

The Archaeology of East Asia and the Population History of the Japanese Archipelago: A Discussion

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I offer my comments on the papers presented at the morning session, by focusing on their implications to two “transitions” : namely, (I) the transition from the Palaeolithic to Jomon, and (II) the transition from Jomon to Yayoi. Issues here, of course, are biological and cultural continuity/discontinuity between the three earlier chronological units in Japanese prehistory. I will conclude with some observation regarding (III) Peopling of the Japanese Archipelago and the Dual Structure Model for the population history of the Japanese.

1. The Transition from the Palaeolithic to Chulmum/Jomon

Hyo-Jai Im' s “New discoveries in the Korean Neolithic archaeology” brings to the attention of this international audience the results of recent investigations at the Kosanni site. The recovery at this site on Cheju Island, off the southwestern coast of the Peninsula, of an assemblage containing ceramic sherds from a horizon below the Kikai-Akahoya tephra certainly fills the chronological gap between the Palaeolithic and Chulmum Neolithic of Korea. It could also be very important for our understanding of the nature of the Palaeolithic-Jomon transition and the identity of the Jomon people.

It is generally assumed that ceramic technology in Japan is of continental origin. Some authors went so far as to specify that it was introduced from the continent via Korea (Aikens and Higuchi 1982:114). The problem, of course, has been that chronometric dates for the oldest pottery in Korea are several thousand years younger than those in Japan. The Kosanni discovery narrows the chronological gap not only between the Palaeolithic and Neolithic periods of Korea, but also between the beginning of pottery-making in the Korean Peninsula and the Japanese archipelago. I am most curious to know (1) how much older than the Akahoya eruption, well-dated at many localities to about 6,300 radiocar-

bon years ago (Machida and Arai 1983), is this Kosanni assemblage, and (2) how does it compare with the earliest ceramic assemblages in Japan and with the assemblages under investigation in the Maritime Provinces of Russia?

Im referred to the occurrence at the Kosanni site of microblades, triangular arrowheads, and plain pottery. Microblades occur with linear relief pottery at Fukui Cave and Sempukuji Cave in northwestern Kyushu, about 250 km east of Cheju Island. Radiocarbon and TL dates for these horizons at Fukui and Sempukuji range from 11,360 to 12,700 years ago. Triangular points and plain pottery, on the other hand, are found at Kamikuroiwa Rockshelter in Shikoku: medium-sized points with a short stem, associated with linear-relief pottery, in Level 9, and smaller points without stem in association with plain pottery in Level 6. Radiocarbon date for Level 9 is $12,165 \pm 600$ b.p., while Level 6 must be younger than $10,700 \pm 300$ b.p.

If the Kosanni assemblage bears specific resemblance to any of the early ceramic assemblages in Japan, and it is shown to be older than the Japanese counterpart, it would have a significant implication for the beginning of the Jomon tradition in Japan, and for the origins of the Japanese people. It appeared to some of us that the ceramic technology, but not the Jomon people, arrived in the Japanese archipelago about 12,000 radiocarbon years ago (e.g. Ikawa-Smith 1980). The reasoning was as follows: (a) the earliest, linear-relief pottery occurs in association with at least two different kinds of lithic technology; it is accompanied by microblades at some sites, and by bifacial points at others, (b) both microblades and bifacial points are present at many Final Pleistocene sites in Japan without pottery, suggesting continuity in tool-making habits from the non-ceramic to early ceramic periods in different regions of the archipelago, and (c) no assemblage with similar composition has been found at comparable time horizon in surrounding areas. If (i) the Kosanni assemblage duplicates some of the early ceramic assemblages of Japan, and (ii) it is definitely older than Japanese assemblage(s), it would be necessary to modify our view regarding the population continuity from the Palaeolithic to Jomon in the formation of the Japanese people. To answer these questions would require international, and interdisciplinary collaboration, among archaeologists, geologists, and other scientists, from Korea, Japan, and elsewhere.

2. The Jomon-Yayoi Transition

The second important discovery Im reports on is the recovery of rice and millet remains from the peat deposits, dated to about 2000 BC, from Kahyonni in the Kimpo area in the west-central coastal region of the Peninsula. As Im points out, this early date suggests a possibility of a direct route across Yellow Sea to

the west coast of Korea for the diffusion of cultivated rice from its homeland in the middle and lower reaches of the Yangtze river. The date and the possible diffusion route have important implications for the origins of rice cultivation and the Yayoi Culture, which is the topic of Kanaseki's contribution, "Origins of agriculture in Japan".

In a joint paper with Sahara, Kanaseki defined the beginning of the Yayoi Period, not by the appearance of Yayoi pottery, but by "paddy field cultivation as the major means of support for society" (Kanaseki and Sahara 1978:15). How to define "paddy field cultivation"—by the presence of rice grains, agricultural tools, or actual remains of paddy fields was one of the issues dealt with by a 3-year project Kanaseki and his colleagues concluded in 1995 (Kanaseki *et al.* 1995). The paper presented to this Symposium is a very useful English summary of the result of that project. They challenged the traditional view which held that (1) the Yayoi Culture was established when immigrants from the continent arrived to settle in northern Kyushu, effecting profound genetic and cultural impacts on the local Jomon population; (2) an explosive population expansion which followed the adoption of the new subsistence practices resulted in the rapid spread of Yayoi Culture through western Honshu; (3) it spread more slowly as the Jomon people in eastern Japan adopted the new way of life; thus, (4) the Yayoi population of northern Kyushu and western Honshu, with some exceptions, was composed of the continental immigrants and their descendants, while the Yayoi people in eastern Honshu were in fact descendants of Jomon people. Observing that the cultigen *Oryza sativa japonica*, as well as the equipments necessary for its cultivation in irrigated fields, were present in northern Kyushu and western Honshu by the end of Final Jomon period, Kanaseki and his colleagues proposed that the active player in the Jomon-Yayoi transition, even in northern Kyushu, were the Jomon people themselves who selectively adopted cultural elements useful for the major socio-cultural transformation.

Many textbook and summary accounts of Yayoi Culture used to emphasize cultural and biological continuity from Jomon (e.g. Aikens and Higuchi 1982:187, Akazawa 1982, Chard 1974:172, Ikawa-Smith 1980:141-142), perhaps in reaction to the older replacement model in which the Jomon, as the ancestors of the Ainu, were replaced and pushed northward by the Yayoi people, the ancestors of the Japanese people. It was probably timely to re-emphasize the Jomon-Yayoi continuity, after the media hyperbole following the Yoshinogari excavations of the late 1980s, and the often evoked image of the arrival of well-organized invaders. Kanaseki's "new Paradigm" for the formation of Yayoi (Kanaseki *et al.* 1995: 257-267), however, differs from the previous views about the continuity in that it posits a relatively long "Incipient Yayoi" stage, during which local Jomon

people gradually adapted the practice of rice cultivation in flooded fields. It also presents an intriguing picture of an ethnic mosaic for the expansion stage of the Yayoi Period, when Yayoi and Jomon peoples lived side by side in some parts of the archipelago.

Kanaseki hypothesizes that the wet-rice cultivation complex was adopted during Final Jomon, and that the increasing number of Late Jomon sites, where charred grains, phytoliths, and impressions on pottery of rice were found, indicates an earlier practice of dryland, slash-and-burn cultivation of rice. It would be useful to know if the Late Jomon rice was indeed cultivated in drylands, and whether it is genetically different from the rice found in the Final Jomon and the Incipient Yayoi contexts. If they are, and if we know more about the genetic characteristics of rice in surrounding regions, it may turn out that different varieties of rice, along with other cultigens, were brought to the Archipelago more than once, from separate sources, as Sasaki, on the basis of ethnological evidence, proposed in his Multi-Layered Model for Japanese culture (Sasaki 1997).

In spite of the foregoing, Kanaseki believes it possible that there was an influx of continental migrants during the Yayoi Period, as suggested by Hanihara's "Dual Structure Model", except that, in his view, the migrants did not arrive until the second half of the Yayoi Period. In any event, Hanihara (1987, 1991) did not specify exactly when during the 1000-year period following the end of Jomon his continental immigrants arrived in Japan.

3. Peopling of the Japanese Archipelago and the Dual Structure Model

Archaeological evidence indicates that during the last 20,000 years of the Pleistocene, if not earlier, the Archipelago was inhabited by human groups with diversified tool-making technologies. Even though human fossil remains are extremely rare, and none is associated with artifacts in satisfactory stratigraphic contexts, we assume they were anatomically modern humans, because the tools recovered from over 3,000 Palaeolithic sites are those which are normally associated with anatomically modern humans of the Eurasian continent. More specifically, they exhibit affinity with Late Palaeolithic tools of northern Eurasia, such as Shiyu and Xiachuan of North China (Chen and Olsen 1990), Uni-I and Afontova of the Yenisei Valley (Vasil' ev 1993), and Diuktai of the Lena-Aldan Basin (Mochanov and Fedoseeva 1996). These, like the Upper Palaeolithic of western Europe, are characterized by functionally specific and stylistically diversified tools made on blade blanks, including backed blades and bladelets, bifacial foliates, various burins and scrapers, and, in the case of later complexes such as Xiachuan, Afontova and Diukai, by microblades.

Therefore, as far as artifactual evidence is concerned, late Pleistocene in-

habitants of the Archipelago must have been of northeast Asian origin, or they had very close cultural (and therefore genetic) interaction with them. There seem to have been at least two waves of migration/diffusion from northeast Asia: shortly before 30,000 years ago with the basic blade technology, and about 15,000 years ago with microblades added to the tool inventory. If anatomically modern humans of the Archipelago were of Southeast Asian origin, as Turner (1995) suggested, they are archaeologically invisible.¹ On the other hand, the Palaeolithic people of Japan, with their northeast Asian toolkits, are biologically invisible.

I have observed above that the currently available evidence suggests that pottery-making was adopted by the Palaeolithic inhabitants of the Archipelago. Stone tools associated with the earliest ceramics include microblades and bifacially flaked points, both of which are widely distributed in northeast Asia. The people at the earliest stage of the Jomon period are likely to be related to the populations in the northeastern, rather than southeastern, parts of Asia.

The Jomon period, which lasted about 10,000 years, is usually divided in five sub-periods: Initial, Early, Middle, Late, and Final. Soon after its beginning, regional variability in ceramic style appears in the Initial Jomon sub-period. Regional variability in ceramics, figurines, and settlement-subsistence systems becomes even more pronounced during Early and Middle Jomon. Reasons for the diversity would include (1) adaptive responses to different environments (2) ideological expressions of ethnic identity, and (3) external contacts. Even with the post-glacial rise in sea level, Jomon people could not have been isolated in the Archipelago for all of the 10,000 years. They had watercraft from the beginning. Among the evidence for external contacts are the jade earrings which first appear in Japan during Initial Jomon, and the Early Jomon Sobata-type pottery, with a close resemblance to some of the Chulmum wares of Korea, which is widely distributed in Kyushu and Okinawa. *Oryza sativa*, clearly of southern origin, was present in Late and Final Jomon times, and possibly as early as Middle or even Early Jomon in the Southwestern part of the Archipelago (Yoshizaki 1997:345). If some of the Jomonese are Sundadonty, the characteristics linking them to southeast Asian populations could have entered Japan in the course of

¹ Although "Minatogawa Man" of Okinawa Island has been compared with the Liujiang skull of South China (Suzuki 1982, Wu 1992), it lacks cultural association, and doubts are being raised about the Pleistocene age on stratigraphic grounds (personal communication from participants at a conference in Okinawa, "Origins of People and Culture in Southwestern Islands", April 26, 1997). In addition, Takamiya (1996) suggested that the population represented by "Minatogawa Man" may have become extinct.

such contacts, since the specimens used in Turner's studies (1976, 1979) appear to date mostly to Middle and Late Jomon of eastern Honshu.

I find it difficult to envisage a biologically homogeneous population lasting for 10,000 years, occupying diverse environments stretching from Hokkaido to the Ryukyus. What I like to emphasize whenever I have a chance is that we do not have Jomon Culture (with a capital C and in the singular), but numerous Jomon cultures (in lowercase plural) which filled the 10,000-year chronological unit called the Jomon Period. I wonder whether fine-grained morphological and molecular studies of Jomon skeletal remains in the future may not reveal biological diversity to match the cultural diversity. Recent genetic studies are very revealing (e.g. Omoto and Saito 1997).

We have already commented on the nature of the Jomon-Yayoi transition. A substantial number of migrants may not have come from the continent to be the initiators of Yayoi Culture, but the cultigens, agricultural tools and techniques, and burial practices involving dolmens and burial jars, must have been brought by human beings. Surely, such events would have been accompanied by gene flows. Frequent interaction with continental populations, probably through Korea, is clearly indicated in the archaeological records of later Yayoi and Kofun times, and seems to have continued into the early historic period.

We began this symposium with Hanihara's Dual Structure Model (1991) as the starting point. In this model, as with Turner's "Sundadonty" and "Sinodonty", southeast Asia and northeast Asia are placed in opposition. This dichotomy is fine, as long as it is understood that North and South are normative concepts. It is clearly unrealistic, however, to imagine that the human groups of Asia can be categorized into two neat types which developed in two separate mythical centers. This is reminiscent of old racial typology. I do not believe either Hanihara or Turner think in this way, but discussions derived from their models are often dangerously close to this typological conceptualization. I am also troubled to find that, just because we are talking about a dual structure, it seems to be assumed that there were only two migrations into the Japanese Archipelago. Just as it is most likely that early migrants to the New World came in many "dribbles" (Meltzer 1989), rather than in three neat waves (Greenberg *et al.* 1986), there probably were a large number of arrivals from various sources into the Japanese Archipelago. The Dual Structure Model as a model is quite acceptable, as long as we do not forget that the reality was far more untidy than the model suggests.

In closing, I would like to thank Professor Keiichi Omoto and the International Research Center for Japanese Studies for inviting me to take part in the Symposium. It was an exciting experience for me to meet and exchange views with scholars from various countries and disciplines. I learned a great deal, and

the papers I commented here alone demonstrate the need for more international and interdisciplinary collaboration.

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