PRE-COLUMBIAN TRANSOCEANIC CONTACTS: THE PRESENT STATE OF THE EVIDENCE

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During the ten years since NEARA's 1992 Across Before Columbus (ABC) conference, the evidence concerning pre-Columbian transoceanic contacts has advanced mightily, including through the appearance of the second edition of John Sorenson and Martin Raish's (1996) massive bibliography on transoceanic contacts. I propose today to review these developments.

Cultural Comparisons

The tradition in transoceanic contacts studies has been to make cultural comparisons; that is, to describe cultural similarities shared by pairs of cultures in the two hemispheres on the opposite sides of the ocean. This fits well with the aim of determining the true culture histories of these various areas.

On the other hand, such comparisons have not been overly successful in convincing non-diffusionists of the desirability of considering contact as an explanation for commonalties. Isolationists can and do continue to assert that if humans could invent something in one area, they could do the same in another, and so contact need not be invoked to account for what is more likely a consequence of independent invention. No amount of purely cultural evidence seems to be convincing to such individuals, because they approach the data from a diametrically opposed theoretical position.

Therefore, the present paper stresses non-cultural—that is, biological—evidence. Still, we may take a few moments to consider the cultural approach since it tends to be convincing to those of us who can be called diffusionists.

Over the years, several kinds of cultural phenomena have been forwarded. Highly arbitrary ones provide the best evidence. Of these, language is the most arbitrary, and I will deal with it a bit later. But also arbitrary—that is, not called for by the nature of the materials used, the functions to which the item is put, simple logic, and so forth—are things such as games (e.g., the classic patolli-pachisi comparison); myths and folktales, which in a number of instances are shared in detail between the hemispheres; art styles and iconography, which have received the greatest attention in comparisons; calendar systems, to the study of which the two David Kelleys have made the greatest contributions, including in the pages of the *NEARA Journal* (Kelley); music, dance, posture, and gesture; and symbols of rank and status such as thrones, litters, parasols, and so on.

But having mentioned all these hoary comparisons, we must observe that few great strides have been made over the last decade in amplifying the cases for transfer in these areas of culture, with the brief exception of Paul Shao's (1998) new findings with respect to Neolithic Chinese and formative Mesoamerican art and iconography in the premier issue of *Pre-Columbiana: A Journal of Long Distance Contacts* that I edit.

Then there is the study of involved technologies, technologies so complex that their invention in the first place is rather astounding, but for which the notion of their having been invented more than once would seem to pass all plausibility. In this line, we have, for example, bark-cloth manufacture, the blowgun complex, and metallurgy, all studied in transpacific context in past years, but not much added to in the last decade. There have, however, been a few advances in other technological realms. At the ABC conference, I gave a paper on four dyestuffs shared by the two hemispheres (Jett 1998a), and followed that up with a survey of resist-dyeing methods in the Old and New Worlds. The latter paper was first published in a festschrift volume honoring John Sorenson (Jett 1998b) and later, with minor amplification, was reprinted in the *NEARA Journal* (Jett 1999). In the piece, I showed the presence, in Nuclear America, of three complex and labor-intensive southern Asian methods of obtaining pattern on cloth: by batikking, tie-dyeing, and ikatting.

Another technological area that has received some additional attention is that of lacquer and lacquerware. Celia Heil (1999) has studied lacquer use in East Asia and West Mexico, and in *Pre-Columbiana* postulated an Asian introduction to America followed by West Mexican influence on Japan. This mention of Japan inevitably reminds us, too, of Nancy Yaw Davis's (2000) intriguing recent book *The Zuni Enigma: A Native American People's Possible Japanese Connection*.

But these studies are about it, as far as I am aware, concerning recent significant contributions in the realm of complex-technology comparisons.

The Evidence Of Human Genetics

For over a century, various workers have pointed to depictions, in Nuclear American art, of faces that look wholly or partially Negroid, Caucasoid, and East Asian. Intriguing and suggestive as these are, today racial assignments on the

basis of visible and measurable phenotypic traits presents problems, and has largely given way to direct study of genotype. Huge advances have taken place here during the last 15 years, especially in the realms of molecular and biochemical genetics. Although these fields are at an early stage and are fast-developing, they have already yielded highly relevant data and have the potential of answering many of our diffusionist questions.

The virtue of molecular genetics is that a variety of kinds of genetic variants are so numerous and independent of one another and seem not to be adaptive that, assuming correct interpretation, they offer as close to absolute proof as could be hoped. The works of Mourant (1956) and of Cavalli-Sforza, Menozzi, and Piazza (1994) have provided an enormous reservoir of data on this subject. Most useful for our purposes are genetic markers: uncommon genes that have no adaptive value or phenotypic function but that exist as "trace elements" that allow us to conclude historical connections, even for fairly minor encounters. Jim Guthrie (2000/2001; also, Fahey 2000/2001) has synthesized and analyzed many of the data in an article in the most recent issue of *Pre-Columbiana*. I can mention only a few highlights here.

It was once contended that all American Indians other than the Blackfoot (who were high in A) were of blood type O. Asian B was said to be absent. Now, however, we know that B occurs in over half the samples of American Indians, particularly among Nancy Yaw Davis's (2000) possibly Japanese influenced Zuni, and that all four ABO blood types were present in pre-Columbian Peru, especially in earlier times.

As early as the 1950s, it was noticed that the Diego blood factor, an East and Southeast Asian type, also occurred among American groups but was absent in the North. Other blood factors are showing comparable patterns. These include the Rhesus and Kell factors, plus transferrins, GM immunoglobins, and human lymphocyte antigens or HLAs. In addition, there are the glucose-6-phosphodehydrogenase deficiency and mitochondrial DNA. I cannot cover the details here, but suffice it to say that a variety of "foreign" genes, especially from Afro-Asiatic and southern Asian parts of the world, occur again in the Western Hemisphere, not randomly, but with definite concentrations, especially in Mesoamerica and in the Central to Southern Andean region. This seems impossible to assign to mere happenstance, and Mediterranean/ Middle Eastern and greater Southeast Asian/ Oceanian inputs appear to be the only believable explanation.

I may mention, as well, Asian HLA links with Ecuador and Colombia, links also supported by presence there of an uncommon type of human Tlymphotropic virus also found among the Ainu of Japan, and the absence of the normal Asian and American mtDNA 9-by deletion. All this is congruent with Betty Meggers's Jomôn-in-Ecuador proposals (Meggers, Evans, and Estrada 1965).

Intestinal Parasites

Although Old World worms intestinally parasitic on humans were once generally thought to have been absent in the pre-Columbian Americas, during the 1980s and 1990s paleopathologists—especially Brazilians—have not only verified the presence of such worms among isolated South American tribes, but have also archaeologically demonstrated the pre-A.D. 1492 (sometimes, strikingly early) presence of certain species in burials in the Western Hemisphere (Reinhard 1992; Verano 1997). These now include hookworms, the whipworm, the hairworm, and the giant roundworm. As far as tropical and subtropical species are concerned, the Bering Strait region acts as a cold screen for transmission, and leaves only the possibility of humans traveling to the New World by boat.

The Evidence Of Cultivated Plants

George Carter (1950,1953) was a pioneer in utilizing the evidence of cultivated plants in tracing transoceanic movements. Carl Johannessen then took the baton and has carried it even farther forward. He and John Sorenson are currently putting together a book, which identifies scores of cultivated plants that appear to have been shared between the pre-Columbian hemispheres (Sorenson and Johannessen 2003).

The beauty of this kind of evidence is that cultivated plants are genetic entities and can be domesticated only where the appropriate wild ancestors occur; that is usually strictly limited geographically. Further, very few such plants can cross oceans or establish and maintain themselves without human help. Thus, along with the indications of human genetics described above, cultivated plants comprise the "smoking guns" of transoceanic evidence.

Only a few prominent examples can be described here. One is the seedless South American sweet potato, discovered archaeologically in Polynesia shortly before the ABC Conference (Hather and Kirch 1991), and for which there is good nonarchaeological indication of presence in pre-Columbian Asia. Another is the amazing archaeological presence of the South American peanut in Neolithic China at about 2000 B.C., first reported in the 1960s and verified by Carl Johannessen (1998:22-25) with Wang in the 1990s.

Readers of the *NEARA Journal* and *Across before Columbus* are aware of Johannessen's work (1998) on the thousands of carvings of ears of maize on temples in India, especially of Karnataka in the south. As far as I am concerned, this ends any controversy as to that plant's pre-Columbian presence in Asia. Since that time, Carl has also found temple sculptures that appear to show other American crop plants, including sunflowers and annonas (Johannessen with Wang 1998). Carl's identifications have been confirmed and added to by Shakti M.

Gupta (1996) who, being unaware of the transoceanic-contacts question, concluded that these American plants were, in fact indigenous to India.

A similar conclusion was once made concerning depictions of annonas and pineapples on Roman murals at Pompeii. This was in the 1950s and involved identifications by pomologist Domenico Casella (1950,1956,1957). His works, in Italian, will appear in translation in the forthcoming issue of *Pre-Columbiana*.

Another example is the plantain or vegetable banana. In an article about to appear in *Pre-Columbiana*, anthropologist William Smole (2001) makes a persuasive circumstantial case for Southeast Asian domesticate's pre-Columbian use in South and Middle America. This is based on early post-contact reports; the presence, at that time, of varieties; the cultural ecology of native plantain use; and linguistics.

Finally, there is the phenomenon of forensic pathologists' identification, during the 1990s, of residues of nicotine and cocaine in ancient Egyptian mummies. Tobacco is, of course, an American and Southwest Pacific genus, and coca is native to the eastern slope of the Andes, none of these places being anywhere near Egypt. Conventional scholars, disbelieving the possibility of transoceanic transfers, have done mental contortions to try to dismiss this evidence. But, as I think I demonstrate in yet another article in the next *Pre-Columbiana*, none of the objections holds up very well (Jett 2001).

Linguistic And Epigraphic Evidence

No area of culture is more arbitrary in specific nature than is language. For most words, the nature of the item referred to has no influence on the sets of sounds selected to verbally convey that concept. When one finds extensive commonalties in vocabulary, especially in connection with systematic sound correspondences, or in structure, one may be confident of a historical connection.

In 1964, David H. Kelley (1964:17), although by no means averse to the notion of long-distance diffusion, wrote, "No competent linguist has suggested that any language or language family of the New World is genetically related to any of those of the Old World in the period since the rise of civilization, and few have suggested relationships at any time depth . . . ." Likewise, in 1973 R. C.Padden (1973:997) noted that "no one has yet established a continuity of linguistic families between the hemispheres in the pre-Columbian period." Highly respected (and conservative) linguist Lyle Campbell (1997: 98-99) could still say in 1997 that "most specialists find no connections between New World and Old World languages," and that, "All evidence presented to date reveals no such [linguistic] impact" of any post-initial-settlement migrations to the New World.

More recently, however, a few such putative relationships have not only been suggested but are now being supported by considerable and compelling comparative data, professionally presented.

Cal-Ugrian, Athapaskan-Eyak, and Yeniseian. Whereas speakers of Eskimo (Inuit) and Aleut and those of Na-Dene are thought to be relatively recent arrivals in North America via Bering Strait, common current thought, though widely disputed (e.g., Fahey 2000/2001:189-96), is that all other native tongues of the hemisphere belong to a single family, Amerind, and are descendants of the single language brought in via the initial migration of humans across Beringia from Siberia—the Greenberg hypothesis—and that these languages received no further extra-hemispheric inputs worth mentioning. Still, linguist Johanna Nichols (1992) has identified grammatical elements in West Coast New World languages that suggest four ancient circumpacific migrations by boat around the Pacific Rim. Nichols suggested the Hokan and Penutian phyla as among the linguistic units possibly involved in circumpacific linkages.

Regarding Penutian (on a less antique time level), Hungarian born linguist Otto von Sadovsky (1996) has made a detailed comparative study of the Uralic languages of Eurasia and the Penutian tongues of Central California and has concluded that not only do the Penutian languages belong to the Uralic subdivision of Ugrian, they relate particularly closely to the Siberian Ob-Ugrian languages. Von Sadovsky did not postulate a transoceanic voyage but, rather, a stepping stone journey by boat from the Ob River delta, along the Arctic Ocean coast of Siberia, through Bering Strait, and down the North American coast to the San Francisco Bay area, the migrants bringing Siberian shamanism and other cultural baggage with them and arriving about 500 B.C.

A strikingly parallel finding has been forwarded by linguist Merritt Ruhlen (1998), who has outlined a seeming close relationship between Ket, a language of the Yeniseian family of central Siberia, and the Athapaskan-Eyak family (part of the Na-Dene phylum) of northwestern North America. Ruhlen considered boat travel between central Siberia and Alaska likely. These distances, though not transoceanic, are great, involving about 160 degrees of longitude.

Uto-Aztecan and Semitic. Of far greater interest are preliminary findings that linguist Brian Stubbs of the College of Eastern Utah has cautiously presented regarding a seeming important proto-Northwest Semitic element of circa 500 B.C., from the area of ancient Palestine/ Phoenicia, in the Uto-Aztecan stock (including proto-UA), whose historically known languages extend from Idaho to Central America. Stubbs claims to have identified around one thousand similarities in lexicon and morphology between the two language groups. Stubbs presented some of these data in small

circulation monographs in the 1980s and more recently has published on some ten percent of the comparisons (Stubbs 1998). Not only are a large number of closely similar or identical lexical items shared, but systematic sound correspondences are also demonstrated, along with a number of unusual semantic commonalties, elements of verb morphology, and other structural elements. As a non-specialist, I must admit to finding the presentation convincing. Devising a historical scenario to account for the connection and creolization is another matter.

Proto-Pelagian. In the premier issue of *Pre-Columbiana*, the late Mary LeCron Foster (1998), a Berkeley anthropologist specializing in linguistics, made a stunning announcement: that lexical comparisons indicated that three supposedly unrelated language families—Old World Afroasiatic and Austronesian and New World Quechuan—in fact were all members of a single phylum, which Foster saw as having spread by sea across the Pacific and which she accordingly labeled "proto-Pelagian." She provided numerous examples of common lexical items

In the same issue of *Pre-Columbiana* as Foster's piece, linguist Mary Ritchie Key (1998) used word lists to suggest an Austronesian contribution to many of the languages of South America, a phenomenon that fits well with my earlier suggestion of Malaysian migrations to tropical South America (Jett 1968), although Key sees the movement as being transatlantic while I proposed transpacific input (both may be correct).

Of course, there is epigraphic evidence as well. I will not review it here, but workers such as the late Bill McGlone, Phil Leonard (McGlone et al.1993), Huston McCulloch (1993), and David H. Kelley (1998), have continued to advance studies pioneered by Cyrus Gordon and, if in a flawed manner, by Barry Fell. A model for this kind of work has been provided by Dick Nielsen (1998), whose work on the Kensington runestone has put that of professional specialists to shame and who has, for my money, shown the stone to be authentic. Then, there is the recent work of Mike Xu (1996, 2002), comparing signs on Olmec objects from Mexico with identical and closely similar characters on Shang oracle bones in archaic China.

Conclusions

I believe that the recently forwarded evidence of human genetics, cultivated plants, and language are overwhelming, and put transoceanic influence studies on a new and much firmer footing. We no longer need rely solely on cultural comparisons: hard science, though a hard sell to some, is in the process of demonstrating what simple cultural comparisons alone can never do: folks were traveling the oceans in amazingly early times and left their genes and their languages in America and took home American cultigens. They were there, and if they were there they had the opportunity to exert cultural influence.

Note

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