

THE NUSANTAO AND NORTH-SOUTH DISPERSALS

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INTRODUCTION

The study of the maritime culture of Southeast Asia has been a central objective of mine since 1949 when I first went to the Philippines. My first publications to deal with the subject appeared in 1975 (1975a, b) when I referred to the bearers of this maritime culture as Austronesians or Austronesian speakers (1975a:151-7). In a postscript to this article (ibid.158) I stated:

The use of the word Austronesian and/or the compound Malayo-Polynesian for a people and a culture is very awkward, and is incorrect as well. Both terms are for a language family and should not be used for other purposes. Because these people share both a basic culture and a language it should not be difficult to coin a word for the people and culture from reconstructed proto-forms of the language.

As they are people of the islands, I proposed the term Nusantao and would like to thank George Grace for giving me the Austronesian root words *nusa* for island and *tau* for man or people. My concept of the Nusantao (1981) has changed over time (1988:85-6) and I find it necessary to revise this yet again. I now define Nusantao as natives of Southeast Asia - an area that includes southern China - and their descendants, with a maritime oriented culture from the beginning and originating probably in southeastern Island Southeast Asia rather before 5000 BC. A majority of the people with this culture, at any one time, probably spoke Malayo-Polynesian languages but there were no doubt minority groups who spoke unrelated languages. The Nusantao were no doubt directly associated with the development and spread of Malayo-Polynesian languages. At any one time there were also many other Malayo-Polynesian speakers living in the interior of the larger islands who were not maritime oriented, and I would not consider these as Nusantao. The Nusantao and the non-maritime Malayo-

Polynesian speakers no doubt were constantly mixing genetically, culturally and linguistically. Their genetic ancestry no doubt varied from time to time and place to place to include Southern Mongoloid, probably as a central core, and Melanesoid, and I would suggest that this may well have been the case from their very beginning (Solheim 1988).

It must be clear that I do not use the word people in a biological sense but as the bearers of a living, evolving, variable culture. Prime examples of Nusantao people in the recent past are the Bajau, Samal and Tausug of Malaysia, Indonesia and the Philippines - maritime cultures relatively little known to the West, marginal to the major cultures, with low status, no political power and, for the most part, very poor. At one extreme there were the Sea Gypsies or Orang Laut, living in mangrove swamps in Malaysia and Indonesia near Singapore and on the small coastal islands up the west coast of the Malay Peninsula. At the other extreme, in the not far distant past, the Bajau and Bugis of Malaysia were a maritime people with considerable power in the seas around Indonesia and Malaysia, but for the last few hundred years they have been land-based. The Bajau were traders along the coasts and their language was one of the most widespread of the coastal trade languages. The Samal of the southern coast of Mindanao were fully maritime but recent political events have virtually eliminated them, as well as most of the boat people in the seas off Guangzhou, Hong Kong and Hanoi.

I have also suggested that boat people - remnants of the Nusantao Maritime Trading Network - would be found living today in ports in southern Korea and Japan. The Ebune, a boat people, living on the Inland Sea in Nagasaki Prefecture, Japan, have always made their homes on boats despite the fact that there had always been sufficient space on land. Entire family units including parents, children, domestic animals and fowl live on

these boats. Amabe County in Oita Prefecture in Japan also has a large number of people living on the water who make their living primarily by fishing, carrying heavy objects on their heads unlike land people. In Okinawa there is a fishing community known as the Itomancho who live on the sea and sail south to Taiwan, west to China and north to Oshima in Kagoshima Prefecture, whereas most Okinawan people dislike fishing and fear and avoid the sea.

China also has several hundred thousand people who live on the water in the coastal areas from the Yangzi River south to Amoy in Fujian, Swatow and Guangdong Province. These people are engaged not only in fishing but also in shipping and operation of floating inns. There is a lot in common among these peoples who live their lives on the water. However, almost no written documents concerning them exist.

THE NORTH-SOUTH MARITIME TRADING NETWORK

In more recent papers I have changed my focus from the Nusantao as a people to the Nusantao Maritime Trading Network. In the beginning this was based primarily on the widespread distribution of two associated types of jade earrings or pendants (Chin 1980; Fontaine 1980; Fox 1970; Kaneko 1983; Kano 1930; Loofs-Wisswowa 1980-1981; Majid 1982; Solheim 1981, 1982-1983; Sung and Lien 1980) and on the distribution of the Sa Huynh-Kalanay Pottery Tradition (Solheim 1959, 1960a, 1964, 1967b, c, 1981, 1992).

The additional data I use to suggest a maritime network connecting western Kyushu, Korea and northern Southeast Asia are a complex of artifacts associated with early rice agriculture in Kyushu and Korea and also in northern Southeast Asia. Do the distributions of these artifacts suggest a maritime network of diffusion, or are they the results of independent invention? As the artifacts I will be describing are found in the Philippines, northern Vietnam, coastal South China, Taiwan, Korea and Japan, where movements over considerable distances of water are involved, a network of trade and diffusion is indicated.

THE RICE COMPLEX IN KOREA

The complex of artifacts associated with rice cultivation in Korea has been noted before, but only in part (Kim, W.Y. 1964; Kaneko 1966:18-21; Kim, J.H. 1978:78-81; Solheim 1988, 1992). Kim W.Y. (1964) brought together rice, the semilunar stone knife and the stepped adze. He did not feel certain of the sources of any of these three but apparently leaned towards a northern origin for the

semilunar knife and a southern one (South China) for the stepped adze, with the possibility of rice being brought in both by way of the northern land route and a southern sea route. The artifacts that appear to me to be a part of the rice-associated complex include table and capstone dolmens, cist graves, double burial jars, semilunar or crescent stone knives, stepped adzes, pediform adzes, perforated disks, stone daggers, concave based and long-stemmed polished stone arrowheads or spearheads, and the so-called plain pottery of Korea (rarely, carved-paddle pottery). I will also argue that a language was associated with the rice and many of these artifacts.

Table and Capstone Dolmens

There are two types of Korean dolmen, a northern type and a southern type. The table and capstone dolmen make up the southern type (Mikami 1961:2-3; Whang 1982). A few of the northern type are found in the south and vice versa, but most dolmens found in southern Korea are the table and capstone types.

Cist Graves and Double Burial Jars

Southern type dolmens often have stone cists or double burial jars placed mouth to mouth as a pair, beneath them (Kim, J. H. 1978:10412).

Semilunar or Crescentic Stone Knives

The semilunar stone knife is found throughout Korea as a part of the Plain Pottery Culture, and is not found in the earlier Geometric Pottery Culture sites. It is assumed to be associated with agriculture, probably with dry-field farming in the north and with pondfield rice in the south (Choe 1982a:521-4; Kim, J. H. 1978:78-9).

Stepped and Pediform Adzes

The true stepped adze, although not common, was the original shape in Korea. The later form, called the grooved adze, changed from a single step on the same side as the cutting edge, to having a double concave surface with ridge between these two surfaces, on the opposite side of the adze from the edge (Kim, J. H. 1978:63, Figure 29/17-8). These latter are in no way similar to the Southeast Asian stepped adze but have some similarity to what Beyer (1948:30-1, Figure 12) named the 'Luzon ridged adze' in the Philippines. The pediform adze is apparently very rare in Korea, as Kim illustrates it from only one site (1978:104, Figure 48/13).

Perforated Disks

Perforated stone disks are widespread in Korea. Many seem too large for a spindle whorl but too small to be a dibble stick weights and in Japan are considered to be spindle whorls (Kim, J. H. 1978:61).

Stone Daggers

The stone daggers were long thought to be relatively late, and copies in stone of Chinese bronze short swords (Mikami 1961:4). It has been found, however, that the earliest forms are earlier than their assumed bronze prototypes (Kim, J. H. 1978:81-82, 100-2) and it is probably the locally-evolved later daggers that have the exaggerated two step handle (*ibid.* 111, Figures 51 and 53).

Concave-Based and Stemmed Arrow and Spearpoints

There is no certainty as to whether these two distinct types of points are arrowheads or spearheads. The concave based, polished stone points are large enough to be either. They are triangular in plain view and in some cases have a straight base. The usual concave-based point is also fluted (Kim, J. H. 1978:83, Figure 38/10-12).

Plain Pottery

The earliest pottery in Korea was the Geometric or Comb Pattern Pottery, now commonly referred to as Chulmun after the Korean term for its pottery (Nelson 1982a:512, 1982b:118). The common forms of this pottery were large conical jars with pointed, or less often, rounded bottoms. Most of their outer surface was decorated with incised lines or punctations made with a multiple-toothed tool, the lines often forming a herringbone pattern. During the 2nd millennium BC new elements appeared leading to the emergence of the Plain Pottery Culture (Kim, J.H. 1978:10-52), now called the Mumun culture (Nelson 1982a:512); these came element by element rather than as a single complex. Although this Plain Pottery tradition is found, with considerable variation, throughout Korea it seems to me that ceramic influences from two different sources combined to produce the Mumun pottery (Nelson 1982b:120-2).

Most Mumun pottery is without decoration or only on the rim. A major change was that the large conical jars developed a more globular body with a slightly restricted mouth and a small flat bottom (Kim, J. H. 1978:53). Another change, according to Kim (*ibid.*), is towards smaller jars with constricted necks, of which some are described as red painted but which might also be red slipped. Also found with the plain pottery at some middle

and late Mumun sites is carved paddle impressed pottery (*ibid.* 115-6).

Rice

Papers presented at a symposium on the origins of rice in Korea showed general agreement that rice had come to Korea by at least 1500 BC, ultimately from South China, but there was no agreement on how and by whom it was brought to Korea and the route(s) by which it came (Choe 1982a, b; Kim W.Y. 1982; Nelson 1982a, c, d).

Conclusions

The artifacts discussed above are not the only items associated with the Korean Rice Complex but they appear to make up a majority of the artifacts found at sites with the Mumun pottery. They seem to have entered at different times and possibly at different places and were incorporated into cultures that were adopting rice as a staple.

THE RICE COMPLEX IN JAPAN

Rice agriculture appears to have entered Japan towards the end of Late Jomon at the northwest corner of Kyushu, the closest part of Japan to southeastern Korea. Most elements of the complex noted for Korea were in place in northwestern Kyushu and western Honshu by the first half of the first millennium BC. These elements, and some others, define the Yayoi Culture.

Table and capstone dolmens were common in the Yayoi Culture, often found over cist graves or double burial jars (Kim, B.M. 1982:171-4). Sometimes, instead of a second jar for the top there was a stone lid; such are also found in southern Korea. The double burial jars, usually placed horizontally or diagonally in the ground, were similar to those in Korea, except that the top jar in Japan did not have handles (Kaneko 1964:28, 1966:1-14). Semilunar stone knives were also common (Aikens and Higuchi 1982:101-3; Skinner 1968:102 Figure 1), as were perforated stone disks (Aikens and Higuchi 1982:187, 202-3 Figure 4.18). Stepped adzes are found in western Japan (Kim W.Y. 1964a:4) and pediform adzes are known from southern Kyushu (Kaneko, pers. comm. 1989). Stone daggers like those of southern Korea, excepting those with an exaggerated two-step handle, are present in Yayoi burial sites on Tsushima Island, between Kyushu and southeastern Korea (Mizuno *et al.* 1953, Plate 43-4). Triangular, concave-based, stone arrowheads were common in Japan for several thousand years before the coming of rice (Aikens and Higuchi 1982:120, Figure 3.12), and in Kyushu since Early Jomon (*ibid.*:205). These points are flaked rather than polished, however. Ground, stemmed points were considered to be imitations

of metal forms (*ibid*:215, 233, Figure 4.35). Flaked, stemmed points, however, were common in Jomon times over most of Japan (*ibid*:139, Figure 3.21).

Jomon pottery had changed relatively little for more than 3000 years before the Late Jomon (ca. 4000-3000 BP), when new forms entered the tradition, such as small teapots and small globular jars with flat bases (Aikens and Higuchi 1982:160-1, Figures 3.39-40). More change came during Final Jomon (ca. 3000-2600 BP) as pedestaled bowls, cups with ring feet and small narrow-mouthed jars entered the repertory of forms (*ibid*:167-9, Figures 3.47-9). Early Yayoi pottery was very much like the Mumun pottery of southern Korea although some continuity from Final Jomon can be noted.

Conclusions

All of the artifacts I have described for the rice complex in Korea were present in Japan, associated with each other and with rice. While the dating is far from secure it would appear that all of these items came to Japan from Korea except for the concave-based and stemmed, triangular stone points, which had been known in Japan for thousands of years. As with Korea, it does not appear that these items came to Kyushu all at the same time as a closely associated complex, but they probably arrived over time from early in the 2nd millennium BC onwards and were all present by Early Yayoi times around 500 to 700 BC. I fully agree with Kaneko (1966:3) in considering the nuclear Yayoi area as including both southern Korea and northeastern Kyushu. Further, I agree with Ledyard's statement (1975:230-1) that:

It seems clear that at that time the Wa [the first state in Japan referred to in Chinese records in AD 240] and the Yayoi culture in general [were present] from the southern coast of Korea through Kyushu and eastward to the Kinai region ... It was an area connected by water, not by land, and one of the most common scenes must have been people going back and forth in their boats (as in some of the wall paintings in Kyushu tombs). It was a maritime state.

Thus, Japan, by way of Kyushu, was in continual contact with southern Korea from Final Jomon times at least through the fifth century AD. (Edwards 1983:288-91; Solheim 1992).

THE RICE COMPLEX IN NORTHERN SOUTHEAST ASIA

No one site or restricted area in northern Southeast Asia contains all of the artifacts discussed above, but practically all of them are present, scattered over much of the

region, and many are found in portions of southern Southeast Asia as well.

Burial Structures

Table and capstone dolmens are not common in any area of Southeast Asia, except for Assam. A few have been reported scattered in Indonesia (Kim, B.M. 1982:175-6; Soejono 1982). Stone cists are found in southeastern Taiwan (Sung 1980:189-91) and in Yunnan (Graham 1958:Plates 2-3). It is curious that associated with cist burials in both of these regions is found an unusual form of pottery that I do not know from any other prehistoric sites in East Asia. These jars often have a pair of long handles extending from the lip of the rim to the maximum diameter of the body (Sung and Lien 1987:Plates 24-5).

Burial jars, some double and some with stone lids, are found in eastern Taiwan (Solheim 1960b:138-40), the islands between Taiwan and Luzon (Beauclair 1972; Solheim 1960b:131-7; Stamps 1980), in Palawan (Fox 1970:67-166) and in the central and southern Philippines (Solheim 1960b:131-7, 1981:48-55), in central and southern Vietnam (Janse 1959; Malleret 1959), in Sarawak (Harrison 1967:178-9; Solheim *et al.* 1959), scattered in Indonesia (Heekeren 1972:191-8), and in southern India and Sri Lanka associated with stone cists and dolmens (Sakar 1982:130-3; Seneviratna 1984). These date primarily from the first millennium BC through the 1st millennium AD but in Palawan and southern Vietnam they go back to the 2nd millennium BC. The sites in Taiwan and between Taiwan and Luzon are later (1st and 2nd millennia AD).

Stone Artifacts

The semilunar stone knife is found in sites in Taiwan, Hong Kong and into Peninsular Malaya from the 1st millennium BC and later, but without a local history going further back (Chang 1969:74, Figure 37, Plate 76; Meacham 1978:101, Figure 6/12 and 192, Figure 9/8; Skinner 1968:102, Figure 2; Sørensen 1974:477, 480).

The stepped adze goes back to the 3rd millennium BC in southeastern China (Fu 1988:11) and had spread to coastal South China, northern Vietnam, Luzon and Taiwan during the 2nd millennium BC (Beyer 1948:49-54, Figure 17-8; Chang 1969:178, Plate 94; Meacham 1978:188; Phong 1979:4). The pediform adze appears to have originated in a late Hoabinhian context in Assam, Burma and Vietnam. They are found fully polished in northern Vietnam and Taiwan during the 3rd and 2nd millennia BC (Chang 1969:112, Plate 73; Li 1983:Plate 67) and are made in bronze in northern Vietnam from the

Dong Dau phase (c.1500 BC) into the Dong Son (Nguyen 1975:Figures 121-4, 143).

The perforated stone disk or spindle whorl is known in Taiwan from the 2nd and 1st millennia BC (Li 1983: Plate 54B). One stone dagger is known from Vietnam and bronze daggers were common there in the north, in South China and in Taiwan from the late 1st millennium BC into the early centuries AD. They appear to be a local tradition (Nguyen 1975: Figures 136, 139).

Concave-based, polished, triangular, fluted and non-fluted stone projectile points show up in Taiwan (Chang 1969: Plates 77) and Hong Kong (Meacham 1978:194, Figure 9.12) during the 2nd millennium BC with no apparent local antecedents, as also does a polished and stemmed stone point in Luzon (Beyer 1948: Figure 22a-b), Taiwan (Chang, K.C. 1969: Plate 77; Li 1983: Plate 74) and Hong Kong (Meacham 1978:195, Figure 9.14).

Shell

An unusual type of shell bracelet makes its appearance in Japan in Early Yayoi times and possibly earlier which I have called a 'bias shell bracelet' (Solheim 1964a:186-90, Figure 29a, Plate 44o). It is one of the earlier types of bracelet in the Philippines but continues in use into early Spanish times. The bias shell bracelet found in Japan is made from a marine shell which is found in Okinawa and further south but not in Japan. It is also found throughout the Ryukyu Islands (Takamiya and Miyagi 1983:57) and at sites on the southern tip of Taiwan (Sung *et al.* 1967: Plate 20 1-2 and 8-9). In the southern Ryukyus the manufacture of *Tridacna* adzes appears to have been introduced from the Philippines or the Marianas (Shijan 1991:289-90).

Pottery

Many elements of the smaller, plain pottery vessels of Korea and Late and Final Jomon and the Yayoi are common in South China and Southeast Asia, including the vertical and everted rim (Maglioni 1975:39; Solheim 1959), red slipping (Solheim 1959) and patterns of incised decoration. Many of these are typical of the Sa Huynh-Kalanay Pottery Tradition, as I defined it, for southern Vietnam and much of eastern Island Southeast Asia (Solheim 1959, 1964b). The carved paddle impressed pottery originated in southeastern China during the 3rd millennium BC (Meacham 1978:211-2) and has been found in scattered sites in Taiwan (Chang 1969:185-6, Plate 87) and north along the China coast from the 1st millennium BC.

Rice and Other Domesticated Plants

There were two different sources and routes for the spread of rice agriculture to Japan. Chang (1988:71-2), the primary authority on the genetics and origins of cultivated rice, has suggested that rice cultivation in Indonesia may be earlier than that in Malaysia and the Philippines. He further stated that *javanica* rice was the primary rice on Bali until the early 1970s, was the variety of rice grown in northern Luzon, especially in the mountains, and was also the rice grown by the mountain tribes of Taiwan. This, combined with the calibrated mean date of 2334 B.C. for rice from Gua Sireh in Sarawak (Bellwood *et al.* 1992:167), strongly suggests that the earliest rice in the Philippines and Taiwan came up from the south and continued north to Japan. Sasaki (1992:4-1) has reported on a type of red rice in the Ryukus known as *akano-kome*, used ceremonially since ancient times. According to Watanabe Tadayo, who extensively researched this rice, it is a variety from the south. *Akano-kome* is closest to a *javanica* rice of Indonesia, known there as *bulu*. Research shows that even in Okinawa there were many pre-modern rice varieties similar to *bulu* and these occur in a wide expanse from Taiwan's mountainous region and Mindanao to the eastern part of the Indonesian islands. Moreover, research in rice genetics has also revealed traces of the spread of rice northward from the south. In other words, genetic research shows that Japanese rice cultivation was influenced by southern island rice growing, even though this was not the main source of the first Japanese rice.

Tropical taro (*Colocasia esculenta*) and yam (*Dioscorea alata* and *D. esculenta*) have a similar distribution, showing that they moved northward from Island Southeast Asia, through the Ryukyus into Kyushu. The techniques of farming these root crops and rice are also Southeast Asian.

FURTHER SUGGESTIONS FOR MARITIME CONNECTIONS

Linguistic issues relating to the possible relationships between the Japanese and Austronesian languages are discussed elsewhere in this volume by Reid and are omitted from my present paper. However, since discussing the original settlement of Micronesia (Solheim 1990) I have realized that the early settlement of the Micronesian islands is a complex matter. I still believe that the Nusantao sailors were the first to arrive, but now strongly suspect that the routes into Micronesia were distinct from the route of the Nusantao explorers into western Melanesia. They probably reached the southern Marianas directly from the Philippines, or possibly from southern

Taiwan via the northern Marianas. There is also a possibility that early Nusantao traders, who I have hypothesized had reached Kyushu first around 3000 BC and started exploring south into the Ryukyus and the Bonin Islands soon after, may have come into the northern Marianas through the Bonin Islands.

CONCLUSIONS

The Ta-p'en-k'eng Culture (TPK), although not yet securely dated, is the earliest neolithic culture to be found on Taiwan. As such it is probably the culture of the first Austronesian speakers there. During the Middle Holocene transgression very little of the P'eng-Hu Islands off the west coast of southwestern Taiwan would have been above sea level. The earliest dating for the TPK Culture appears there around 5000 BP, following the lowering of sea levels, although TPK might have been earlier than this in the southwestern coastal area of Taiwan.

Referring to TPK related sites on the China mainland, Tsang (1992:269) comments:

Most of these coastal sites are located on shellmounds and sand dunes. Archaeological data from these sites show that fishing, gathering and hunting were the most important subsistence activities, but that some agriculture was also carried on.

Tsang (1992:287) also says:

Based on the current archaeological evidence mentioned above, I do not agree with Bellwood (1978:207) that 'Taiwan is a potentially vital area for the transmission of cultural innovations from the Asian mainland into the islands', if he chooses to 'emphasize the importance of the Corded Ware-Yüan-shan cultural tradition'.

Since the homeland of this tradition was most likely on the coast of the mainland between Fujian and Vietnam, as mentioned previously, I would postulate that the Austronesian languages and cultures were transmitted into insular Southeast Asia and the Pacific Islands along the eastern coast of the Southeast Asian mainland rather than through the island of Taiwan.

On the basis of the above information I postulate that the Early Nusantao Maritime Trading Network made contact, cultural and genetic, with the Middle Neolithic people of southeast China. This included the peoples of the lower Yangzi Valley. The Nusantao maritime traders extended their contacts to southwestern Taiwan and took there the seeds of the TPK Culture.

With their knowledge both of the ocean and of use of the land the early Nusantao people quickly incorporated the new elements of culture they came into contact with,

developing a somewhat new and different culture in the sand dune and shell mound sites. Thus, the Middle Neolithic sand dune and shell mound sites along the South China coast were Nusantao settlements. This Nusantao combination of land settlement and expanding maritime trading network is, to my knowledge, unique in the world so there is no existing model which can be invoked. I agree with Tsang's (1995) suggestion that the Austronesian language of the Corded Ware cultures was gradually transmitted to insular Southeast Asia and the Pacific Islands along the coast of the South China Sea. To present my reasoning in agreement with this it is necessary to move to the Pacific and the earliest, widespread pottery tradition there.

THE LAPITA POTTERY TRADITION

On the basis of linguistics, physical anthropology, and archaeology it is now generally agreed that the ancestors of the Polynesian peoples were the bearers of the Lapita Culture of Melanesia and that the ancestry of the Lapita peoples came from eastern Island Southeast Asia somewhat before the middle of the second millennium BC. It is argued that an important element of the Lapita Culture that led to the colonization of the Pacific islands was extensive long distance trade (Kirch 1988; Wickler 1990). It has generally been felt that this long distance trade developed in the islands of the Bismarck Archipelago. While I have not expressed it in this way before, I would argue that this long distance trade element of the Lapita Culture came with their Nusantao ancestors from Island Southeast Asia (Solheim 1976, 1984-85:84-5).

For many years pottery was the defining element of the Lapita Culture and I long ago noted its relationship to the Sa Huynh-Kalanay Pottery Tradition of Island Southeast Asia (Solheim (1964a:206-9, 1967b:167, 1976:35-6). As soon as radiocarbon dating became common in the archaeology of the Pacific and Southeast Asia it became apparent that this could not be so, as Lapita pottery was earlier than the Sa Huynh-Kalanay pottery. They were so similar, however, that I pointed out that the two pottery traditions must have had a common ancestor (Solheim *et al.* 1979:126-9). A great majority of their shared forms and decoration are present in Vietnam well before 2000 BC. This strongly suggests, at least to me, that the ancestry of the Lapita pottery lies in Vietnam, whence it was carried by Nusantao traders, probably the ancestors of the Lapita people (Solheim 1979:197). This would mean that the Nusantao Maritime Trading Network developed towards the south from southeastern China, along the coast of the China Sea across to Borneo.

SUMMARY

My hypothesis of the origin and development of the Nusantao Maritime Trading Network is as follows. The origin of the Nusantao as a sailing and navigating people was in eastern Indonesia and the nearby southern Philippines. Improvement of their sailing abilities was forced upon them by the rising sea levels at the end of the Pleistocene, which required movement across gradually longer stretches of open sea to maintain contact with relatives and homeland. Outrigger canoes were probably necessary for the expansion of the Nusantao and the origin and center of innovation of all Austronesian boat traits probably lies in the islands surrounding Sulawesi. It will be noted, however, that the highest development of single-outrigger canoes was reached in Micronesia and that the place of origin of double outriggers was probably Vietnam (summarized from Doran 1981).

Before 5000 BC, some of the now fully maritime-oriented people of the eastern Indonesian islands and southern Mindanao started their explorations to the north through the Philippines, reaching Taiwan and southeastern China. After reaching the China coast of Fujian and Guangdong they started extending their network north and south along the China coast while continuing contact with the northern Philippines, and for about 2500 years with Taiwan. Expansion along the Vietnam coast would have followed two routes, one continuing along the coast to the south and then west, the other to Borneo, into Palawan and the Philippines and southeast to Sulawesi, and also around the southern coast of Borneo and into the Lesser Sunda islands. The northwards expansion of the Nusantao network to Korea and Japan however, has been the primary focus of this paper.

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NOTE

1. For further discussion of the sand dune and shell mound sites around the Pearl River Delta see the papers in this volume by Chen Xingcan, Li Guo and Qiao Xiaoqin (eds).

REFERENCES

Aikens, C. M. and Higuchi, T. 1982. *Prehistory of Japan*. New York: Academic Press.
 Beauclair, I. de 1972. Jar burial on Botel Tobago Island. *Asian Perspectives* 15(2):167-76.

Bellwood, P. 1978. *Man's Conquest of the Pacific*. Auckland: Collins.
 Bellwood, P., Gillespie, R., Thompson, G.B., Vogel, J.S., Ardika, I.W. and Ipoi Datan. 1992. New dates for prehistoric Asian rice. *Asian Perspectives* 31(2):161-70.
 Beyer, H. O. 1948. *Philippine and East Asian Archaeology and its Relation to the Origin of the Pacific Islands Population*. Quezon City: Bulletin No. 29, National Research Council of the Philippines.
 Chang, K. C. 1969. *Fengpitou, Tapenkeng and the Prehistory of Taiwan*. New Haven: Yale University Press.
 Chang, T.T. 1988. The ethnobotany of rice in Island Southeast Asia. *Asian Perspectives* 26(1):69-76.
 Chin, L. 1980. *The Cultural Heritage of Sarawak*. Kuching: Sarawak Museum.
 Choe, C. P. 1982a. The diffusion route and chronology of Korean plant domestication. *Journal of Asian Studies* 41(3):519-29.
 ----- 1982b. Comments on Kim and Nelson. *Journal of Asian Studies* 41(3):545-7.
 Doran, E. 1981. *Wangka*. College Station, Texas: Texas A & M University Press.
 Edwards, W. 1983. Event and process in the founding of Japan: the horserider theory in archaeological perspective. *Journal of Japanese Studies* 9(2):265-95.
 Fontaine, H. 1980. On the extent of the Sa-huynh Culture in continental Southeast Asia. *Asian Perspectives* 23:67-9.
 Fox, R. 1970. *The Tabon Caves*. Manila: National Museum of the Philippines Monograph No. 1.
 Fu, X. 1988. On stepped stone adzes and shouldered stone implements. *Kaogu Xuebao* 1:1-36.
 Graham, D.C. 1958. The customs and religion of the Ch'iang. *Smithsonian Miscellaneous Collections* 135 (1).
 Harrison, B. 1967. A classification of stone age burials from Niah Great Cave, Sarawak. *Sarawak Museum Journal* 15 (30-31; N.S.):126-200.
 Heekeren, H. R. van 1972. *The Stone Age of Indonesia*. (2nd ed.). The Hague: Nijhoff.
 Janse, O. R. T. 1959. Some notes on the Sa-huynh Complex. *Asian Perspectives* 3(2):109-11.
 Kaneko, E. 1964. Japan. *Asian Perspectives* 8(1):24-68.
 ----- 1966. Japan, a review of Yayoi period burial practices. *Asian Perspectives* 9:1-6.
 ----- 1983. Sotono jukei jushoku wo meguru. (About the bi-cephalous ornament). *Ethnos in Asia* 20:126-37. (in Japanese).
 Kano, T. 1930. Kotosho Yami zoku no yagi no suhai ne tsuite. (About goat worship of the Yami of Botel Tobago.) *Jin-ruigakuzashi* 45:41-5. (In Japanese).

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- Kim, B. M. 1982. A new interpretation of megalithic monuments in Korea. In Kim B. M. (ed.), *Megalithic Cultures in Asia*, pp. 164-88. Seoul: Hanyang University, Monograph No. 2.
- Kim, J.H. 1978. *The Prehistory of Korea*. Translated and edited by R. J. and K. Pearson. Honolulu: University Press of Hawaii.
- Kim, W.Y. 1964. The beginning of rice cultivation in Korea. Paper 15 presented at the International Conference on Asian History. University of Hong Kong, Aug. 30-Sept. 5 1964.
- 1982. Discoveries of rice in prehistoric Korea. *Journal of Asian Studies* 41(3):513-8.
- Kirch, P. 1988. Long distance exchange and island colonization: the Lapita case. *Norwegian Archaeological Review* 21(2):103-17.
- Ledyard, G. 1975. Galloping along with the horseriders: looking for the founders of Japan. *Journal of Japanese Studies* 1(2):217-54.
- Li, K.C. 1983. *Report of Archeological Investigations in the O-Luan-Pi Park at Southern Tip of Taiwan*. Taipei: Kenting Scenic Area Administration.
- Long, K. N. 1992. History behind the jar. In C.O. Valdes, K.N. Long and A. Barbosa (eds), *A Thousand Years of Stone-ware Jars*, pp. 25-69. Manila: Jar Collectors (Philippines).
- Loofs-Wissowa, H. 1980-81. Prehistoric and protohistoric links between the Indochinese peninsula and the Philippines, as exemplified by two types of ear-ornaments. *Journal of the Hong Kong Archaeological Society* 9:57-76.
- Maglioni, R. 1975. *Archaeological Discovery in Eastern Kwangtung*. Journal Monograph II. Hong Kong: Hong Kong Archaeological Society.
- Majid, Z. 1982. The West Mouth, Niah, in the prehistory of Southeast Asia. *Sarawak Museum Journal* 31(52; N.S.):1-200.
- Malleret, L. 1959. Quelques poteries de Sa-huynh dans leurs rapports avec divers sites du Sud-Est de l'Asie. *Asian Perspectives* 3(2):113-9.
- Meacham, W. (ed.) 1978. *Sham Wan, Lamma Island*. Journal Monograph III. Hong Kong: Hong Kong Archaeological Society.
- Mikami, T. 1961. *The Dolmen and Stonecist in Manchuria and Korea* (English Summary). Tokyo: Yoshikawa Kobunkan.
- Mizuna, S., Higuchi T. and Okazaki T. 1953. *Tsushima*. Archaeologia Orientalis, Series B. VI. Tokyo and Kyoto: The Far-Eastern Archaeological Society.
- Nelson, S. 1982a. The origins of rice agriculture in Korea - a symposium. Introduction. *Journal of Asian Studies* 41(3):511-2.
- 1982b. Recent progress in Korean archaeology. *Advances in World Archaeology* 1(1):531-43.
- 1982c. The effects of rice agriculture on prehistoric Korea. *Journal of Asian Studies* 41(3):531-43.
- 1982d. Comments on Kim and Choe. *Journal of Asian Studies* 41(3):547-8.
- Nguyen, P.L. 1975. Les nouvelles recherches archéologiques au Vietnam. *Arts Asiatiques* 31.
- Phong, N. T. 1979. Classification of Southeast Asian tools (axes and adzes) in the Late Neolithic - Early Bronze period. In *Some Problems on the Cultural History of Southeast Asia*, pp. 1-6. Hanoi: Committee for Social Sciences of Vietnam, Department for Southeast Asian Study.
- Sarkar, H. 1982. Megalithic Culture of India. In Kim B. M. (ed.), *Megalithic Cultures in Asia*, pp. 127-63. Seoul: Hanyang University Press.
- Sasaki, K. 1992. Kuroshio Road - the northern spread of culture through the Southern Islands. *Black Current* 35:34-40 (in Japanese; translated by Douglas Fuqua).
- Seneviratna, S. 1984. The archaeology of the megalithic Black and Red Ware Complex in Sri Lanka. *Ancient Ceylon* 5:237-387.
- Shijan, A. 1991. The distribution of *Tridacna* shell adzes in the southern Ryukyu Islands. *Bulletin of the Indo-Pacific Prehistory Association* 10:282-91.
- Skinner, H.D. 1968. The North Pacific origin of some elements of Polynesian material culture. In Wilhelm G. Solheim II (ed.), *Anthropology at the Eighth Pacific Science Congress*, pp. 102-11. Asian and Pacific Archaeology Series 2. Honolulu: Social Science Research Institute, University of Hawaii.
- Soejono, R.P. 1982. On the megaliths in Indonesia. In Kim B.M. (ed.), *Megalithic Cultures in Asia*, pp. 73-98. Seoul: Hanyang University Press.
- Solheim, W.G. II (ed.) 1959. Sa-huynh pottery relationships in Southeast Asia. *Asian Perspectives* (Special Issue) 3(2):97-188.
- 1960a. Two major problems in Bornean (and Asian) ethnology and archaeology. *Sarawak Museum Journal* 8 (13-14; N.S.):1-5.
- 1960b. Jar burial in the Babuyan and Batanes Islands and in central Philippines, and its relationship to jar burial elsewhere in the Far East. *Philippine Journal of Science* 89 (1):115-48.
- 1964a. *The Archaeology of Central Philippines*. Monographs of the National Institute of Science and Technology. Manila: Bureau of Printing.
- 1964b. Further relationships of the Sa Huynh-Kalanay Pottery Tradition. *Asian Perspectives* 8(1):196-211.

- 1964c. Pottery and the Malayo-Polynesians. *Current Anthropology* 5(5):360, 376-384, 400-3.
- 1967. The Sa-huynh-Kalanay Pottery Tradition: past and future research. In M. Zamora (ed.), *Studies in Philippine Anthropology*, pp. 151-174. Manila: Alemar Phoenix.
- 1967b. Two pottery traditions in late prehistoric times in Southeast Asia. In F.S. Drake (ed.), *Symposium on Historical, Archaeological and Linguistic Studies on Southern China, South-east Asia and the Hong Kong Region*, pp. 15-22. Hong Kong: Hong Kong University Press.
- 1975a. Reflections on the new data of Southeast Asian prehistory: Austronesian origin and consequence. *Asian Perspectives* 18(2):146-60.
- 1975b. The Nusantao and South China. *Journal of the Hong Kong Archaeological Society* 6:108-115.
- 1976. Coastal Irian Jaya and the origin of the Nusantao (Austronesian speaking people). In Chosuke Serizawa (ed.), *UISPP Colloquium 18: Le Premier Peuplement de l'Archipel Nippon et des Iles du Pacifique: Chronologie, Paleogeographie, Industries*, pp. 32-42. Nice: International Congress of Prehistoric and Protohistoric Sciences.
- 1979. A look at 'L'Art préboudhique de la Chine et de l'Asie du Sudest et son influence en Oceanie' forty years after. *Asian Perspectives* 22(2):165-205.
- 1981. Philippine prehistory. In G. Casal, R. T. Jose, Jr., E. S. Casino, G. R. Ellis and W. G. Solheim II (eds), *The People and Art of the Philippines*, pp.16-83. Los Angeles: Museum of Cultural History, University of California.
- 1982-83. Remarks on The lingling-o and bi-cephalous ornaments. *Journal of the Hong Kong Archaeological Society* 10:107-11.
- 1988. The Nusantao hypothesis: the origin and spread of Austronesian speakers. *Asian Perspectives* 26(1):77-88.
- 1990. Thoughts on land and sea peoples in Southeast Asia and their possible relationship to initial settlement of Micronesia. *Micronesica Supplement* 2:241-6.
- 1992. Nusantao traders beyond Southeast Asia. In I.C. Glover, P. Suchitta and J. Villiers (eds), *Early Metallurgy, Trade and Urban Centres in Thailand and South-east Asia*, pp. 199-212. Bangkok: White Lotus.
- Solheim, W. G. II, B. Harrison, and L. Wall 1959. Niah 'Three Colour Ware' and related prehistoric pottery from Borneo. *Asian Perspectives* 3(2):167-76.
- Solheim, Wilhelm G. II, Avelino Legaspi and Jaime S. Neri, S.J. 1979. *Archaeological Survey in Southeastern Mindanao*. Monograph No. 8. Manila: National Museum.
- Sørensen, P. 1974. The neolithic cultures of Thailand (and north Malaysia) and their Lungshanoid relationship. In Noel Barnard (ed.), *Early Chinese Art and its Possible Influence in the Pacific Basin*, pp. 459-506. Taipei.
- Stamps, R. B. 1980. Jar burials from the Lobusbussan Site, Orchid (Botol Tobago) Island. *Asian Perspectives* 23(2):181-92.
- Sung W. H. 1980. Taiwan viewed from an archaeological perspective (in Chinese). In *China's Taiwan*, pp. 93-220. Taipei: Central Antiquities Publications.
- Sung W.H., Huang S.C., Lien C.M. and Le K.C. 1967. O-Luan-Pi: a prehistoric site of the southern tip of Formosa. Reprinted from the *Annual Bulletin of the China Council for East Asian Studies* No. 6.
- Sung W.H. and Lien C.M. 1980. On a double-headed nephrite ornament from Botel Tobago Island, Taiwan. *The National Palace Museum Quarterly* 14(3):31-3 (English Summary), 39-51 (in Chinese.)
- 1987. *Peinan Excavation 1986-87*. Taipei: Southern Materials Center, 2nd printing.
- Takiyama H. and Miyagi E. 1983. *The Historical Atlas of Okinawa*. Tokyo: Hakushobo.
- Tsang C.H. 1992. *Archaeology of the P'eng-Hu Islands*. Taipei: Institute of History and Philology, Academia Sinica, Special Publication Number 95.
- 1995. New archaeological data from both sides of the Taiwan Strait and their implications for the controversy about Austronesian origins and expansion. In P. J-K. Li et al. (eds), *Austronesian Studies Relating to Taiwan*, pp. 161-84. Taipei: Institute of History and Philology, Academia Sinica.
- Whang, Y.H. 1982. The general aspect of Megalithic Culture of Korea. In Kim, B.M. (ed.), *Megalithic Cultures in Asia*, pp.41-64. Seoul: Hanyang University Press.
- Wickler, S. 1990. Prehistoric Melanesian exchange and interaction: recent evidence from the northern Solomon Islands. *Asian Perspectives* 29(2) 135-54.