsistence activities and a radically new material culture. But if it is the same population then there should be some faint indications at least in the material culture.

## Continuities at O-Luan-Pi

1. The first piece of hard evidence that a local evolution hypothesis could focus on is the site of O-luan-pi itself: site II Loci A-E (Li, 1983) in particular. The area is attractive and scenic, but it is not of landmark proportions. The fact that in an area of 200 by 200 m four cultural phases were found, dated by the excavator and by C14 at 5000, 4000, 3000 and 2500 BP, might suggest near-continuous occupation of the site.

2. In addition, not only stone tools but shell and bone implements are found in each of the four phases, and the bone tools of the later phases have parallels in the earliest assemblages. There may be a gap between the first, Changpin-related phase (OLP I), and the next (OLP II), which is inter-



preted on the basis of typology as a late phase or outgrowth of TPK. But no C14 dates are reported for it. It could be argued of course that near-continuous occupation of an attractive site and similar source materials for tools does not necessarily imply continuity of population, but these shreds of evidence do in my view tilt slightly toward a local evolutionary explanation.

3. The exploitation of shell food resources has a continuum, and the first two phases have similar shell remains in terms of quantity and variety of species. The third (OLP III) has a much larger quantity and much greater variety of shells represented, suggesting a larger population and either ecological change or a shift in collecting strategy. The shells of all four phases are of similar sizes and have similar fractures for the extraction of the shellfish.

4. Li's table (1983:65-67) listing the tool types from each of the four phases shows that pebble and flake choppers, flake tools, pitted pebbles and bone "chisels" are found in all. Judging from the photographs, there are broad typological similarities, and the "flake choppers" of phase I and III seem quite close. The typological traits suggest that at least parts of the primitive stone industry did continue through time, even after much more sophisticated stone technology has been adopted.

While all of the above-mentioned characteristics are interesting, it is the neolithic artifacts and pottery of the upper three layers which draw one's attention away from the continuities, and because they are so clearly unprecedented in the lower layer, seem to suggest a new population. The continuities listed above would provide some support for an interpretation of the site based on continuity and local evolution. But they are not specific enough to get really excited about and base bold statements on.

5. But the shell scrapers, the humble operculum shell scrapers -- now

they are something to hang more interpretive weight on! In phase I and in *each subsequent phase*, the same type of disc-shaped scraper occurs, made always from the same shell (identified as *Turbo cornutus* in Sung et al 1967). This is a specific tool type which is most unlikely to have been independently invented by an incoming group of migrants. According to Li (1983: 33,43,51), "the concave side of the operculum was chipped to a sharp edge" - - and precisely the same manufacturing process was observed by Li in the scrapers from phases I, II and III. Of the published specimens, the range of diameters, or lengths in the case of ovaloid shapes, is virtually identical in each phase.

Li remarks that the shell scrapers of phase I are the oldest examples in East Asia. A preliminary search of the literature revealed no similar specimens in South China or the Philippines, and only one other reported example from Taiwan -- from the first excavations at O-luan-pi. Sung et al (1967:31) noted the same manufacturing process, and cited an example in stone of a similar tool used by the Yami of Lan Yu to scale fish. The Yami tool was made from flat beach pebbles, but the operculum scraper was in Sung's view a more efficient tool. During the International Symposium on Austronesian Studies Related to Taiwan, Pat Kirch maintained that the opercula are not tools at all, but had been damaged by the food-extraction process. He cited the existence of many similar examples on Lapita sites. After the Symposium, with this possibility in mind, I inspected several specimens of the chipped opercula from O-luan-pi on display at the Archaeology Dept. of the National Taiwan University. The regular edge-working which was apparent on them left me with no doubt that K.C. Li was right in his original interpretation of the artifacts as scrapers that have been deliberately fabricated for that purpose. W.H. Sung, C.M. Lien and C.H. Tsang all

concurrent. Later, consultation with a marine biologist settled the matter: not only would the food extraction have been much easier and more logical if the weaker parts of the shell were attacked, but the chipped edges on all 38 specimens illustrated in K.C. Li's O-luan-pi report are invariably on the inner surface of the opercula. This phenomenon is clearly related to the concave cross-section of the operculum and the function of the desired tool.

There may be earlier examples in the Philippines of the use of Turbo opercula for making tools. Spoehr (1973) reported a site on the island of Sanga Sanga in the Sulu Archipelago which had shell tools associated with pottery in the upper level and shell tools with flaked stone tools, shell debitage, middens and a bone tool in the lower level. C-14 dating of Turbo opercula from each level gave results of 6650 +/- 180 and 7945 +/- 190 BP respectively. A more recent excavation at this site has been conducted in 1992 by W.P. Ronquillo (personal communication and 1993). This excavation confirmed the presence of pottery, polished shell adzes and polished stone adzes in a stratigraphically distinct layer with a C14 date of 7290 +/- 120 BP., which calibrates to ca. 5990-5540 B.C. Such an early date on a neolithic assemblage in the southern Philippines must raise serious questions about the origins of neolithic technology in island Southeast Asia, including Taiwan. Interestingly, a large Turbo operculum with flaking on the edge was found, but Ronquillo was not certain that the object was a tool.

The presence of the operculum scrapers in all four occupation phases at o-luan-pi *considerably* strengthens the case for local continuity. It does not prove that the population was completely stable or that there was no immigration into it. But I would argue that it does show that the evolution from what Li called "persistent upper palaeolithic" to a neolithic stage did not involve the total displacement of the original population by a new wave of

migrants bearing the neolithic way of life. The site of O-luan-pi may represent a stable population in contact with "the outside world" by means of trade, inter-marriage, raiding, etc. but with no numerically significant movement of settlers into the area. Or it may represent a small population of hunter-gatherers which was gradually assimilated into an expanding neolithic population, with the survival of certain "primitive" artifact types. The former scenario seems the more likely to me.

## On The Neolithic Peopling of Taiwan

It is clear that the continuities between the first and subsequent phases at O-luan-pi do not prove or disprove the contending hypotheses on the appearance and spread of neolithic technology in Taiwan. The probability of a continuum of population and cultural development does however allow a sharper focus on the mechanisms which might have given rise to the Neolithic, and on the possible origins of the TPK culture. There was certainly an increase in population when this culture makes its appearance, probably in the period 4000-3000 B.C.

The key to the spread of the neolithic traits, and presumably the population increase related to it, is surely in contacts with the major land masses adjacent to Taiwan. As I have indicated above, some of the traits may well have come from the south, but it is not unreasonable to assume on present evidence that most came from the southeast coast of China, where neolithic cultures were already highly developed. Although the situation in Fujian province is still somewhat ill-defined, it seems reasonable to extrapolate from adjacent provinces to conclude that it too had cultures at a similar grade of material and technological development. This is at the same time the reason

why one looks to the mainland for the origin of most of the neolithic elements which appear later in Taiwan, and the reason why one may well doubt that neolithic culture came across the Strait as a package. Rather, some elements seem to have drifted across, many others not, and those that did underwent considerable change in the process. Pottery as a concept *probably* came from the mainland (disregarding the theoretical possibility of a Japanese origin) but TPK cannot be closely related to any mainland cultural assemblage, and probably constitutes a melange of some borrowed elements and much local innovation. This is not what one would expect if a consistent pattern of settlement took place from the mainland to Taiwan. But it is what one would expect if there were only occasional or rare contacts across the Strait.

The key, it should be stressed, is the contact, and more specifically the ability to initiate and maintain contacts. To my mind, this key element was brought by people from the south, as discussed above, and it played the main role in planting and cultivating the seeds of neolithic life in Taiwan. Perhaps, though it is by no means certain in the light of the data from Sanga Sanga, the seafarers from the south knew nothing of agriculture, pottery or polished tool technology when they began to undertake increasingly extended sea voyages from northern Luzon across the Balintang and Bashi Channels, along the coasts of Taiwan and across the Taiwan Strait. But the conduit of information they provided was the stimulus for hundreds of small groups such as that represented by O-luan-pi to try out and adopt new techniques and subsistence patterns, while continuing to rely on traditional resources.

Such a scenario does require a single settlement on Taiwan by "Nusantao" from the south, though undoubtedly some did occur. These settle-

ments may have been seasonal or short-lived, and the ancestral genetic input of people from Luzon into the Taiwan aboriginals of today may have been very small indeed. The major influence from the sea nomads would have been in the conduit of information and ideas, and of course the language. Those groups of hunter-gatherers who avoided the seafarers, moved inland and/or clung tenaciously to the old lifestyle would eventually have been overwhelmed by the expansion of the neolithic population, either being absorbed into it or becoming extinct. It seems logical to propose that the seafarers and the emergent neolithic population on Taiwan were pre- or Proto-Austronesian.

## Conclusion

In this reconstruction, we have seen that the mainland provided the first humans to inhabit Taiwan, and was the source for much of the neolithic technology and material culture which was eventually adopted by the descendants of the first paleolithic inhabitants. Luzon and other islands of the south provided the seafaring skills necessary to make contacts with the mainland, and the language which spread in tandem with the neolithic cultural elements and the attendant population increase. Perhaps it is fanciful, but at least it is a fair distribution of the ultimate origins of important aspects of Taiwan's prehistory to the north and south. Of course the most important aspect of all is what the peoples of Taiwan did themselves.

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# **The Lapita Culture of Western Melanesian in the Context of Austronesian Origins and Dispersal**

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At approximately 3,500 B.P. a distinctive archaeological horizon appeared quite suddenly throughout much of the Bismarck Archipelago in Western Melanesia. Known as the Lapita cultural complex, these assemblages are characterized by complex and sophisticated ceramics, stilt-house and coastal villages, complex shell-working, a broad-spectrum horticultural/marine economy, and long-distance exchange. The appearance of the Lapita culture in Western Melanesia is generally interpreted as representing a major incursion of Austronesian-speaking peoples. In this paper, new evidence for the earliest Lapita phase in the Bismarck Archipelago is reviewed, and compared with the archaeological sequences for other island groups in Indonesia, Sabah, and the Philippines. The archaeological evidence supports a model of Austronesian expansion throughout this island southeast Asian-Melanesian region over the period from ca. 5,000-3,000 B.P. The paper concludes with a brief consideration of the possible role of Taiwan as the Proto-Austronesian homeland.

## **Introduction**

At approximately 3,500 years B.P. a remarkable phenomenon occurred throughout much of Western Melanesia, especially the Bismarck Archipelago: the sudden appearance of large, permanent village settlements occupied by the makers and/or users of a sophisticated ceramic complex. The ceramics, known archaeologically by the term *Lapita*, are highly distinctive not only in

vessel form but in the rigorous system of dentate-stamped and incised decorative motifs applied to their surface contours. This Lapita Cultural Complex (Green 1979) has no clear precedents in the Bismarck Archipelago itself--and although Lapita probably rapidly incorporated some aspects of earlier cultural traditions in the region (Allen 1984; Gosden 1989; Green 1991, 1992)--many prehistorians (though not all) agree that the sudden appearance of Lapita communities in Western Melanesia marks the intrusion of a new population. For a variety of reasons, including not only archaeological evidence but also arguments from historical linguistics and biological anthropology, the appearance of the Lapita complex in western Melanesia is frequently interpreted as the archaeological reflection of the first significant expansion of Austronesian-speaking peoples into Oceania proper.<sup>1</sup>

The significance of Lapita for the subsequent colonization and prehistory of Remote Oceania (especially Polynesia and central-eastern Micronesia) has been extensively discussed in the literature (see, for example, Kirch and Green 1987 on the importance of Eastern Lapita as the foundation for the Polynesian societies). The aim of this paper, therefore, is not yet another overview of the contribution of the Lapita complex to later Oceanic prehistory. Rather, my purpose is to turn the archaeological gaze in the reverse direction, westwards toward the Austronesian homeland and back in time to periods predating Lapita. What can an archaeological perspective on the *earliest* Lapita phase of the Bismarck Archipelago tell us about the early Austronesians as they commenced their expansion eastwards into the Pacific?

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1 The qualifier "significant" is critical here, for it is entirely conceivable that there was some Austronesian presence in the Bismarck and/or New Guinea region prior to Lapita. However, such earlier intrusions--if they did occur--had nothing of the scale or impact of the Lapita expansion.

The archaeology of island southeast Asia, including Taiwan, is still in an embryonic stage, and attempts to link the earliest Lapita culture of the Bismarcks with specific archaeological assemblages to the west are fraught with pitfalls. However, that such links existed cannot be doubted, and recent discoveries such as Bismarck Archipelago obsidian in Sabah archaeological sites (Bellwood and Koon 1989) are exciting developments. In this paper, I outline in summary the key aspects of the earliest Lapita cultural complex as manifested through recent archaeological excavations in the Bismarck archipelago. With this overview as a guide, I then canvass the island southeast Asian archaeological record for parallels and connections, ending ultimately with Taiwan, considered by some as the putative Austronesian homeland. The reader should not expect any definitive conclusion, for our knowledge of the archaeology and prehistory of the early Austronesian world is still much too fragmentary. However, stock-taking efforts such as this are essential from time-to-time in order to guide and direct future research.

## 1. Recent Lapita Archaeology in the Bismarcks

Before proceeding to an overview of the earliest Lapita assemblages of western Melanesia, a brief discussion of the archaeological sources is required, particularly because much of the material drawn upon in this paper is new and to some extent, still unpublished. Prior to 1985 archaeological knowledge of Lapita sites in the Bismarck Archipelago was restricted to limited excavations at the late Lapita site of Watom, inconclusive tests of two Lapita sites in the Mussau Islands (Egloff 1975; Bafmatuk et al. 1980), and a few other surface collected or tested sites (e.g. the Ambittle site). Anson's attempt (1986) to synthesize these data into a coherent picture of a distinctive Far Western Lapita culture was more provocative than convincing (see

Kirch et al. 1987).

This situation changed dramatically following the implementation in 1985 of a major international effort, the Lapita Homeland Project, the brainchild of Jim Allen (1984). Surveys and excavations of Lapita (and non-Lapita) sites were undertaken throughout this region, but particularly in the Mussau Islands, New Ireland, Duke of York Islands, Watom, Nissan, and along the southwestern coast of New Britain (including the Arawe Islands). Subsequently, the rich early Lapita finds at Mussau and in the Arawe Islands have been followed up by intensive field seasons led respectively by P. Kirch and C. Gosden. As a result of these projects, a distinct early Far Western Lapita phase can now be defined in terms of a number of archaeological criteria, including ceramic style, non-ceramic material culture, settlement patterns, and so forth.

Although none of these new excavations at early Lapita sites has yet been fully monographed, several preliminary reports and syntheses have appeared. These include the overview by Gosden et al. (1989) on Lapita sites studied during the 1985 project, and various chapters in the edited Lapita Homeland Project report (Allen and Gosden, eds., 1991), especially those by Kirch et al. (1991), Specht (1991), and Gosden (1991). In addition, preliminary reports and specialized studies resulting from three seasons of work at the rich Mussau Islands Lapita sites have been published by Kirch and his associates (Kirch 1987, 1988a, 1988b, 1989, 1990; Kirch and Hunt 1988; Kirch, Swindler, and Turner 1989), while Gosden (1989, 1991, 1992) has begun to report on his extensive work in the Arawe Islands. These, along with extensive unpublished data from the Mussau Islands in the author's possession, are the primary data sources upon which the following overview of early Lapita assemblages in the Bismarck Archipelago is based.

## The Earliest Lapita of Western Melanesia

### 2. Sites and Chronology

A brief review of key sites and their associated radiocarbon ages is a necessary preliminary to the synopsis of the early Lapita culture in the Bismarck Archipelago. Without doubt the most important site excavated to date, in terms of the wealth of artifacts, faunal and floral materials, and of the extent of excavations, is Talepakemalai (Site ECA in the Papua New Guinea national site inventory) on Eloaua Island in the Mussau group (Kirch 1987, 1988a). The ECA Lapita deposits extend over more than 1 km<sup>2</sup>, but the most significant materials were obtained from a waterlogged zone covering more than 100,000 m<sup>2</sup>. The site has been extensively dated by radiocarbon (Kirch and Hunt 1988), and initial occupation began by about 3,500 B.P. The early phase at ECA extends from about 3,500-3,000 B.P. Also yielding important collections of early Lapita materials from the Mussau Islands are the EHB and ECB Lapita sites on Emananus and Eloaua Islands (Kirch et al. 1991). EHB appears to have been established at about the same time as ECA, and its ceramic assemblage appears to be a good sample of the earliest Lapita pottery. Site ECB may have been settled toward the end of the early Lapita phase. Other sites in the Mussau Islands, such as EKQ, although they contain later Lapita ceramics, are not considered in this review.

Another locality where sites containing early phase Lapita materials were excavated during the Lapita Homeland Project is the Arawe Islands, a small group of *makatea*-type islets off the southwest coast of New Britain. Sites FNY, FOH, FOJ, and FNZ all contain pottery of early Far Western type

(Gosden et al. 1989:570), although no detailed information on the ceramics is yet available. The published radiocarbon dates indicate that initial Lapita settlement in the Arawe Islands begins about 3,000 B.P., although pre-Lapita sites are also clearly present.

Other sites dating to the early Lapita phase have also been recorded elsewhere in the Bismarcks, such as the Ambittle site off the coast of New Ireland, probably the Boduna site off Talasea, New Britain (Ambrose and Gosden 1991), and possibly some of the highly-disturbed open sites reported by Lilley (1991) from the Duke of York Islands between New Ireland and New Britain (these sites remain undated). In sum, at least ten sites containing early Lapita materials are now known throughout the Bismarck Archipelago, with a temporal span from about the middle of the second millennium to the beginning of the first millennium B.C.

### 3. Settlement Patterns

In his classic review of the Lapita cultural complex some 15 years ago, Green (1979) alluded to several key aspects of Lapita site location and settlement pattern: "settlements when occupied were situated so as to maintain ready access to the sea and permit launching and beaching of large canoes;" "small islands represent a disproportionate part of the total" range of ecological settings of Lapita sites; "the preferred locations were in the intermediate zone" between marine and terrestrial environments; and, "Lapita settlements were internally differentiated, self-sufficient villages occupied by sedentary populations" (1979: 32, 34). (See also Lepofsky 1988 for a detailed review of the evidence for Lapita settlement locations.) The recent evidence from the early Bismarck Archipelago sites confirms Green's statements, but also adds new perspectives on the nature of Lapita settlements. Certainly the



proclivity to settle on small, generally coral (or upraised limestone) islands situated off the coasts of larger land masses such as Mussau and New Britain is now thoroughly attested.

Perhaps most intriguing is the discovery that a common settlement type among the earliest Lapita villages was a cluster of *stilt- or pile-house structures* constructed over shallow water reef or lagoon flats. Such pile dwellings are well known in the ethnographic record for Melanesia and for parts of island southeast Asia (Watterson 1990), but had hitherto not been evidenced for early prehistoric periods. At the Talepakemalai site, stilt-houses were constructed over a shallow reef flat, and the bases of these dwellings have been anaerobically preserved due to subsequent coastal progradation, burial, and creation of a waterlogged site context. Similar preserved pile bases have also been discovered by Gosden in the Arawe Islands sites. In other cases, it appears that the lack of a later phase of progradation or sediment accumulation has left some former Lapita stilt-house settlements represented only as palimpsests of sherds and other artifacts scattered across the reef flat. This is the most likely explanation for the Kreslo site described by Specht (1991), and for several later Lapita sites reported by S. Wickler (pers. comm., 1990) from the northern Solomon Islands.

The predilection of the earliest Lapita colonizers in the Bismarck Archipelago for offshore islets and sand cays as the locations for their pile-house and other settlements raises intriguing questions. The avoidance of the larger mainland islands could reflect at least two possible motives: (1) given that the larger islands were already settled, this settlement pattern may indicate an avoidance of direct contact with these indigenous populations; or (2), given the likelihood that malaria was already endemic in the Bismarcks, the strategy may represent efforts to avoid mosquito-infested coastal lowlands

of the main islands. Of course, these possible motives for the early Lapita settlement pattern need not have been mutually exclusive.

#### 4. Subsistence Economy

New evidence for the subsistence economy of the earliest Lapita communities in the Bismarck Archipelago comes from extensive suites of faunal and floral materials excavated at Talepakemalai and other sites, augmented by the less direct evidence of technology. Overall, the Lapita subsistence economy can be characterized as a broad-spectrum adaptation to a wide range of marine and terrestrial microenvironments and resources, an economy that integrated developed horticulture/arboriculture with technologically sophisticated exploitation of the marine world. Some hunting-and-gathering of terrestrial resources is also indicated.

The horticultural basis of Lapita economy had long been inferred archaeologically on such indirect evidence as the sedentary, long-duration village settlement pattern, the presence of domestic animals (pigs, dogs, fowl) and of artifacts related to vegetable food preparation (scrapers, peeling knives, etc.) (Green 1979; Kirch 1984:54-62). The water-logged deposits at Talepakemalai and some of the Arawe Islands Lapita sites have now yielded a large collection of anaerobically-preserved plant remains, adding invaluable new data on early Lapita cultivation (Kirch 1989).<sup>2</sup> These reveal that the early Lapita settlers cultivated an extensive complex of tree crops, including many cultigens typical of later Melanesian village arboriculture (e.g., Yen 1974).

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2 Sites excavated by Gosden (1992) in the Arawes have evidently yielded a prehistoric plant assemblage very comparable to that reported by Kirch (1989). However, no detailed report is as yet available on this assemblage, and the discussion following therefore depends entirely on the materials from the ECA site in Mussau.

Among the most important cultigens directly attested by plant remains at the Talepakemalai site are: coconut (*Cocos nucifera*), Tahitian chestnut (*Inocarpus fagiferus*), the Canarium almond (*Canarium indicum*), the Vi apple (*Spondias dulcis*), *Corynocarpus cribeanus*, *Dracontomelon dao*, *Pometia pinnata*, *Burckella obovata*, and *Terminalia catappa*. Significantly, many of these taxa are also represented by Proto-Oceanic lexical reconstructions (e.g., coconut, \*niuR; Tahitian chestnut, \*ipi; *Canarium* almond, \*kangaRi; Vi apple, \*quRi, *Terminalia catappa*, \*talise).<sup>3</sup> Not directly attested in the paleoethnobotanical assemblage--but likely to have been cultivated as well--are root or tuber crops such as aroids or yams.<sup>4</sup> Numerous *Cypraea*-shell scrapers and *Pinctada*-shell peeling knives from ECA and other sites strongly suggest the preparation of large quantities of tuber and root-crop vegetable foods.

While bones of pig, dog, and fowl in the early Lapita sites indicate the presence of these domestic animals, the bulk of protein in the diet of the earliest Lapita colonizers was derived from exploitation of littoral and marine resources, including shellfish, turtles, porpoises, and a wide variety of inshore, benthic, and pelagic fishes. Fishbone dominates the vertebrate faunal assemblages of all the Mussau Lapita sites, and the most common families represented include Lethrinidae, Scaridae, Serranidae, Balistidae, Labridae, Lutjanidae, Acanthuridae, and others. The presence of Scombrids, taken by open sea trolling, is noteworthy. The faunal evidence for marine exploitation

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3 I thank Prof. R. Blust for supplying these POC reconstructions.

4 The absence of root or tuber remains is not surprising, given the sedimentary context of the ECA site. The preserved plant remains are restricted to woody or fibrous tissues, especially seed cases or husks. Soft tissues comprised largely of parenchyma would not be expected to survive in the ECA depositional context. Thus, the absence of such plant tissues should not be regarded as evidence for the absence of tuber or root crops.

is matched by the artifactual record of shell fishhooks in a wide variety of sizes. Two basic forms are present, one designed for rod-and-line angling, the other for trolling.

## 5. Ceramics

From the archaeological viewpoint, ceramics are a key aspect of the Lapita cultural complex, both because they are *sine qua non* the defining criterion for the complex, and because they are the most useful artifact class for assessing possible relationships between early Lapita assemblages and other early Austronesian complexes to the west. Over the more than 1,000 years represented by the Mussau Lapita sites, the ceramic complex underwent considerable change, primarily through reduction in variety of vessel forms, and in a shift from complex dentate-stamped designs to the dominant use of simple incision. Here, I focus only on the earliest part of the ceramic sequence, that represented for example by the Zone C deposits in Area B of the ECA site (Kirch 1987:168-72, 1988a:334-35), and by the EHB site assemblage.

The earliest Lapita ceramics are rather low-fired earthenwares, slab-built and paddle-and-anvil finished, incorporating calcareous sand and/or volcaniclastic tempers (non-plastic inclusions). A wide range of vessel forms are present, including plain jars with restricted orifices (but often with notched rims), and a range of elaborately-decorated bowls and dishes; many of the bowls are supported on pedestals or ring-feet. There are also some "cylinder stands" that appear to have functioned as pedestals for flat-bottomed dishes. It is these bowls, dishes, and pedestal stands that carry the classic dentate-stamped motifs which typify Lapita as a ceramic style.

While dentate-stamping is the most important decorative *technique* used

to create that early Lapita motifs, it was by no means the exclusive technique. The earliest ceramics display a wide range of combinations of stamping, incising, carving, and cut-outs. Bowl rims frequently display triangular cut-outs, and pedestals also are often decorated by triangular cut-outs. Another common feature of the bowl rims is the presence of a groove or notch running the circumference of the rim. Also common was the use of a fine, white lime to in-fill the carved and stamped designs; this appears to have been applied after firing.

There are as yet no known antecedents to the Lapita ceramic complex within the Bismarck Archipelago; the complex appears full-blown at ca. 3,500 B.P.. Nor can the elaborate design system used to decorate Lapita vessels be *directly* linked to any other archaeological assemblages to the west, although there are many close parallels (see below). However, this lack of a direct ancestral ceramic tradition may be an artifact of our incomplete knowledge of southeast Asian prehistory. One possibility should be raised at this juncture: that the design system represented on the Lapita pottery represents the transference or extension of mobiliary art from other media to ceramics. The most likely media would have been barkcloth or textiles, and human skin in the art of tattooing. Green (1979b) some time ago discussed the obvious connections between later Lapita ceramic decoration and Polynesian barkcloth and tattooing designs. Indeed, as Green later suggested (1985:220), the stamping technique that dominates Lapita ceramic decoration itself could have been a simple transference of tattooing technology to pottery. In other words, the complex system of motifs (and the obvious cultural and symbolic grammar that underlies this system) may have been present in early Austronesian culture but applied largely to other media of mobiliary art, prior to its transference to Lapita pottery. This is merely a hypothesis at present, but

one with important implications for any efforts at seeking direct archaeological parallels to Lapita pottery in island southeast Asia.

## 6. Other Material Culture

The recent claim of Terrell (1989:625) that Lapita represents nothing more than "a trade ware in Melanesia" is unfounded, as Green (1992) rightly observes. For addition to wholly new settlement patterns, subsistence adaptations, and ceramics, Lapita assemblages also incorporate a distinctive set of non-ceramic artifacts, including stone and shell adzes and a wide variety of shell tools and "ornaments." Indeed, the diversified and quite sophisticated worked-shell industry appears to be almost as distinctive to Lapita as the ceramic complex.<sup>5</sup> This paper is not the proper forum to review in detail the artifactual evidence for Lapita shell working, and some preliminary accounts have appeared elsewhere (e.g., Kirch 1988b). Suffice it to say that the range of shell taxa being worked at early Lapita sites includes large *Conus* species, *Tridacna* clams, *Spondylus* bivalves, *Pinctada* pearl shell, *Trochus niloticus*, *Nautilus* shell, and probably others. Shell working tools include hammers, abraders of coral and stone, and probably other materials of a perishable nature (e.g., coarse lianas or other fibrous materials) that can be inferred from the evidence of manufacture detritus. The range of artifacts produced from shell is remarkable, and a brief listing would include adzes, chisels, rings of a variety of diameters and styles, beads also highly varied in shape and form, pendants, perforated disks, non-perforated disks (possibly inlay pieces), scrapers, peeling knives, fishhooks of several styles, and other objects

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5 While recent excavations in pre-Lapita sites in the Bismarcks have uncovered some evidence for limited shell working (Jim Allen, pers. comm., 1993), there is as yet no indication of the kind of technologically and morphologically differentiated shell artifact industry represented in the Lapita sites.

of uncertain function.

While the early Lapita colonizers also worked a variety of stone materials (particularly into adzes and abrading tools), and used both obsidian and chert flakes, it is the sophisticated shell-working industry which stands out along with pottery among their technological repertoire. Thus, in our efforts to seek ancestral connections for the Bismarck Lapita population, it seems reasonable to accord this shell industry considerable attention, along with the ceramics.

## 7. Long-Distance Exchange

Perhaps no other part of the world is so intimately associated with the anthropological concept of "exchange" as Melanesia. In part the association is historical, deriving from the seminal field research of Seligmann and his famous student, Bronislaw Malinowski. Yet if the *kula* is the classic textbook example of tribal exchange, what are we to make of the archaeological evidence for Lapita exchange? While the *kula* integrated communities over a geographical range of about 250-300 km (Leach and Leach 1983, map I; Brookfield with Hart 1971, figs. 13.3 and 13.4), the archaeologically-documented extent of Lapita long-distance material exchanges approximates a linear span of 4,000 km, an order of magnitude greater than the *kula*. And, if we are to take the recent finds of Talasea obsidian in a slightly later than Lapita dated context in Sabah (Bellwood and Koon 1989) as indicative of the original gambit of the Lapita network, then the geographic range extends to 6,500 km! These observations strongly suggest that existing ethnographic models of long-distance exchange (see Hage and Harary 1991) are insufficient analogs for Lapita. Of course, I am being purposively provocative, but my underlying point is fundamental to any consideration of Lapita and its

wider anthropological implications for southwestern Pacific prehistory.

Lapita settlements appear on the archaeological landscape of the Bismarck Archipelago quite suddenly at about 3,500 B.P.. Yet despite this precipitous intrusion, these sites incorporate a host of exotic materials, indicative of a complex network of inter-community exchanges. For example, the earliest deposits at the Talepakemalai site include approximately equal quantities of both Talasea (New Britain) and Lou (Manus Islands) obsidian, imported ceramics from no less than 16 different exotic clay sources (Hunt 1989), and a miscellany of other exotic imports including stone adzes and other tools, and even ubiquitous oven stones.

The archaeological sequences from late Pleistocene and early Holocene cave and rockshelter sites in New Britain and New Ireland (Allen and Gosden, eds., 1991) have demonstrated that a long-distance obsidian exchange network already existed in this region prior to the Lapita intrusion. However, the *scale* of exchange--as measured both spatially and volumetrically--appears to have undergone a quantum transformation with the advent of the Lapita populations.

The implication is that the initial Lapita colonizers in the Bismarcks were already fundamentally entwined in an exchange economy. This is essentially the model put forward by Friedman (1982). Very likely, these Lapita people incorporated an already existing regional exchange in obsidian (and other materials?) as they expanded their own network(s). From the perspective of early Austronesian origins and dispersals, the significance of the Lapita evidence for long-distance exchange is that we should expect such activities to have been an integral part of the ancestral Austronesian culture from which Lapita derived. Ceramics, in particular, need to be examined



from this perspective, and not merely as typological/chronological indicators.<sup>6</sup>

Ward Goodenough (1982) has offered a provocative hypothesis regarding the early dispersal of Austronesian-speaking peoples that is of some relevance to the present discussion. Writing of the importance of the Ban Chiang and other early southeast Asian mainland chiefdom/state level societies which first developed in the fourth millennium B.C. and flourished in the third and second millennia, Goodenough states that:

it is reasonable to assume that economic or commercial interests of some kind were responsible for the enormous spread of Austronesian-speaking peoples. These interests, we must presume, were fostered by some developing center of wealth and population on the Asian mainland that provided a growing demand for products from abroad. China, for example, has long been a major importer from Borneo of such forest products as birds' nests, rattan, resins, incense wood, camphor, beeswax, gutta-percha latex, bezoar stones, rhinoceros horns, and hornbill ivory and feathers . . . . A trade based on this kind of product demand in the South China Sea in the third and second millennia B.C. to feed into an expanding mainland market would have provided the impetus needed for overseas exploration and settlement. With this expansion there would also have developed secondary centers of population and wealth in Indonesia and the Philippines that would have stimulated further commercial exploration. The spread of

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6 Here the archaeologist may pose a challenge to the historical linguists and comparative ethnographers as to whether any evidence may be adduced to support the hypothesis of inter-community exchange as a key aspect of early Austronesian cultures. Blust (1980), for example, advocated a system of "asymmetric exchange" in early Austronesian society, based on Proto-Malayo-Polynesian reconstructions (see also For 1988).

Austronesian-speaking peoples makes sense as an outgrowth of this kind of process (Goodenough 1982:53).

It is conceivable that the exchange of materials between Lapita communities reflects more than just ritualized exchange, and that the initial Lapita populations in the Bismarcks at least, were connected to a trade network extending back into island southeast Asia. One might envision their initial expansion into this region as spurred, in part, by the search for new sources of products such as turtle shell, feathers, resins, obsidian and other stone, and so forth. In this context, the discovery of Bismarck archipelago obsidian in Sabah (Bellwood and Koon 1989) is especially significant. For the present, we should take Goodenough's suggestion as an intriguing working hypothesis; however, it is an hypothesis that should guide future archaeological efforts in our efforts to understand the early Austronesian dispersal.

## Seeking Cultural Connections for Lapita in Island Southeast Asia

Having reviewed some of the major aspects of the earliest Lapita assemblages in the Bismarck archipelago, I turn now to the formidable task of assessing possible connections and relationships with comparable-age materials from island southeast Asia and Taiwan. Two caveats cannot be overly stressed here. First, the archaeology of this vast region is still in its infancy; for example, for the entire Irian Jaya region lying between the Bismarcks and Halmahera, there is not one single systematic archaeological survey or dated local sequence! Second, my efforts are necessarily based solely on the archaeological literature, which is highly variable in quality of data presentation, illustration of materials, and so forth. Ideally, this review would be based on

first-hand, systematic examination of archaeological collections from the various sites reviewed. As these are scattered amongst various museums literally around the world, this task must await a future date.

A further problem concerns the absolute dating of many of the south-east Asian assemblages. Unfortunately, quite a number of the most interesting sites, from the perspective of Lapita parallels (such as Kalumpang in Sulawesi), have never been radiocarbon dated. For other sites, there are the usual problems of suspect or stratigraphically inverted ages. Spriggs (1989) recently attempted to synthesize the radiocarbon chronology of the southeast Asian Neolithic, and the reader is referred to his paper for a more detailed chronological discussion than can be ventured here.

### 1. Sulawesi/Halmahera Region

Geographically closest to the Bismarck Archipelago is the Halmahera-Sulawesi group of archipelagoes, and it is therefore reasonable to begin the task of extra-regional comparisons there. Indeed, one of the archaeological ceramic assemblages most closely resembling Lapita was unearthed almost sixty years ago by P. V. van Stein Callenfels at Kalumpang, along the Karama River in central Sulawesi (van Heekeren 1972:185-89, pls. 96-101). The site was unfortunately excavated prior to the development of radiocarbon dating, and its precise chronological age is unknown, although it is clearly "late Neolithic" but pre-iron. The illustrated ceramics bear remarkable resemblances to Lapita, both in the use of combined incising and impressed (stamped) techniques, and in the specific motifs used. Both curvilinear and rectilinear geometric designs are involved, as with Lapita, and there is furthermore the portrayal of stylized anthropomorphs. The non-ceramic inventory included rectangular stone adzes, also comparable to Lapita forms; shell

objects were not reported. Finally, both fish and a domesticated form of pig were also recovered. A second site on the Karama River, Minanga Sipakko (van Heekeren 1972:189, pl. 102)--about which even less is reported--also yielded ceramics with some Lapita-like parallels. Bellwood (1985:248) has also noted the obvious similarity between the Kalumpang-Minanga Sipakko assemblages and Lapita.

In the Minahasa district of Sulawesi and the Talaud Islands to the northeast, Bellwood (1976) reported several archaeological assemblages of interest. The Paso site in Minahasa yielded a ceramic assemblage ("Paso Ware") dominated by "jars with restricted necks and everted rims, ... unrestricted bowls, ... pedestals, ... and pedestalled platters" (1976:250-52), all classic early Lapita forms. Decoration, however, is reported to be rare, and is restricted to simple incising. While no  $^{14}\text{C}$  dates were obtained, Bellwood noted the similarities of the Paso Ware to ceramics from the Dimolit site in the Philippines, and believes the Minahasa assemblage to be "late Neolithic." In the Talaud Islands, the Leang Tuwo Mane'e site (LTM) on Karakellang Island yielded a long Neolithic sequence with pottery appearing "about 2,500 B.C. or perhaps a little before" (1976:261). The early Neolithic pottery consists of "globular pots with everted rims, apart from a very few bowls with direct rims;" these again are typical Lapita forms. However, aside from red-slipping (also typical of Lapita), there is no decoration. Thus the connections to Lapita are not compelling. Shell midden dumping was also present throughout the LTM sequence, but fishbone and *Canarium* nuts were confined to the most recent levels. A third site, the Leang Buidane cave (LB) on Salebabu Island, yielded a ceramic complex of vessels with "red-slipped, impressed, or incised" decoration quite evocative of Lapita (Bellwood 1976: fig. 11). This site clearly dates to the early metal period, sometime after 500 B.C., and thus this assemblage

can hardly count as a possible Lapita pre-cursor. The LB ceramic complex itself might, however, derive from an earlier (as yet undiscovered) tradition which could be ancestral both to Lapita and the later, early-metal period ceramics of the Talaud Islands.

Most recently, Bellwood (1992) has carried out preliminary survey work and test excavations in the Halmahera group, resulting in the discovery of several sites containing ceramic assemblages with possible connections to Lapita. Of particular interest is an assemblage of plain or red-slipped pottery excavated at the Uattamdi Rockshelter on Kayoa Island. A radiocarbon date of  $3,440 \pm 110$  b.p. on small marine bivalves from a hearth places this assemblage at approximately the same time period as the early Lapita assemblages in the Bismarck Archipelago. While no decorated ceramics are present, the plain and red-slipped vessels are extremely similar in form, rim shape, and technological attributes to the plain and red-slipped jars from the ECA site in Mussau.<sup>7</sup> The Uattamdi lower deposit also yielded large quantities of marine shell and animal bone (taxa not yet identified), a ground stone adze with lenticular cross-section, and a variety of worked shell artifacts such as disc beads, bracelets, spoon/scrapers, knives, and worked pearl shell. In sum, the Uattamdi site displays very close parallels to the early Lapita materials from western Melanesia.

## 2. Sabah

Two of the most important sequences from island southeast Asia--from the Lapita perspective--derive the Bukit Tengkorak and Madai (MAD 1) sites excavated by Bellwood (Bellwood, ed., 1988; Bellwood and Koon 1989) in

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<sup>7</sup> These similarities were confirmed by Prof. Bellwood during his recent stay at Berkeley, when he was able to examine the ECA site collections first-hand.

Sabah, northeastern Borneo. The Madai site complex consists of several inter-linked limestone caves and rockshelters, of which the most important for our purposes is MAD 1 (Bellwood, ed., 1988). The well stratified site has a lengthy sequence; Layer 11a with an associated radiocarbon date of  $2,650 \pm 80$  b.p. (1988, fig. 6.6) marks the beginning of what Bellwood has termed the "Atas Period" extending from ca. 3,000-1,000 B.P.. "The Atas Period shows a dramatic increase in the use of stone for tools, but continuing strong reliance on shellfish and hunted animal foods. Pottery is in intensive use throughout the Atas Period" (1988:131). Pig is reported from Layer 10 onwards. The ceramic assemblage from Layer 11a, comparable in age to Lapita, "has very close similarities with the earliest pottery from Leang Tuwo Mane'e (LTM) in the Talaud Islands" (1988:178). Jars and bowls (some carinated) are the main vessel forms represented. Red-slipping is common, and the use of check-impressed decoration is also indicated.

While the succeeding Layer 10 deposit is clearly slightly later than classic Lapita (radiocarbon dates indicate an age of about 2,200-2,000 B.P. for this phase), the ceramic assemblage nonetheless displays striking parallels with Lapita, both in vessel shapes and in the "intricate incised decoration" (Bellwood, ed., 1988:187, see figs. 11.4-11.6). In particular, one is struck with the similarities between Layer 10 pedestal-footed vessels and those from the ECA site in Mussau, even to details of ring-foot profiles (see 1988, fig. 11.4, F4g). The highly intricate incised decorations are also evocative of Lapita motifs, including the use of zone markers separating major motifs.<sup>8</sup>

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8 Bellwood (ed., 1988:187) comments on the close similarities between the Layer 10 assemblage and the pottery from Buidane in the Talaud Islands, of approximately the same age. While both of these assemblages are unquestionably too late in age to be ancestral to Lapita, the similarities in vessel forms and in decorative style are so remarkable that one suspects more than random convergence is at work

The Bukit Tengkorak (BT) rockshelter complex excavated by Bellwood and Koon (1989) has been reported thus far only in summary, but the finds there are of remarkable importance, since they include the first discovery of Bismarck Archipelago (Talasea) obsidian west of the area of known Lapita distribution. The main stratified cultural deposit in BT is Layer 3, with uncalibrated  $^{14}\text{C}$  determinations of  $2,700 \pm 100$ ,  $2,330 \pm 170$ , and  $2,320 \pm 250$  b.p. (Bellwood and Koon 1989:617). These dates suggest that the Layer 3 materials are contemporaneous with the later phase of Lapita in the Bismarcks. The ceramics from Layer 3 were "mostly plain or red slipped", but a vessel-and-lid combination was also excavated (1989, fig. 4). The excavators note that "the meticulous precision with which this vessel is decorated is well paralleled in contemporary Lapita assemblages in the western Pacific," an observation with which I concur. Aside from pottery, Layer 3 yielded shell disc beads, "a barrel-shaped bead bored longitudinally, two perforated pendants, the core of a shell bracelet . . . , and a shank of a one-piece fish-hook" (1989:620). Although this shell artifact assemblage is small, it displays precisely the kind of diversity of classes and sophistication of working that characterizes the Lapita shell working industry. No details are provided on faunal remains, other than the remark that Layer 3 is "a dense midden of artefacts, fish-bones and shells," which hints at an economy based in part at least on extensive marine exploitation. Most remarkable is the stone industry of flakes and flake-blades in agate and obsidian. Twelve pieces of obsidian

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here. Two alternatives seem possible at this stage: first, that the early Metal age ceramics of Buidane and MAD 1, Layer 10 were developed out of a ceramic complex also ancestral to Lapita. Alternatively, and especially given the evidence for Talasea obsidian is Sabah (see below), it is just conceivable that the late Neolithic-early Metal pottery of Sabah/Sulawesi was itself the result of an east-to-west diffusion of ceramic style.

were analyzed by the PIXE/PIGME method by J. R. Bird; five of these are from the Talasea source on New Britain, while the other seven derive from an unknown source, probably in the Indonesian-Philippines region. To quote the excavators,

The identification of the Talasea obsidian, a fairly prolific component of many Lapita sites in the Bismarck and Solomon Archipelagoes, doubles at one stroke the extent of its geographical distribution. It now extends for some 6500 km from Sabah to Fiji, and probably ranks as the most widely-distributed commodity of its period anywhere in the world (Bellwood and Koon 1989:620).

While the Layer 3 assemblage at BT is clearly not Lapita per se, the close resemblances in both the ceramics and the shell artifacts (and subsistence economy ?), and the direct evidence of exchange/trade linkages "broadens the whole Lapita debate in a remarkable way" (Bellwood and Koon 1989: 621).

The major suggestion can now be made that the Lapita colonists of western Melanesia continued to distribute Talasea obsidian back into their homeland region for some centuries, perhaps as a result of continuing and remembered kinship ties with populations located on an immediate level in the region Halmahera and western New Guinea. Beyond here the obsidian probably moved by exchange over many short distances rather than by long-distance transfer, and it would seem unlikely that the inhabitants of a site as far away as Bukit Tengkorak ever visited the Talasea source themselves. However . . . we face the surprising possibility that cultural contacts, however diffuse, could have formed a linked chain during the 1st millennium BC over an expanse of almost 8,000 km, from Borneo, the Philippines and



possibly even southern China deep into the central Pacific. The Lapita colonists may have settled new lands, but did not burn their boats behind them (Bellwood and Koon 1989:621).

These remarks evoke the Goodenough's model of expanding trade as a major impetus to the dispersal of Austronesian-speaking peoples, referred to earlier in this paper.

### 3. Philippines and Sulu Archipelago

For a variety of reasons, including arguments adduced from historical linguistic as well as archaeological evidence, the Philippines can be expected to have played a key role in the dispersal and differentiation of early Austronesian-speaking groups. Unfortunately, the prehistory of this extensive archipelago remains most incompletely understood. Almost thirty years ago, Solheim (1964) produced his monograph on the *Archaeology of the Central Philippines*, in which he defined his Kalanay, Novaliches, and Bau pottery complexes. These were based on a very unsystematic "dig" (see Green 1965) at the Kalanay site in Masbate, and on the extensive Guthe collections from a variety of sites throughout the archipelago, largely unprovenienced and undated. The lack of modern controls makes this collection rather difficult to work with, although it contains materials of indisputable significance to an understanding of Lapita relationships in island southeast Asia. Although Solheim has made much in later writings of his "Sa Huynh-Kalanay" tradition in relation to Austronesian expansion and even Lapita, this complex (if indeed it can be defended as a meaningful archaeological construct) is generally associated with metal and is therefore too late in time to be relevant to the problem of early Austronesian dispersal and differentiation. In re-reviewing Solheim's ponderous monograph, I was struck rather with his "Novaliches"

pottery complex. Solheim states that "the most characteristic vessel of the Novaliches pottery complex is a shallow bowl on a high ring-stand" (1964: 154). Furthermore, the bowl rims have "a channel around the outside and below the edge of the rim," while the "ring feet are ornately and carefully decorated." In further descriptions of individual pots, Solheim indicates that the commonly used decorative techniques include "cutout triangles" on the ring-feet, impressing, gouging, punctations, and tool impressions. The parallels with the earliest ceramic materials from the ECA and EHB Lapita sites in Mussau are quite striking and, while I would want to examine the original material first-hand before committing to definite pronouncements, the Novaliches complex appears to be as close a parallel to early Lapita as is evident anywhere in island southeast Asia at present. I must reiterate, however, that the complex is defined on a set of undated, unsystematically-collected materials.

More recently, work by Aoyagi and associates, and by Thiel at the Lal-lo and Magapit shell midden sites in the Cagayan Valley of northern Luzon have yielded ceramic assemblages and associated materials which again display remarkably close parallels to Lapita (Aoyagi and Tanaka 1985; Aguilera, Aoyagi, Ogawa, and Tanaka 1986; Aoyagi, Aguilera, Ogawa, and Tanaka 1991; Ogawa and Aguilera 1992; Thiel 1985, 1986). The red-slipped and brown wares illustrated by Aoyagi and Tanaka (1985, figs. 7, 8) from Magapit include bowls, ring-feet, and restricted-orifice jars of forms very similar to Lapita types. Especially notable is the fine, dentate-stamped decoration on rims and bowl shoulders (see Aoyagi and Tanaka 1985, pls. 5, 6). Thiel's excavations at the nearby Lal-lo site yielded a similar assemblage. She describes the decoration as being largely confined to rims, although "one ring foot is decorated" (1986:84). Associated with the pottery are ground stone

adzes with trapezoidal and lenticular sections, and various ornaments of fired clay. Shellfishing was obviously an important aspect of the economy, although no detailed midden analyses are reported; likewise, "animal bone" is mentioned by not described in detail (1986:89). Four radiocarbon dates are reported from the Magapit/Lal-lo sites (see Spriggs 1989, table 3):  $3,680 \pm 110$ ,  $3,790 \pm 100$ ,  $3,680 \pm 100$ , and  $3,550 \pm 110$  b.p. Spriggs (1989:600) rejects these dates because they are based on shell, with an unknown calibration/reservoir correction factor. The correction factor is not likely to be more than about -450 yrs (if the dates were properly corrected for  $\delta^{13}\text{C}$ ), however, and their overall agreement suggests that they should not be wholly discounted. Certainly they indicate that an age span somewhere in the second millennium B.C. is reasonable for the Lal-lo/Magapit ceramic assemblages.<sup>9</sup>

In Palawan, the Duyong Cave reported by Fox (1970) has also often been cited for its burial assemblage of a stone quadrangular adze, four *Tridacna*-shell adzes, and perforated *Conus*-shell ornaments. The burial was dated to about 3,000 B.C., and indicates the presence by that period of a sophisticated shell-working industry, including several of the key artifact types which are so characteristic of the later Lapita assemblages.

At Sanga Sanga Island near the southwestern tip of the Sulu Archipelago, Spoehr (1973) excavated the Balobok rockshelter, which yielded a small collection of Neolithic pottery (1973:184-191). Of particular note are the use of red slip, and in one case, of stamped circles with lime-infilling. The site also yielded a *Tridacna*-shell adze and a gouge (1973, fig. 180).

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9 Thiel (1986) also obtained an age of  $380 \pm 100$  b.p. from the Lal-lo site, and has therefore claimed that the site was occupied for 3,400 years. There is no basis for this claim, and the only reasonable interpretation is that the later date is simply out of context or contaminated.

Faunal remains include pig, a variety of marine shellfish, and reef fish. Unfortunately, the radiocarbon dates obtained both underlie the ceramic-bearing deposit, and the age of the pottery is thus uncertain. While the assemblage bears some interesting parallels to Lapita, I am more inclined to see a closer relationship with the earliest assemblages in the Marianas Islands of Micronesia, where lime-infilled stamped circles are characteristic of the earliest pottery; Spoehr (1973:273-74) appears to concur with this assessment.

#### 4. Southern Parallels: Timor

The vast arc of the lesser Sunda Islands remains more-or-less archaeological *terra incognita*, with the exception of Timor, where Glover (1986) carried out important excavations in a series of rockshelters (Lie Siri, Bui Ceri Uato, Uai Bobo 1 and 2) spanning the late Pleistocene to historic periods. Ceramics appear in these sequences at about 4,500-4,000 B.P., and some of the pottery bears incised and stamped designs with parallels in Sulawesi (see for example, the decorated pottery from Lie Siri, Glover 1986, Pl. 19, which he compares to the Kalumpang materials). Of particular note are the associated shell artifacts, which include *Nautilus* shell discs/beads, *Trochus*-shell fishhooks, *Tridacna*-shell adzes, and *Trochus*-shell armbands (Glover 1986, Pls. 32, 38, and 45). An agricultural economy is suggested by the presence of pig, but marine exploitation is also important. None of the Timor ceramic assemblages can be suggested as a direct prototype for Lapita, but as a complex, these early Neolithic materials--including the developed shell-working industry and indications of a broad-spectrum horticultural-marine exploitation economy--are the kind of archaeological reflection one would expect for early Austronesian communities.

## 5. Indonesia, Sabah, the Philippines: Summary Thoughts

In the preceding pages I have given an overview--doubtless eclectic and biased--of some of the most significant Neolithic sites and assemblages in Indonesia, Sabah, and the Philippines, from the perspective of Lapita archaeology. Before turning to Taiwan and the putative origins of Austronesian culture, some intermediate conclusions are appropriate. For a number of years now, there has been a continuing (if not exactly "raging") debate<sup>10</sup> among Oceanic prehistorians regarding the immediate origins of the Lapita Cultural Complex. The debate has sometimes been characterized in terms of two polar positions: (1) the "fast train to Polynesia," versus (2) indigenous origins in the Bismarck Archipelago (Allen 1984; Allen and White 1989; White, Allen, and Specht 1988). In light of the preceding review of the "late" Neolithic in island southeast Asia (I use Bellwood's terminology), what are we to make of Lapita?

To Oceanic prehistorians, the problem seems to boil down to the inability to find a precise and unambiguous "ancestor" for Lapita in island southeast Asia. Lacking a definitive phylogeny into which Lapita can be positioned, the door remains open to claims that Lapita is nothing more than a "trade ware" in Melanesia (Terrell 1989), or that the Lapita complex is fundamentally Melanesian in origin, with nothing but the pottery having been borrowed from some folks 'over there' in island southeast Asia (the position expressed by White et al. 1988).

Given the foregoing review of Neolithic sites in Indonesia, Sabah, and

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10 The debate did "rage" on at least one particular occasion, at the pseudo-Polynesian restaurant and pub in downtown Canberra, between PVK and Jim Allen, during the Lapita design conference; here I would like to thank Jim for the stimulus of his arguments. They have sharpened my own perception of the complexity of the Lapita phenomenon in Melanesia.

the Philippines, my overwhelming reaction is that were it not for the long-standing scholarly divide between Oceania/Southeast Asia, Lapita would not be seen as anything particularly distinctive or unique. To state this another way, the early Lapita assemblages of the Bismarck archipelago fit comfortably within the range of variation that I have just reviewed for cultural complexes dating to the second and third millennia B.C. in island southeast Asia. Indeed, it is probably futile to seek a single putative "ancestral" pottery and/or cultural complex for Lapita within island southeast Asia. Rather, we should view the early Lapita assemblages of the Bismarcks as an eastwards extension of a "polythetic" set of related cultures of presumably Austronesian-speaking peoples that underwent rapid expansion and diversification in the period between 3,000-1,000 B.C. All of these cultures share certain key characteristics, which we have seen repeated in the various assemblages reviewed above: common attributes of ceramic vessel form and decorative *technique* (not necessarily specific artistic style), complex and sophisticated shell-working industry, broad-spectrum economic adaptation including horticulture and marine exploitation, and (although this is too little addressed in the literature) long-distance exchange or trade connections.

## Taiwan and the Putative Austronesian Homeland

If Lapita is one of a number of related but differentiating cultural complexes distributed geographically from the Philippines and Indonesia as far east as the Bismarcks in the third-to-second millennia B.C., what does this imply regarding "ultimate" Austronesian origins and the "Austronesian homeland?" First, I suggest that the archaeological picture as I have sketched it is essentially in agreement with the model of Austronesian expansion put

forward by Bellwood (1985; 1987). The movement of Austronesian-speaking populations from an original Proto-Austronesian homeland (situated in Taiwan and/or including parts of coastal South China ?) over a period from about 5,000 to 3,000 B.P. through the Philippines and on into Indonesia and the Bismarck Archipelago is, I believe, reflected in the archaeological record reviewed above. This spread must have been accompanied by the rapid differentiation of Proto-Austronesian language into its major sub-branches, including Western and Central Malayo-Polynesian, South Halmahera-West New Guinea and, in the Bismarck Archipelago, Oceanic (see Bellwood 1987, fig. 10). However, while population expansion southwards and eastwards led to cultural and linguistic differentiation, we must keep in mind that complex linkages, especially through trade and exchange, may have continued to join these early Austronesian communities for a lengthy period.

Taiwan, and quite possibly adjacent regions of southern China, have been suggested by several scholars as the likely area of the Austronesian homeland (e.g., Chang 1969; Blust 1985). If so, then the archaeological record of Taiwan should exhibit a Neolithic phase pre-dating the assemblages just reviewed for the Philippines-Indonesia-Western Melanesia region, with ceramics, stone and shell working, broad-spectrum horticultural-marine exploitation economy, and other cultural attributes that we have characterized as typical of the early Austronesian communities. Spriggs (1989:605), in his review of radiocarbon dates for the Neolithic of island Southeast Asia, feels that the radiocarbon evidence (though not without problems) is consistent with this view. He further notes that the "donor culture can only be the Corded Ware culture" also known as the TPK culture (after the Tapenkeng site, Chang 1969).

This paper is not the proper forum for a detailed consideration of

Taiwan prehistory in relation to Austronesian expansion (and, in any event, the task is better left to those more familiar with the material). However, I would like to venture a few comments, given the ultimate focus of this symposium on Taiwan. The material culture of TPK, including cord-marked and incised ceramics, pitted pebbles, and ground stone adzes (Chang 1969:53-59, 164-171) could well be ancestral to many of the later Neolithic assemblages in island Southeast Asia that we have reviewed above. At the same time--based on an admittedly limited knowledge of Taiwan prehistory--it is a set of assemblages that immediately post-date the TPK horizon that most impresses me for their possible connections to early Austronesian assemblages to the south. I refer, for example, to the "fine red ware" assemblage excavated by Chang (1969:88-94) at Fengpitou. Chang dates this horizon to between 2,400-1,900 B.C., which is still early enough to make it a candidate for Austronesian expansion into the Philippines. Similarly, the Suo-kang and Nan-kang sites recently excavated by Tsang (1992) in the P'eng-hu Islands in the Taiwan Strait, yielded an assemblage with numerous parallels to the early Austronesian assemblages in the Philippines, Sabah, Sulawesi, and Timor. Among these parallels are the range of ceramic vessel forms (including pedestal feet, bowls, and restricted orifice jars with everted rims), but also a range of associated artifacts including net sinkers, polishing stones, adzes, pitted cobbles (identical to putative nut-cracking hammers from Lapita sites), bone fishhooks, and other shell artifacts. Marine exploitation is indicated both by shellfish midden, and by fishbones. The Suo-kang site has a radiocarbon age of  $4,600 \pm 193$  B.P., while the Nan-kang site has a reported date of  $4,680 \pm 151$  B.P. (Tsang 1992:147, 167). Thus, both of these sites are still well within the time span for initial Austronesian expansion out of Taiwan.



Another site with great potential significance in relation to early Austronesian dispersals is O-Luan-Pi, situated at the southern tip of Taiwan (Li 1983). Cultural Phase III, dating to about 3,000 B.P., not only contains ceramics and a variety of stone artifacts, but a number of shell and bone objects with close parallels in early Lapita assemblages. Of particular note are fishhooks manufactured from *Turbo* shell, large *Conus* shells evidently worked for shell-ring production, and two-piece fishhook points of bone.

In short, while the TPK culture may well represent the earliest Austronesian communities in Taiwan, it is the immediately succeeding phase which may be the most interesting from the viewpoint of initial Austronesian differentiation and expansion out of the homeland region and on into insular southeast Asia. The period which immediately follows TPK in Taiwan appears to be characterized by regional differentiation, reflected in the diverse fine-red and fine-corded marked pottery assemblages (especially in the less well-known southern and eastern parts of the island). It is to these assemblages that I personally would be inclined to look for further connections between Taiwan and the Austronesian cultures to the south.

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## **Taiwan Aborigines, Asians and Pacific Islanders: A Multivariate Investigation of Skulls**

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Two separate multivariate analyses are applied to 33 measurements recorded in 2,956 human male crania for investigating biological relationships. A total of 53 modern and near modern Asiatic, including Taiwan Aborigines (Atayal), and Pacific Island groups are represented. A basic division occurs between the Asian and Australo-Melanesian cranial series. The Atayal, along with Chinese from Taiwan and Hainan Islands and Shang Dynasty Anyang specimens, occupy a separate Asiatic branch. The Atayal are further related to some Southeast Asians but not to Polynesians. Removal of the size-related component has very little effect on the pattern of craniometric variation and inter-group distances presented.

### **Introduction**

The Austronesian language family stretches from Easter Island to Madagascar. Although, none are now represented on the mainland of China, Austronesian speakers, or aboriginal tribes, have inhabited Taiwan for a considerable period of time. Taiwan and adjacent mainland China have figured prominently in discussions of the origins of the Austronesian language family (see e.g. Blust 1984-85, Bellwood 1985) although others (e.g. Meacham 1984-85) have advanced alternative explanations. Compared to other Austronesian speakers, the aboriginal tribes of Taiwan are frequently

characterized as the most differentiated linguistically, culturally and biologically (Chai 1967, 1984, Howells 1973b: 251, 1989: 10). Archaeological evidence suggests that the ancestors of Taiwan's aboriginal populations can be traced to at least the Neolithic cultures found on mainland China 4,000 to 5,000 years B.C. (Pearson 1989). The practice of tooth ablation as a puberty initiation rite among Taiwan Aborigines and among people on the mainland of China strengthens this assertion.

Although once widespread and numerous, only nine aboriginal tribes now survive and these are primarily restricted to the central mountain range and eastern valleys of Taiwan. As of 1984, Hsu and Li (1989:194) report that the number of individuals identified as aboriginal has dwindled to 320,000, or approximately 1.68% of the total population of Taiwan. The two largest surviving tribes are the Ami and Atayal. The native tribes of Taiwan, frequently described as a hostile people who practiced head-hunting until recently, lived in virtual isolation until the advent of the Han Chinese who began immigrating to Taiwan in substantial numbers beginning in the 12th century A.D.

The majority of the Chinese living on Taiwan today can trace their ancestry to Fujian and Quandong Provinces (Chai 1984:113). Prior to this time, the inhabitants of Taiwan were exclusively non-Han and Austronesian speakers. Direct evidence for the existence of an earlier so-called negrito or australoid people living in Taiwan, prior to the arrival of the aboriginal tribes, is largely lacking.

Studies of the physical and biological features of Taiwan aborigines, living and extinct, are few. Chai (1967,1984) has reviewed the biological features of the living aborigines including somatology, anthropometry, dermatoglyphics, physiological capacities and genetic polymorphisms (e.g.

blood types). Although considerable variation exists among these tribes, the somatological features of Taiwan's aborigines tend to conform to the so-called Mongoloid pattern. Hair color ranges from dark brown to black and hair texture is straight and coarse. The color of the eye iris is usually dark brown and skin color is medium. The "Mongoloid" eyefold is present. The nasal bridge is concave and lips are of medium thickness. Stature is generally short and head form is brachycephalic.

Because suitable collections of human remains are generally lacking, skeletal studies of Taiwan's aboriginal tribes are few, a situation which will hopefully improve with the recent recovery of numerous human remains from controlled archaeological excavations at sites such as Pei-nan in eastern Taiwan (Lien 1989) and at Shih San Hang near Taipei. The most frequently studied cranial series, and the one used in the present study, is that collected by Takeo Kanaseki following the so-called Wushe incident of 1932. The crania belong to Atayal tribes people who live in northern Taiwan. Wushe (Jenai) is on the southern boundary of Atayal territory. The material, approximately 97 crania, has been variously distributed between National Taiwan University and Academia Sinica (Nankang). The series has been studied by various investigators including Chang (1949), Kanaseki (1952), Tokitsu (1960), Howells (1983, 1986, 1989) and Turner (1987) and Turner and Lien (1984). The latter authors are of the opinion that the series is affected by gene flow from the mainland of China, a point which will be addressed later.

In this paper multivariate statistical procedures are used to investigate patterns of biological variation and historical-biological relationships in Atayal and other cranial series representing East Asia, Southeast Asia, and the Pacific. The present study utilizes data, including several series from Japan,

Korea, China, and Mongolia not previously analyzed by me. The results will be compared with previous physical anthropological studies of Taiwan's aborigines.

## Material and Methods

### Samples

A total of 53 male cranial series are used in the present study. The number of crania, where they were examined, and other information pertaining to these series are given in Table 1. Eight Chinese series, representing northern, eastern, western and southern regions of China, are included. Series not previously analyzed by me include Chinese crania from Taiwan and Hainan Islands, and a series from a region in northern China previously known as Manchuria. Further, there are eleven cranial series from Japan compared by me for the first time. These latter include Jomon, Yayoi, Kofun, Edo and modern Japanese, Ainu and Ryukyu Islands. Other previously unreported series include Korea and Mongolia. The remaining cranial series representing mainland and insular Southeast Asia, Melanesia, Australia, Polynesia and Micronesia have been previously described (Pietrusewsky 1984, 1990a, 1990b). All data were recorded by me using complete or nearly complete adult male specimens. Age and sex was determined by visual inspection using standard methods of osteological and forensic analysis.

### Cranial Measurements

Following the methods of Martin (1957) and Howells (1973a), 36 standard cranial measurements were recorded in each specimen. Because of the

incomplete nature of several specimens in some of these series, three measurements, bizygomatic breadth, basion-prosthion length and *foramen magnum* length were eliminated from these analyses. The names of the measurements and references for each are indicated in Table 2.

Because the multivariate statistical procedures used in the present study require complete sets of data, missing measurements were replaced through regression. The computer program, PAM, of the UCLA Biomedical Computer P-Series which performs a stepwise regression analysis (Dixon & Brown 1979) was the method used. Because complete or nearly complete specimens were initially selected, very few measurements were actually replaced by this method.

### Stepwise Discriminant Function Analysis and Generalized Distance

The two multivariate statistical procedures used are stepwise discriminant function analysis and Mahalanobis' Generalized Distance. The computer program, BMDP-7M (Dixon & Brown 1979), was used to perform the discriminant analysis. The major purpose of discriminant analysis is to maximize the ratio of between-group variance to total variance, while taking into account the intercorrelation of variables, by producing a finite series of orthogonal functions. The first few canonical variates, or functions, account for most of the variation among the groups. The technique further identifies which variables are most responsible for the observed differentiation. In this study, the interpretation of discriminant functions and the patterns of group separation is based on an inspection of standardized canonical, or discriminant, coefficients. Although originally designed to assign an unknown specimen to one or more groups, discriminant analysis has been shown to be especially useful as a measure of variation between groups (Campbell 1978). The mathematical

basis of this technique is discussed in Goldstein and Dillon (1978). Because many of the general assumptions of multivariate normality and equality of group covariance matrices are rarely met (Corruccini 1975), tests of significance are not used in interpreting group differences identified in the present study.

Mahalanobis' Generalized Distance (Mahalanobis 1936) was applied to the same data analyzed by discriminant function analysis. Generalized Distance, the sum of squared differences, provides a single quantitative measure of similarity (distance) between individual groups using many variables while taking into account intercorrelation between the variables. The average linkage within group (or Unweighted Pair Group Method) clustering technique was the algorithm selected to construct the diagrams of relationship, or dendrograms, based on Mahalanobis' Distances. This technique combines clusters so that the average distance between all cases in the resulting cluster is as small as possible and the distance between two clusters is taken to be the average between all possible pairs of cases in the cluster.

### **Removal of the Size Based Component: Z-Scores and C-Scores**

A common problem in morphometric analyses is to determine the relative contribution of size and shape in distance measures. Size is defined as the magnitude of a vector of measurements on an organism while shape is a function of relative proportion normalized by size (Corruccini 1987:289,290). Many researchers believe that shape, rather than size, is of greater importance when the taxonomic units in question are above the deme or subspecies level and thus warranting the removal of this size-based component (Corruccini 1973:743). Howells (1989), for example, uses transformed or standardized variables, or C-scores, to enhance the comparability of both



size and shape.

Because the cranial series used in the present analysis are separated by considerable geographic, and sometimes temporal, differences, size differences may contribute in a disproportionate manner to the observed morphological variation. In an attempt to investigate the possible differential effects of size and shape in the present craniometric analysis, two separate analyses are performed. In the first, raw measurements are used, while in the second standardized measurements, or measures from which the size related variation have been "removed", are analyzed. The method of standardization used is one recommended by Howells (1989). In this method, raw measurements are subject to a double standardization procedure. Z-scores are computed both across variables for each case (so that equal weighing is given to each variable) and across cases for each variable (to negate absolute size differences between individuals) [Green 1990:299]. Z-scores, which may be negative or positive, are equal to the number of standard deviation units by which each measurement in question departs from the mean of all the population (or general) means. This latter procedure avoids undue weighing by uneven sample sizes. The procedure may be expressed as:  $Z_{ij} = (X_{ij} - \bar{X}_i) / \sigma_i$ , where  $i$  = number of the measurement;  $j$  = number of the individual;  $X_{ij}$  = value of measurement "i" for individual "j";  $\bar{X}_i$  = mean of population means, or general means; and  $\sigma_i$  = overall standard deviation for measurement "i" (or the pooled variance of all populations).

The second part of the standardization procedure involves the calculation of C-scores which express the difference between the Z-scores of a single measurement for a given individual and the mean Z-score of that individual, for all the measurements used in the analysis, or:  $C_{ij} = Z_{ij} - \bar{Z}_j$ , where  $\bar{Z}_j$  = average Z-scores for all the variables for individual "j" which is calculated as

follows:  $\bar{Z}_j = \sum Z_{ij} / N$  where  $N$  = number of variables used.

Mahalanobis's Generalized Distance and stepwise discriminant function analysis were then applied to these standardized measures, or C-scores. The results of two separate multivariate analyses, one using raw measurements and the other using standardized scores are presented.

## Results

### Analysis 1: Raw Measurements

The means and standard deviations for 33 cranial measurements recorded in 18 male groups, previously not reported, are presented in Table 2. Univariate statistics for the remaining groups are presented elsewhere (Pietrusewsky 1984, 1990a, 1990b, 1992).

#### STEPWISE DISCRIMINANT ANALYSIS (53 male groups, 33 measurements)

A ranking (table not shown) of the cranial measurements selected by stepwise discriminant function analysis according to the F-values received at each step indicates the following variables to be the strongest discriminators: maximum cranial breadth, alveolar length, nasion-prosthion height, basion-nasion and nasal height. Eigenvalues, the percentage of total dispersion, the cumulative percentage of dispersion and level of significance for the first 10 discriminant functions, or canonical variates, are presented in Table 3. The first three functions account for approximately 65.2% of the total variance.

Canonical coefficients for 33 cranial measurements recorded in 53 male samples for the first three canonical variates are given in Table 4. Group separation on the first canonical variate is primarily the result of variation in biorbital breadth, alveolar length, nasion-prosthion height, nasal height and nasio-occipital length. This function can be defined as an upper facial

breadth and facial height discriminator. Correlations are generally weak and three of the five most important discriminators are negatively correlated. The second canonical variate is responsible for group separation primarily on the basis of differences in interorbital breadth, basion-nasion length, nasio-occipital length, nasal breadth and nasio-frontal subtense. The second canonical variate is thus a mid- to upper facial and cranial vault breadth (including cranial base) discriminator. Group separation on the third variate is primarily due to differences in bifrontal breadth, nasal and orbital height, and cheek height.

Figure 2 is a plot of the group means on the first and second canonical variates, or discriminant functions. Together these two functions account for approximately 55.7% of the total variation described by the discriminant analysis. Several major clusters are evident in this diagram. The Australian and Melanesian series cluster in a single quadrant well removed from clusters containing Polynesian (and Guam) and the Southeast Asian samples. Most of the cranial series from China, including Taiwan, form a tight cluster and although more dispersed, most of the cranial series from Japan, from Yayoi to modern times, are grouped together. Manchuria, Bronze-age Anyang, Korea and Mongolia form a separate cluster. The Ainu and Jomon series form a peripheral isolate removed from all the other groups. The Atayal series and the Bronze-age Thai series are peripheral and intermediate between two clusters, ones containing the Southeast Asian and Japanese cranial series.

Some of the group classification results are given in Table 5. The total percentage of cases correctly classified is 50.0% which suggests the groups sampled are not well differentiated. The highest rates of successful classification are those obtained by Easter Island (84.4%), Tasmania (80.0%),

Mongolia (81.8%), Atayal (72.2%) and Guam (71.7%). The groups having the poorest classification results include Edo (16.4%), Lesser Sundas (17.8%), Hangzhou (23.5%), Viet Nam (25.6%) and Yayoi (27.4%). Groups with the poorest classification results generally are re-classified into one of the neighboring groups. Cases misclassified as Atayal include Chinese (7), Japanese (13) and Southeast Asians (6). Of the ten cases originally classified as Atayal, three are misclassified as Chinese, one as Korean, four as Japanese and two as Southeast Asian.

#### Generalized Distance

Mahalanobis' Generalized Distance was applied to the same measurements analyzed by discriminant analysis. Some of the distances are presented in Table 6. Figure 3 is the diagram of relationship obtained when the Unweighted Pair Group method of cluster analysis is applied to these raw scores. The first split is between a branch containing all the Melanesian and Australian series and another which contains all the Asian and Polynesian (Mongoloid) samples. Polynesians (including Guam) are the next to split from this all Asian division. The series from East and Southeast Asia occupy separate branches. Atayal occupies a peripheral branch within the East Asian branch which contains Chinese from Taiwan and Hainan Island and Shang Dynasty Chinese from Anyang. Manchuria and Korea connect with a branch containing three modern and one Edo Japanese series. Cranial series from mainland and insular Southeast Asia form a separate branch. Ainu (from both Hokkaido and Sakhalin Islands) and Jomon cluster together and fall outside the Southeast Asian and East Asian grouping. The series from Mongolia is the last to join the Asian constellation.

Inspection of the distances in Table 6 indicate that, while none of the values are particularly small, the series closest to the Atayal sample are

Korea, Taiwan Chinese, Hainan Chinese, Edo Japanese, Hong Kong Chinese, Anyang, Ryukyu Islands and Viet Nam, in that order. The next nearest groups, based on the magnitude of these distances, are mostly of Chinese and Japanese origin followed by Southeast Asia. The largest distances, indicating the greatest dissimilarities, are between Atayal and Polynesians, Australian Aborigines and Melanesians. Of the Polynesian series, Atayal is closest to New Zealand.

The general conclusion to be drawn from this first analysis is that the basic split is between an Australo-Melanesian and a Mongoloid division. Within the latter, East Asians and Southeast Asians occupy separate branches while Ainu-Jomon and Polynesians each form separate more peripheral branches. The Atayal, although members of a separate cluster, go principally with the series from East Asia.

## Analysis 2: C-scores

In this second analysis craniometric variation among the 53 groups is examined after the size-related variation has been removed by standardization. Stepwise discriminant function analysis and Generalized Distance are applied to the standardized measures, or C-scores.

### STEPWISE DISCRIMINANT FUNCTION ANALYSIS

Based on the F-values obtained at the end of the stepping process, the first variables selected in this discriminant analysis include: alveolar length, nasion-prosthion height, minimum cranial breadth, nasio-occipital length and biauricular breadth.

Summary statistics for the first 10 variables are given in Table 7. The first three functions account for approximately 65.9% of the total variance. Canonical coefficients for 32 measurements for the first three canonical

variates are given in Table 8. The variables contributing most to group separation on the first canonical variate are biorbital breadth, maximum cranial length, alveolar length, nasal height and nasion-prosthion height. Variation in upper facial breadth and height, cranial vault and palate length and height of the nasal aperture are primarily responsible for group differences in the first canonical function. Group separation on the second variate is primarily the result of variation in nasio-occipital length, basion-nasion length, interorbital breadth, inferior malar length and alveolar breadth. The length of the cranial vault, facial prognathism, the distance between the eye sockets, and the inferior length of the zygomatic bone are the primary discriminators in the second variate. Variation in maximum cranial vault length, nasal height, minimum cranial breadth, bifrontal breadth and nasion-prosthion height are responsible for group separation on the third canonical variate. Cranial vault length, facial height and breadth, facial prognathism and dimensions of the palate are all strong contributors to the pattern of variation seen in the analyses of C-scores.

Figure 4 is a plot of 53 group means on the first two canonical variates. These two functions account for approximately 56.7% of the total variation described by this discriminant analysis. The arrangement of the groups is very similar to the one based on the raw data. The only exception is that the Atayal series is now closer to the Southeast Asian cluster while the early Bronze-age Thai series falls within the Japanese constellation. Very little else changes in this representation.

Some of the group classification results are presented in Table 9. The total percentage of cases correctly classified is 48.9%. Groups having the best classification results are Easter Island (87.5%), Mongolia (83.3%), Hawaii (79.6%), Sakhalin Ainu (77.3%) and Tasmania (76.9%). Groups with the

poorest classifications include Edo Japanese (14.5%), Lesser Sundas (20.0%), Hangzhou (25.0%), Korea (25.0%), and Viet Nam (26.7%). Approximately 53% of the Atayal specimens are misclassified as Chinese (6), Japanese (5), Korean (1) or Southeast Asian (7). Cases which are mis-assigned to Atayal include China, Japan and Southeast Asia. None of the Jomon or Ainu cases are misclassified as Atayal. Likewise, none of the Polynesian, Australian or Melanesian cases are mis-classified as Atayal.

#### Mahalanobis' Generalized Distance

Some of the distance results obtained when Mahalanobis' Generalized Distance is applied to 33 C-score measures are presented in Table 10. Figure 5 is the dendrogram which results when cluster analysis of the distances based on C-scores is made. As was the case in the previous analysis using raw measurements, Atayal clusters with Chinese from Taiwan and Hainan Islands and Anyang, which together represent a separate branch containing East Asian and Northern Asian series. The pair clustering for the remaining series is identical to that seen in Figure 3. Inspection of the original distances indicates the groups closest to the Atayal series are Viet Nam, Edo Japanese, Hainan Island, Taiwan Chinese, Korea, Anyang, modern Japanese, Ryukyu Islands, Thailand and the Philippines. In passing, it is noteworthy that some of the smallest distances are between Hangzhou and Shanghai Chinese (0.829), Ryukyu and Kamakura (1.868) and Edo and Kyushu (2.002).

The general conclusion to be drawn from the second analysis is very similar to that reached in the first. The initial split is between a group containing all Australian and Melanesian series and one which includes East Asia, Southeast Asia, Jomon-Ainu and Polynesian series. The Atayal, representing Taiwan Aborigines, are members of an East Asian division containing

Chinese, Japanese, Korean and Manchurians but there is also evidence of a Southeast Asian connection, especially Viet Nam.

## Discussion- Conclusions

The 53 male cranial series examined in the present analyses are often separated by large geographical distances and sample a wide range of environments. That differences in environment of this magnitude contribute to differences in cranial size is a distinct possibility. However, comparing the results of two analyses, one based on raw measurements and the other on standardized measures from which the size component has been removed, are fundamentally the same.

Curiously, the minimal differences found in the two analyses relate to the placement of the Taiwan aboriginal series. In the plot of group means based on stepwise discriminant function analysis of raw measurements, the Atayal occupy a relatively peripheral position. When C-scores are analyzed by the same multivariate procedures, the Atayal series aligns more closely with Southeast Asians, particularly Viet Nam. Alternatively, misclassifications of Atayal specimens increase from 28% to 53% when C-scores are used. Overall, there are slightly better (50%) classification results based on raw measurements than on C-scores (48.9%). Although Atayal's position in the two dendrograms based on cluster analysis of distances does not change, some differences are found when the two distance matrices are compared. In the distances based on the raw measurements, Viet Nam ranks eighth behind seven continental Asiatic series, while in the C-score analysis, Viet Nam ranks ahead of these groups and is closest to Atayal. The differences are nonetheless of a minor nature. Although Atayal crania are typically small, removal of



the size component apparently has had little effect on their relative position vis-à-vis the other series.

Earlier views that differences in size strongly influence inter-population distances at the regional level (Relethford 1984:193) and that differences in size can greatly outweigh differences in shape (Corruccini 1973:743) are not supported by the results presented in this study. Removal of the size-related component has had very limited effect in interpreting the craniometric variation among the groups investigated here. A very similar conclusion was reached by Green (1990), who found that removing this size-based component has had little effect in interpreting craniometric variability in crania from Papua New Guinea.

Previous studies which have utilized Atayal crania similar, if not identical, to those investigated here and studies of living Taiwan aboriginal groups are worthy of discussion. One recent researcher who has made extensive use of the Atayal series preserved in Nankang is Howells. Howells' sample, consisting of 29 male and 18 females, has been used in several different craniometric investigations (e.g. Howells 1983, 1984, 1986, 1989, 1990). Using Principal Components Analysis and Generalized (Pythagorean) distances, multivariate procedures similar to those used in the present paper, the Atayal series invariably groups with Filipino and recent Chinese from Hainan Island which are then attracted to a relatively tight cluster containing Japanese and Chinese series, or northern Far Easterners as Howells calls them. The results of the present analysis, although more extensive, are similar to the results of earlier work by Howells with regard to the placement of Atayal and cranial series common to both studies. In the present analyses, Japan, Manchuria and Korea form a separate cluster which is attracted to a homogeneous Chinese subbranch. The Atayal, Taiwan Chinese,

Hainan Chinese and Anyang represent (at least in the cluster analysis of distances) a separate cluster within a larger division which includes all mainland and offshore Asiatic series. The affinities between Atayal, southern Chinese (e.g. Hainan and Taiwan Chinese) and non-Chinese Southeast Asian series are similar to the results presented by Howells. Comparable results were obtained in Bowles' multivariate analyses of anthropometric data from all regions of Asia (Bowles 1977, 1984). In the latter multivariate analyses, living Atayal combine with three other tribal groups from Taiwan, a cluster which Bowles cites as being most closely linked to the Rhade of Viet Nam. Two additional Taiwan Aboriginal groups, Paiwan and Ami, are linked with North Burma and the Miao (southeast China), respectively, in the same analysis.

The distinction between Atayal, Anyang and Chinese living on Hainan and Taiwan Islands (these latter trace their recent ancestry to Fujian and Quangdong Provinces on the adjacent Chinese mainland), and the samples from Manchuria, Japan, and Korea found in the present analysis, reinforces Bowles' north-south distinction, and to a lesser extent, Turner's recognition of two dental complexes, Sinodont and Sundadont (Turner 1985, 1987, 1990). Turner characterizes the latter complex as earlier and now more marginal in its distribution while the Sinodont complex is later, derived and now mostly found in the peoples of northern Asia and the Americas. Howells offers an historical explanation for the observed connection between the Shang Dynasty cranial series from northern China (Henan) and Austronesian speakers of Taiwan, common to both of these analyses. In Howells' view, the Shang Dynasty and Taiwan Aborigines represent a general unspecialized and variable Mongoloid population that once may have been widespread in later Paleolithic times (Howells 1983:315). Lending support to this view is the

observation that expansive southward migration by the Han Chinese does not occur until after the Shang Dynasty.

Turner (1987) and Turner and Lien (1984) have examined dental variation in the Atayal series as well as a few prehistoric Taiwan skeletal series. Depending on which traits are used, the Atayal invariably align with Sinodonts (modern Chinese and Japanese), results which these authors attribute to admixture with recent Chinese immigrants to Taiwan. The prehistoric skeletal samples from Taiwan examined by Turner generally group with Sundadonts, although in one study (Turner 1987), they also link up with Sinodonts. Unfortunately, in one of these studies (Turner 1987) Anyang crania are combined with specimens from Mongolia, Siberia, Tibet and northern China which, in part, may explain the erratic placement of Atayal and other Taiwan dental series in this particular analysis. Contrary to the conclusions reached by Turner (1987) and Turner and Lien (1984), the Atayal cranial series, although no doubt affected by gene flow from recent Chinese immigrants, still reflects individuality. Connections between Atayal, Hainan and Taiwan Chinese and Shang Dynasty Anyang, the latter widely separated in time and space from the former, suggests an older and possibly separate ancestry of these groups, one which was distinct from the more northerly mainland Asiatic Mongoloid groups such as Japanese, Koreans and Chinese. Links between the Atayal and Southeast Asia (e.g. Viet Nam) further found in the present analyses, strengthens this assertion and lends support to Howells opinion that Taiwan Aborigines quite possibly represent a biological diversity in human populations which existed in South China when Taiwan was colonized by food producing people (Howells 1983:304).

Examining the present day distribution of Austronesian speakers, the Atayal series is closest to cranial series from Viet Nam, Philippines and

Indonesia, areas occupied by speakers of the Western Austronesian division. There is no evidence in the cranial data to connect Atayal directly with Polynesians or the Oceanic division of this language Family. These biological data broadly parallel the linguistic classification of this language Family which has characterized the Austronesian languages of Taiwan as the most isolated and closest to the western division. The biological connection between Atayal and Shang Dynasty Chinese crania found in the present study is further supported by at least one recent linguistic study which has found evidence for a relationship between Old Chinese and Austronesian (Sargart 1993).

An interesting cluster found in the present work is the Ainu-Jomon grouping which is set off from all other Asian series, a result which has been duplicated in the work of several different physical anthropologists (e.g. Brace & Hunt 1990, Brace et al. 1989, 1990, Dodo 1986, Hanihara 1985, Howells 1966, 1986, Kiyono 1946, Koganei 1893-94, Ossenberrg 1986, Turner 1976, Turner & Hanihara 1977, Yamaguchi 1982, etc.). However, there is no support (in the cluster analysis of distances, classification results, or from an inspection of Mahalanobis' distances) of a Jomon-Pacific connection as proposed by Brace and Hunt (1990) and Brace et al. (1990). The Polynesian and Jomon-Ainu branches in the present analyses are well differentiated from all remaining series. Further discussion of Japan and possible Pacific connections is saved for a later time.

The main conclusions which may be drawn from the present multivariate study of Atayal, Asian and Pacific cranial series are:

1. The recognition of a basic division between Australo-Melanesian and Asiatic series. In the vernacular this may be categorized Australoid versus Mongoloid.
2. The basic split within the Mongoloid branch is between Southeast Asia

(island and mainland) and more northerly Asiatic groups.

3. Taiwan Aborigines (Atayal) go with Shang Dynasty Chinese (Anyang) and Taiwan and Hainan Island Chinese and together, these are set off from, and at times intermediate to, Southeast Asian and more northerly Asiatic groups, Chinese, Japanese and Koreans.

4. Other more marginal Mongoloid groups include a separate and distinct Ainu-Jomon cluster, an isolated Mongolian series and a Polynesian/Chamorro group.

5. There is little or no support for a Ainu-Jomon-Pacific grouping in these analyses to suggest a shared ancestry of Polynesians and prehistoric Japanese.

6. The Atayal crania are not related to Polynesian, Chamorro or any other Oceanic series included in the present analyses.

7. Relatively few measurements: palate (alveolar) length, facial and nasal heights, cranial vault length and height and interorbital distances, are primarily responsible for group separation in these analyses.

8. Removal of the size-related component has little or no effect on the pattern of craniometric variation exhibited by the groups analyzed here.

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Table 1. Fifty-three Male Groups Used in the Present Study

<u>Sample</u> (abbrev.)	<u>No. of</u> <u>Crania</u>	<u>Location</u> <sup>1</sup> <u>and Number</u>	<u>Remarks</u>
<b>East Asia</b>			
Shanghai (SHA)	50	SHA-50	The specimens are mostly from post-Qing cemeteries in Shanghai.
Hangzhou (HAN)	68	SHA-68	Ancient skeletal remains exhumed in the modern city of Hangzhou, Zhejiang Province in eastern China.
Nanjing (NAJ)	49	SHA-49	Ancient remains exhumed from the modern city of Nanjing, Jiangsu Province in eastern China.
Sichuan (SIC)	53	SHA-10; CHE-43	A majority of these specimens date to the Ch'en Dynasty (A.D. 1796-1908) and are from Chengdu, Sichuan Province in western China. Ten crania are from Leshan, Lishong County), Sichuan Province.
Hong Kong (HK)	80	HKU-80	Specimens represent individuals who died in Hong Kong between 1978-1979.
Anyang (ANY)	96	TPE-96	Bronze-age (11th century B.C.) Shang Dynasty sacrificial victims excavated at Anyang in northern Henan Province in northern China (Li 1977).
Taiwan Chinese (TAI)	58	TPE-47;TKO-8; TKM-3	Modern Chinese living in Taiwan who trace their immediate origins to Fujian and Guangdong Provinces on the mainland of China.
Hainan Island (HAI)	47	TPE-47	Chinese immigrants originally from the Canton region of China who began arriving around 200 B.C. (Howells 1989: 108). This material was excavated by T. Kanaseki in Haikou City on Hainan Island.
Atayal (ATY)	36	TPE-28;TKM-7; TKO-1	The specimens in Taipei represent slain victims of Atayal, the second largest surviving Aboriginal tribe in Taiwan. The incident took place in 1932 and the specimens were collected by T. Kanaseki in the same year (Howells 1989:109).
Manchuria (NCH)	69	TKO-69	Many of the specimens are from northeastern China or the region formerly referred to as "Manchuria," which today includes Heilongjiang and Jilin Provinces and adjacent northern Korea. A great many of these specimens are identified as soldiers or cavalrymen who died in battle in the late 19th century.

Table 1. (cont'd) Fifty-three Male Groups Used in the Present Study

<u>Sample</u>	<u>No.</u> <u>Crania</u>	<u>Location<sup>1</sup></u> <u>and Number</u>	<u>Remarks</u>
Korea (KOR)	32	KYO-7; SEN-3 TKM-2; TKO-20	Specific locations in Korea are known for most of these specimens.
Mongolia (MOG)	66	SIM-66	The skulls are identified as coming from Ulaanbaatar (Urga), Mongolia and were purchased by A. Hrdlička in 1912.
Kanto Japanese (KAN)	67	CHB-67	A dissecting room population of modern Japanese from the Kanto District of eastern Honshu. The majority of the individuals were born during the Meiji period (1868-1911) and most died well before 1940.
Tohoku Japanese (TOH)	53	SEN-53	Dissecting room specimens of modern Japanese from the Tohoku District in northern Honshu Island.
Kyushu Japanese (KYU)	51	KYU-51	Modern Japanese which derive mostly from Fukuoka Prefecture in Kyushu Island. Other specimens are from Yamaguchi, Saga, Nagasaki and adjoining Prefectures.
Edo (EDO)	55	NSM-55	The specimens are from the Joshinji (Tokyo) site and date to the Edo Period or approximately the 17th to mid-19th centuries.
Kamakura (KAM)	52	NSM-9;TKO-43	Specimens are from the Medieval mass burial sites of Zaimokuza and Gokurakuji in the city of Kamakura, victims of a war which occurred in 1333.
Kofun (KOF)	82	KYO-15;KYU-53; NSM-8; TKO-6	The Kofun period follows the Yayoi period and these sites are dated from approximately the third century A.D.
Yayoi (YAY)	62	KYU-62	A combined sample of Yayoi specimens from Doigahama (39), Yoshimohama (14) and Nakanohama (2) sites in Yamaguchi Prefecture. The rest (7) are from Koura, Shimane Prefecture, in southern Honshu Island.
Jomon (JOM)	51	TKO-16; NSM-19 KYO-15;SAP-1	All specimens represent Late to Latest Jomon sites on Honshu Island. The largest series are Ebishima (11) in Iwate Prefecture in Tohoku District and Tsukumo (12), Okayama Prefecture in the Chugoku District.



Table 1. (cont'd) Fifty-three Male Groups Used in the Present Study

<u>Sample</u>	<u>No.</u> <u>Crania</u>	<u>Location<sup>1</sup></u> <u>and Number</u>	<u>Remarks</u>
Ainu (AIN)	79	SAP-18 TKM-5 TKO-56	Skeletons collected by Koganei in 1888-89 from abandoned Ainu cemeteries in Hokkaido (Koganei 1893-1894).
Sakhalin Ainu (SAK)	22	KYO-20 TKM-1 TKO-1	The majority of these specimens were excavated by Kiyano in 1920 from Ainu cemeteries on Sakhalin Island.
Ryukyu Island (RYU)	81	KYU-34; KYO-37 TKO-10	Specimens are from the Sakishima (13), Okinawa (13) and Amami (49) groups, respectively. Six more are identified only as Ryukyu Island.

Mainland Southeast Asia

Viet Nam (VTN)	86	HCM-56; PAR-30	Specimens are from Hanoi (Van Dien Cemetery) and Ho Chi Minh City.
Bachuc (BAC)	51	BAC-51	Victims of the 1978 Khmer Rouge massacre in Bachuc Village in western Angiang Province, Viet Nam.
Cambodia & Laos (CAM)	40	PAR-40	A combined sample of crania from various locations in Cambodia and Laos collected between 1877 and 1920.
Thailand (THI)	61	SIR-61	Most of the specimens represent dissecting room cases from Bangkok.
Neolithic Thailand (NTI)	14	UHM-12;DUN-2	Sample includes specimens (10) from Ban Chiang, a neolithic site (First-Fourth millennia B.C.) in north-eastern Thailand, and two specimens each are from Ban Na Di (1000 B.C.-300 B.C.) and Non Pa Kluay (prehistoric Bronze to Iron period), sites located in northeastern Thailand.

Island Southeast Asia

Philippines (PHL)	28	BER-9;DRE-19	Most specimens are from Luzon Island.
Lesser Sundas (LSN)	45	BAS-5;BER-6; BLU-2; CHA-1; DRE-17;LEP-1; PAR-6;ZUR-7	Crania from Bali, Flores, Sumba, Lomblem, Alor, Timor, Wetar, Leti and Barbar Islands.

Table 1. (cont'd) Fifty-three Male Groups Used in the Present Study.

<u>Sample</u>	<u>No.</u> <u>Crania</u>	<u>Location<sup>1</sup></u> <u>and Number</u>	<u>Remarks</u>
Borneo (BOR)	34	BER-2;BRE-2; DRE-6; FRE-4; LEP-8;PAR-12	A great many of the specimens are indicated as representing Dayak tribes, some have elaborate decorations.
Sulawesi (SLW)	41	BAS-7;BER-10; DRE-4; FRE-7; LEP-5;PAR-8	An exact location is known for many of these specimens.
Java (JAV)	73	BER-2;BLU-8; CHA-9;DRE-2; LEP-24;PAR-28	Crania were collected from several different localities in Java.
Sulu (SUL)	38	LEP-1; PAR-37	The specimens in Paris were collected by Montano-Rey circa 1900.
<u>Polynesia</u>			
Easter Is. (EAS)	64	BER-5;DRE-9; PAR-43;AMS-7	Most of the crania in Paris were collected by Pinart in 1887 at Vaihu and La Perouse Bay.
Hawai'i (HAW)	49	BPB-49	Specimens represent prehistoric Hawaiians from Moka-pu, O'ahu Island.
Marquesas (MRQ)	51	PAR-49;LEP-1; BLU-1	Crania are from four islands, Fatu Hiva, Tahuata, Nuku Hiva and Hiva Oa.
New Zealand (NZ)	70	BRE-2; PAR-27; SAM-1; AIM-17; GOT-5; ZUR-9; DRE-8	A representative sample from North and South Islands of New Zealand.
Tahiti (TAH)	33	PAR-33	Crania are from the island of Tahiti.
<u>Micronesia</u>			
Guam (GUA)	46	BPB-42;PAR-4	Most of the specimens in the Bishop Museum were collected by H.G. Hornbostel at Tumon Beach on Guam during WWII.
Caroline Islands (CAR)	24	TKO-7;DRE-9; PAR-4;GOT-3; AMS-1	Specimens are from Kosrae (1), Pohnpei (6) and Truk (7).

Table 1. (cont'd) Fifty-three Male Groups Used in the Present Study

<u>Sample</u>	<u>No.</u> <u>Crania</u>	<u>Location<sup>1</sup></u> <u>and Number</u>	<u>Remarks</u>
<u>Melanesia</u>			
Admiralty Islands (ADR)	79	DRE-20;GOT-9; CHA-6;TUB-28; BRE-5;BAS-11	Specimens from Hermit, Kaniet and Manus Islands.
Vanuatu (VAN)	47	BAS-47	Most of the specimens were collected by F. Speiser in 1912 from Malo, Pentecost and Espirtu Santo Island.
Fiji (FIJ)	32	BER-I;AMS-3; PAR-8;QMB-1; DRE-4;SAM-3; FRE-3;CHA-1;BPB-8	Crania are from all major islands including the Lau Group in the Fiji Islands.
New Britain (NBR)	85	CHA-43;DRE-42	The specimens in Dresden were collected by A. Baessler in 1900 and those in Berlin were collected by R. Parkinson in 1911.
Sepik R. (SEP)	74	DRE-33;BRE-3; GOT-31;TUB-7	The specimens in Dresden were collected by O. Schlaginhaufen in 1909.
Biak Is. (BIK)	48	DRE-48	Most (45) of the specimens were collected by A.B. Meyer in 1873 on Biak Island (Mysore) in Geelvink Bay, Irian Jaya.
New Ireland (NIR)	53	AMS-4;BER-2; BLU-6;DRE-18; GOT-15;QMB-1; SAM-6;TUB-1	The crania in Dresden were mostly collected by Pöhl in 1887-1888 from the end of the island; the specimens in Göttingen were collected during the Südsee Expedition in 1908.
<u>Australia/Tasmania</u>			
Murray R. (MRB)	85	AIA-39; DAM-46	These crania were collected by G.M. Black along the Murray River (Chowilla to Coobool) in New South Wales between 1929-1950.
New South Wales (NSW)	62	AMS-21;DAS-41	The specimens are from the coastal locations in New South Wales.
Queensland (QLD)	74	AMS-21;DAS-3; DAQ-2; QMB-48	This sample is drawn from the southeastern and middle-eastern parts of Queensland.
Northern Territory (NT)	75	AIA-29;AMS-3; MMS-1;NMV-38; QMB-1;SAM-3	Crania are from Port Darwin (39) and Arnhemland (36).

Table 1. (cont'd) Fifty-three Male Groups Used in the Present Study

<u>Sample</u>	<u>No.</u> <u>Crania</u>	<u>Location<sup>1</sup></u> <u>and Number</u>	<u>Remarks</u>
Tasmania (TAS)	26	THM-22; CHA-1; SAM-2;NMV-1	The crania represent Tasmanian Aborigines.

- <sup>1</sup>AIA = Australian Institute of Anatomy, Canberra  
AMS = The Australian Museum, Sydney  
BAC = Bachuc Village, Angiang Province, Viet Nam  
BAS = Naturhistorisches Museum, Basel  
BEK = Museum für Naturkunde, Berlin  
BLU = Anatomisches Institut, Universität Göttingen, Göttingen  
BPB = B. P. Bishop Museum, Honolulu  
CHA = Anatomisches Institut der Chairté, Humboldt Universität, Berlin  
CHB = Chiba University School of Medicine, Chiba, Japan  
CHE = Dept. of Anatomy, Chengdu College of Traditional Chinese Medicine, Chengdu, PRC  
CHN = Dept. of Anatomy, Chongqing Medical University, Chongqing, PRC  
DAM = Dept. of Anatomy, University of Melbourne, Melbourne  
DAQ = Dept. of Anatomy, University of Queensland, Brisbane  
DAS = Dept. of Anatomy, University of Sydney, Sydney, Australia  
DRE = Museum für Völkerkunde, Dresden  
DUN = Dept. of Anatomy, University of Otago, Dunedin, New Zealand  
FRE = Institut für Humangenetik u. Anthropologie, Universität Freiburg  
GOT = Institut für Anthropologie, Universität Göttingen, Göttingen  
HCM = Faculty of Medicine, Ho Chi Minh City, Viet Nam  
HKU = University of Hong Kong, Hong Kong  
KYO = Lab of Physical Anthropology, Faculty of Science, Kyoto University, Kyoto  
KYU = Dept. of Anatomy, Faculty of Medicine, Kyushu University, Fukuoka  
LEP = Anatomisches Institut, Karl Marx Universität, Leipzig  
MMS = Macleay Museum, University of Sydney, Sydney  
NSM = National Science Museum, Tokyo  
NMV = National Museum of Victoria, Melbourne  
PAR = Musée de l'Homme, Paris  
OMB = Queensland Museum, Brisbane  
SAM = South Australian Museum, Adelaide  
SAF = Dept. of Anatomy, Sapporo Medical College, Sapporo  
SEN = Dept. of Anatomy, School of Medicine, Tohoku University, Sendai

Taiwan Aborigines, Asians and Pacific Investigation

SHA	=	Institute of Anthropology, College of Life Sciences, Fudan University, Shanghai
SIM	=	National Museum of Natural History, Smithsonian Institution, Washington, D.C.
SIR	=	Dept. of Anatomy, Siriraj Hospital, Bangkok
THM	=	Tasmanian Museum and Art Gallery, Hobart
TKM	=	Medical Museum, University Museum, University of Tokyo
TKO	=	University Museum, University of Tokyo, Tokyo
TPE	=	Academia Sinica, Nankang, Taipei
TUB	=	Institut für Anthropologie u. Humangenetik, Universität Tübingen, Tübingen
UHM	=	Department of Anthropology, University of Hawaii, Honolulu
ZUR	=	Anthropologisches Institut, Universität Zürich, Zürich

Table 2. Means and Standard Deviations for 33 Cranial Measurements for 18 Male Groups

MEASUREMENT <sup>1</sup>	Atayal		Taiwan		Hainan Is.		Anyang		Northern Chinese	
	N = 36		N = 58		N = 47		N = 96		N = 69	
	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
MAXCRANL	176.4	6.5	178.1	5.4	174.1	6.6	180.6	4.9	181.1	6.4
NASOCCIL	173.6	6.2	176.4	5.4	172.3	6.4	178.3	4.7	179.4	6.2
BASINASI	97.2	4.2	98.9	3.3	98.2	4.3	101.1	3.7	100.1	3.7
BASIBREG	132.1	4.3	137.9	4.1	136.7	4.1	138.5	4.5	136.5	4.6
MAXCRANB	133.8	4.4	137.6	5.5	139.0	6.5	137.3	5.8	138.3	6.1
MAXFRONB	112.4	3.4	115.2	4.6	116.5	5.1	115.2	5.3	118.1	5.9
MINFRONB	92.4	3.5	92.4	3.2	93.4	4.0	92.6	4.0	93.5	4.0
BISTEPHB	107.1	4.0	109.3	5.4	111.2	5.7	108.7	6.0	110.7	6.9
BIAURICB	121.0	5.4	123.6	4.4	123.7	6.1	125.4	5.2	124.8	5.0
MINCRANB	75.7	3.8	76.4	3.1	77.0	3.7	76.3	3.5	76.6	4.0
BIASTERI	105.3	5.1	106.4	4.5	104.3	4.4	107.9	4.5	107.4	4.3
NASIPROS	66.9	4.0	71.7	4.4	71.9	3.5	71.0	4.0	76.6	4.0
NASALHGT	49.6	2.9	53.4	2.9	52.0	2.5	52.3	2.7	55.0	3.2
NASALBTH	24.1	1.9	24.4	1.9	24.9	2.0	25.5	1.8	23.7	1.8
ORBHGTLF	33.2	1.8	33.7	2.4	33.5	1.9	32.6	2.0	35.5	2.3
ORBBTHLF	39.6	1.5	39.5	2.2	39.7	2.1	39.8	1.7	40.4	2.0
BIJUGALB	111.4	5.4	114.0	3.8	114.5	4.4	115.2	4.3	113.7	3.9
ALVEOLAL	50.0	2.7	50.8	3.2	51.7	2.8	51.9	2.8	52.6	3.0
ALVEOLAB	62.9	4.2	63.1	3.8	65.9	3.2	66.0	3.3	64.9	3.3
MASTOIDH	24.1	2.5	25.0	2.6	26.0	3.1	28.0	2.6	27.6	3.0
MASTOIDW	17.6	2.7	18.9	2.4	19.8	2.5	20.8	2.8	20.7	2.8
BIMAXILB	95.8	4.9	98.6	4.8	99.0	4.4	100.9	4.6	98.1	3.7
BIFRONTB	102.6	3.7	104.8	3.2	104.9	4.1	104.5	3.4	104.4	3.4
BIORBITB	92.9	3.9	93.7	3.2	94.0	3.6	93.7	3.3	94.6	3.4
INTERORB	26.6	2.4	27.2	2.0	26.7	1.9	27.3	2.2	27.1	2.1
MALRLINF	33.6	3.3	34.9	3.2	34.3	3.3	34.3	2.6	34.3	2.8
MALRMAX	49.0	3.5	52.1	3.0	51.3	3.2	51.5	2.9	52.5	3.0
CHEEKHGT	21.1	1.9	24.8	2.7	24.6	2.2	25.6	2.5	25.3	2.9
NASIBGCR	109.4	4.6	112.3	4.5	110.6	4.0	113.1	4.5	111.5	4.5
BRGLMDCR	111.3	6.5	113.4	5.4	111.3	5.1	114.1	5.3	113.2	6.2
LAMOPISC	91.4	4.2	97.4	5.4	95.0	4.8	97.1	5.0	96.9	5.4
BIMAXSUB	19.8	3.4	20.9	3.3	21.7	2.9	20.9	3.2	22.5	3.2
NASFROSB	14.9	2.1	15.9	2.5	15.8	2.4	14.2	2.7	13.1	2.1

Table 2.(cont'd) Means and Standard Deviations for 33 Cranial Measurements for 18 Male Groups

	Mongolia		Korea		Ryukyu Is.		Kanto		Tohoku	
	N = 66		N = 32		N = 81		N = 67		N = 53	
MEASUREMENT	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
MAXCRANL	184.0	6.2	178.1	7.3	180.8	6.5	181.4	5.7	183.0	6.3
NASOCCIL	181.1	5.9	175.8	7.0	178.9	6.2	178.7	5.4	180.4	6.0
BASINASI	101.9	4.3	100.2	3.9	101.8	3.7	101.7	4.2	101.7	4.5
BASIBREG	131.4	5.1	137.5	5.6	136.4	4.5	138.2	4.9	136.3	4.9
MAXCRANB	148.7	5.9	140.4	5.0	138.1	4.9	140.3	5.8	137.2	4.7
MAXFRONB	124.0	5.4	118.4	4.7	117.2	4.5	118.2	5.9	117.2	4.8
MINFRONB	97.4	4.4	92.9	3.5	94.7	3.7	95.5	4.2	95.7	3.8
BISTEPHB	115.5	7.0	112.9	4.4	111.9	4.3	111.6	6.4	111.4	5.7
BIAURICB	134.3	5.1	126.1	5.6	124.9	4.3	125.4	5.1	123.6	5.1
MINCRANB	80.9	4.1	78.0	4.2	76.2	4.0	80.2	4.4	77.6	3.3
BIASTERI	113.6	4.9	107.4	4.5	107.2	4.0	107.6	4.1	107.9	4.7
NASIPROS	76.8	5.1	72.8	3.9	69.0	5.0	70.7	5.0	71.4	3.6
NASALHGT	57.0	3.3	52.7	2.7	50.6	3.2	51.7	3.3	51.7	4.5
NASALBTH	26.7	1.8	24.3	1.5	25.1	1.9	24.1	2.2	23.4	2.2
ORBHGTLF	36.7	2.3	34.3	2.2	32.9	1.9	33.7	2.3	34.1	1.6
ORBBTHLF	43.2	2.0	40.0	1.8	40.7	1.7	40.8	2.1	40.1	2.2
BIJUGALB	120.9	5.1	114.5	4.0	115.8	4.1	114.4	5.0	114.4	5.3
ALVEOLAL	52.5	3.0	52.3	3.7	53.3	2.9	52.1	3.3	51.6	2.8
ALVEOLAB	66.2	4.0	65.2	3.9	64.5	3.7	65.7	4.9	64.5	5.1
MASTOIDH	26.6	3.0	25.8	2.9	26.4	2.3	27.5	2.5	26.3	2.7
MASTOIDW	19.2	2.9	19.8	3.2	20.6	3.1	19.7	3.1	20.0	3.1
BIMAXILB	103.6	5.1	98.4	4.9	102.3	4.1	98.1	4.8	98.3	5.0
BIFRONTB	108.6	4.2	104.0	3.8	105.7	3.1	105.8	4.3	104.5	4.1
BIORBITB	99.8	4.6	94.2	3.5	95.6	2.9	96.6	4.2	95.0	4.1
INTERORB	28.9	2.6	26.3	1.7	27.0	2.1	27.6	2.6	27.5	2.2
MALRLINF	37.1	3.2	34.1	3.2	34.5	3.2	33.3	4.2	33.0	3.7
MALRMAX	56.1	3.6	52.2	3.3	52.8	3.6	52.8	4.0	51.5	4.3
CHEEKHGT	27.7	2.8	24.0	2.4	24.8	2.4	23.4	2.8	23.6	2.5
NASIBGCR	112.8	4.8	111.7	4.9	110.7	4.9	111.2	4.1	110.1	3.9
BRGLMDCR	109.8	5.4	110.7	7.3	114.6	5.6	112.4	5.9	113.5	4.9
LAMOPISC	93.5	5.1	97.3	6.1	96.7	4.8	99.1	5.7	99.0	5.6
BIMAXSUB	19.2	2.5	20.9	2.8	21.7	2.8	23.5	2.8	22.8	2.2
NASFROSB	14.2	2.3	13.1	2.0	14.6	2.1	15.3	2.2	14.6	2.4

Table 2.(cont'd) Means and Standard Deviations for 33 Cranial Measurements for 18 Male Groups

	Kyushu		Edo		Kamakura		Kofun		Yayoi	
	N = 51		N = 55		N = 52		N = 82		N = 62	
MEASUREMENT	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
MAXCRANL	182.9	5.8	181.5	5.8	185.2	6.6	182.5	5.7	183.3	6.2
NASOCCIL	180.4	5.6	179.2	5.5	183.0	6.5	180.6	5.5	181.4	6.4
BASINASI	102.1	4.3	101.1	3.3	103.3	4.0	101.2	4.1	101.6	4.1
BASIBREG	138.6	4.5	136.7	4.5	137.8	4.3	135.1	5.0	135.4	5.2
MAXCRANB	137.1	4.5	137.7	4.9	136.8	4.5	140.9	5.3	141.5	5.0
MAXFRONB	116.4	5.0	117.9	4.9	115.9	4.2	119.4	5.2	120.5	4.2
MINFRONB	94.5	4.6	95.4	4.7	95.7	4.4	95.9	3.7	97.2	4.3
BISTEPHB	111.5	5.9	111.8	5.7	109.9	5.2	113.7	5.6	114.3	4.9
BIAURICB	123.2	4.8	123.6	4.8	124.3	5.2	128.1	4.8	127.9	4.6
MINCRANB	77.5	3.7	77.2	4.0	75.4	4.0	78.0	4.0	78.9	4.4
BIASTERI	107.5	4.8	107.0	3.7	108.2	4.5	110.2	5.1	110.1	5.6
NASIPROS	71.3	3.6	71.2	4.5	69.0	4.1	70.9	4.5	72.1	4.7
NASALHGT	51.2	2.6	51.7	3.0	50.6	3.0	51.5	3.0	52.5	3.7
NASALBTH	24.2	2.5	24.3	1.8	25.1	2.1	25.1	1.8	25.2	1.7
ORBHGTLF	33.5	2.0	34.5	2.1	32.9	2.2	33.5	2.1	34.0	2.0
ORBBTHLF	40.8	1.9	41.0	1.9	41.3	2.1	41.6	2.0	42.0	1.9
BIJUGALB	113.5	5.0	114.4	4.1	116.7	4.4	117.8	4.1	117.9	4.4
ALVEOLAL	53.5	3.0	52.8	3.5	53.9	3.0	53.0	2.8	52.6	2.8
ALVEOLAB	65.9	4.1	64.8	4.1	65.4	3.1	65.0	3.9	65.0	3.5
MASTOIDH	26.9	3.2	27.1	3.2	26.0	3.1	25.0	3.3	26.5	2.8
MASTOIDW	20.0	2.9	20.3	2.9	20.1	3.4	20.7	2.9	20.3	2.6
BIMAXILB	98.5	4.0	98.0	5.4	101.6	5.5	101.5	3.9	103.4	3.9
BIFRONTB	105.0	4.0	105.3	3.7	106.5	3.8	107.3	3.9	107.3	4.3
BIORBITB	94.7	3.8	95.4	3.6	96.3	3.5	96.8	3.5	97.8	3.9
INTERORB	27.3	2.3	26.7	2.0	27.5	1.7	27.3	2.1	28.7	2.3
MALRLINF	33.3	3.8	34.5	4.1	34.1	3.5	34.0	3.3	33.9	3.6
MALRMAX	52.3	3.6	52.5	4.0	53.3	4.0	52.7	3.6	52.3	5.7
CHEEKHGT	23.4	2.4	23.8	2.3	24.6	2.6	25.0	2.4	25.5	2.6
NASIBGCR	111.6	3.6	111.4	4.6	111.9	4.6	111.9	4.9	112.2	5.0
BRGLMDCR	114.2	4.8	112.0	6.1	116.4	6.0	113.8	5.3	113.6	6.9
LAMOPISC	99.5	5.5	98.2	4.9	98.5	4.0	98.0	5.7	95.9	11.8
BIMAXSUB	23.4	2.7	23.0	2.8	22.2	2.7	21.4	2.9	21.6	2.9
NASFROSB	14.4	2.2	15.1	2.5	14.3	2.8	13.3	2.3	14.4	2.7



Table 2.(cont'd) Means and Standard Deviations for 33 Cranial Measurements for 18 Male Groups

MEASUREMENT	Jomon N = 51		Ainu N = 79		Sakhalin Is. N = 22	
	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
MAXCRANL	184.2	6.3	187.1	5.9	185.0	6.5
NASOCCIL	181.9	6.4	184.5	5.2	183.1	6.2
BASINASI	103.8	4.6	105.9	4.2	105.3	5.1
BASIBREG	138.1	5.4	138.0	5.1	134.8	4.2
MAXCRANB	143.9	5.7	140.1	3.4	139.3	4.5
MAXFRONB	122.1	5.2	119.5	3.8	117.7	3.5
MINFRONB	99.2	5.2	97.2	3.8	97.5	3.3
BISTEPHB	117.2	5.2	112.9	4.7	110.8	4.2
BIAURICB	127.4	5.9	123.7	4.7	127.1	5.1
MINCRANB	78.4	5.0	78.0	3.9	78.3	4.8
BIASTERI	110.6	5.1	109.6	4.9	108.7	3.8
NASIPROS	68.0	3.9	69.0	4.4	72.7	3.9
NASALHGT	49.5	2.7	50.2	2.9	52.2	2.3
NASALBTH	25.2	1.4	24.3	1.8	25.3	2.0
ORBHGTLF	32.9	1.9	33.8	1.9	34.5	1.8
ORBBTHLF	42.3	2.2	42.5	1.9	42.2	1.6
BIJUGALB	119.4	4.9	116.3	4.3	118.8	3.9
ALVEOLAL	52.9	2.5	54.4	3.3	55.0	3.1
ALVEOLAB	64.4	3.8	63.7	3.9	64.9	3.3
MASTOIDH	27.1	3.3	26.4	3.0	26.0	4.0
MASTOIDW	21.4	3.0	20.4	3.2	21.5	2.9
BIMAXILB	101.3	4.9	99.4	5.2	102.0	4.8
BIFRONTB	108.6	4.0	106.8	3.7	107.5	2.8
BIORBITB	98.8	4.1	97.5	3.5	97.5	2.9
INTERORB	27.0	2.0	26.2	2.0	26.4	2.1
MALRLINF	32.4	3.0	34.1	3.5	36.5	3.9
MALRMAX	49.9	4.4	51.1	4.3	52.8	3.8
CHEEKHGT	23.6	2.3	22.9	2.5	24.5	2.7
NASIBGCR	110.3	4.0	112.2	4.0	113.8	4.9
BRGLMDCR	115.1	4.9	113.2	5.0	109.0	5.2
LAMOPISC	100.1	4.5	98.9	4.1	96.0	3.3
BIMAXSUB	21.8	3.0	22.5	2.8	22.1	2.8
NASFROSB	14.4	2.4	15.1	2.1	15.3	2.0

<sup>1</sup>MAXCRANL = Maximum cranial length (M-1); NASOCCIL = Nasio-occipital length (M-1d); BASINASI = Basion nasion (M-5); BASIBREG = Basion-bregma (M-17); MAXCRANB = Maximum cranial breadth (M-8); MAXFRONB = Maximum frontal breadth (M-10); MINFRONB = Minimum frontal breadth (M-9); BISTEPHB = Bistephanic breadth (H-STB); BIAURICB = Biauricular breadth (M-11b); MINCRANB = Minimum cranial breadth (M-14); BIASTERI = Biasterionic (M-12); NASIPROS = Nasion-prosthion (M-48); NASALHGT = Nasal height (M-55); NASALBTH = Nasal breadth (M-54); ORBHGTLF = Orbital height, left (M-52); ORBBTHLF = Orbital breadth, left (M-51a); BIJUGALB = Bijugal breadth [M-45(1)1]; AVEOLAL = Alveolar length (M60); ALVEOLAB = Alveolar breadth (M61); MASTOIDH = Mastoid height (H-MDL); MASTOIDW = Mastoid width (H-MDB); BIMAXILB = Bimaxillary breadth (M-46); BIFRONTB = Bifrontal breadth (M-43); BIORBITB = Biorbital breadth (H-EKB); INTERORB = Interorbital breadth (M-49a); MALRLINF = Malar length, maximum (H-XML); CHEEKHGT = Cheek height [M-48(4)]; FORAMGL = Foramen magnum length (H-FOL); NASIBGCR = Nasion-bregma chord (M-29); BRGLMDCR = Bregma-lambda chord (M-30); LAMOPISC = Lambda-opisthion chord (M-31); BIMAXSUB = Bimaxillary subtense (H-SSS); NASFROSB = Nasio-frontal subtense (H-NAS). M = Martin (1957); H = Howells (1973a).

Table 3. Eigenvalues, Percentage of Total Dispersion, Cumulative Percentage of Dispersion and Level of Significance for the First 25 Canonical Variates (Based on 53 Male Groups and 33 Cranial Measurements)

Canonical Variate	Eigenvalue	% Dispersion	Cumulative % Dispersion	d.f. <sup>1</sup>	p <sup>2</sup>
1	4.33127	45.18	45.18	84	*
2	1.00450	10.48	55.66	82	*
3	0.90980	9.49	65.15	80	*
4	0.60721	6.33	71.48	78	*
5	0.49001	5.11	76.59	76	*
6	0.31568	3.29	79.88	74	*
7	0.27069	2.83	82.71	72	*
8	0.23431	2.45	85.15	70	*
9	0.18027	1.88	87.03	68	*
10	0.17596	1.84	88.87	66	*

<sup>1</sup>d.f. = degrees of freedom = (p + q - 2) + (p + q - 4) ...

2p < .01 when eigenvalues are tested for significance according to Bartlett's criterion  $[N - 1/2 (p + q)] \log_e (1 + \lambda)$ , where N = total number of crania, p = number of variables, q = number of groups,  $\lambda$  = eigenvalue, which are distributed approximately as chi-square (Rao 1952:323)

Table 4. Canonical Coefficients for 33 Cranial Measurements Recorded in 53 Male Groups for the First Three Canonical Variates.

VARIABLE	Canonical Variate 1	Canonical Variate 2	Canonical Variate 3
	Coefficient	Coefficient	Coefficient
MAXCRANL	-0.09255	0.01088	0.09322
NASOCCIL	0.11175	-0.13648	-0.02722
BASINASI	0.04280	-0.14400	-0.04507
BASIBREG	0.00953	0.04330	-0.02875
MAXCRANB	0.03401	0.02158	0.02217
MAXFRONB	-0.01579	0.02741	0.03992
MINFRONB	-0.03600	-0.03696	0.01229
BISTEPHB	0.03508	-0.02249	-0.05288
BIAURICB	0.01958	-0.03302	-0.05890
MINCRANB	0.08509	0.04012	0.10439
BIASTERI	-0.01307	0.00434	0.04125
NASIPROS	0.13929	0.00213	0.09245
NASALHGT	-0.11350	0.09352	-0.15010
NASALBTH	-0.01092	0.13568	0.01045
ORBHGTLF	-0.00014	0.06639	-0.12491
ORBBTHLF	-0.04688	-0.04101	-0.05543
BIJUGALB	0.03108	-0.08201	-0.05857
ALVEOLAL	-0.14974	0.00092	-0.01272
ALVEOLAB	-0.03187	0.04981	0.09902
MASTOIDH	-0.02736	0.00885	-0.07543
MASTOIDW	0.04232	-0.03425	-0.02032
BIMAXLB	0.06534	0.03300	0.00345
BIFRONTB	0.07014	-0.01200	0.15982
BIORBITB	-0.19300	-0.04655	-0.03133
INTERORB	0.04240	0.18434	-0.03611
MALRLINF	-0.05499	0.09125	0.02043
MALRLMAX	-0.01695	0.04541	-0.04102
CHEEKHGT	0.05764	-0.00924	-0.10466
NASIBGCR	-0.03406	0.00847	-0.05477
BRGLMDCR	-0.00735	0.04168	-0.00459
LAMOPISC	0.00384	0.01879	-0.04135
BIMAXSUB	-0.09613	-0.02845	-0.04950
NASFRONSB	-0.03979	0.11647	-0.02834

Table 5. Summary of Some of the Classification Results from Discriminant Function Analysis Using Raw Measurements (Number of Cases Classified in Groups)

	HK	ATY	TAI	HAI	NCH	ANY	MOG	KOR	KAN	EDO	KAM	YAY	AIN
Hong Kong	41	1	1	1	4	2		1	1	1			
Atayal	1	26		1				1	1		1		
Taiwan	1	1	27	5	1	5		1	1		1	1	
Hainan	2		2	23	1	5		1	1				1
N. Chinese	1	1		1	35	2	1	3	2	1	1	1	
Anyang	1	1	6	5	1	52	1	1	2		4		
Mongolia					1		54	1				2	
Korea	1		2	3	1	1		13			1		
Kanto	4		1	1	2			3	29	1	1	1	
Edo	1	3		3	3			1	3	9	2	3	1
Kamakura	1	1	1			3				2	25		1
Yayoi	1	2			1	2	2	2	3	1	7	17	1
Ainu						2			2	1	1		47
Jomon							1				1	4	3
Thailand	2	1	2	1					2	1		1	
Vietnam	2	3	3	3		2		1		2		2	
Philippines	1	1						1	1				1
L. Sundas			1										
Java	1				1			1					
Hawaii										1			
New Zealand	1					1			1				
Guam	1												
New Britain													
Murray R.													
Tasmania													1
Total Cases													
Orig. Assig.	80	36	58	47	69	96	66	32	67	55	52	62	79
No. Correctly Assigned	41	26	27	23	35	52	54	13	29	9	25	17	47
% Correct	51.2	72.2	46.6	48.9	50.7	54.2	81.8	40.6	43.3	16.4	48.1	27.4	59.5

Table 5 (cont'd). Summary of Some of the Classification Results from Discriminant Function Analysis (Number of Cases Classified in Groups)

	JOM	THI	VTN	PHL	LSN	JAV	HAW	NZ	GUA	NBR	MRB	TAS
Hong Kong		4	1			1						
Atayal				1								
Taiwan				2	1							
Hainan		2	1						2			
N. Chinese		2			1		1					
Anyang			1	1	1			1				
Mongolia		1				1						
Korea	1	1					1					
Kanto		3					1	1				
Edo	1	1	1	1		1	1	1				
Kamakura	1				1		1					
Yayoi			1									
Ainu	8				1			1				
Jomon	33											
Thailand	1	24	5	1		1			1			
Vietnam	1	5	22	8		6		1				
Philippines			2	14		1						
L. Sundas			3	2	8	2	1	1		4		
Java		2	2	2	3	28	2	1				
Hawaii		1	1			1	39		1			
New Zealand	1						2	37	1			
Guam							4	2	33			
New Britain					1					42	3	1
Murray R.										1	53	3
Tasmania			1		1							21
Total Cases Orig. Assig.	51	61	86	28	45	73	49	70	46	85	85	26
No. Correctly Assigned	23	24	22	14	8	28	39	37	33	42	53	21
% Correct	64.7	39.3	25.6	50.0	17.8	38.4	79.6	52.9	71.7	49.4	62.4	80.8

Table 6. Mahalanobis' Generalized Distance Results for 34 of the 53 Male Groups Based on Raw Measurements

	HK	SIC	SHA	ATY	TAI	HAI	NCH	ANY	MOG	KOR	KAN	EDO	KAM	KOF	YAY
Hong Kong	-0-														
Sichuan	7.939	-0-													
Shanghai	4.045	4.372	-0-												
Atayal	12.877	12.325	13.716	-0-											
Taiwan	7.685	8.951	10.274	7.303	-0-										
Hainan Is.	7.734	10.852	10.040	7.453	2.964	-0-									
N. China	6.855	6.132	6.834	12.144	8.337	8.730	-0-								
Anyang	7.663	10.497	9.848	7.811	4.454	4.952	7.501	-0-							
Mongolia	20.257	10.915	12.141	25.299	23.705	23.765	16.254	21.631	-0-						
Korea	6.537	7.961	7.470	7.252	5.339	4.383	3.875	4.555	16.419	-0-					
Kanto	6.879	12.223	7.994	9.577	9.444	8.062	7.710	9.307	21.721	4.838	-0-				
Edo	5.882	8.122	6.789	7.576	7.401	5.934	4.254	6.617	18.423	3.228	2.719	-0-			
Kanakura	10.616	12.643	11.523	9.706	9.906	10.547	8.584	5.824	20.752	6.512	7.296	4.272	-0-		
Kofun	10.466	9.396	9.948	11.097	10.115	9.930	7.310	7.131	14.104	4.585	8.845	5.047	3.142	-0-	
Yayoi	9.292	8.033	7.408	10.212	10.429	10.201	6.478	6.923	10.568	5.579	7.991	4.839	4.241	2.496	-0-
Ainu	17.030	21.666	18.392	16.322	20.364	18.823	15.238	16.241	24.905	12.004	9.336	6.740	6.690	8.269	8.412
Ryukyu	7.877	10.855	9.821	8.435	7.410	6.709	7.734	4.391	18.543	4.609	7.180	3.632	1.868	2.780	3.166
Jomon	19.561	23.057	19.771	18.774	20.302	16.989	17.475	15.049	25.426	12.087	11.364	9.341	7.332	6.466	8.010
Sakahlin	18.171	15.995	17.620	14.910	17.732	15.871	12.913	13.331	17.713	10.388	13.508	7.870	8.291	6.605	6.909
Thailand	6.488	13.116	7.460	12.254	9.039	7.115	13.572	10.806	21.579	8.058	7.275	8.011	13.836	13.213	12.008
Bronze Thai	17.869	24.413	14.707	20.574	18.965	19.274	19.139	16.635	26.616	14.470	17.529	14.838	13.941	16.096	15.694
Vietnam	6.610	8.701	7.529	9.085	6.217	6.083	10.715	7.847	19.385	6.759	8.464	6.116	8.481	9.530	8.162
L. Sundas	9.912	12.851	10.431	11.582	12.948	11.895	13.394	12.296	24.516	11.960	10.609	7.214	8.787	12.506	11.986
Borneo	11.203	14.180	10.530	12.176	14.311	13.456	15.239	12.817	22.963	11.633	10.532	9.213	8.831	12.044	11.327
Sulawesi	12.112	14.204	10.420	13.508	14.026	12.232	15.423	12.712	19.969	11.671	11.992	10.447	12.731	14.037	12.332
Java	10.939	15.194	9.674	15.471	12.744	10.631	13.814	12.260	22.659	10.697	11.898	9.947	12.437	14.521	12.807
Easter Is.	26.764	31.157	30.715	29.114	27.327	31.104	26.111	24.114	39.541	25.677	23.431	19.055	16.681	24.567	25.373
Hawaii	17.722	20.226	18.426	27.074	21.263	20.953	17.492	17.849	24.271	16.435	17.441	13.677	15.386	17.240	16.667
Marquesas	27.374	23.014	26.015	30.030	26.715	29.573	22.222	24.817	31.423	24.833	23.877	18.231	19.550	22.743	22.761
New Zealand	21.604	20.260	21.199	19.831	20.649	21.485	19.368	18.701	31.639	19.755	15.598	11.893	14.092	19.362	19.186
Guam	18.577	16.051	16.186	22.299	19.928	20.178	18.188	23.156	17.253	18.301	14.351	15.842	19.743	18.295	
New Britain	28.009	31.690	29.526	27.405	33.336	34.125	32.211	32.902	46.541	34.124	26.730	18.116	23.507	31.014	31.651
Murray R.	43.763	46.208	44.070	37.072	49.175	47.279	47.274	46.202	57.865	47.745	39.150	35.920	36.192	44.077	44.767
Tasmania	35.041	39.371	37.587	32.039	42.666	40.539	41.664	40.645	47.124	40.212	30.247	30.580	30.356	35.223	35.823

Table 6 (cont'd). Mahalanobis' Generalized Distance Results for 34 of the 53 Male Groups Based on Raw Measurements

	AIN	RYU	JOM	SAK	THI	BTI	VTN	LSU	BOR	SLW	JAV	EAS	HAW	MRQ	NZ
Ainu	-0-														
Ryukyu	7.748	-0-													
Jomon	4.272	7.338	-0-												
Sakahlin	5.566	7.587	9.696	-0-											
Thailand	18.363	9.785	18.938	20.104	-0-										
Bronze Thai	16.743	14.118	18.783	19.625	14.822	-0-									
Vietnam	16.140	5.698	16.112	16.353	3.941	15.019	-0-								
L. Sundas	15.370	8.670	19.137	16.102	7.338	16.396	4.384	-0-							
Borneo	19.882	8.309	18.325	18.913	7.536	15.056	4.265	3.933	-0-						
Sulawesi	19.882	8.772	21.146	19.488	5.073	12.638	4.995	3.901	4.119	-0-					
Java	19.168	10.159	20.233	20.190	4.600	15.814	4.023	4.281	4.849	2.632	-0-				
Easter Is.	20.364	19.465	27.057	23.286	26.534	11.873	19.766	16.029	16.673	21.140	22.597	-0-			
Hawaii	17.772	15.614	20.949	17.963	13.801	19.068	11.946	11.250	12.793	11.672	9.745	11.387	-0-		
Marquesas	24.711	21.296	29.990	22.387	24.549	27.965	19.090	16.987	16.073	17.729	19.660	12.108	10.357	-0-	
New Zealand	17.856	15.503	21.467	18.702	18.659	21.950	14.021	10.445	11.219	13.095	15.672	8.535	11.263	5.443	-0-
Guam	23.481	16.757	27.042	22.194	16.201	32.876	11.851	11.275	11.491	13.136	12.545	14.992	9.486	16.694	12.554
New Britain	30.237	26.149	37.820	33.868	25.899	23.154	21.860	8.872	14.712	16.980	19.929	22.942	26.549	27.079	16.914
Murray R	37.853	41.214	47.869	41.337	39.278	43.418	36.507	19.882	25.693	29.885	32.271	34.421	35.480	36.095	25.930
Tasmania	32.867	34.329	38.184	38.412	30.720	46.412	29.982	18.311	21.821	25.794	30.520	35.824	32.223	36.637	25.628
	GUA	NBR	MRB	TAS											
Guam	-0-														
New Britain	24.820	-0-													
Murray R.	33.902	9.583	-0-												
Tasmania	35.734	11.617	10.668	-0-											



Table 7. Eigenvalues, Percentage of Total Dispersion, Cumulative Percentage of Dispersion and Level of Significance for the First 32 Canonical Variates (Based on 53 Male Groups and 33 Cranial Measurements using C-Scores.)

Canonical Variate	Eigenvalue	% Dispersion	Cumulative % Dispersion	d.f. <sup>1</sup>	p <sup>2</sup>
1	4.32362	46.25	46.25	84	*
2	0.98175	10.51	56.76	82	*
3	0.85173	9.17	65.87	80	*
4	0.56934	6.09	71.96	78	*
5	0.48737	5.21	77.17	76	*
6	0.31463	3.37	80.54	74	*
7	0.24736	2.64	83.18	72	*
8	0.22253	2.38	85.56	70	*
9	0.17963	1.93	87.49	68	*
10	0.17439	1.86	89.35	66	*

<sup>1</sup>d.f. = degrees of freedom =  $(p + q - 2) + (p + q - 4) \dots$

<sup>2</sup> $p < .01$  when eigenvalues are tested for significance according to Bartlett's criterion  $[N - 1/2(p + q)] \log_e (1 + \lambda)$ , where  $N$  = total number of crania,  $p$  = number of variables,  $q$  = number of groups,  $\lambda$  = eigenvalue, which are distributed approximately as chi-square (Rao 1952: 323)

Table 8. Canonical Coefficients for Cranial Measurements Recorded in 53 Male Groups for the First Three Canonical Variates Using C-Scores.

Variable	Canonical Variate 1 Coefficient	Canonical Variate 2 Coefficient	Canonical Variate 3 Coefficient
MAXCRANL	0.55831	-0.26590	-0.53838
NASOCCIL	-0.39140	0.46720	0.12117
BASINASI	-0.03585	0.40756	-0.05117
BASIBREG	0.08836	-0.28093	0.26692
MAXCRANB	-0.04378	-0.23219	-0.10079
MAXFRONB	0.18242	-0.26034	-0.18415
MINFRONB	0.23296	-0.00257	-0.07161
BISTEPHB	-0.06404	0.08021	0.23437
BIAURICB	0.03623	0.08120	0.18037
MINICRANB	-0.18795	-0.35249	-0.33445
BIASTERI	0.17164	-0.17695	-0.19377
NASIPROS	-0.40523	-0.24013	-0.30998
NASALHGT	0.43228	-0.23816	0.51617
NASALBTH	0.13795	-0.33766	-0.01034
ORBHGTLF	0.11682	-0.12814	0.16423
ORBBTHLF	0.18129	0.00756	-0.02120
BIJUGALB	0.00475	0.19307	0.14209
ALVEOLAL	0.54473	-0.10142	0.01071
ALVEOLAB	0.22151	-0.37385	-0.24300
MASTOIDH	0.20043	-0.07681	0.22783
BIMAXLB	-0.13941	-0.22846	0.03523
BIFRONTB	-0.08420	-0.23348	-0.31649
BIORBITB	0.60450	0.03096	0.06120
INTERORB	0.02690	-0.39709	0.13363
MALRLINF	0.28718	-0.39057	-0.03205
MALRLMAX	0.17334	-0.20594	0.14979
CHEEKHGT	-0.01033	-0.00223	0.14143
NASIBGCR	0.24233	-0.06331	0.18776
BRGLMDCR	0.15090	-0.29734	0.00190
LAMOPISC	0.09658	-0.11770	0.15866
BIMAXSUB	0.40162	0.00835	0.07340
NASFROSB	0.21357	-0.35523	0.15809

Table 9. Summary of Some of the Classification Results Based on C-Score Analysis

	HK	ATY	TAI	HAI	NCH	ANY	MOG	KOR	KAN	EDO	KAM	YAY	AIN
Hong Kong	41	2	2		4	3			2	1			1
Atayal	1	17	1	1				1	1		1		
Taiwan	1	1	28	4	1	5		2				1	
Hainan	2		3	21	1	5		1	1	1			1
N. China	2			1	30	2	2	3	2	1	1	1	
Anyang	1	4	3	4	2	51	1	2	2		3		
Mongolia					1		55	1				1	
Korea	1		2	2	1	1		8	2		1		
Kanto	5		1	1	2			2	29		2	1	
Edo	3	4		2	4			1	3	8	2	3	1
Kamakura	1	1	1			3				1	23		2
Yayoi	1	3			2	1	3	1	1	1	5	18	2
Ainu						2			3	2	2		47
Jomon							1				1	4	2
Thailand	1	2	1	1				1	3	1		1	
Vietnam	2	2	3	4		2		1	1	2		2	
Philippines		1						1	1			1	
L. Sundas		1	1									1	
Java	1							1					
Hawaii			1					1					
New Zealand	1					1			1		1		
Guam				1							1		
New Britain													
Murray R.													
Tasmania													
Total Cases													
Orig. Assig.	80	36	58	47	69	96	66	32	67	55	52	62	79
No. Correctly Assigned	41	17	28	21	30	51	55	8	29	8	23	18	47
% Correct	51.2	47.2	48.3	44.7	43.5	53.1	83.3	25.0	43.3	14.5	44.2	29.0	59.5

Table 9 (cont'd). Summary of Some of the Classification Results Based on C-Score Analysis

	JOM	THI	VTN	PHL	LSN	JAV	HAW	NZ	GUA	NBR	MRB	TAS
Hong Kong		4	1			1						
Atayal				1	2							
Taiwan			1	1	1		1					
Hainan		1	1						2			
N. China		2			1		1					
Anyang			2	1	1			1				
Mongolia		1				1						
Korea		2				1	1					
Kanto		3					1	1				
Edo	1	1		1		1		1				
Kamakura	1	1			1		1					
Yayoi		1	1				2		1			
Ainu	9				1			1				
Jomon	34											
Thailand	1	23	5	1		1		1	1			
Vietnam	1	5	23	8		6		1	1			
Philippines			2	15		2	1					
L. Sundas			3	1	9	3		1		2		
Java		2	1	4	3	29	2	1				
Hawaii						1	39		1			
New Zealand								39	1			
Guam							4	2	32			
New Britain					2					42	2	
Murray R.										1	54	3
Tasmania					1							20
Total Cases												
Orig. Assig.	51	61	86	28	45	73	49	70	46	85	85	26
No. Correctly Assigned	34	23	23	15	9	29	39	39	32	42	54	20
% Correct	66.7	87.7	26.7	53.6	20.0	39.7	79.6	55.7	69.6	49.4	63.5	76.9

Table 10. Mahalanobis' Generalized Distance Results for 34 of the 53 Male Groups Based on C-Scores

	HK	SIC	SHA	ATY	TAI	HAI	NCH	ANY	MOG	KOR	KAN	EDO	KAM	KOF	YAY
Hong Kong	-0-														
Sichuan	7.735	-0-													
Shanghai	3.981	3.877	-0-												
Atayal	7.941	9.186	7.588	-0-											
Taiwan	6.531	8.558	8.509	5.984	-0-										
Hainan Is.	6.440	10.583	8.549	5.880	2.955	-0-									
N. China	5.980	5.895	5.414	10.492	8.316	8.732	-0-								
Anyang	6.683	10.210	8.301	6.296	4.445	4.950	7.501	-0-							
Mongolia	20.319	10.774	12.014	20.753	22.791	23.035	15.535	20.836	-0-						
Korea	5.155	7.439	5.430	6.158	5.325	4.341	3.817	4.528	15.226	-0-					
Kanto	6.105	12.037	6.708	7.776	9.404	8.055	7.703	9.293	21.150	4.750	-0-				
Edo	5.190	7.977	5.609	5.646	7.340	5.916	4.242	6.593	17.899	3.113	2.716	-0-			
Kamakura	9.297	12.157	9.555	8.556	9.898	10.513	8.540	5.799	19.628	6.518	7.224	4.172	-0-		
Kofun	9.508	9.112	8.420	9.554	10.094	9.927	7.305	7.131	13.289	4.546	8.828	5.021	3.118	-0-	
Yayoi	8.621	7.888	6.245	8.256	10.356	10.185	6.460	6.893	10.022	5.454	7.985	4.840	4.135	2.471	-0-
Ainu	15.697	21.147	16.365	15.192	20.360	18.757	15.180	16.211	23.739	12.009	9.268	6.630	6.682	8.238	8.297
Ryukyu	7.021	10.625	8.435	6.756	7.385	6.706	7.738	4.386	17.845	4.551	7.177	3.624	1.819	2.780	3.157
Jomon	13.445	22.703	18.084	17.396	20.319	16.993	17.472	15.047	24.486	12.063	11.320	9.286	7.339	6.454	7.951
Sakahlin	17.049	15.619	15.891	13.563	17.728	15.877	12.889	13.317	16.752	10.374	13.469	7.813	8.274	6.597	6.854
Thailand	6.489	12.932	7.386	7.405	7.922	6.218	12.728	9.861	21.616	6.723	6.537	7.353	12.554	12.298	11.367
Bronze Thai	17.869	24.199	14.653	15.528	18.782	18.289	18.217	15.604	28.605	13.035	16.716	14.106	12.563	15.088	14.975
Vietnam	6.498	8.685	7.185	5.517	5.668	5.682	10.349	7.410	19.386	6.043	8.159	5.864	7.817	9.104	7.912
L. Sundas	9.787	12.854	10.070	8.080	12.421	11.514	13.038	11.884	24.456	11.280	10.322	6.968	8.151	12.105	11.762
Borneo	11.115	14.155	10.228	8.478	13.706	13.010	14.823	12.335	22.943	10.857	10.191	8.922	5.112	11.578	11.042
Sulawesi	11.956	14.206	9.996	10.179	13.562	11.905	15.135	12.362	19.630	11.066	11.765	10.257	12.174	13.698	12.143
Java	10.922	15.097	9.525	11.099	11.852	9.926	13.167	11.515	22.709	9.603	11.340	9.455	11.403	13.800	12.324
Easter Is.	26.794	31.128	30.537	25.095	26.586	30.555	25.602	22.517	39.606	24.786	22.983	18.687	15.810	24.297	25.029
Hawaii	17.530	19.447	18.389	20.013	18.988	18.985	15.609	15.820	24.037	13.845	15.714	12.068	12.881	15.241	15.086
Marquesas	27.293	22.976	25.686	26.314	26.109	29.125	21.805	24.332	31.439	24.059	23.547	17.950	18.814	22.284	22.473
New Zealand	21.294	20.244	20.514	17.086	20.391	21.331	19.233	18.517	31.412	19.384	15.500	11.834	13.735	19.224	19.134
Guam	18.440	15.371	16.168	15.573	17.839	18.380	17.858	16.333	22.977	14.863	16.736	12.904	13.532	17.912	16.860
New Britain	27.429	31.514	28.520	25.270	33.244	34.066	32.140	32.899	46.041	33.953	26.707	24.137	23.411	30.905	31.589
Murray R.	43.013	46.037	42.763	35.256	49.129	47.265	47.269	46.217	57.183	47.634	39.165	35.887	36.160	44.083	44.723
Tasmania	34.376	39.193	36.410	30.079	42.597	40.518	41.610	40.627	46.466	40.096	30.264	30.571	30.249	35.206	35.837

Table 10 (cont'd). Mahalanobis' Generalized Distance Results for 34 of the 53 Male Groups Based on C-Scores

	AIN	RYU	JOM	SAK	THI	BTI	VTN	LSU	BOR	SLW	JAV	EAS	HAW	MRQ	NZ
Ainu	-0-														
Ryukyu	7.690	-0-													
Jomon	4.260	7.319	-0-												
Sakahlín	5.556	7.560	9.697	-0-											
Thailand	17.039	8.966	17.881	19.024	-0-										
Bronze Thai	15.328	13.220	17.632	18.441	14.809	-0-									
Vietnam	15.458	5.346	15.585	15.816	3.843	14.885	-0-								
L. Sundas	14.703	7.978	18.674	15.592	7.237	14.906	4.386	-0-							
Borneo	16.104	8.382	17.769	18.323	7.465	12.528	4.264	3.391	-0-						
Sulawesi	19.244	9.888	20.727	19.059	4.933	15.628	4.988	3.897	4.110	-0-					
Java	18.056	9.615	19.384	19.325	4.590	11.853	3.981	4.230	4.817	2.560	-0-				
Easter Is.	19.444	18.974	26.346	22.584	26.521	27.900	19.768	16.005	16.671	21.091	22.603	-0-			
Hawaii	15.240	13.763	18.745	15.723	13.594	21.787	11.352	10.635	12.245	10.989	9.437	10.966	-0-		
Marquesas	23.957	20.903	29.450	21.782	24.483	32.760	19.090	16.986	16.076	17.716	19.635	12.111	9.332	-0-	
New Zealand	17.485	15.375	21.227	18.461	18.351	27.478	13.967	10.400	11.150	13.063	15.484	8.424	10.273	5.370	-0-
Guam	21.139	15.079	25.038	20.127	16.046	23.025	11.351	10.751	11.035	12.542	12.293	14.647	9.487	16.247	11.667
New Britain	30.112	26.121	37.776	33.882	25.421	34.124	21.680	8.717	14.542	16.860	19.563	22.660	25.141	26.895	16.881
Murray R.	37.792	41.224	47.862	41.321	38.552	42.604	36.216	19.617	25.373	29.680	31.732	34.028	33.779	35.790	25.859
Tasmania	32.817	34.325	38.166	38.357	30.101	45.634	29.745	18.090	21.551	25.624	30.044	35.458	30.648	36.364	25.565
GUA	NBR	MRB	TAS												
Guam	-0-														
New Britain	23.579	-0-													
Murray R.	32.344	9.568	-0-												
Tasmania	34.301	11.616	10.676	-0-											

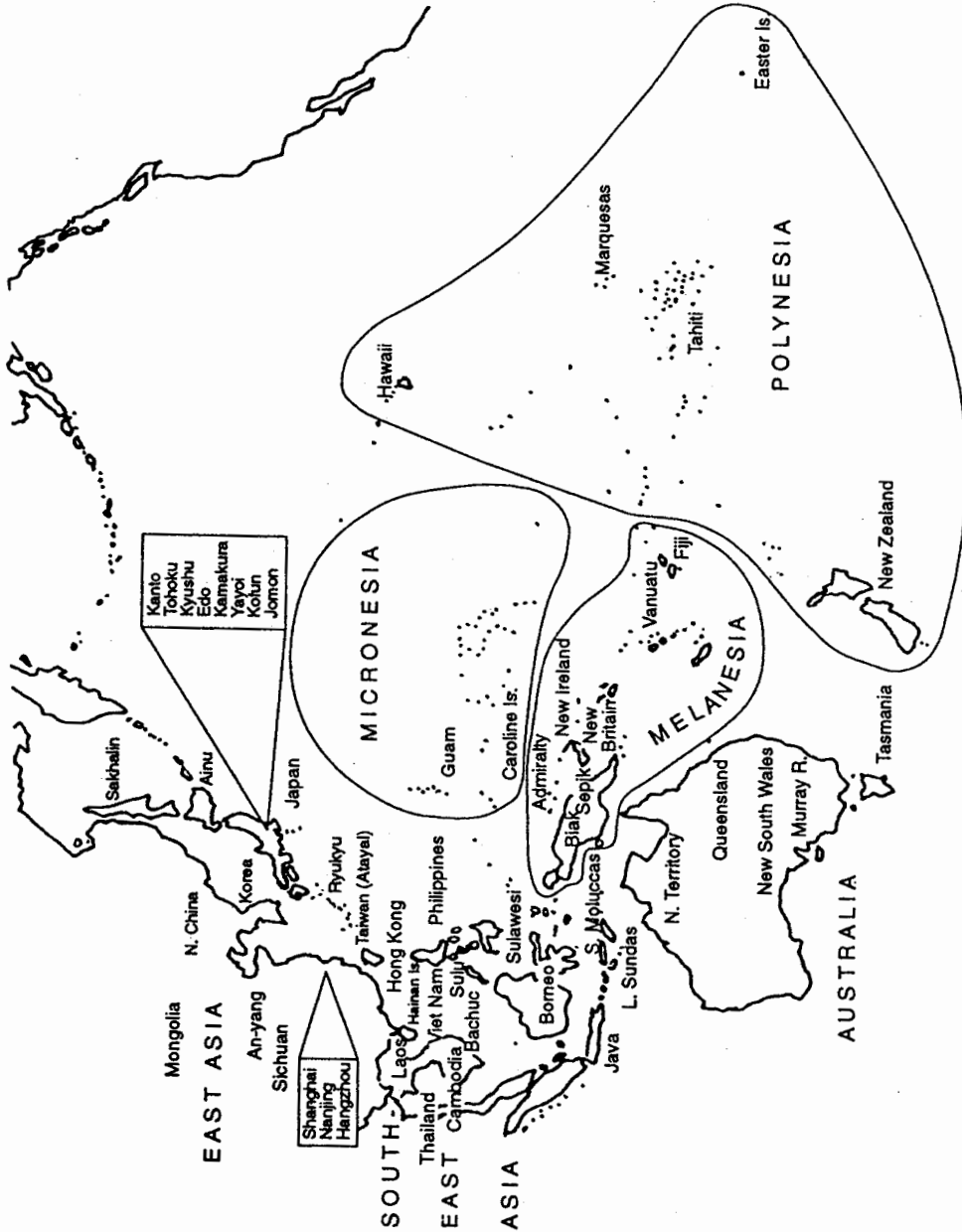


Figure 1. Map showing the approximate locations of the cranial series used in the present study.

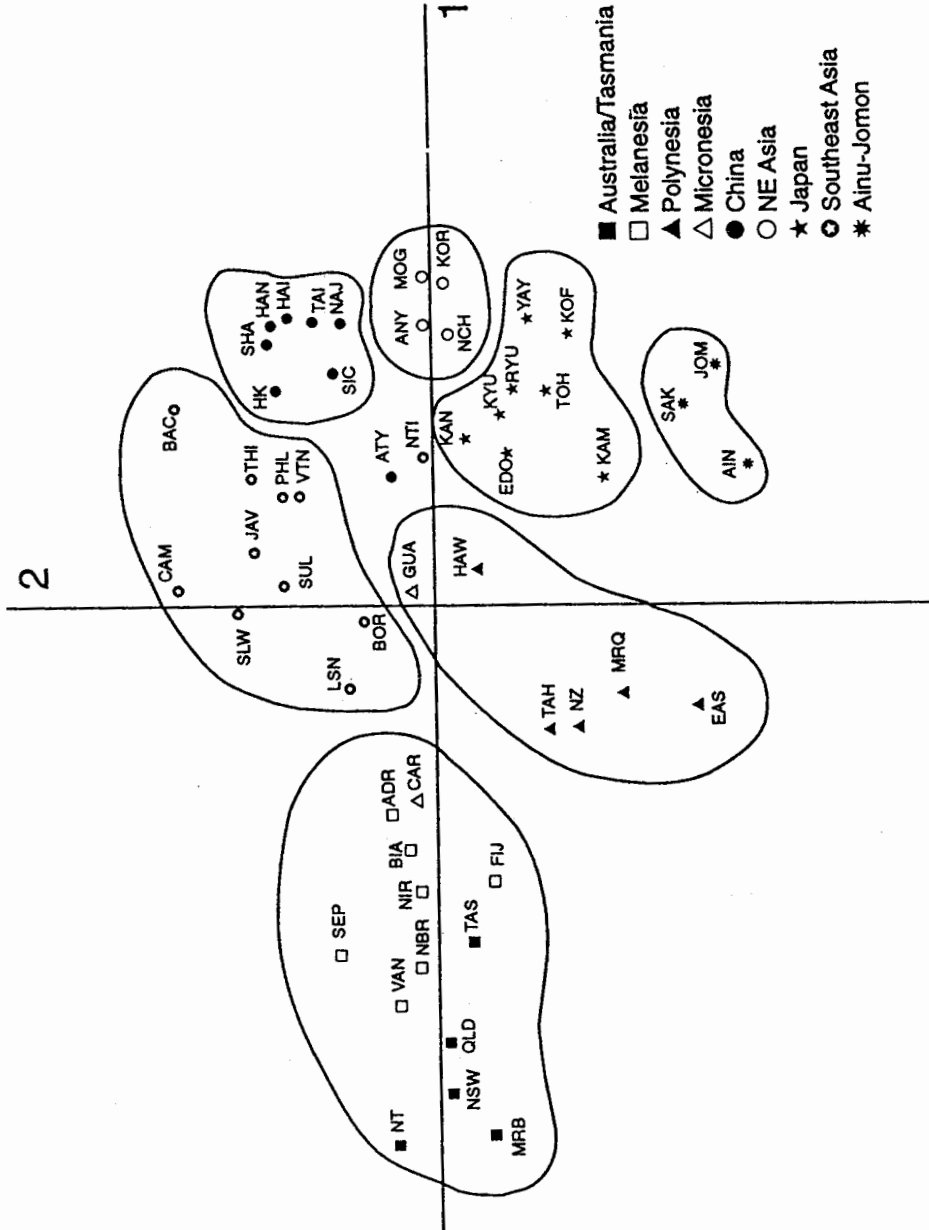


Figure 2. Plot of 53 male group means on the first two canonical variates (discriminant functions) using 33 unstandardized cranial measurements.



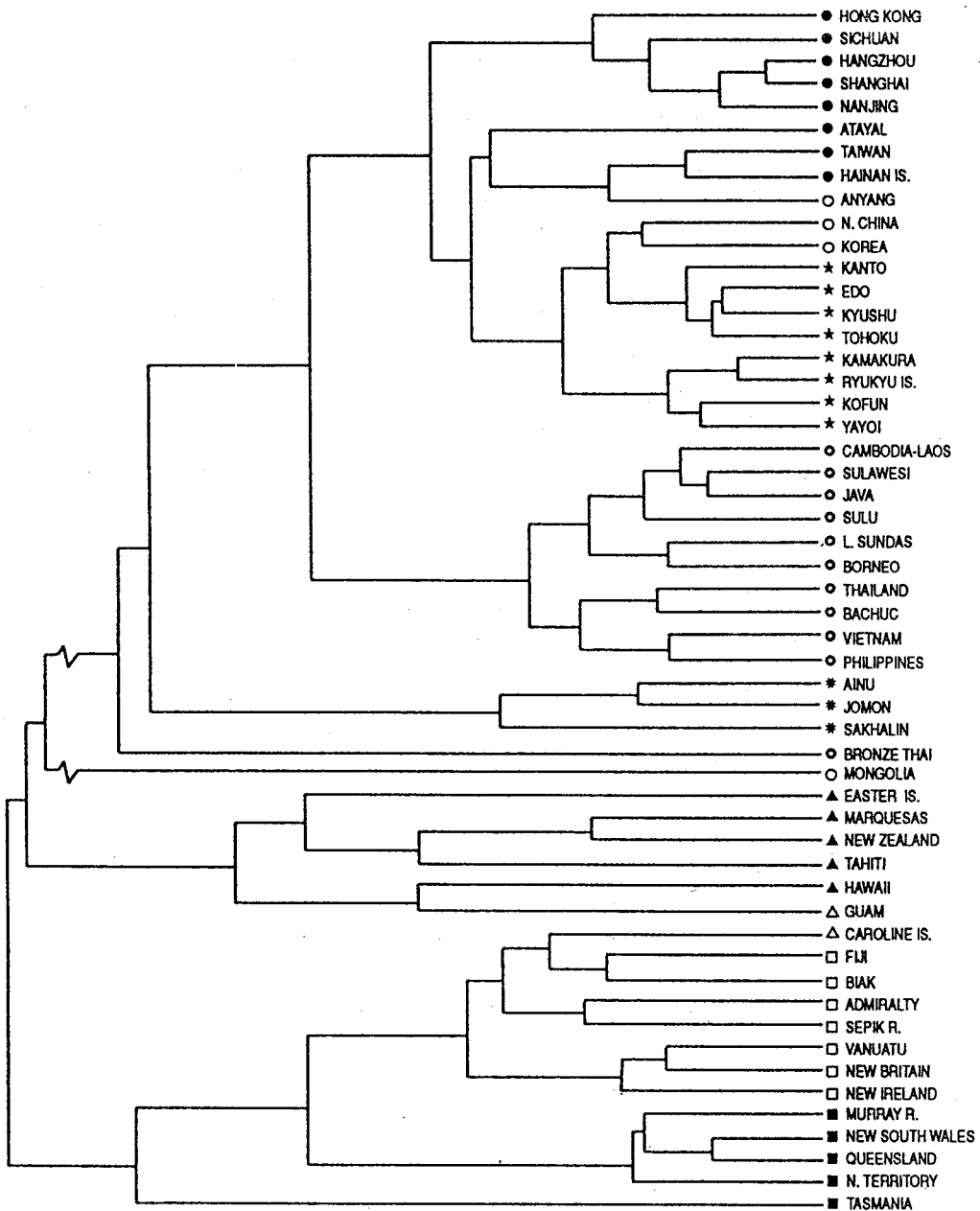


Figure 3. Diagram of relationship based on a cluster analysis (UPGMA) of Mahalanobis' Generalized Distances using 33 unstandardized cranial measurements recorded in 53 male series.

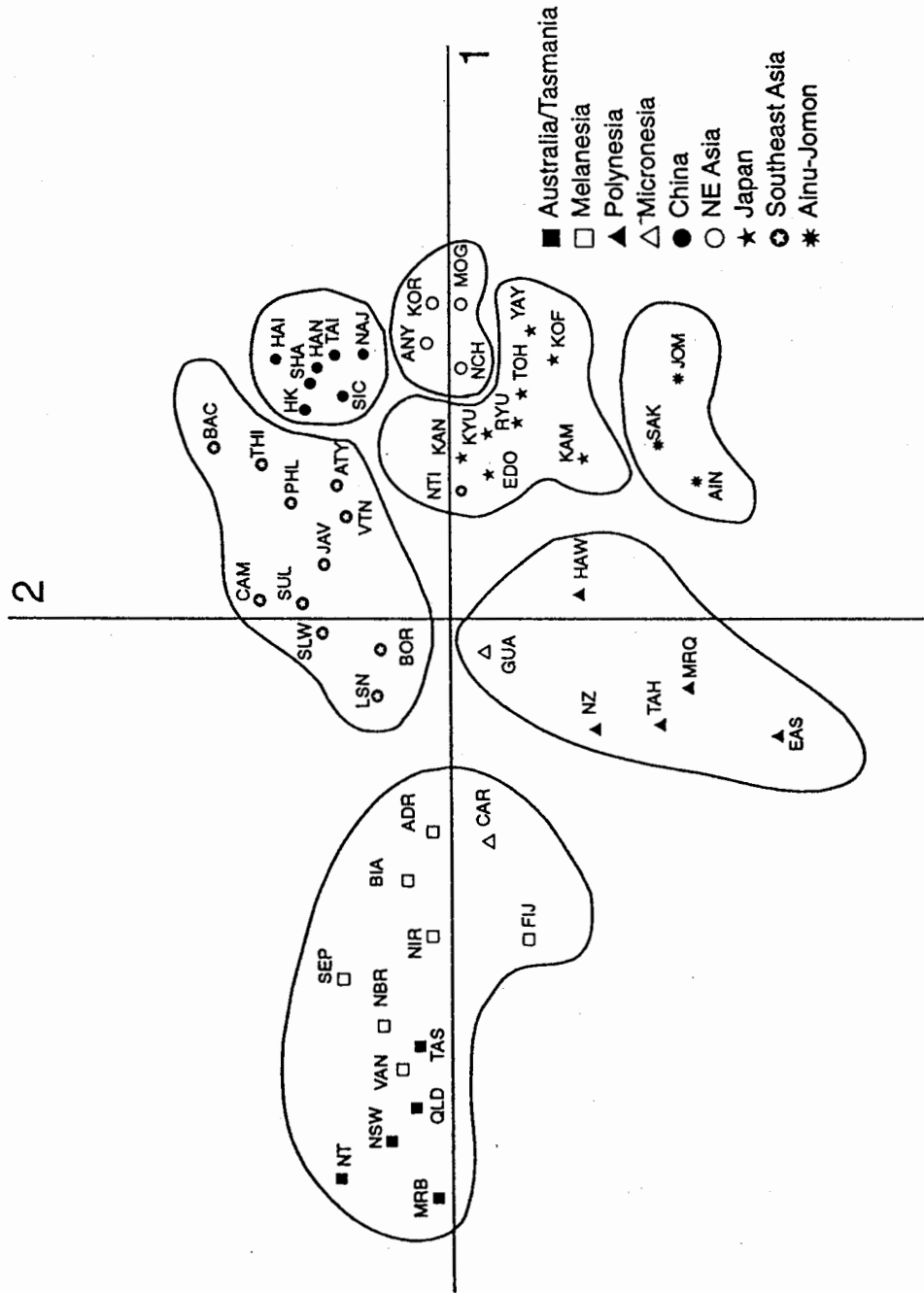


Figure 4. Plot of 53 male group means on the first two canonical variates (discriminant functions) using C-scores derived from 33 cranial measurements.

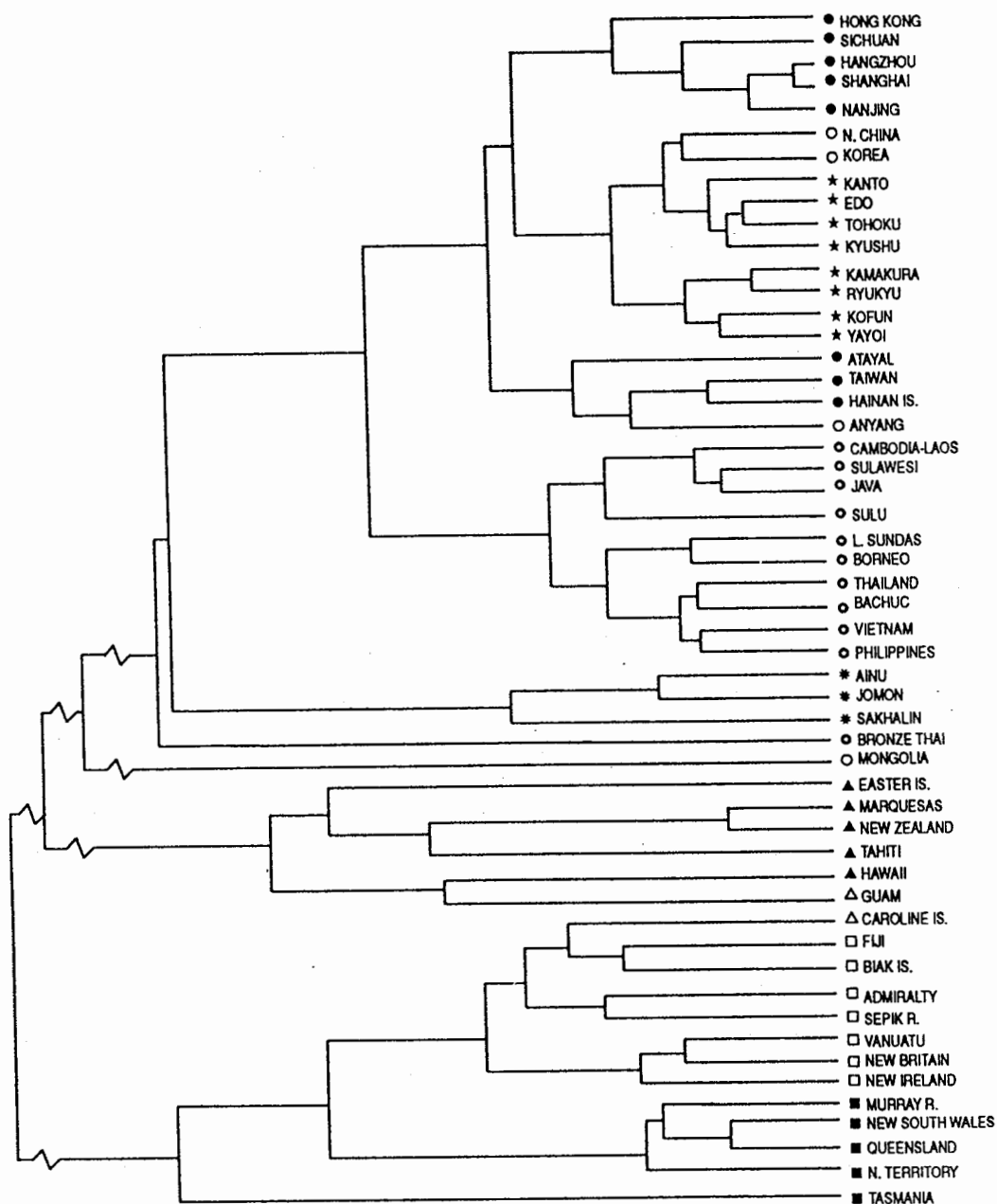


Figure 5. Diagram of relationship based on a cluster analysis (UPGMA) of Mahalanobis' Generalized Distances using C-scores derived from 33 cranial measurements.



## Some Aspects of Peinan Settlement Patterns

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The enormous archaeological material excavated from the Peinan site supplies multi-dimensional data for studies on several subjects, among them the settlement patterns is one basic item. This study, though still in its preliminary stage, was done with the ambition of presenting the layout of the Neolithic village (including the burial ground) in a multiple spatial arrangement on one hand, and to discuss the diachronic development of some aspects of Peinan Culture on the other.

Basically due to activities of shifting cultivation, the villagers moved away and migrated back many different times, eventually the site was repeatedly occupied. And there was probably a rotation system based on the concept of territory. This could be the mechanism of cultural adaptation of Neolithic Peinan people and is significant to start thinking about settlement archaeology at a regional level.

### I. Introduction

Taiwan is both geographically and geologically on the eastern edge of the Asian continent. The island is divided by a central mountain range, the eastern side being colonized by Han Chinese only by the 19th century. They regarded the eastern side as the area "behind the mountains," in other words as a remote area. However, seen in the archaeological materials, eastern Taiwan was well-developed and prosperous during its prehistoric times.

Most scholars have recognized that the history of Taiwanese archaeology began in the early phase of the Japanese occupation, with the discovery of

the Chih-shan-yen, Yuan-shan, and other shell mounds in the Taipei basin (Kanaseki & Kokubu 1950). Few scholars noticed that Dr. Torii started archaeological investigations along with the ethnological work in the east coast area as early as 1896 (Sung 1952, Lien 1986:167-168), where he photographed the erect slate slabs at the Peinan site (TRPRS 1990: Plates 139 & 140). Archaeological investigations in eastern Taiwan were done mainly by Japanese and Chinese scholars, as well as scholars from other countries. Most findings illustrate that the prehistory of eastern Taiwan shared the cultural developmental stages of the island as a whole, as well as its surrounding major isles (Fig. 1). In addition to the discovery of the preceramic Changpinian Culture, the earliest prehistoric cultural remains so far found in Taiwan, the archaeological material provided evidence that Neolithic people in eastern Taiwan shared the same pattern of living. These include subsistence modes based on domesticated food production supplemented by hunting and gathering, a certain degree of sedentary residence, the manufacture and use of elaborate polished stone implements, pottery, basketry, and weaving. However, the Neolithic sites of eastern Taiwan were characterized by the presence of megalithic constructions, which were confined to this area, the region having a very high density of slate slab graves with a great complexity of burial methods. The region is also very rich in jade artifacts. All of this clearly shows the prosperity of the Neolithic cultures in eastern Taiwan. Most of our knowledge of the prehistory in this region is based on studies of the archaeological assemblages found through investigations or excavations. Little has been known about settlement patterns.

The excavations at Peinan carried out during 1980 to 1989, provided enormous archaeological finds, including large quantities of artifacts, and

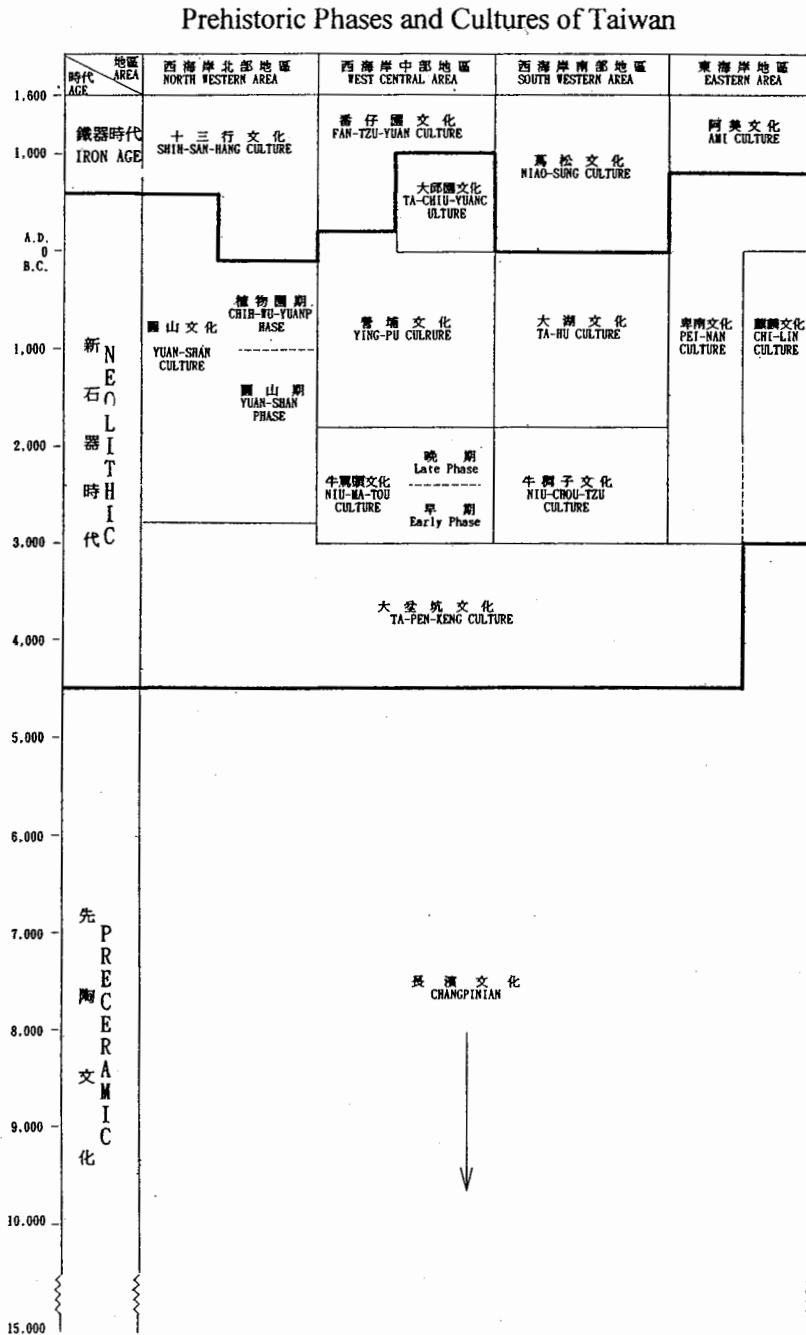


Fig. 1 Sequence of Prehistoric Cultures and Phases of Taiwan (after Lien 1991b).

remains of house floors, storage structures and more than 1,500 slate slab graves. Analytical studies of these remains make it possible to reconstruct a village layout in multiple spatial arrangements, as well as diachronic development in its Neolithic context.

The Peinan site is situated at 22°47' N and 121°06' E on the southern terrace of the Peinan River parallel to the foot of the Peinan Hills, near the southern end of the Taitung rift valley. The altitude of the site is from about 40m to 70m A.S.L. and extends to as high as 100m on the hill. The site shares similar ecological conditions, such as seasonal moonsons in winter and typhoons in summer, with the other sites along the southern part of the rift valley, as well as the slopes of the coastal mountains and the narrow coastal plain areas. These sites also share common assemblages of pottery and inventory of stone implements in addition to neatly aligned slate slab graves. However, Peinan is unique in being such a largescale site, both geographically and diachronically.

Several preliminary reports about the excavations at this site have been published (Sung and Lien 1984, 1985, 1987, 1988; Lien and Sung 1986). A brief introduction of the findings made from the excavations is offered, followed by a presentation of the intra-site settlement components. Due to the extensiveness of the site, and the demands for land for the railway station, a long-term debate developed over the issues of construction vs. conservation. As a result, 13 salvage excavations were carried out from 1980 to 1989 by the Department of Anthropology, National Taiwan University, under supervision of Prof. Wen-hsun Sung and the author. An area of 10,000 sq.m. was explored, adjacent to an area of 40,000 sq.m. which was destroyed. Peinan was determined to extend, as an archaeological site, to between 400,000 and 800,000 sq.m. Thus, it not only became the site with



the largest area excavated but also proved to be the largest archaeological site in Taiwan.

The ten years of salvage archaeology can be divided into three periods: intensive excavations from 1980 to 1982, analysis from 1982 to 1986, and further excavations from 1986 to 1988 (Lien 1989a). As a result, enormous quantities of archaeological data were obtained. A project for establishing a museum at the site was also initiated. The finds included numerous artifacts, at least 50 architectural units, 1,523 graves and about 13,000 grave-good items, including about 4,000 jade artifacts. Towards the conclusion of the excavation the government accepted the suggestions of scholars and the mass media to establish a national prehistory museum at the site. A further archaeological survey was conducted at the proposed museum site, and this led to the discovery of seven more graves (Lien & Sung 1989). Due to the enormous quantity and the complexity of the findings, only a couple of excavation reports could be finished and published, plus several unpublished monographs. (detailed site reports are still in progress).

Two cultural strata were recognized, including corded-ware pottery in the lower, and the Peinan Culture material in the upper; the latter was the major deposit of the site. Ten radiocarbon dates for the Peinan Culture fell between 2,300 and 5,300 BP, and seven cluster between 2,800 and 3,500 BP. Thus, the date of the corded pottery in the lower stratum should be earlier. Based on the stratigraphic evidence and the characteristics of the pottery, as well as comparative studies of the cultural styles of the Peinan, Yuan-shan, and Niu-chou-tzu cultures, I believe that the corded pottery stratum at Peinan corresponds with the Ta-peng-keng stratum in northern and western Taiwan, and that the Peinan Culture is parallel with the Niu-chou-tzu and Niu-ma-tou cultures (or Corded Red Ware Culture) in south-western Taiwan,

and with the Yuan-shan Culture in the north.

Corded pottery marked with comb pattern was found mainly in the bottom layer of the site in extremely small amounts, but differed vastly from Peinan pottery. As a whole, pottery is nearly the only cultural remains of Ta-pen-keng Culture in eastern Taiwan so far recognized. Little is known of the Ta-pen-keng Culture in eastern Taiwan, or of its relationship to the later Peinan Culture; however, the association of the cord marked pottery with slender points of slate found at the Peinan site (so-called slate needles, Lien & Sung 1989: 54) could be evidence of some degree of local adaptation. For this type of slate implements so far was only found along the eastern coast.

The archaeological findings excavated from the Peinan Culture stratum give a clear view of Neolithic village life in eastern Taiwan. The pottery is a fine orange sandy ware, with few decorations, low temperature fired and hand formed (not with a wheel). The main types of vessel include a jar with a flaring rim and "ring foot" with vertical or horizontal handles, a small rimmed vase with two vertical handles, a bowl with or without horizontal handles, plates, dishes, ladles and so on. Other earthenware artifacts include miniature pots, spindle whorls, rings, and animal figurines. The stone inventory includes sickles, knives, pestles, spear-arrow heads, adzes, jade earrings and other ornaments, as well as grindstones of various forms and sizes. The bones of wild boar, deer, and fish were found at the site, but there is no evidence for domesticated animals.

## II. A Neolithic Village with Its Layout of Multiple Spatial Arrangement

Looking at a number of the erect slate (and schist) slabs at the site, it may be seen that they were aligned with and shared the same orientation. Thus the site was once believed to be as an old settlement belonging to one of the aboriginal tribes of the area (Sayama 1914, Kamano 1915, Kano 1930). However, since the early to mid-20th century no further related studies have been made. Kanaseki and Kokubu did a minor excavation at the site and found large quantity of artifacts and a house of 15m x 4.2-4.3m were found (Kanaseki and Kokubu 1957). Until future large-scale excavations are carried out, however the structural components of the village and the uniqueness of the spatial arrangements between them will not be well understood.

### Village layout

More than 50 architectural units were found in the upper stratum of the site as seen in by the foundations of houses as well as by storage structures. Mainly based on the analysis of these remains, especially excavated in an area covering 840 sq.m. of the site done during the last period of salvage excavations, the spatial relationship between houses, storage structures, and graves was reconstructed to a certain extent (Lien 1991a). The following is a summary (Lien 1991b:348).

The houses have rectangular in shape being built directly on the ground surface, and averaging 11.5 x 5.5m in size. Doors could not be identified with certainty, but they most likely faced to the east towards the delta of the Peinan River. Front yards and most house interiors were paved with slate slabs or split boulders. One of the most striking characteristics was that the

houses were clustered side-by-side in a zone with a NNE-SSW orientation (see Fig. 2, left half). The rectangular slate slab graves lay directly underneath the houses with the same orientation (see Fig.3, compare with Fig. 2).

Round or oblong storage structures, with or without a subterranean base, were also built alongside the houses with the same orientation. The western edge of the storage zones was defined by a long boulder wall, beyond which was a second zone of houses. The elongated burial zone beneath the houses measured about 15m wide, and the house and storage zones together measured 18m to 20m wide (see Fig. 2, central column). Burials were seldom found beneath the storage structures (see Fig. 3).

Generally speaking, the slate-built graves were so densely distributed at the site that the burials and graves intruded into each other and overlapping. Thus, the archaeologists initially tended to believe that they were excavating a burial site or else the excavated area was a prehistoric cemetery. After making a detailed analysis (Sung & Lien 1986), it was recognized that the orientation of the burials was almost evenly NNE-SSW, and distributed along a directional line formed in several zones (Lien 1989b: Fig. 3). These zones of the distribution of the graves are similar to the two zones observed at the 840 sq.m. area (see Fig. 3) about 200m away to the south.

Thus, the layout of the Neolithic village at Peinan can be reconstructed as follows. The village was located at the foot of the Peinan Hills on a terrace of the Peinan River. Within the village, houses were built side-by-side to form an alignment which followed the direction of the hill. Each house was adjacent to one or two storage structures which in turn adjoined those of neighboring houses. Burials were located underneath the houses (rather than in a separate village cemetery). There were several zones of these house and storehouse combinations, with family burials beneath the houses,



Fig. 2 Map of various structural remains including houses, storage sites and slate slab graves covering the 840 sq.m. excavated area of the Peinan site (after Sung & Lien 1988: map 5, revised).

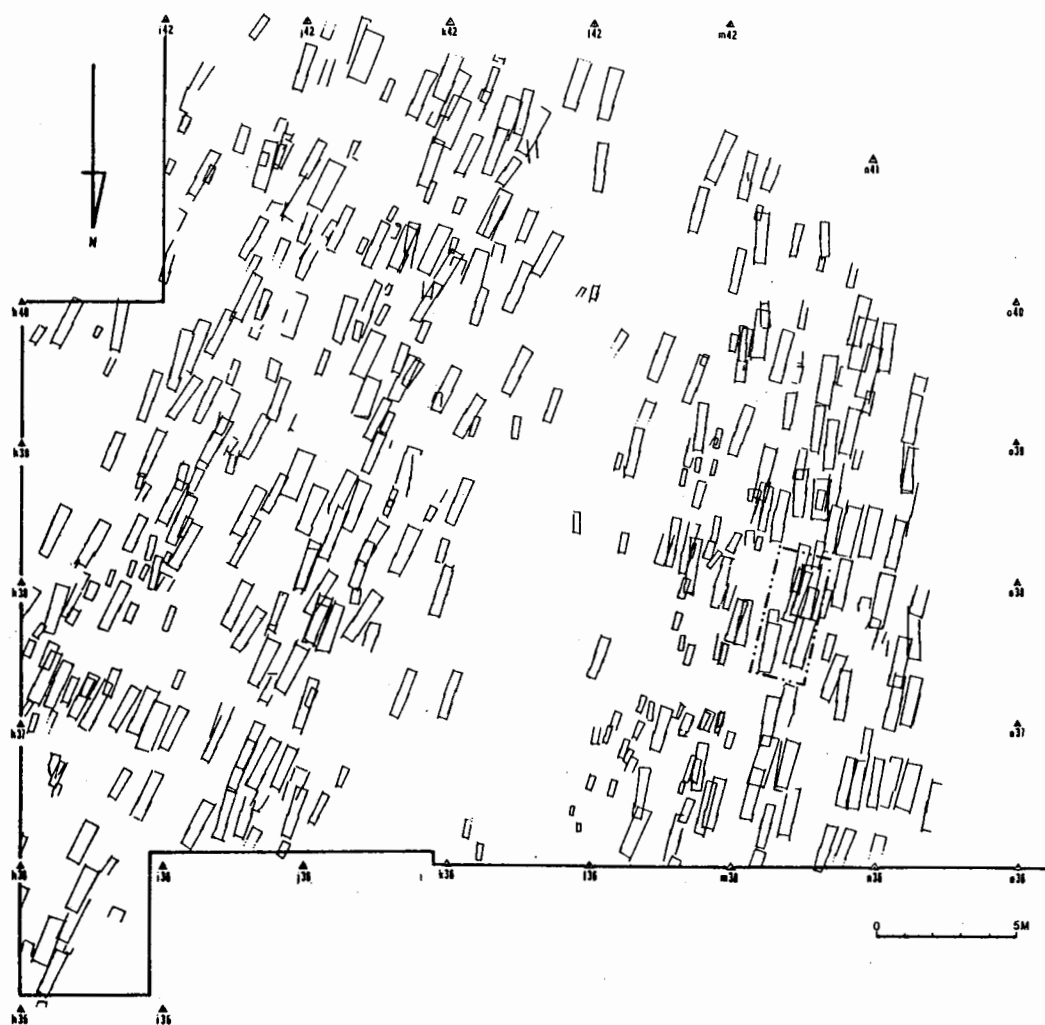


Fig. 3 Distribution of slate slab graves of the 840 sq.m. excavated area of the Peinan site.

distributed across the site. The house floors were disturbed for burying the dead, and there were natural destruction and deposition. Here analysis of the grave zones, in terms of vertical distribution in one of the village components, follows a brief description of the Peinan burials and graves.

### The Peinan burials and graves

More than 1,530 burials and graves lined with slate and schist slabs were excavated in 14 seasons of work. These burials ranged from fetuses to old adults. Almost all were intact. More than 21% of the excavated graves contained more than one skeleton, evidently due to later opening and reuse. Most burials were in extended postures with their heads facing south. The length of the grave generally represented the age and stature of the person interred (Lien 1991b: Fig.2).

About 75% of the adult graves and 23% of the infant graves yielded grave-goods, mostly of pottery, jade and slate. The most common artifacts discovered were bell-shaped and tubular beads, slotted earrings, bracelets, pendants, adzes, spear and arrow heads, pottery vessels, spindle whorls, and shreds of jade. Of these items, the slotted earrings were particularly interesting, being most often mentioned by scholars, especially in terms of stylistic studies. A total of 1,328 of these earrings were found in the excavated graves, almost all being in complete form. 442 of the 692 graves containing with grave goods yielded earrings. Thus the item was clearly a basic offering for the dead, especially for adults.

### III. An Analysis of the Stratification of Graves

The slate slab graves were neatly clustered and formed as a zone signifi-

cantly in space consistent with the house zone above ground as mentioned above. They shared the same orientation, material, structure and location which strongly suggests that the Peinan people practiced customs of "inside house burial" somewhat parallel to those of the traditional Formosan Austronesians (see Lien 1991a: 132-134).

An analysis of the vertical position of the graves makes it easier to see their density and aggregation (Sung & Lien 1987:43-44, 1988:50). Although generally speaking the adult graves were found on a deeper level and infant graves in less depth, the situation is actually quite complicated due to the diachronic development which is significant enough to warrant further discussion. Based on a study of the vertical distribution of the graves, and the different forms of graves in their special association such as intrusion and overlap, we found there are many groups of stratified graves with chronological meaning (Sung & Lien 1987:44-45, 1988:52-53). I found this to be an extremely useful model for explaining the evolutionary process of Peinan burial behavior, providing that the attributes of the burial data from each grave are carefully determined and examined. Here is an example. Following a brief description of the stratified graves of B2381, B2413, B2419, B2451 and B2452 (see Fig 4), I discuss the changes of these variables based on a stratification model.

#### B2381

This is on the top of the stratification. Its cover slate slabs being broken before excavation, flat boulders of the living floor were found inside the grave. It was quite shallow and very close to the living floor, and was an uncommon form of slate slab structures. This grave was constructed with small slate slabs and using extra slabs for the conjunctions, thus forming



layered grave walls. As a whole, it seems to include an inner grave with an outer grave, thus being named by archaeologists as a "coffin within the coffin." It was possibly widened for later reuse. There were multiple skeletons, but all were in extremely bad condition. The grave goods included one adze and one arrow-head of jade, as well as five pottery vessels.

#### B2413

This is in the lower stratum, at an interval of about 30cm beneath B2381. The common form of the slab structure persisted, but also had an extension structure at its northern end, assumedly because the grave was enlarged during its reuse. Multiple skeletons in extremely poor condition as only traces of the piled long bones and the teeth were found dispersed. Rich grave goods included fourteen earrings (including one "zoo-anthropomorphic jade ear ornaments," one "animal figurine with rings and slotted rings," and twelve slotted earrings with 4 protuberances, i.e. type IIA), fifteen tubular beads, one cylinder, nine adzes, nine spear-heads of jade or serpentine; and one slate bracelet. They were found approximately in two different levels of the grave deposit. One earring of the same type was found between cover slabs, being located there possibly due to grave reuse.

#### B2419

This is parallel with B2413 at its eastern side. It was there during the long term reuse of B2413. This was a simple and common form of slate structure, but less its base and northern end slabs. Fragments of teeth were found from the southern end, but no grave goods were found. Due to the length of the grave (about 110cm), it was judged to be a single non-adult burial.

B2452

This is underneath the northern end of B2419, and was intruded and aligned with the B2451. More than half of the grave was neatly cut the B2451 longitudinally. It represented the most common type of Peinan grave structure (see Sung & Lien 1985:93 -133). No skeletal remains were found, but traces of teeth and a pair of ring shaped earrings (type IA) were found in situ. Thus it is believed to be a single adult burial, with its head oriented towards the south.

B2451

This is directly underneath B2413 and B2419. More than half of this grave's western part is missing due to intrusion from B2452. It was believed to be the most common type of Peinan grave but with less base slabs. Nothing was found in the remaining part of the grave.

B2449

In this case there was no direct stratification relationship with any of the above mentioned graves except for B2450. However, its absolute depth was lower than B2413 and about equal to that of B2451. The southern part of the grave intruded into B2550; it evenly cut more than half of B2550 transversely from the cover down to the base. It had the same grave structure as B2451 and B2452. Traces of a skull and associated ornaments were found at the southern end of the grave. Thus it was assumed to be a single adult burial with its head towards the south. The ornaments included three tubular beads (for a necklace), and one rectangular earring (type IIIB).

## B2450

More than half of the grave was missing due to an intrusion from B2449. Traces of teeth and one rectangular earring (type IIIA) were found in the southern end (indicating it was a single burial with its head towards the south).

## Discussion

The stratification of these graves supplies a relative chronology. There were intervals between each intrusion or overlap, as well as possible extensions of the multiple burial graves. Each interval indicated a time gap between different occupations of this village, though there is no way of knowing the exact numbers of years, and every interval was not necessarily of the same duration. I believe that it took a long time to form an interval in the site (see below). Based on this chronological framework, the changes in burial customs as well as of the ornament styles can be systematically described and discussed.

(1.) Although it is as a rule that the adult graves were found on a deeper level and infant graves in less depth, multiple adult graves were mostly found in the higher layers of the grave stratification as above mentioned (as seen in Fig. 4) though they did not entirely replace single burials. There were single burials found in the upper stratum of the grave zones which included common forms of grave structures, such as first time use of multiple burial graves, and a new form of grave named "skull coffins" by the archaeologists (see Sung & Lien 1988:51-53).

Multiple burial graves were built for reuse, with the numbers of the dead ranging from 2 burials to more than 14 (Sung & Lien 1988: 43). Graves of double burials are quite common, and a few of them might even

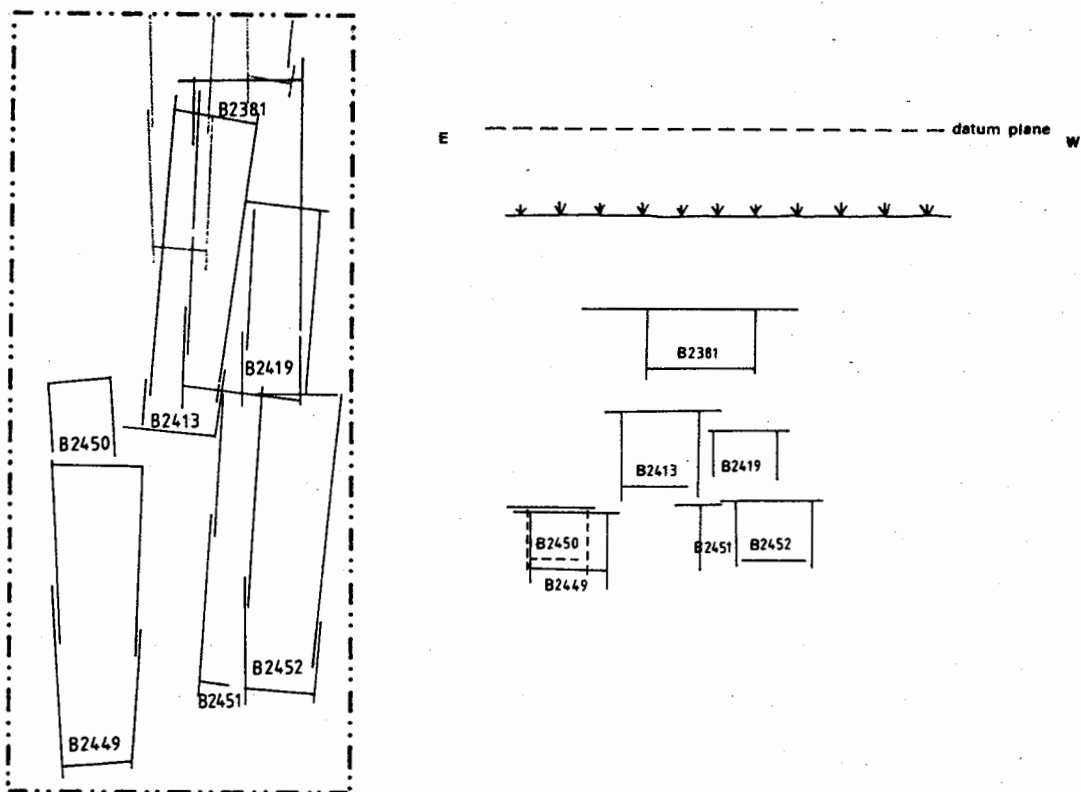


Fig. 4 Plan (left) and stratification (right) of the Peinan burials B2381, B2413, B2419, B2449, B2450, B2451, and B2452.

have been husband and wife, or siblings. The slate slab structures of multiple burial graves are in great varieties and changed over time. Besides the enlarged sizes of the grave of common form and a new form which was differed in the locking structure at the end of the grave slabs (Sung & Lien 1987:41), there were the so called "coffin within the coffin" and the "extension coffin" such as that of the above mentioned B2381 and B2413 respectively, as well as several cases of a "sophisticated slate grave with an enclosure constructed with natural boulders" (Sung & Lien 1987:108-112, Lien 1989:184). All of these types of multiple burial graves tended to contain more burials, and yielded rich grave goods.

It was almost the condition to be seen that only multiple burial graves intruded single burial graves.

All of the evidence lead me to conclude that the custom of constructing a slate slab grave below the house floor for repeated usage was a cultural phenomenon which developed during the later period of the Peinan Culture.

(2.) Graves which overlapped or intruded on each other not only offered chronological information, but also gave evidence for explaining certain aspects of settlement patterns. The Neolithic Peinan people buried their dead in a specialized way, in terms of the elaborate structure of the graves, the treatment of the dead bodies with their offerings, the constraining spatial location, and the eventual occurrence of the "unusual" intrusion feature. Most of the intruded graves were made neatly all the way through or halfway cut through with only the intruded part missing, the other part remaining intact.

Here are my explanations. First, burial practices must be related to the cultural concept of death. The societal meaning of death could be related to the recognition and habitation/ inheritance rights of residence and territory,

and the right of belonging to tribal organization (Lien 1991a:133). This could last permanently when it had been initiated through a normal ritual process, such as the practice of the "inside house burial," but once the ritual behavior completed that stage and the symbolic meaning existed and continued, the material meaning of the burial and the graves ceased to be important. Thus the behavior of intrusion became acceptable. In view of this reason, the behavior of reopening and reusing of graves could be explained.

Second, there were long intervals between every grave being intruded into or overlapped onto. In terms of later burial practices, my conjecture is that people forgot or had little idea about exact locations of previous burials, but for some important reasons a new burial or grave had to be at that spot. I believe they were people of the same culture moving back to the original house over the graves, or perhaps they rebuilt the house on the same site. Thus, the new graves overlapped or intruded into other ones, and eventually the grave zone and the layered components of the village were formed.

Logically the stratified graves, to a certain extent, indicated stratified houses above the floor level. This information leads me to infer that this village was repeatedly occupied with long intervals of time in between each occupations.

As for why these peoples moving away and then migrating back to the same village, it is reasonable to believe that this could be related to their shifting cultivation system practiced in the tribal chieftain's territory, as is the case parallel to Paiwan groups (C. M. Tseng 1992: personal communication).

(3.) Enormous grave goods found in association with the burials were the most noticeable materials of the Peinan excavations. Among them, more than one thousand items of jade earrings offered more information especially

on function and stylistic changes. In my previous paper (1992), I clarified the abandonment of the use of the Chinese term "*chüeh*" or the Philippine word "*ling ling O*" for the slotted earrings of Taiwan jade. If one views the significance of these items in their cultural context, our understanding of the archaeological context of the Peinan earrings helps us to examine related local cultural aspects. As for the study which concerns us here, there are different styles of earrings which appeared in graves at different strata.

Based on analysis of the jade earrings found with contextual burial data (Sung & Lien 1988:48, Lien 1992) the simple slotted ring (type IA) and the slotted ring with four protuberances (type IIA) were the most common forms of Peinan earrings. The rectangular slotted earring (type IIIA and IIIB) was not so common, only one earring generally yielded from a single burial. Earrings with human and animal shapes rarely occurred. Thus far only three pieces were found from multiple burial graves; two of them were mentioned above. In addition, type IA earrings varied in size and tended to occur in single burials. They might have been closely related to infants and women. Type IIA earrings are of more regular size, but a wide range of materials and tended to occur in multiple burial graves.

The stratification presented here tested this observation once more. Thus, it is possible to set up a tentative chronology for the types of the earrings: type IA definitely occurred before type IIA, and types of the "zoo-anthropomorphic" forms were the latest. Rectangular earrings were definitely older than type IIA and probably older than type IA; certainly at least no later than type IA. However, it should be remembered that type IA and type IIA both had long duration and probably overlapped for a long time. Thus far type IA as well as rectangular and nearly square slotted earrings have only been found along the eastern coast (Sung 1989: Fig.1). This will be

significant as a source for testing jade earrings found at other sites in Taiwan.

## IV. Conclusion

The enormous archaeological data excavated from the Peinan site supplies multi-dimensional materials for studies on several subjects, among them the settlement patterns is one basic item. This study, though still in its preliminary stage, was done with the ambition of presenting the layout of the neolithic village in a multiple spatial arrangement on one hand, and to discuss the diachronic development of some aspects of Peinan Culture on the other. Thus far, the conclusions of this study are as follows:

(1.) It has been shown that the Peinan site resulted from a very long-term accumulation of village ruins, it cannot be represent a single size-scaled village at any single time. As analogically referenced from the traditional aboriginal villages, the population size of the neolithic village at Peinan, even in its most developed period, would not be larger in its upper limit of five hundred (Okada 1942, Li 1957). Because certain village public buildings are unknown to us, such as men's house, watch tower, village palisade etc., we have no idea of the territorial size of the village. However, based on analytical studies of the artifacts and the various features of the village, we can reconstruct it as a concentrated village with sedentary daily life. Basically due to activities of shifting cultivation, the villagers moved away and migrated back many different times, eventually the site was repeatedly occupied. Finally, it became an enormous site. Thus, I think it is logical to say that the Neolithic settlements at Peinan continued as long as three thousand years, and the total duration of the Peinan Culture lasted even



longer (see Fig.1).

(2.) Traditionally the natives had a high frequency of population mobility, which had interested social anthropologists only on the subject of genealogy and classification of the native tribes (IETIU 1935, and Mabuchi 1954) or numerical population studies based on the migration of the native tribes under the pressures of governments in modern times (Wei and Wang 1966). However, the purpose of migration, such as "due to change in land cultivation, or following the movements of animals" is only mentioned in general ethnographic records, and very few specific studies have been carried out. Thus what we can see from these studies on tribal migration is mostly the record of outward migration routes, which is a feature very different from the archaeological record at Peinan. I believe that village activities related to shifting cultivation systems were probably the major motivation which led the people to migrate. And there was probably a rotation system based on the concept of territory. This could be the mechanism of cultural adaptation of Neolithic Peinan people and is significant to start thinking about settlement archaeology at a regional level.

(3.) As mentioned at the beginning of the paper, neolithic archaeology in eastern Taiwan clearly has its own unique characteristics and development. The bias of looking at eastern Taiwan as a pocket of cultural input from the outside simply because it seems to be geographically and ethnically remote should be abandoned.

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## **People and House: an Ethnoarchaeological Example from the Yami on Orchid Island, Taiwan**

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The major purpose of this paper is to provide an alternative example of the relationship between house and people and architectural variability in particular, as has been proposed by some processual archaeologists. The ethnoarchaeological data of Orchid Island show that the social and cultural aspects of domestic space and architecture play important roles in the relationship between people and house hence the formational processes of the archaeological records.

One of the major fields of research in ethnoarchaeology in recent years is to examine some implicit and/or underlying theoretical preassumptions, to avoid researcher's ethnocentrism. Most people will accept the fact that the theoretical framework one adopts will influence the way data is collected, analyzed and interpreted. The major purpose of this paper is to provide an alternative perspective to widen the view and other possibilities. As Keesing puts it "when we commit ourselves to a paradigm, perhaps powerful but inevitably sharply limited in scope, we try to pretend that it is global, even total." (Keesing 1982, 32). Methodological elegance and rigor are not sufficient to justify the validity of a specific approach, just as, one cannot deny a particular approach simply by its less rigorous methodology. It is not just function but also meaning people have to bear in mind in their underst-

anding of human social and cultural. In the following pages, I will try to provide another perspective, by using the Yami example, of the relationship between house and people. I would argue that functional model is not total. To understand better, one "... requires synthetic explanations that integrate the several para-digms " (Kirch 1984, 283).

The role and importance of prehistoric population has been noticed by prominent archaeologists and anthropologists in the first half of this century (Childe 1936; Steward 1949; White 1949). Population is regarded as playing an important role (a key variable) in human cultural evolution. The theme was succeeded by the New Archaeology which was greatly influenced by Steward and White. Population plays as the prime mover in the systemic models of various studies concerning the origin and development of agriculture and complex societies. It is Naroll who first proposed a mathematical formula derived from a cross-cultural comparison of 18 societies. The formula suggests an estimate of 'ten square meters per person' of the total floor area (Naroll 1962). Naroll's formula is often cited and followed by various researchers. Their studies, though, prove that Naroll's formula is not as universally valid as its original authour would like to be. However, a common belief in that a mathematical formula is obtainable is shared by all these researchers. The discrepancy is covered by another formula, given a new constant and/or another determining factor to reach a better fit between empirical data and the formula instead of exploring alternative approaches (Dohm 1990; Read 1978; Schacht 1981; Wiessner 1974). The assumption underlying this mathematical approach is that area/population ratio is constant, regardless of time and space. However, the relationship between (habitation) space and people is far more complex than a simple mathematical equation can exhaust. Although the study of proxemic and



human psychology may show that there is a ceiling where crowdedness can be tolerated, there are many variations which are mainly determined by socio-cultural factors. "Area is not a neutral referent for numbers of people" (Fletcher 1981).

Among various archaeological data, domestic buildings (habitation space in particular) and artefacts (pottery especially) are regarded as most productive in respect of the reconstruction and estimation of archaeological population. Plog concluded that " Site counts, room counts, the quantity of roofed space and other measures of utilized space are likely to remain the most common empirical base for demographic influences " (Plog 1975, 94). One reason for habitation space being singled out is the well-preserved conditions of architectural structure remains found in archaeological context in certain parts of the world. Architecture is regarded as the artefact par excellence from which archaeologists can approach prehistoric social organization (Gilman 1987). Various studies have tried to establish the relationship between architecture variability (house size), population and household wealth (socio-economic status) (Dohm 1990; Hassan 1981; Kramer 1979). Since the studies on the reconstruction and estimation of archaeological population derive their formulae mainly from ethnographic analogs, it is not surprising that further studies are carried out mainly in ethnoarchaeological contexts. Kramer and Sumner's ethnoarchaeological studies in Southwest Asia have shown that there are regional variations of population density, and it is inaccurate to apply a general figure to the whole area. Sites of different hierarchical levels may have different population densities (according to their functions in the system) (Kramer 1979, 154; Sumner 1979). Kramer's study has shown that there are relationships between architectural features, household size and composition, and economic status. However, the relationship is

a complex one. Compound area, roofed area and dwelling area are each related to different variables, including wealth, population, and household structure. As Kramer puts it " ... domestic architecture is related to aspects of population and wealth in interesting and complex ways " (Kramer 1979, 158).

Schiffer & McGuire try to establish a general theory, a social theory of design, to account for the architecture variability. Architectural design is viewed as a social process. "(t)he theory focuses on the influence of utilitarian and symbolic function as well as on the trade-offs between production and maintenance costs and a particular design is viewed as the outcome of a process of compromise among conflicting goals, influenced by factors of adaptation and social organization" (Schiffer & McGuire 1983, 277). Although they claim to take symbolic functions into account and view house construction as a social process, their argument is based on the model of 'economic man', efficiency and maximization. Round buildings require low construction costs but high maintenance; rectangular buildings, on the other hand, require high construction costs but low maintenance. As the degree of sedentism increases and wealth accumulates, the focus shifts from maintenance to construction. Architecture is viewed as a vehicle for the representation of status differentiation. The symbolic aspect of architecture is like the style of an artefact, only secondary to its function. How different societies choose to set the balance between production and maintenance costs cannot be explained away simply by efficiency and least effort. Different societies might put different emphasis on different aspects. What is 'economical'? This varies among people from different cultures and even among people of different sub-traditions within a culture. A 'real gain' is not necessarily defined by a measurable material return.

Different degrees of correlations have been identified between the size of a house (space), its residents and/or household wealth. The formulae derived from ethnographic analogy, however, only 'describe' the correlation retrospectively. No explanation is given as to how and why such figures are derived. The causal links are not 'really' established. Understanding the processes involved is important. Only then is a wider application of the founded results possible. Ethnoarchaeological investigations provide chances to examine processes and the 'why' question in context.

In the following pages, I will use the ethnoarchaeological data of the Yami to address the issue of the relationships between house(space)-people-wealth. I would argue that, in terms of the Yami data, the social and cultural aspects of domestic space and architecture play most important roles in the relationship between house, people and wealth. It is the house as a symbolic representation, a symbol of social prestige and a representation of conjugal unit, which underlies the relationship between house size, people, and household structure.

## The Yami of Orchid Island

Orchid Island (*Ponso no Tao* in Yami) is a small Tertiary volcanic island with an area of about 45 square kilometers. It lies off the southeastern coast of Taiwan main island at 22°-22°6' N. latitude, 121°3'-121°7' E. longitude. It is about 49 nautical miles from the city of Taitung. The topography is dominated by the central mountain ranges. At the foot of the mountain, there lies the confluent alluvial fan where the Yami build their settlements. The climate is humid tropical with abundant rainfall (3440 mm.). The island ecology is a mixture of Asian and Australian systems. At present, there are

six settlements (villages) on the island. The population is just over 3000. Although the island has been mentioned in early Chinese historical accounts, but knowledge about the islanders is quite limited. On the whole, Orchid Island is quite isolated.

The Yami are of Malayo-Polynesian stock. According to Yami oral traditions, they share common ancestry with the Batanese in the north of the Philippines. This affinity is supported by linguistic, archaeological and ethnographical evidence, and it is also supported by the skewed geographical knowledge which is in favour of the south.

Their subsistence pattern is agro-fishing. Surrounded by the Pacific waters, the ocean becomes the center of the Yami's universe. Sea-fishing, especially the flying-fish fishing provides supplement food (*yakan*) to the staple food (*kanen*, namely the tuber). Fishing is a man's job and activity. In contrast, a woman's job and activity is on the taro field, especially the wet taro paddy field.

Men are responsible for clearing fields, as well as yam and millet planting. Women, on the other hand, are responsible for planting wet taro, sweet potato as well as collecting shellfish. Special tasks associated with men are: fishing, metal-working, pottery-making, boat- and house-building and making baskets. Special tasks associated with women are: planting and harvesting tubers (taro, sweet potato), cooking and weaving.

The Yami divide a year into three seasons: *teiteika*, *amiyan* and *rayon*. Different tasks are scheduled according to the calendar. The Yami's social division of time revolves around the flying-fish fishing activities.

There is no permanent chieftainship in the Yami society. Basically it is an egalitarian society. Prestige and status are achieved instead of ascribed. Age and sex are two major structuring principles of Yami society. Elders play

important roles in certain rituals and ceremonies.

## The Yami Traditional House

A traditional Yami compound, in its climax, consists of three units: a main house (*vahay*), a workshop (*makarang*), and a resting platform (*tagakal*). The subterranean main house is built in a dug-out pit paved with pebbles. It is a place for sleeping (winter), cooking, procreation, storing valuables and ceremonial purposes. And, the house itself is a symbol of social prestige and self-esteem. The workshop is a pile building with its floor at the same level as the ground (of the front yard). Usually, it is a place for sleeping (summer, when the main house is too hot to stay), working and entertaining guests. The resting platform is a small pile building with its floor about 60-90 cm above the ground (or sometimes higher). It is a multi-purpose space for chatting, working and napping.

The roof ridge of the main house has to be parallel with the coastline. The roof ridge of the workshop and resting platform, on the other hand, have to be perpendicular to the coastline. The door (entrance) has to face the sea. Although a newly-wed couple might stay with their parents (husband's), they can also build a house of their own. Usually, they will begin with a two-entranced small main house. Afterwards, they might inherit the father's or other kin's house site and/or building materials. Otherwise they might try to expand their house by themselves, thus from a two-entranced main house to a three-entranced main house, then, a workshop might be added. The climax will be a four-entranced main house together with workshop and resting platform. A man makes every effort to expand and/or rebuild his house during his lifetime. It is not just because house-

building itself is labour consuming, but also that the completion ceremony requires three years of preparation (to open new paddy fields to plant enough wet-taro to cover the roof of the new building). And it is through this process and the enormous amount of food distributed during completion ceremonies that people gain social prestige and accumulate social capital.

## Inside a Main House

The site of the main house is a rectangular pit dug about 1.5-2 meters beneath ground level. As one approaches a house complex, to reach the subterranean main house, one has to cross the front yard and descend from one of the two stone steps. Without going down the step, one can see only the roof. This sunken device has the pragmatic function of avoiding the attack of the prevalent typhoons and monsoons. And its submerged appearance provides privacy and differentiates inside and outside at the same time. The roof consists of two slopes. The size and proportion of the front slope to the rear one is about three to one. It is the main post (*tomok*) which divides the front and rear roof slope from inside. Under the roof, the house is divided into three spaces: the veranda (*do sesedepan*), front room (*do sepanid*) and back room (*do vahay*), following each other from front to back. the floor is terraced so that each space raises higher than the one before it. Sliding doors and plank walls stand in between and separate each space. The doors are so low, to enter is literally to crawl into. This characteristic has its root in Yami belief. The door serves to shut off the malevolent evil spirits (*anito*) that permeate Yami social life.

The door in the east side is called *sekez* and the door in the west is called *sarey*.

*Sekez* is the direction of sunrise, it is woman's domain. *Sarey* is the direction of sunset, it is men's domain. In the beginning of the day, women open the door on the *sekez* side to bring in the sunlight, and daily activities start thereafter. Normally, for a main house with three and/or more than three entrances, there are two sets of hearths, one common hearths for daily cooking and one ceremonial hearths for cooking and drying flying fish during the flying fish fishing season. The common hearths are located in the *sekez* side of the front room. The ceremonial hearths, on the other hand, are located in the *sarey* side of the back room. The distinction between *sekez* and *sarey* thus female and male is not just a semantic expression, it also appears in daily activities. Coming into the veranda or the front room, the female approaches from the *sekez* side while the male approaches from the *sarey* side.

The place for taking meals is nearer to the *sekez* side, but the female members stick to the *sekez* side and male members are away from the *sekez* side. And, the male and female take food from separate plates and bowls. There are regulations about the eating of fish in terms of sex, age, and different pot.

While sleeping, female sleeps on the *sekez* side, male on the *sarey* side (sexual intercourse takes place on the *sekez* side). One must sleep with his/her head towards the sea and never towards the direction of sunset. It is only the deceased who's head is placed towards the west. Inside the front room, the east (the *sekez* side) is the location of common hearths where women carry out the daily cooking activities. The west (*sarey*) side is the place where the storage cabinet situated. Goat horns and pig's mandibles, which are symbols of wealth, are hanging on the ceiling. Sunset is associated with death. The deceased have to be carried to the burial ground from the

*sarey* side.

The back room is a space with evident ceremonial and religious features. The main post (*tomok*) is situated in the back room. *Tomok* is a shaped wooden plank with carvings. When erecting the main post, a special ceremony has to be held and the blood of goat or chicken sprayed on it. The erection of *tomok* safeguards and ensures the prosperity of the family as well as good fishing and harvesting. *Tomok* is not located in the middle of the back room, it is towards the *sarey* side. If there are two *tomok*, the big one is in the west (*sarey* side) and the small one in the east (*sekez* side). The ceremonial hearths in the *sarey* side of the back room are the place where the migratory fish and sacrifice are prepared. The back room is also the place where the ceremonial costumes are kept. During the flying fish fishing season, the flying fish is carried into the back room through the door of *sarey* side and cooked and smoked in the ceremonial hearths.

It is impossible to give a detailed account of the spatial layout of the Yami house because of the lack of space. However, it is clear that the Yami household space is characterized by certain facilities and structures which divide the space into specific sections associated with particular recurrent activities. The Yami main house mediates a system of oppositions based on gender.

*sarey:sekez :: male:female :: sunset:sunrise :: death:life :: sacred:profane :: superior:inferior.*

This series of oppositions mediates the Yami value system.

## The Developmental Cycle of a Domestic Group

The Yami residential pattern is patri-viri-neolocal. The most common



pattern of the developmental cycle of a domestic group is that a newly-married couple lives in the workshop (*makarang*) of the husband's parent's compound or builds a small one-entranced house (*varag*) by the parent's compound. They eat with the parents. As soon as the baby is due, the couple will set up their own house and form an independant household of their own. This means that they cook their own meals and eat food from their own hearth. They can work and harvest some of the paddy fields and swiddens assigned by the father. But, the property can not be divided until the father's death. If the site is auspicious, the couple will succeed in having children and be without misfortune, and the couple might rebuild and enlarge their house during their lifetime. If a couple does not succeed in producing children and illness and misfortune fall upon the family, the couple may have to move to a different site to seek an anspicious place.

When the father dies, the property is divided equally among the sons. One of the sons may move back to his deceased father's compond. He might redecorate or rebuild his father's house. The widowed mother might move to the workshop and take her meals from her own hearth. When the third generation is grown up, the cycle will restart. No two married couples live under the same roof and eat from the same hearth. Thus one can even go further to suggest that neolocal is the norm.

## Man and Wife

The husband and wife bond is strong among the Yami. Together, they form the basic and most important unit in Yami society. *Asa ka vahay* (one house) is a household, a nuclear family. People of the same household eat food from the same hearth. As soon as the couple cooks and eats food using

a herath separate from their parents' they become an independent unit.

'*Miyaven do vahay*' is the term for a married couple. *Yaven* means cooking supper. As the Yami put it, " husband and wife are those who live together, and eat together. They are one ". Husband and wife are those who share food and residence. Another term for man and wife is '*kapikavang do sahad*' which means two people in the same boat. The meaning is clear if one knows that boat (*tatala*) is used as a metaphor for house (*vahay*) in ceremonial songs. The implication is deeper, especailly when one considers that '*pikavangen*' is the term for a two-man boat. Two people in a two-man boat, one in the stern one in the prow, symbolize the complementary and cooperative nature of the conjugal unit, this is well demonstrated in their division of work and preparing for house completion and boat launching ceremonies. The relationship is not one of total domination. A man who intends to hold a completion and/or launching ceremony has to consult his wife beforehand and obtain her consent. '*Kataned no zisan*, another term for man and wife, means people who watch the treasure box. *Zisan* is the container of family heirlooms. A conjugal unit has the co-responsibility of safeguarding family property and prosperity.

A conjugal unit is composed of two people who share food, residence, activities and responsibilities. The kinship network is always reckoned from both the husband's and the wife's sides. It is within this network which the couple mobilize.

The tie between man and wife is demonstrated in a ritual called '*mangnagit*' during the flying fish fishing season in the month of *Papataw*. *mangnagit* means eating together. In the morning of the 17th of *Papataw*, a man and his wife share an exclusive meal together. Again, the notion of food sharing is implicated in the relationship between man and wife.

During the flying-fish fishing season, on the occasions when several households (families) eat together, food is always divided and served in separate plates and bowls for each individual household. A widowed mother or father who eats with her/his married children's family takes food from a separate serving plate. Married siblings do not help each other in the case of illness or misfortune for fearing that it might be contagious and thus endanger one's own family.

The conjugal unit is represented by the house, or one might say the house represents the conjugal unit. The conjugal unit is the most basic and important unit of social production and reproduction in Yami society.

## Equality and Competition

The idioms of equality and competition play important roles in Yami social life in the past as well as in the present. And it is these ethos and competition and the house as a representation of conjugal unit described in previous section which play important roles in the examination of the house-people-wealth issue in the Yami context.

Leach was struck by the following event when he visited Orchid Island in the late 1930s. He saw six men dividing their catch on the beach. There were 23 fish. For the sake of fairness and equality, they threw away 5 fish (Leach 1937, 424). That ethos which Leach found half a century ago is still pervasive today.

Property should always be divided equally among children. The father's belongings go to his sons and are divided equally among them. The mother's belongings go to her daughters and are divided equally among them.

Equality, to divide equally, to have equal share implies, at the same

time, reciprocity and competition. The food one receives during a ceremony indicates the social relationships between the two parties. The recipient will reciprocate a similar quality and quantity on future appropriate occasions.

Competition is another characteristic which permeates Yami social life. The ethos of competition is probably expressed most dramatically in feasting, namely the house completion ceremony and boat launching ceremony. These ceremonies require at least three years of long-term planning, a joint effort of husband and wife. It is also something of great social import. People build up their social capital and prestige through these ceremonial feasts. The more ceremonies a man has held, the more he gains and accumulates his social prestige and capital. He can belittle and speak loudly in front of his opponents. In a row, one party will challenge his opponent: "You lazy man. How many ceremonies have you got?" His opponent may shut his mouth and shy away.

## House-People-Wealth

The Yami data indicates that house size is not necessarily a direct reflection of the number of occupants and/or wealth. For the Yami, the house is more than a shelter, it is a symbol of social prestige. Building a three- and/or four-entranced main house and giving ceremonial feasts are one of the major goals of pursuing individual fulfillment. During a household developmental cycle a man and his wife together enlarge their main house from a one- or two-entranced main house to a three- and then four-entranced main house. The average area of a two-entranced main house is about 23 square meters, 44 square meters for a three-entranced main house, and 54 square meters for a four-entranced main house (Wei & Liu 1962). There are varia-

tions in each category and overlap between different categories. However, the main purpose here is to show a general tendency and thus to indicate the problem of applying a cross-cultural generalization, especially a quantitative one, to specific areas. The average population of the Yami household was about 4 until recently when modern medicine was introduced.

The nuclear family is the norm among the Yami. It is thus problematic to infer from the size of the house to the structure of the household and/or family. Larger house in Yami society does not indicate an extended or joint family.

The relationship between house and wealth is more obscure. A larger house needs a larger site. But a site could be inherited from father, uncle (FB), or father-in-law or other sources. A man can build his house on the margin of the settlement or other unoccupied site if it is a lucky spot for him and his family. The size of a house site could be a result of various historical processes. Ceremonial feasting requires hard work and large amounts of wet taros to cover the roof of the main house. This indicates that the host owns a certain amount of paddy fields which are regarded as one of the indications of wealth among the Yami. However, a diligent man can open new paddy fields by his own efforts.

Property and heirlooms are always divided equally among sons and daughters. This is a mechanism which plays down the possibility of accumulating wealth. Building a house and giving ceremonial feasts are not simply a reflection of family wealth. They also show one's ability in maneuvering one's kinsmen. The very high percentage of three- and four-entranced main house indicates another important aspect of Yami social life and their ethos of competition and equality, as can be demonstrated by the following figures. In 1957, the village of *Ivalino* had 12 two-entranced main houses, 15 three-

entranced main houses, and 28 four-entranced main houses. The number of three- and four-entranced main houses represents 78.18% of the total (Wei & Liu 1962). In 1983, the same village had 5 two-entranced main houses, 11 three-entranced main houses, and 37 four-entranced main houses. The total percentage of three- and four-entranced main houses was 88.89% (Chiang 1986). The lower number of two-entranced main house which contributes to the higher total percentage of the three- and four-entranced main houses is the direct result of the introduction of the modern concrete house. In *Ivalino*, the new settlement has been occupied by a younger generation of couples. This explains the decreasing number of two-entranced main house in the traditional settlement. The figure, on the other hand, demonstrates nicely the ethos of competition which has persisted from the past to the present.

According to the house size and the house type, one has to argue either that most families are wealthy or that they are egalitarian or that there is something else which promotes people to build similar sizes and types of houses.

It is clear from the Yami case that architectural variability (house size) cannot be explained by the general theory proposed by Schiffer and McGuire as a compromise of maintenance and construction costs. It is the meaning content, the house as a symbol of social prestige and a representation of the conjugal family, which is the underpinning of architectural variability in the Yami context.

"Inhabited spaces are never neutral: they are all cultural constructions of one kind or another. Any building, in any culture, must inevitably carry some symbolic load." (Waterson 1990, xvi). Houses (domestic space) are both symbolic and pragmatic. The relationship between architectural variability (house size and form) cannot be explained simply in economic and function-

al terms. Waterson's study in the vernacular architecture of the Southeast Asia demonstrates that there is close relationship between cosmology, social organization (kinship system) and architecture. Social relations define the use of space. The practice, individual action and movement in space act out social relations.

To understand the process, meaning and function have to be considered at the same time. An general theory based on economical and functional premises is not sufficient to understanding the processes.

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