Austronesian Origins and Expansion: The Philippine Archaeological Data

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Questions concerning the origins of the Austronesian language family and the cultural identity of its speakers continue to be of interest to many researchers. These questions have been approached through a number of disciplines, including linguistics, archaeology, and physical anthropology. In this paper I will present some of the archaeological data, particularly that from the Philippines, to see what light it can shed on the problem of Austronesian origins and expansion.

There are three main divisions in this paper. First I will present a general prehistory of the Philippines, focusing on the time period after 5000 B.C. I will present data mainly from my own excavations in northern Luzon, but will also discuss other Philippine regions. I will then discuss external relationships with other areas in Southeast Asia and neighboring regions. Finally, I will discuss how this material relates to the problem of Austronesian origins and expansion.

This paper is designed to provide a broad prehistoric sequence for the Philippines as a whole. As such, it does not deal with regional sequences, which can vary considerably from one area to another. These local variations are very important to the prehistory of the Philippines, but are not the focus of this paper. Also, I deal with the developments primarily from a culture-historical point of view and do not discuss the processes behind the various developments. Such processes are certainly very important for proper understanding, but it is not possible to discuss them adequately in a paper of this length.

There are two primary hypotheses for the location of the Austronesian homeland. One is Taiwan, with a subsequent population spread south through the Philippines and then east and west, which resulted in the various branches of the Austronesian languages (Bellwood 1980, 1983; Dahl 1973; Shutler and Marck 1975). The other hypothesis places the homeland farther south, somewhere in the east Indonesian–Melanesian area, with a spreading of population north, east, and west (Dyen 1971). The Philippine region is of central importance to both of these hypotheses, and the archaeological data are very important in determining prehistoric cultural characteristics and relationships between various areas.

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Fig. 1. Philippine archaeological sites. (1) Lal-lo shellmiddens, (2) Arku Cave and Musang Cave, (3) Pintu Shelter, (4) Batungan Caves, (5) Tabon Caves.
The preagricultural people of the Philippines had a flake and core tool technology and a subsistence pattern of hunting, gathering, fishing, and shellfish collecting. Various hunting and gathering sites have been excavated, including Musang Cave (Thiel 1980), a habitation site in northeast Luzon in Cagayan Province on the Piñacuan de Tuguegarao River, a minor tributary of the Cagayan River, which flows north into the Babuyan Channel (see Fig. 1). The cave is 37 meters long and varies in width from 3 to 10 meters; the front part was used for habitation.

Musang Cave contains a habitation deposit of 160 cm which has been divided into two cultural layers on the basis of artifact types and soil layers. The lower layer, Cultural Layer 1, produced a shell midden area, 273 flake tools, and animal bones from wild pig and deer. An edge-wear study on the flake tools showed uses on wood, bamboo, and bone. In the upper part of this cultural layer were also four flake tools with a silica sheen, which can be produced by grass or grain reaping. Four carbon dates were obtained, which range in uncalibrated age from approximately 9800 to 7500 B.C.

Several other habitation caves in the same general area, with a similar flake tool and animal bone assemblage, have been excavated by personnel from the National Museum of the Philippines. In other areas of the Philippines there are also cave sites with similar assemblages that date to the period between 15,000 and 3000 B.C., and even later.

By 3000 B.C. there is evidence for agricultural activity in the Philippines. From the present data we cannot determine if this is the result of diffusion from another area, or of local domestication activities. I am of the opinion that horticulture is a fairly early development in Southeast Asia, and that it began independently in various areas as a result of ecological and demographic factors. I do not have space to discuss the processes behind these developments here, but I have discussed them in detail elsewhere (Thiel 1980). However, one point I wish to make here is that many of the agricultural crops in Southeast Asia, particularly Island Southeast Asia, are root and tree crops. These require different methods of domestication and different types of agricultural practices from grain crops, and so point to independent domestication activities.

There are early horticultural sites in New Guinea and Thailand which are undoubtedly the results of independent domestication activities. Similar activities were probably taking place in various parts of Southeast Asia, including the Philippines, after 7000 B.C. Through time a slash-and-burn type of subsistence pattern developed, and on the mainland rice agriculture was also developed. However, many groups of people continued their hunting and gathering ways for a few thousand years after the general appearance of agriculture in the area. This resulted in a cultural situation, still present in some parts of Southeast Asia including the Philippines, in which hunters and gatherers and swiddenists live near each other, and each group utilizes different resources. I think this led to the development of early trade (Peterson and Peterson 1977) of the type still practiced today between the Agta hunters and gatherers and neighboring agriculturalists in northeast Luzon (J. Peterson 1978). Trade was thus an early development, and something that people were used to doing; this idea will be important when I consider Austronesian expansion. (I am here using "trade" as a general term to refer to any type of exchange system, including simple exchange and reciprocity as well as more developed trade systems.)

However, there is the alternate hypothesis that horticulture did not begin independently in Island Southeast Asia but was a result of diffusion from the mainland. This is also possible. Although this hypothesis does not preclude early trade, for example between hunting and gathering groups in different ecological areas, it makes it less likely,
and less likely to have been on as large a scale. I think the early horticulture—early trade hypothesis provides a better explanation for the archaeological record, and also provides a better explanation for the subsequent expansion patterns of the Austronesians.

The cultural patterns of early agriculturalists in the Philippines can be determined from various archaeological sites, though it is unfortunate that most of those excavated are burial caves, which do not represent a full picture of the lifeways of their users. One such burial cave is Arku Cave (Thiel 1980), which is about 1.5 km upriver from Musang Cave.

Arku Cave is situated in a cliff 200 m above the river, and can be entered by a back entrance opening on to the hill behind the cave. All of the burials were secondary and many of the bones were scattered, so it was not possible to tell how many people are actually represented, but it is at least 48–57 adults, 2 adolescents, 5 children, and 2 infants. Since only about 15 percent of the cave was excavated, the entire number of burials could be over 400.

Six different types of burial were excavated in the cave. One was a jar burial, with the bones of two adults placed inside and directly outside a red-slipped jar. A second was a skull placed in a pot, with other bones placed inside and outside the pot; this individual was a young adult male. A third type of burial consisted of the bones of two adults placed in a small pit. Another burial area had a group of bones from four or five adults; 30 percent of these were heavily covered with red ocher. A fifth type of burial was an area about 30 by 70 cm on which were placed many very small bone fragments from one or two people, together with 48 sherds and some pieces of red ocher. Many of the bones were stained with red ocher, and in the northeast part of this bone area was a complete small stemmed pot which contained bone fragments and pieces of red ocher. A sixth possible burial type consisted of the many bones found scattered throughout the excavated squares with no apparent pattern. At the time of burial these could have been neatly placed in one area and later disturbed, either by later human activity or by the many stones which have fallen from the ceiling, or by other means. There are also many bones scattered on the present surface of much of the cave.

Associated with the burials were many grave goods, including a great deal of pottery. Nine whole vessels and 7310 sherds from approximately 310 vessels were excavated. The pottery was made by the paddle-and-anvil technique and has a sand temper. There are four colors that are distinctive enough to denote differences in manufacture—red-slipped, polished black, orange, and red brown. For descriptive purposes the Arku pottery can be divided into 11 types on the basis of rim form and vessel size. These are various types of pots, bowls, and cylindrical jars with straight sides and flat bases. Some of the vessels have ring feet or carinated shoulders. Besides the red slip, four vessels were decorated by simple incision.

In addition to the pottery there were also many other artifacts excavated. The most common are shell and stone beads and shell bracelets. There are also 37 earrings, made of shell, fired clay, ground stone, and jade, some of which are of the lingling-o type common in the Philippines (for example, Fox 1970: Fig. 37). Other artifacts include a sandstone barkcloth beater, eight spindle whorls and five fragments made of fired clay, four small spatulate objects made of horn or bone that may be tattooing chisels, 68 drilled animal teeth, a Conus shell pendant with red paint, a cowrie shell, three trapezoidal ground stone adzes, 19 bone points, and 15 flake tools, six of which have silica sheen.

Unfortunately, because of the scattered nature of many of the burials, it was not always possible to determine which grave goods were associated with which burials,
although some association could be made. In particular, the young man whose skull was placed in the pot had a large number of grave goods, but there were other burials which had few. There were definite variations in the amounts and types of goods present in the various burial areas.

Six carbon dates were obtained for the site. Five range in uncalibrated age from approximately 1200 to 100 B.C. The sixth is c. 4540 B.C., but it is probably aberrant because of the processing technique used. However, this sample is the deepest stratigraphically, and the correct date is probably about 1500 B.C., though it may be earlier. This sample dates the skull of the young man in the pot.

From this site we can interpret various cultural aspects associated with these people. The wealth and types of goods excavated indicate that they were agriculturalists. The blades with silica sheen indicate that they may have been growing grain, possibly rice. The variations in the quantities of grave goods with the various burials, and particularly the occurrence of goods with young individuals, indicate that they may have had a stratified or ranked society. Tattooing may have been practiced.

The pottery is fairly well made, and the vessel forms show a variety of uses. Whether it was made locally or obtained in trade is not known. Both barkcloth and woven cloth were made. The barkcloth beater and a spindle whorl were found in the same level of the same square, so both barkcloth and woven cloth may have been made in the same time period. A use-wear study of the flake tools shows uses for animal butchering, bamboo working, and woodworking. The adzes are also woodworking tools. The bone points indicate hunting. The cowrie and Conus shells show trade or contacts with other areas.

I will now return to Musang Cave to discuss Cultural Layer II, the upper layer. This layer contained a small amount of shell; bones of pig, deer, and birds; 153 flake tools, including one with sheen; pottery; and a few beads and other artifacts. Over 2300 sherds were excavated, with the same manufacturing techniques and colors as at Arku Cave. The vessel forms are also the same, though there are more vessel types at Arku. The pottery from both caves is indistinguishable each from the other, and undoubtedly came from the same source.

In addition to the pottery there were various other artifacts. In the upper 10 cm were six sherds of porcelain, one stone bead, one turquoise glass bead, and one tubular green glass bead. From the 10 to 30 cm level came a spherical green glass bead. From the 30 to 45 cm level came a brass needle, two bone points, a boar tooth pendant, and a fired clay earring of lingling-o type. From 45 to 60 cm came a fired clay earring, a bone point, and four cowrie shells.

Two carbon dates were obtained for this layer; c. 2280 B.C. at 35–40 cm and c. 3180 B.C. at 50–55 cm (both uncalibrated). These do not date the earliest part of Cultural Layer II, which goes to 85 cm and may date from 3500 B.C. or earlier. This date is particularly important because it dates the earliest pottery.

Cultural Layer II is somewhat difficult to interpret. It may have been deposited by agriculturalists who used the cave as a frequentation site for hunting and who buried their dead in Arku Cave. Alternatively, it may have been deposited by hunters and gatherers who used the cave as a frequentation site while hunting and gathering, as they had in earlier time periods. They obtained the pottery, beads, earrings, and other artifacts from a group of agriculturalists who moved into the area. It would have been this second group who used Arku Cave for burials. I think this second interpretation is the more probable, one reason being that the flake tools from both Cultural Layers I and II are the same types and manufacture, which indicates cultural continuity.
The assemblage from the upper layer in Musang Cave is similar to and approximately contemporary with that from Pintu Shelter, which is located 150 km south of Musang. At Pintu were found shells, animal bones, flake and core tools, pottery, bone points, and two glass beads. The excavator interpreted Pintu as a frequentation site for hunters and gatherers (W. Peterson 1974). Thus, by 3500 B.C., hunters and gatherers in various areas of the Philippines were probably trading with agriculturalists.

Another site in northern Luzon that I wish to discuss is the Lal-lo Shellmiddles (Thiel, n.d.), located in Cagayan Province on the Cagayan River, 30 km from the sea. The site consists of a series of shellmiddles in an area over one kilometer long and from 50 to 200 m east of the river. The midden areas vary from a few meters to over 70 meters in maximum dimension, and the deposits are from 20 cm to 1.5 m thick. Seven two­meter squares have been excavated; some contained great quantities of shell, others did not. All contained pottery and other artifacts.

From approximately 1336 vessels, 12,206 sherds were excavated and analyzed. There are eight different kinds of pottery—orange, coarse buff, red-slipped, red-brown, dark red-brown slipped, polished black, grey-tan, and grey. There are 319 different rim forms. The great majority of vessels, 83 percent, are bowls of various types. Other vessel types present are everted-rim pots, flat dishes with upturned rims, globular vessels without an articulated rim, and straight-sided vessels. There are also carinated shoulders and ring feet.

Several things about this pottery collection are distinctive. One is the very high percentage of bowls. A second is the large number of rims that have thickened flat lips. There is also a large number of rims with unusual lip forms.

Only 2 percent of the pottery is decorated (Fig. 2). Most of the decoration occurs on rims; 68 percent of the 237 decorated vessels are decorated here. There are 114 different types of decoration, which can be divided into ten major categories. The most common comprises small punctate dots in rows, zigzag lines, or geometric patterns. Fifty-four percent of the decorated vessels have this type of decoration. Seven percent have incised circles with dots or incised lines, 6 percent have small punctate dots with incised lines, 9 percent have incised lines in geometric patterns, 2.5 percent have crosshatching, and 1.3 percent have large punctate dots. The remaining decorations are different from the dot and incised line variety. Fourteen percent have impressed lines (not cord-marking), and two sherds have paddle-impressed squares. Several of the black incised sherds have a white lime infill.

Other artifacts besides the pottery include one lenticular and four trapezoidal ground stone adzes, 13 iron fragments, one fragment of bronze, seven fired clay earrings, four fired clay pendants, one large fired clay ring, and one large ground stone ring. Pig bone was also excavated. The site may have been a permanent village or it may have been seasonally occupied. In either case, a major activity was collecting shellfish from the river.

Two carbon dates were obtained. The earliest is c. 1840 B.C. (uncalibrated) from 85 cm; this does not date the earliest levels which may be as old as 2500 B.C. or earlier. The other date is c. A.D. 1560. The two dates were obtained from widely separated areas of the site. I think both are reliable, and they show a relatively long time span of occupation, at least 3400 years, with little cultural change. Due to the nature of the deposits I think the site was used at many different times between these dates. Various areas may have been used more or less continuously by various groups of people.

Sites in other areas of the Philippines show similar cultural developments. Village life with agriculture and pottery was probably present in many areas by 3000 B.C., and social
status differences were undoubtedly present in many societies. There are various artifact types that are widespread throughout the islands, for example lingling-o earrings, adze types, and various pottery styles, that demonstrate some type of trade or contact throughout the Philippines.

Of particular importance are various pottery traditions that are present in the Philippines and other areas of Southeast Asia. One widespread example is the Sa-Huynh-Kala-
nay tradition that is found in the central and southern Philippines, Indonesia, Viet Nam, and Malaya. This tradition has incised and impressed geometric and curvilinear designs and dates from 1500 B.C. onwards. It may be the result of traders who were active throughout the region, and who traded with a variety of cultural groups (Solheim 1976). However, it may actually be several different but related lesser traditions, each not as widespread as the whole.

Another tradition is the Tabon pottery tradition, from the Tabon caves in Palawan, which dates from about 1500 to 500 B.C. and later. The earlier pottery is plain, red-slipped, or cord-marked. In the later periods various incised decorations were also used (Fox 1970). This pottery is somewhat similar to that from the Arku tradition, which dates from 3500 B.C. to at least 1 B.C., and probably more recently. Many of the earrings and other artifact types from Arku and the Tabon caves are similar enough to indicate strongly some type of relationship. The two areas may have been part of a widespread trade network.

The tradition is quite forms and decoration incised designs are to the Sa-Huynh-Kalanay pottery dates from 2500 Other sites in the designs very similar are the Batungan Caves of Lal-Io, which have 760 B.C. (Solheim shows that there traditions, as well artifact types, each found over widespread areas during similar time periods. This strongly suggests that there were various independent trade networks (or other types of contact, though trade seems the most reasonable explanation) operating in the Philippines, some of which also extended to Indonesia and the mainland. Some type of inter-island contact was certainly present by 3000 B.C., and probably by 3500 B.C.

However, all of the pottery assemblages, even the earliest, seem to represent well-established traditions. The ultimate origins of pottery and possibly some of the other artifact types seem to be outside the Philippines. I think Taiwan is the most likely area. There are three cultures on Taiwan that have pottery and other artifact types similar to various Philippine pottery traditions. The earliest of these is the Corded-Ware Culture of the west coast, which dates from about 4000 B.C., or earlier. The pottery is a coarse, cord-marked ware, and probably has relationships to cord-marked wares on the mainland. Associated artifacts indicate hunting, gathering, and simple agriculture (Chang 1969, 1972a, 1972b; Stamps 1980).

The second culture is the Lungshanoid, in central and southwest Taiwan, which dates from 2500 B.C. or earlier. This pottery is cord-marked and incised. Associated artifacts indicate intensive grain agriculture, probably of rice, hunting, and shellfish collecting (Chang 1969; Stamps 1980). The third culture is the Yuan-Shan, of northern and eastern Taiwan, which dates from the same time period as the Lungshanoid, 2500 to 1 B.C. This pottery has distinctive incised designs, a distinctive stone tool industry, spindle whorls, and other artifacts which indicate intensive grain agriculture. Shellmounds are also present (Chang 1969; Stamps 1980).

Similarities can be found between all three of these cultures and various Philippine assemblages. Some of the early pottery in the Tabon and Sa-Huynh-Kalanay traditions is cord-marked, and these traditions also have other artifact types similar to those of the Lungshanoid Culture. One of the most distinctive similarities, though, is between the Yuan-Shan and the Lal-lo pottery, especially in the incised decorations.

The pottery from Lal-lo is also similar to that of areas outside Southeast Asia. One
area is Micronesia; some Lal-Io decorations are very similar to Marianas Red. The Lal-Io decorations are also very similar to some of the incised Lapita ceramic decorations of Melanesia. There are also similarities in vessel forms. The Lapita dates later than early Lal-Io.

I think that beginning about 4000 B.C. various people from several different cultures on Taiwan began to expand south into the Philippines. I think there were various reasons for this expansion. One was territorial expansion resulting from a desire for new agricultural land. Grain agriculturalists traditionally have a higher rate of natural population increase than horticulturalists. A second reason was a search for new trade contacts. A third may have been a desire by certain individuals, such as lesser sons of chiefs, to establish their own political territories (Bellwood 1983).

I think that territorial expansion and trade were both important to these people, and that both are necessary to explain the archaeological record as well as the physical traits of the people who now inhabit Island Southeast Asia. Territorial expansion with actual movements of people is important in explaining why the Mongoloid physical type is now the dominant one in Southeast Asia. However, this type of expansion alone is not sufficient to explain the rapid spread of the various artifact types that show up in many widespread areas of the Philippines. I think a search for new trade contacts, with movements by sea, is important in explaining this aspect of the archaeological record.

At the time the various people from the north entered the Philippines, the region was already occupied by both horticulturalists and hunters and gatherers. These people already had well-established local trade relationships, and so were used to trading. The Taiwanese could take over land in some areas, farm, and eventually expand their populations. They probably also interbred with the local people. And they no doubt also traded with them. The local people were probably eager to trade because the newcomers brought new artifact types with them.

However, the newcomers could not just settle anywhere, particularly not in areas where horticulturalists were already well established, numerous, and possibly sometimes hostile. In many areas it would have been to the newcomers' advantage simply to sail to another location to find land less densely inhabited or friendlier people. In some areas the newcomers may have purchased the right to settle. The settlers from Taiwan probably brought rice agriculture, pottery, and other cultural traits, such as spinning and weaving, with them. The knowledge that the local people already had trade patterns, and that their own goods were in demand, could have led to rapid movements throughout the Philippines to find new areas for trade. Trade was probably important to obtain utilitarian goods as well as luxury goods to enhance status.

This combination of migration, agriculture, and trade led to increases in population, interbreeding, and diffusion of cultural traits such as rice agriculture, pottery manufacture, and weaving. It led also to the relatively rapid establishment of several separate new cultural traditions in the Philippines. Trade and contacts led to the spread of similar artifact types over widespread areas, such as the nearly identical types of earrings that are found over 1000 km apart at both the Tabon Caves and Arku Cave, and the various pottery traditions that are widespread throughout the area. Trade, contacts, and migrations were not limited to the Philippines, but also continued south, west, and east.

As people migrated south their rice did less well in the humid tropics, so they adopted the local horticultural root and tree crops to add to their subsistence base.

I think this was the situation in the Philippines by 3000 or 2500 B.C. There were rice
agriculturalists, who in some areas also grew the local root and tree crops, horticulturists, and hunters and gatherers, each occupying various regions. The agriculturalists had a ranked or stratified social organization. There were various types of trade between all of these groups. There also seem to have been groups or individuals whose occupation was trading and who sailed locally or widely throughout the Philippines, Indonesia, parts of the coastal mainland, and parts of Melanesia, trading with a wide variety of cultural groups (Solheim 1976). This resulted in the similar artifact types that are found in widely scattered areas of the Philippines and neighboring regions. Also, as populations continued to expand, people continued to migrate to new areas, particularly to the islands in the east. A desire by some individuals for their own political territories also could have led to migrations.

The final section of the paper will discuss how all of the this relates to Austronesian origins and expansion. The data point to population movements from Taiwan south into the Philippines. Taiwan was thus the original Austronesian homeland. The various groups of people who migrated south spoke closely related Austronesian languages. Besides their languages, these people brought rice agriculture, pottery, and other new items of technology and culture.

Austronesian languages probably spread throughout the Philippines as a result of several processes. One was actual population increase and movement into the interior by agriculturalists. Another was the result of trade. The local people first learned a new language from the Austronesian newcomers as a trade language and eventually adopted it as their own. Austronesian was also spread by the occupational traders who sailed throughout the Philippines and neighboring regions. Various local people learned it as a trade language and eventually adopted it. Austronesian languages also became widespread because various Austronesian-speaking peoples continued to migrate, both as a result of a search for new agricultural lands, and as groups migrating with a new chief. Through time various dialects and languages developed.

The Austronesian-speaking peoples of the south Philippine-Indonesian area added new words to the vocabulary, such as those for the local root and tree crops (Blust 1976; Bellwood 1980). The people also continued to develop greater skills in various crafts, for example pottery and ornament manufacture. Some of them migrated into Micronesia, and others moved into Melanesia, where an incised pottery tradition became even more elaborated and evolved into what is known as Lapita. The Lapita potters were Austronesian speakers who continued to expand east and eventually settled the Pacific.

To return to the original two hypotheses, the data point to Taiwan as the original homeland of the Austronesian language family, with the spread of both people and cultural traits south through the Philippines, and then east and west to form the various branches of Austronesian. But the south Philippine–Indonesian–east Melanesian area is also important because this is the region where particular cultural traditions developed a distinct identity and formed the homeland for the eastern Austronesian languages.

REFERENCES

Bellwood, Peter

Blust, Robert
CHANG, KWANG-CHIH
1969 Fengpiaoyi, Tapenkeng, and the Prehistory of Taiwan. Yale University Publications in Anthropology 73. New Haven: Department of Anthropology, Yale University.

DAHL, OTTO

DYEN, ISIDORB

FOX, ROBERT

PETERSON, JEAN

PETERSON, JEAN, AND WARREN PETERSON

PETERSON, WARREN
1974 Summary report of two archaeological sites from northeastern Luzon. APAO 9:26–35.

SHUTLER, RICHARD, AND JEFFREY MARCK

SOLHEIM II, WILHELM G.

STAMPS, RICHARD

THEIL, BARBARA