INVESTIGATION INTO MIGRATIONS AND PARALLEL ADAPTATIONS ALONG THE PACIFIC RIM

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ABSTRACT

Within American archaeology, there has been a long-standing interest in identifying the patterns of migration into North America. Associated with this concern is the investigation and comparison of maritime adapted cultures along the Pacific Rim from Japan to California. Previous investigations have emphasized the tracing of bifacial lithic traditions backward through time to potential sources of origin within Siberia or the Russian Far East. Until recently, such investigations have been limited by restricted direct access to the archaeological sites within these areas. With recent improvements in the political climate between Russia and the United States, field investigations into these questions can now be pursued directly. Consequently, primary research can now be initiated, allowing the possibility of tracing these cultural traditions from their origins and expanding our avenues of inquiry to encompass the total complexity represented in the archaeological record.

Introduction

For the last five years a joint Russian and Japanese archaeological investigation has been conducted at the Ustinovka 3 and 6 sites. The principal investigators have been Dr. Nina A. Kononenko of the Institute of History, Archaeology and Ethnography in Vladivostok, Russia, and Professor Hiroshi Kajiwara of Tohoku Fukushi University in Sendai, Japan. During the 1995 field season American archaeologists participated in these excavations for the first time. These participants were Ms. Christiana Wiesend, who was a graduate student at the University of Wyoming, and myself. The maritime area of the Russian Far East includes the politically defined Primorye Region. This region includes the Port of Vladivostok and approximately 1,000 kilometers of coastline.

The region is situated due west of the Island of Hokkaido, which is the northernmost island of Japan. Primorye lies between 42 and 49 degrees north latitude and between 130 and 140 degrees east longitude. The sites of Ustinovka are located in the Primorye Region and occupy the same latitudinal position as the state of Oregon. The Ustinovka River sites are located approximately 350 kilometers northeast of the City of Vladivostok, and about 30 kilometers inland from the Sea of Japan.

The Paleolithic period in this area is characterized by terrestrial hunting of both large and small animals. The Neolithic period commences with the origin of semi-sedentary settlement patterns and a shift in subsistence to more intensively exploited resources such as agriculture and fishing along specific river valleys. The shift to the Neolithic period appears to have taken place within the Amur River Valley around 13,000 B.P. and then spread to the maritime areas and Japan by 12,500 B.P. (Kajiwara 1995:6). The formation of complex maritime adapted hunting, fishing and gathering societies appears to commence around 8,000 B.P.

Issues of Migration

Numerous attempts have been made to trace the paths of North American migrations through the diffusion of bifacial lithic technology (Moratto 1984:87-88). It comes as no surprise

that both areas share a bifacial lithic tradition which originated in Asia (Dikov 1965:10; Yi and Clark 1985:3; Flenniken 1987:117). Bifacial lithic technology appears to have developed in Asia out of an association with wedge-shaped microblade technology approximately 15,000 years ago and subsequently spread into both Japan and North America (Morlan 1967:207). Among the earliest sites identified in the Alaskan interior which exhibit a bifacial tradition is one located in the Nenana Valley and dated to approximately 12,000 B.P. (Powers and Hoffecker 1989). It is thought that this technology spread fairly rapidly into the midlatitudinal areas of the North American continent by around 11,500 B.P. to form the Clovis bifacial tradition (Haynes 1982). Further evidence of the Asiatic origins for Paleo-Indian cultures is the presence of percussion blade technology which accompanied the Clovis bifacial tradition (Green 1963; Hammatt 1970; Tunnell 1978).

A second commonality between the two areas is a pressure microblade technology. It is hypothesized that this tradition originated in Northeast China 24,000 years ago and diffused throughout the Far East by 14,000 B.P. (Gai Pei 1984:353; Chun and Ziang-Qian 1989:144). This same technology is found throughout Alaska and the Northwest Coast beginning around 10,500 B.P. and is identified as the American Paleo-Arctic Tradition (Anderson 1970; Fladmark 1979; Erlandson and Moss 1995:13). This has become a primary marker for a hypothesized second period of migration to the New World from the maritime regions of the Far East (Dixon 1993:118). These marine adapted people occupied the coastal and offshore island areas of southeast Alaska and British Columbia. They were probably the ancestral group of the Tlingit and Haida, who were to later develop the most complex maritime adapted cultures found in North America (Fladmark 1986:30-33).

A third marker for an hypothesized migration is a younger influx of microblade techniques that occupied the arctic regions of Siberia, Alaska and the northern expanse of Canada. This lithic technology is dated between 4,000 to 1,000 years ago and appears to be associated with the spread of Eskimo groups across the Bering Strait. This microblade tradition has been labeled as the Denbigh Tradition (Giddings 1951) and is associated with a broader complex referred to as the Arctic Small Tool Tradition (Dumond 1978).

The route that these early populations took into the North American continental interior and south along the coast is still a matter of speculation. While the coastal areas of British Columbia and southern California have been intensively studied, relatively little work has been done along the coast from southern Washington to the San Francisco Bay area (Moss and Erlandson 1995:8-10). The possibility of early occupations in Oregon have been raised by the reported 8,000 year old site at Tahkenitch Landing (Minor and Toepel 1986; Erlandson and Yesner 1992:269). The coast from San Francisco Bay to San Luis Obispo is distinguished by rugged shorelines with narrow or no coastal terraces. Thus, "populations on the central (California) coast were apparently forced to direct their subsistence focus inland to overcome the limited potential of the marine environment" (Jones and Waugh 1995:2). At the present time there is little known about Early Holocene occupations in these areas, but research is ongoing.

Paleo-Coastal occupations that occupied coastal areas in southern California have been generally associated with Paleo-Indian cultures moving from the interior during the Early Holocene. This cultural tradition is thought to have resulted from movement out of the interior California and Great Basin areas by groups of the Western Pluvial Lakes Tradition of the terminal Clovis Culture and have been identified as the San Dieguito Cultural Complex. This association has been based upon similarities in the local bifacial lithic typologies and appear to have occupied the southern California coast as far south as northern Baja California (Linick 1977:30: Erlandson and Yesner 1992:269) and north to the Ventura area between 7,000 to 9,000 years ago (Moratto 1984:92-94).

More recent investigations have begun to identify possibly earlier maritime-adapted cultural occupations along the Santa Barbara Coast and on the adjacent Channel Islands. As a result of deglaciation at the end of the Pleistocene, sea levels have risen as much as 100 meters in some areas and have apparently inundated most of the coastal sites that might have existed prior to 9,000 B.P. Some coastal sites to the north of Santa Barbara, on Vandenberg Air Force Base, date between 8,000 and 9,000 years ago. These sites are located on elevated marine terraces and are characterized by substantial shell middens which lack a significant amount of chipped stone materials. "It would appear that the biface manufacturing evident in the chipped stone assemblages at many sites in the Vandenberg region was not taking place prior to 6700 RYBP..." (Glassow 1991:121).

While sites located along the southern California mainland do not appear to significantly pre-date 9,000 B.P., work on the offshore Channel Islands is beginning to shed new light on the possibility of earlier occupations. These islands reflect a long and rich maritime occupation which necessitated the possession of seaworthy watercraft. On Santa Rosa Island the Arlington Springs burial dates to 10,000 $\pm$ 200 (L-650) RYBP (Orr 1968). On San Miguel Island the Daisy Cave site has yielded cultural materials including the remains of a domesticated dog and basketry. Recent dates obtained from sea grass cordage fall between about 8,600 and 9,900 cal B.P. (6650-7950 cal B.C.) (Connolly et al. 1995:309). The above sites indicate that there was a significant offshore island, and probably coastal, maritime adapted Paleo-Coastal occupation that was prior to 9,000 B.P. and possibly independent of the San Dieguito Complex.

American archaeologists have long been fascinated with the question of human origins in the New World. We have generally attempted to follow the archaeological trail of evidence backward in time through the identification of associated lithic tools. Association of New World bifacial lithic traditions with those found in Russia have been tenuous at best and inherently descriptive in nature (Clark 1988:4). While it has led to a number of interesting results, it has also served to limit the nature of inquiry into the processual complexity of these migrations. The implementation of additional methods of inquiry, especially the examination of indirect evidence through climatic and ecological data, has been employed to expand our knowledge of these migrations.

The peopling of the New World was not inherently a regional event, but we often approach it as one. There is an awareness among the archaeological communities within the Far East that the evolution of prehistoric cultures along the Pacific Rim is a geographically widespread phenomenon and that it cannot be adequately addressed through a politically defined regional perspective. The sequence of prehistoric cultural events that took place within Northeastern China, Siberia and the Russian Far East during the Late Pleistocene and throughout the Holocene periods also had direct and profound effects upon the evolution of hunting, fishing and gathering cultures in both Japan and the West Coast of North America (Morlan 1967). These events resulted in the simultaneous migration of people and the diffusion of subsistence technologies into Japan, as well as across the Bering Strait.

These processes are directly related to an influx of people into Japan from the Amur River Valley and consequently the inception of the Jomon Culture. "The Jomon were the first Japanese people to use pottery and the bow and arrow. They also dramatically expanded the use of river and ocean resources and the processing of certain foods such as nuts... Inception Jomon (called Mikoshiba Culture) pottery and some kinds of stone artifacts are comparable with the Siberian Neolithic" (Kurishima 1995:1).

Environment and Resources

Both the Far East and the Northwest Coast occupy the northern latitudes of the Pacific Rim. As in coastal North America, the Primorye

Region exhibits a narrow continental shelf, with protected coastlines, bays and estuaries providing productive habitats for shellfish and marine mammals. The coast of the Primorye Region is lined with mountain ranges which abruptly rise to over 5,000 feet in elevation and are transected by numerous rivers providing seasonal spawning grounds for salmon. During the Late Pleistocene these areas would have been covered with scattered coniferous forests and park tundra landscapes (Keally 1990:143; Moss and Erlandson 1995:6). The plant communities would have provided rather limited resources of roots and berries. The abundance and diversity of land animals would also have been limited, but it is thought that mammoth survived in the region until approximately 8,000 B.P. (Kononenko 1993:165).

The shift in terrestrial resources within both of these regions during the Pleistocene/Holocene transition would have served to focus subsistence activities toward the river valleys. Within both areas the predictability and abundance of seasonal anadromous fish appears to become a focal point for riverine subsistence activities. Moreover, the coastal environments with their fish, marine mammal and shellfish resources become an important focal resource throughout the Holocene period.

Site Types in the Russian Far East

In order to understand the processual sequence of events which led to the rapid expansion and evolution of populations during the Pleistocene/Holocene transition, it is essential that we employ a comparative approach. Rather than tracing lithic typologies backward through time, it should prove more fruitful to return to the beginning and identify the events that laid the foundation for simultaneous migrations and evolution of Neolithic riverine and maritime cultures. The roots of this line of inquiry lie in Northeastern China, the Russian Far East and Japan.

A number of coastal and peri-coastal river sites have been located within the Russian Far East. These sites represent an evolution of cultural adaptations over the past 20,000 years. Among the earliest peri-coastal river sites that have been firmly dated in association with cultural materials is the site of Suvorovo 4 (Tabarev 1994:28). This site has yielded two Carbon-14 dates in excess of 15,000 B.P. (Kuzmin 1994b:373). This date appears to closely correspond with the inception of peri-coastal river adaptations and is geographically located within a few kilometers from the Ustinovka River series of sites. These sites are located on elevated river terraces within the Zerkal'naya River Valley. The Ustinovka and Zerkal'naya Rivers are productive spawning grounds for seasonal salmon runs. Stratified deposits of silicified tuff are found along the eroded river terraces of the Ustinovka River and this stone was extensively utilized for lithic tool production. In fact, the scarcity of good lithic material within the region appears to be a defining factor as to the selection of specific river valleys for cultural occupation.

Excavation of Ustinovka 6 began in 1992 and was continued during the 1995 field season. The site is situated on top of a terrace approximately 1,000 meters from the north bank of the river. The site contains wedge-shaped microblade cores and limited numbers of bifacial blanks and preforms. Based upon local point typologies, the paucity of dart and arrow point forms within the site is thought to imply a Late Pleistocene mode of subsistence as terrestrial hunters. The site has yielded a single radiocarbon date of 11,550 $\pm$ 240 B.P. (Kajiwara 1996).

The site of Ustinovka 3 is situated one kilometer west of Ustinovka 6. A large quantity of bifaces in varying stages of reduction have been found in this site. A point type found at this site appears to be typologically similar to one found in the later Neolithic sites in the region. There is also a marked decrease in the presence of microblades within the site. Dating of this site is tentatively thought to approximate 9,000 to 8,000 B.P. based upon tool type.

During the Pleistocene/Holocene transition,

marine resources of sea mammals, ocean fish, shellfish, and birds became an increasing focus of the river and coastally adapted Rudnin'skaya Cultural Complex. This Neolithic transition is characterized by the collections from a number of coastal archaeological sites within Primorye, such as Chertoi Verota dated 6,800 B.P., Boisman dated 6,300 B.P., and Valentin-Peresheek dated 4,900 B.P. (Kuzmin et al 1994a:361-364). Having viewed the collections from the Chertoi Verota and Valentin-Peresheek sites at the Institute of History, Archaeology and Ethnography in Vladivostok, it is evident that there is exhibited an increasing level of cultural complexity. This is also reflected in the diverse lithic assemblage within the Boisman site collection housed at the Far Eastern State University (Popov and Kononenko 1995). These changes are reflected in increased sedentism, elaboration of artistic expression, expansion of the types and complexity of lithic tools being manufactured, the development of craft specialization, elaboration of burial practices, and indications of warfare.

Native Cultures of the Historic Period

Ethnographic accounts of aboriginal cultures of the Russian Far East demonstrate that increased specialization of complex riverine and maritime hunters and gatherers continued into the historic period (Boas 1903). Russian ethnographers have separated these native populations into three distinct groups based upon their cultural and artistic traditions (Vasilev 1995). The first group is referred to as the Northeastern or Paleoasiatic, and they occupy the Polar zones of the Russian Far East, Alaska, and Canada (Eskimo). The second group is the Northern Tungusskii, who specialize in Caribou hunting and span both the Siberian and Russian Far East regions. The third group is the coastally adapted Southern Tungus-Manchurian, whose traditional territories are within the areas of the Amur River Valley and Sakhalin Islands (Vasilev n.d.).

It is this third Asiatic group, who appear to have entered the Far East from China during the Transitional period, that bears the closest resemblances with the maritime cultures of the Northwest Coast. In addition to the microblade lithic tradition mentioned above, a number of shared traits have been identified through ethnographic research.

> Today we recognize a host of cultural ties among cultures across the Bering Strait, Raven Mythology being but one of them. Others include plate and rod armor, the sinew-backed bow, wrist-guards, and sinew-twisters; snow goggles; semi-subterranean log houses with roof entries; the use of ground slate, oil lamps, ulus, and skin boats; dog or reindeer traction; whaling by both float and poison techniques; mummification ritual; harpoon and fishing technology; spring traps; beliefs about similarly named evil spirits (*kele, kala, kalag*) and similar deities of the sky and sea world; harvest Festivals (whale, *bladder, keretkun*); specific features of the shamanism complex; and many more (Fitzhugh 1994:33)

Interestingly, a number of important technological traits failed to diffuse across the Bering Strait until either the late prehistoric or historic periods. Among these technologies were ceramics, metallurgy, and sails for boats. Future research may benefit by focusing upon these items as hypothesized markers of differences in cultural adaptations between the two populations, and/or as markers of time separation signifying discrete migrations.

Issues of Parallel Adaptation

The preceding brief summary of prehistoric and historic occupation of the Russian Far East is intended to convey the depth and complexity of human evolution within the geographic area of the Pacific Rim. It is evident that the evolution of maritime cultural complexity followed comparable courses in both the Far East and the North American west coast. Early American archaeologists emphasized tracing paths of migration through the diffusion of bifacial point technology. Attention to ecological factors and

processes of parallel adaptation have gained prominence since the introduction of the New Archaeology in the late 1960s (Binford 1962).

At the Pleistocene/Holocene transition both areas experienced a proliferation of marine adapted communities. These sites commonly occupy elevated terraces where fresh water, marine resources and terrestrial resources could be easily accessed (Glassow et al. 1988:68). At some of these sites the exploitation of shellfish became pronounced (Erlandson 1991). Closely following the transition we begin to see signs of the development of semi-sedentary subsistence strategies emphasizing seasonally available resources. The development of sophisticated maritime skills and technology also makes its appearance.

While the migration of people and technologies obviously did take place along the Northwest Coast during the transition period, it should not be assumed that the wholesale transplantation of complex societies took place. Even the diffusion of ideas does not necessarily explain the sharing of similar general traits. The sharing of similar adaptive strategies within similar environmental constraints can and should result in the independent invention of similar solutions.

An excellent example of such parallel adaptation would be the Chumash culture of the Santa Barbara coast in California. This highly complex maritime-adapted culture evolved in relative isolation, both temporally and geographically, from similar cultures of the Northwest coast and the Far East (King 1990). Yet many similarities in general marine adaptation exist such as the development of seaworthy watercraft, marine fishing, the hunting of sea mammals, permanent villages, and stratified societies. A further example of such independent invention may be the development of microblade type industries which existed among the Northwest Coast Haida on Queen Charlotte Islands as far back as 8,000 years ago (Fladmark 1986:33), and the Chumash on Santa Cruz Island within the last millennium (Arnold 1985).

The indigenous development of complexity among Native American maritime cultures may be traced through the archaeological record (Moss and Erlandson 1995). Additionally, the independent evolution of complex maritime cultures in California, such as in San Francisco Bay (Bickel 1981; Moratto 1984:219) and along the Santa Barbara Coast, strongly argue for a comparative approach which incorporates ecological and processual explanations. Given that complex maritime cultures in California such as the Chumash were separated from the northern latitude cultures by significant time and distances, it is more probable that they converged upon maritime solutions independently. Chumash culture may therefore play an important role in evaluating the processes of parallel cultural evolution among complex maritime adapted hunting and gathering societies.

Price and Brown (1985:9) have established a model for the development of complex hunting and gathering societies which specifies conditions, consequences and causes that can be applied to the analysis and comparison of Pacific Rim maritime cultures. This model specifies that as population size increases within a circumscribed environment, stress will be placed on the subsistence procurement strategies. If the resources are sufficiently predictable and abundant this can lead to increased population density and the development of complex cultural systems to resolve the stress.

The identification of societal changes within archaeological sites can prove elusive. To assist in this endeavor Yesner (1994:2-3) identified twelve factors that can be elicited from the archaeological record. They include permanence of settlement, increased population size and density, clustering of households, storage facilities, burial structures, household size and contents, status differences within burials, ornamentation, exotic trade items, warfare, ritual structures and artwork.

In addition to hypothesizing possible migration routes and cultural affiliations, the

analysis of parallel adaptations through evolutionary processes has yielded a considerable amount of new information. It is obvious that some technological traits, such as bifacial and microblade production did originate in the Far East. It is also evident that many of the cultural traits exhibited by complex maritime societies were not transportable and can better be explained as independent adaptations within similar societies and environmental constraints.

Conclusions

Through this survey of prehistoric and historic adaptations spanning the Pacific Rim it is evident that we are not dealing with a single continuum of events. Multiple sequences of migration are discernable, yet these events may not be as discrete as changes in the archaeological record may imply. The processes which led to the evolution of riverine, coastal and complex maritime-adapted societies are only beginning to be understood. We are just beginning to separate the processes of diffusion from those of parallel adaptation and independent invention.

In order to further develop a comprehensive understanding of the processes at work, we must move beyond a regional approach and begin to embrace a broader Pacific Rim perspective. Until recently, the Cold War era effectively cut off the possibility of an integrative Pacific Rim approach. Expertise in Russian languages, and therefore the relevant literature, has been a significant limitation in furthering a comprehensive understanding of the cultural dynamics of this region among archaeologists in the U.S. Prehistorically the Bering Strait was a conduit between the cultures of the Far East and North America. During the last century it has come to be perceived by the political community, and to a considerable degree also the academic community, as a barrier to cultural transmission. We now have the opportunity to reevaluate our perspective on the Pacific Rim and rebuild international expertise and affiliations with the eastern half of the Pacific Rim culture area. The need for this is recognized by researchers in the Far East and the door of opportunity to participate in this endeavor is open.

Unlike many of the cultural resources along the west coast of the United States, the archaeological sites within the Russian Far East have only been mildly impacted by industrial development. The opportunity to obtain uncompromised data is available now, but will not remain so indefinitely. During the Soviet era the government made an effort to "modernize" the ethnic populations, but as in the United States they have struggled to maintain their own distinctive cultural identities. In fact, in the February 26, 1996 Los Angeles *Times* business section was an article about the Udege people of the Tungus-Manchurian group, who are now fighting to save their lifeways and land from foreign logging interests who are obtaining contracts to harvest timber within their traditional territories. If the anthropological community delays in becoming actively involved in the research potential of this area, as we have found within our own coastal areas, industrialization will quickly compromise the quantity and quality of information that we will ultimately have available for research purposes.

Notes

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