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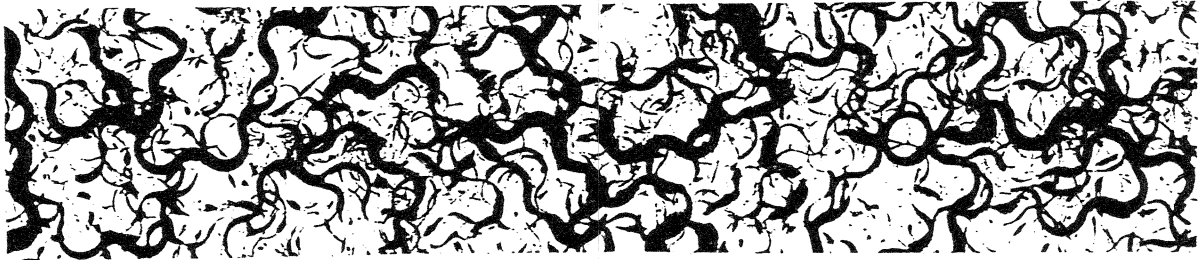
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Beringia: Controversies Arise By Douglas Orr

Ever since Christopher Columbus made his fateful journey across the Pacific Ocean, Europeans have wondered about the origin of the people of the New World. Presently, many archaeological, linguistic, and biological studies are underway to discover when people migrated across Beringia (Bering Land Bridge). Anthropologists researching the Beringia migration use the paradigm Cultural Materialism because it seeks to explain why and how people adjust to ecological and demographic constraints (Lett 1987:91). Anthropologists also consider Cultural Materialism useful because it has a self correcting system that restricts fields of inquiry to things that are discernible by scientific operations (Lett 1987:89). This allows anthropologists to propose hypothesis that are testable and falsifiable. This paradigm's stipulations provide a very broad study and explanation area. Archaeologists have recently began to classify their theories into high, middle, and low level categories (Trigger 1989:19). High level theories, such as Cultural Materialism, are called either research strategies or controlling models. According to Bruce G. Trigger, high level theories are defined as "abstract rules that explain the relationships among the theoretical propositions that are relevant for understanding major categories of phenomena" (1989:22). Trigger also states that "middle level theories are derived as generalizations that attempt to accord for the regularities that occur between two or more sets of variables in multiple instances. . . sufficiently specific that they can be tested by applying them to particular sets of data" (1989:21). Two examples

of middle level theories are New Archaeology and Post-Processual Archaeology. Low level theories are considered empirical research with generalizations (Trigger 1989:21). All of the theories about the New World Indian migration(s) to the New World are low level theories.

Until the middle of the 19th century, the Indians were thought to have been in the New World for only about 2,000 years, until the Beringia Theory developed in the 1930's. This theory stated that Mongols from Asia had migrated across Beringia following herds of large game animals into North America. The Beringia Theory assumed the people that came across Beringia had the technology to survive. It also assumed that Beringia had large game animals for the people to hunt and consume. One of the difficulties of exploring archaeological sites in the Bering Strait is that much of Beringia is now underwater, although many underwater archaeological research is underway. Therefore, finding artifacts and human remains is nearly impossible. If archaeologists find an object believed to have antiquity, RC (Radio Carbon 14) Dating is impossible because water saturation causes the results to be distorted. Geologists have varied opinions concerning what time Beringia was above water, but the consensus seems to be that Beringia was above water between 10,000-32,000 B.P. (years before present), 35,000-44,000 B.P., 48,000-58,000 B.P., and 62,000-75,000 B.P. (Fagan 1979:113).

In the 1930's a distinctive point was found at a kill site near Clovis, New Mexico. This type of point, named Clovis for the city it was found by, was as nothing found before in the New World. According to Stuart J. Fiedel, "Clovis points are lanceolate in shape, 7 to 15 cm (3 to 6 in) long, bifacially

thinned by skillful percussion flaking; most distinctively, they are fluted at the base, usually on both faces"(1992:57). One of the Clovis points was found still lodged in between two mammoth ribs, allowing dating of the tool by RC Dating the bone. The RC Date from these ribs was circa 11,500 B.P. The time for the Beringia migration had to be pushed back from 2,000 B.P. to between 13,000-14,000 B.P., which prompted the Clovis Scenario. The Clovis Scenerio asserts that the Beringia migration occured during the last ice age. Since the 1930's, Clovis points have been found as far north as Southern Canada, as far south as Central America, and from the East to West Coast. Since Clovis points haven't been found in Siberia, it is assumed that the Clovis points were created either as or after the people crossed Beringia.

Since the 1930's many Pre-Clovis sites have been excavated in Alaska and Siberia. Nikolai N. Dikov, an archaeologist doing fieldwork in Siberia, has identified the Dyuktai Culture. The Dyuktai Culture was prevalent from 11,000-18,000 B.P. in Siberia (Dikov 1988:13). This culture has many similarities to sites found in Alaska dating between 13,600-14,300 B.P. (Dikov 1988:13). The microcores (small stones from which tools are made) found at Dyuktai Culture sites are almost an exact replica of the ones found in the New World (Yi and Clark 1985:1). This supports the initial entry date across Beringia that the Clovis Scenario predicates.

According to Johanna B. Nicholes, of the University of California at Berkeley, 12,000 years isn't long enough for the diversity of the languages of the New World to develop from a few languages (Horgon 1992:17). Nicholes believes that it would take over 30,000 years for all these languages to

develop. Many scholars have asserted that the migration across Beringia took place much earlier than the Clovis Scenario would allege. A new interpretation of the migration of people across Beringia is called the Neo-Clovis Scenario. Within the Neo-Clovis Scenario there is a one-wave-theory and a three-wave-theory. This scenario is supported by genetic, linguistic, dental, and archaeological evidence.

Joseph Greenburg, of Stanford University, is a linguist who supports the one-wave-theory of the Neo-Clovis Scenario. Greenburg examined between 300-400 basic words from each of the 1,500 New World Indian Languages (Lawren 1984:39). He condensed all of these into three linguistic families. He concluded that the largest of these families is the Amerind family, which contains about 1,000 languages, the second largest, the Na-Dene, is comprised of the languages of the Indians of the Northwest Coast (Coastal Oregon, Washington, and British Columbia), and the Eskimo-Aleut is the smallest of the three (Lawren 1984:39). Greenburg maintains that after one migration across Beringia, by at least 20,000 B.P., the three language families separated from one another. Greenburg is criticized by many linguists because in the past only five linguists have been able to condense all 1,500 languages into as little as six language families (Fladmark 1986:15).

Christy Turner, of Arizona State University, compared the dental characteristics of New World Indians against people in Asia and Siberia. Turner found that only Indians, Asians and Siberians have shovel teeth, peg teeth, five cusps, and three roots (Lawren 1984:39). Since only these people have these dental characteristics this data suggests they must have had

common ancestors (Lawren 1984:39). Turner believes these ancestors are the people now residing in the general area of Tibet. The migration to Tibet must have taken place sometime after the one across Beringia. The Beringia crossing could only have taken place after 40,000 B.P. when these dental characteristics first appeared in Asia (Fiedel 1992:56).

Stephen Zegura, of Arizona State University, has compared blood types, enzymes, and proteins between New World Indians and the people of Siberia (Lawren 1984:39). Zegura concluded that the differences between New World Indians and the Siberians must have taken over 15,000 years to develop (Marshall 1990:740). Zegura found the same three families, Amerind, Na-Dene, and Eskimo-Aleut, as Greenburg found in his studies. Zegura believes that New World Indians migrated across Beringia before they diverged into separate groups.

Douglas C. Wallace, of Emory University, and Lurgi L. Cavalli-Stora, of Stanford University, have studied MDNA (mitochondrial deoxyribonucleic acid) and CDNA (cellular deoxyribonucleic acid), respectively, of New World Indians (Horgon 1992:17). They have both concluded from their work that the Four Eves Hypothesis explains who the New World Indians ancestors were and when they migrated across Beringia (Harris and Lyon 1991:64). The Four Eves Hypothesis states that the New World Indians can be traced to four women who migrated across Beringia at about 30,000 B.P. Wallace's comparative study of the MDNA of New World Indians has found four rare distinct markers within MDNA (Horgon 1992:17). Since MDNA mutates at a much slower rate in populations than CDNA, by tracing these four markers'

mutation rate an approximate date of divergence can be attained (Horgon 1992:17). Wallace also found the three families of Amerind, Na-Dene, and Eskimo-Aleut through his research. Cavalli-Stora compared CDNA of Siberians against North American Indians and came up with the same results as Wallace. Both Wallace and Cavalli-Stora support the one-wave-theory.

The main proponent of the Neo-Clovis Scenario's three-wave-theory Robert C. Williams. Williams studied immunoglobulin GM allotypes (proteins in cells) from 5392 Native American Indians from 10 different samples over a period of 20 years (Williams et al. 1985:2). He came up with the same three groups as the others, but since these proteins have timetable qualities he has given approximate dates to the three migrations across Beringia. He maintains that Amerind was the first group to migrate across Beringia between 16,000-40,000 B.P., the Na-Dene between 12,000-14,000 B.P., and the Eskimo-Aleut at around 9,000 B.P. (Williams et al. 1985:3). Moses S. Schanfield studied both immunoglobulin GM and KM allotypes. Schanfield concluded that there wasn't three, but four separate migrations across Beringia (1992:381). Although both Williams and Schanfield have come to the conclusion that there wasn't just one migration across Beringia, they don't agree to either three or four migrations.

The archaeological sites supporting the Neo-Clovis Scenario are very controversial. Not only do they go against the widely accepted Clovis Scenario that has been around for over half a century, but attribute more technology to earlier people than previously thought. When a lithic (stone) tool is found, the only way to find its antiquity is by RC Dating the

surrounding organic material. This can be problematic because there can be geological and rodent disturbances. Ground water and coal particles also can contaminate RC Dating. Before a RC Date can be accepted, all of these potential problems must be ruled out. Although all these sites may be discounted by many archaeologists, the sheer number of these finds poses a problem to the Clovis Scenario.

An archaeological find has been at the site named Taima Taima on the coast of Venezuela. Alan Dryan and Ruth Gruhn, of the University of Alberta, are the archaeologists excavating Taima Taima (Marshall 1990:740). They have found various bone tools that have been RC Dated to circa 25,000 B.P. (Horgan 1992:17). The remains of a mastodon with lithic cut marks on the bone has been RC Dated fifteen times to circa 13,000 B.P. (Marshall 1990:740). Many archaeologists question the validity of these RC Dates in account of possible ground water contamination because they believe the site was underwater for a long period of time.

Jacques Cinq-Mars, of the Archaeological Survey of Canada, contends that he has found three very old sites in the Yukon Territory. The three cave sites, named Bluefish Caves, have yielded many shaped caribou bones that have been RC Dated to circa 24,800 B.P. (Begley and Miller 1991:14). Also, a mammoth bone that appears to have some flakes removed from it by humans to make bone tools was RC Dated to between 15,500-20,000 B.P. (Marshall 1990:740). Many crudely shaped flakes from this site have been RC Dated by surrounding organic material to between 9,000-14,000 B.P. (Horgan 1992:26). Archaeologists argue that the caribou bones may have been geologically

shaped in the appearance of tools and the mammoth bone may have just been gnawed by predators.

Forty miles northwest of Bluefish Caves is a site named Old Crow. There, flaked lithic tools have been RC Dated by surrounding organic material to between 23,000-28,000 B.P. (Begley and Miller 1991:14). Many mammoth bones with spiral fractures have been RC Dated to between 25,000-40,000 B.P. (Begley and Miller 1991:14). Archaeologists have cast doubt upon the dates of the lithic tools because they are on the wrong strata (geologic levels) for the dates arrived on. They contend there has been a geological disturbance at the site. As for the mammoth bones, it is under great debate in archaeology as to whether spiral fractures are only made by humans or if they can be caused another way.

In the Valley of Mexico a site has been found named Tlapacoya. A hearth has been found and the charcoal has been RC Dated to circa 24,000 B.P. (Fiedel 1992:56). A lithic blade was escavated from underneath a log and the log was RC Dated to between 20,000-22,000 B.P. (Fiedel 1992:56). It is very questionable as to whether the hearth was manmade or just the result of a brush fire. As for the lithic blade, many archaeologists contend that the blade may have been placed underneath the log at a later date by rodent activity.

One of the most damaging sites to the Clovis Scenario has been found by Richard MacNeish, of the Andover Foundation of Archaeological Research (Dawson 1992:1A). Orogrand Cave, in New Mexico, has yielded two obscure archaeological findings, a hair and a hand print. The human hair, analyzed to

be from a New World Indian, was RC Dated to circa 19,000 B.P. (Katz 1986:72). Thermoluminescence was used to date the clay oven on which the hand print was found to circa 28,000 B.P. (Dawson 1992:1A). Thermoluminescence is a new technique of dating in which crystalline materials are heated to their critical temperature thereby releasing trapped electrons in the form of light energy that is measured to find the date in which the object last reached its critical temperature. One critique of this site is the validity of the thermoluminescence dating technique because it is new and may be unreliable.

Another site which is damaging to the Clovis Scenario is the Meadowcroft site. Meadowcroft is a sandstone rockshelter in Southwestern Pennsylvania and was excavated by J.M. Advasio, of the University of Pittsburgh (Fiedel 1992:51). Fifty-two RC Dates have been taken from Meadowcroft and vary between 12,800-19,600 B.P. (Marshall 1990:740). One occupation level that had hearths, lithic tools, and deer bones with lithic cut marks, has been RC Dated to circa 15,000 B.P. (Begley and Miller 1991:14). Geologists have attested to the artifacts being on the right strata, but archaeologists believe there has been coal particle contamination. Others have contended that this site would have been too close to glaciers during the last ice age for the type of technology found.

Many other theories about the New World Indians migration and origin are still coming from anthropology. Although it is generally accepted that Beringia was the migration route taken by New World Indians, some contend that other routes were taken. Some don't coincide with the genetic

evidence that the New World Indians are of Siberian or Asian heritage. Since new information and new scholars are constantly being added to anthropology, new theories are sure to erupt from the scholarly world. There are six theories that have some following and have a possibility of greatly influencing anthropology.

William S. Laughlin, of the University of Connecticut, has proposed the Coastal Theory (Allman and Schrof 1990:54). One of the main reasons Laughlin proposed this theory is because new evidence taken from pollen core samples of Beringia suggests that during the last ice age, Beringia wasn't a steppe tundra (small tufts of grass) as was believed, but instead it was a polar tundra (no grass and hardly any small plants) (Fladmark 1986:9). Since it would have been impossible for herds of animals to live on polar tundra, humans wouldn't have been able to survive either. Laughlin's Coastal Theory states that fishermen from Siberia followed the coast of Beringia to the New World and upon arrival in the New World they traveled up rivers to populate the interior (Allman and Schrof 1990:54). The evidence for this theory is the abundance of harpoons found in Beringia and the apparent lack of pollen. The harpoons found in Beringia have been RC Dated to circa 13,000 B.P. (Fiedel 1992:49). The absence of archaeological data on fishing village sites is because they are now underwater.

Robert Bonnicksen, of Oregon State University, has proposed the European Theory. Bonnicksen believes that people did migrate across Beringia, but he also believes that some Europeans also came to the New World (Rensberger 1992:A2). He has noticed that Clovis Points don't

resemble anything found in Siberia, yet are very close to the lithic technology of Europe (Dietrich 1992:F1). Furthermore Clovis Points appear in the New World fully developed without a precursor technology. During the last ice age it is believed that the coast between Newfoundland and Europe was about 400 miles closer together than today and was connected by an ice bridge (Rensberger 1992:A2). Bonnichsen thinks that some Europeans may have traveled across this ice bridge. Some ancient skulls found in North America seem to resemble an European physique rather than a Siberian one.

Otto J. von Sadvoszky, of California State University Fullerton, is a linguist who has found a link between North American Indian Languages and ones in Siberia. For over 20 years von Sadvoszky has been working on his Cal-Ugrain Theory (von Sadvoszky 1984:13). He found a connection between the Ob-Ugrians (people in Northwest Siberia along the Ob River) and the Penutians (Indians that live in the Great Basin and Central Coast of California) (von Sadvoszky 1984:13). Not only is the language similar, but also the culture. He has not narrowed down an exact date to the Indian's entry into California, but he believes the break between the two languages in Siberia happened at circa 3,000 B.P. (von Sadvoszky 1984:14). It seems that the California Indians arrived later than the rest of the New World Indians.

Thomas Johnson, of the Elphinstone Pioneer Museum in Canada, has proposed the Peking-America Theory. Johnson believes that Peking Man (Neanderthal in Asia) migrated to the New World at approximately 126,000 B.P. (Anonymous 1988). During the ice age at that time, the water in the oceans was twice as low as the water has been since and it may have been

possible for a migration across the continental shelf (Anonymous 1988). The evidence that Johnson says supports his theory is the right-handed tools found in glacial deposits in the Georgia Strait near Vancouver, Canada (Anonymous 1988). A major criticism of this theory is that there is no evidence of this early occupation that has been validated and genetic and linguistic evidence disproves it. It is under heated debate whether the artifacts found in the glacial deposits are as old as some believe because RC Dating is impossible.

Two other current theories on migration to the New World are usually looked upon with ridicule by archaeologists. One of these, the Maritime Hypothesis, states that the Polynesian fishermen made it to Hawaii and continued on to the New World (Begley and Miller 1991:14). The three problems with this hypothesis are the lack of genetic evidence for the New World Indians being of Polynesian heritage, archaeological evidence that Hawaii was populated only 1,000 B.P., and the New World Coastal Indians fear of leaving the sight of land (Horgon 1992:19). The other theory, the Antarctica Hypothesis, states that Australian Aborigines migrated across an ice bridge created between Australia and South America during the last ice age (Horgon 1992:19). The main problem with this hypothesis is that genetic evidence is in dire opposition.

In the past ten years two sites have posed a problem to all of the above theories. Although they are highly criticized by many archaeologists, they bear a lot in common. Both sites, Pedra Furada and Monte Verde, are in South America and have yielded RC Dates to 33,000 B.P. Both archaeologists

working the sites have invited their peers to examine their finds, but few have obliged.

Pedra Furada is a cave site on the coast of Brazil. Nied Guidon, of the Institute of Advanced Social Studies in Paris, has been excavating this site. He believes there was a continuous human occupation from 6,000-32,000 B.P. (Marshall 1990:740). Within the cave there are many paintings on the walls and ceiling of humans and animals made with red ochre (a paint made from plants). This red ochre has been RC Dated to circa 13,000 B.P. (Begley and Miller 1991:14). Guidon has found crude lithic artifacts and hearths, dated by RC Dating surrounding organic material and coal, respectively, to circa 32,000 B.P. (Marshall 1990:740). Twenty other lithic artifacts have various RC Dates before 14,000 B.P. (Begley and Miller 1991:14). Since this is a cave site, the main concern with many archaeologists is whether the crude lithic artifacts were human made or were just rocks that fell from the ceiling and broke.

In South Central Chile, a peat bog site was found named Monte Verde. Tom Dillehay, of the University of Kentucky, believes he has found the oldest site in the New World (Marshall 1990:740). Because peat bogs don't allow organic material to deteriorate, wooden artifacts may be found. This is the case at Monte Verde. Wooden spear tips, digging sticks, mortars, and hardwood foundations for huts were found and RC Dated eight times to ca. 13,500 B.P. (Marshall 1990:740). Three stone hearths and twenty-six crudely chipped pebbles were dated by RC Dating surrounding organic material to ca. 33,000 B.P. (Begley and Miller 1991:14). Because of the peat bog's

characteristics the validity of the RC Dates can not be legitimately questioned, but many archaeologists maintain that the pebbles weren't chipped by humans and the hearths were natural fires.

According to Stuart Fiedel, people couldn't cross Beringia any "earlier than 35,000-40,000 B.P. [because that's] when modern man seems to have replaced the Neanderthals throughout Eurasia"(1992:45). There is absolutely no evidence to date that Neanderthals were ever in the New World. Although it is believed Beringia was above water between 35,000-44,000 B.P., 48,000-58,000 B.P., and 62,000-75,000 B.P., Neanderthals didn't have the technology needed to cross the cold barren land of Beringia at that time. The controversy over the New World Indians has been raging for over five hundred years. Now, this controversy falls upon the scholars of contemporary anthropology to discern. It is important for contemporary anthropologists to understand how the New World Indians arrived, and when, because a chronology must be made for the culture and technology of the New World. Now, there is enough information to make some general assumptions about this chronology. The New World Indians have common ancestors to the people that now live in Siberia and Asia. They either used Beringia as something to walk across or followed its coast. Europeans may have had some influence on technology in the New World around 12,000 B.P. The Central Californian Indians may have come to the New World at about 3,000 B.P. The New World migration could have occurred any time between 35,000-13,000 B.P. As more evidence is found, more general assumptions will be able to be made. For now at least there are tantalizing

ideas floating around that we must keep in mind as possibilities, but many archaeologists predict that the migration across Beringia occurred much earlier than 12,000 B.P.

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