

The Fringe of American Archaeology: Transoceanic and Transcontinental Contacts in Prehistoric America

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Abstract—Pre-Columbian contacts between the Americas and travelers from other continents and islands are highly probable, but the topic is taboo to mainstream American archaeologists. Probability rests upon the Paleolithic antiquity of boats, sets of favorable winds and currents, documented crossings by a variety of small boats, seafaring by Polynesians, Norse, and Basques, and cultural similarities including domesticates, complex technologies, and intellectual fantasies such as calendar astrology. Refusal to investigate transoceanic contacts derives from American Manifest Destiny ideology, which legitimates conquest by declaring American First Nations to have been bestial savages incapable of even accepting travelers, and from an obsolete notion of scientific method supposing that replicability is a principal criterion of science and, thus, to validate hypotheses of “laws” of cultural development requires an independent case (natural experiment). Postulating the Americas to have been totally independent of “Old World” contacts before 1492 allows archaeologists to use American data as natural experiment validating their hypothesized “laws.”

Keywords: Pre-Columbian—American Indians—American archaeology—boats—ocean crossings

David B. Quinn, on historian Samuel Eliot Morison:

The rejection of any pre-Columbian movement across the Atlantic apart from the Norse voyages leaves the ocean peculiarly empty for many centuries, but it is a justifiable reaction in an outstanding historian whose great merit is that he sees sharply in black-and-white terms and is therefore uniquely qualified to expound what is already known. He is perhaps too impatient to study the nuances of pre-Columbian enterprise (Quinn, 1974: 22–23).

Introduction

American archaeology focuses on outlining local cultural development, with an underlying premise that each local sequence is an example of the working out of a general law of cultural evolution. British anthropologist E. E. Evans-Pritchard caustically observed,

[Anthropology] seeks patterns and not scientific laws, . . . interprets rather than explains. The concepts of natural system and natural law, modelled on the constructs of the natural sciences, . . . have been responsible for a false scholasticism which has led to one rigid and ambitious formulation after another. . . . The feeling that any discipline that does not aim at formulating laws and hence predicting and planning is not worth the labour of

a lifetime . . . leads very easily to . . .—Saint-Simon and Comte are cases in point—ersatz religion (Evans-Pritchard, 1963: 26–27).

Evans-Pritchard could have added Herbert Spencer's name; that Victorian philosopher is still championed by an American anthropologist regularly cited by archaeologists fitting data to a popular model of cultural progress (Carneiro, 2000). Neither contemporary philosophers of science (e.g., Hull, 1989), nor the two works by archaeologists cognizant of this field (Kelley and Hanen, 1988; Gibbon, 1989), are usually referenced. George Gaylord Simpson's discussions of the principles and methodology of a historical science (e.g., geology, paleontology) seem unknown, and his successor Stephen Jay Gould is likely to be dismissed as foolish (Carneiro, 2000: 74; Dunnell, 1996: x).

Science versus the Folk Notion of Science

Simpson, doyen of paleontology for decades, outlined the methodology for historical sciences in a festschrift for Theodosius Dobzhansky. The foundation of these sciences, he stated, is the principle of actualism:

We . . . observe present configurations and from them infer configurations that preceded them. The principle of actualism is essential for such inferences. Historical inference depends less on projection into the past of the immanent, construed in a static sense, than on projection of processes. . . . For the most part, these processes are recognized and characterized as they occur in the present. . . .

In the total study of . . . any history, there are three phases:

- (1) obtaining and studying the historical data, . . .
- (2) determination of present processes, . . . and
- (3) confrontation of (1) and (2) with a view to ordering, filling in, and explaining the history (Simpson, 1970: 81, 84–85).

Simpson particularly excoriated “hypothetico-deductive explanation” (the H-D model) as “quite unacceptable in the practice of historical science” (Simpson, 1970: 86; see also Gould, 2002: 1335–1339 on contingency as the critical component of history, including evolutionary history). American archaeologists became enamored of the “H-D model” in the 1960s and its use continues, its practitioners unconcerned about the source of their hypotheses. The effect is conservative, perpetuating a Eurocentric Enlightenment model of human history (Kehoe, 1998: 218). Scientific Creationists are an extreme case of the conservative import of the hypothetico-deductive method, in their usage taking hypotheses from Christian Scripture.

Opposed to a sophisticated understanding of historical sciences is the popular, or folk, model of science. This expects a scientist to (1) set up an experiment that will control all but one variable; (2) make observations that should confirm, or could nullify, the working hypothesis (or model). The experiment may be replicated to test its validity; replicability is supposed to be essential to a truly scientific test (Shapin, 1996: 107). Following this early modern science model, nineteenth-century archaeologists premised “the New World” as a natural

experiment where they might test the validity of their scheme of the Old World process of evolutionary progress. To count as a scientific experiment, each source of their observations should be independent of the other—if they were connected, we would have a single experiment, not replication. Deduced laws of cultural evolutionary progress could be validated only if New World societies had been *totally isolated* from the Old World. Thus for persons anxious that “the labour of a lifetime” be justified by discovery of scientific laws, everything hinged on the isolation of the Americas up to 1492.

A second problem for the archaeologist naively following the folk model of science is the question of controlling variables. This is usually accomplished by a set of unarticulated premises from the same American popular culture that provides the folk model of science: indigenous American societies were primitive, and that means they were small, isolated, static, “tradition-bound,” and powerfully affected by their environments (termed “ecological determinism” [Phillips, 2001: 3]). Environmental difference would be the major variable to be observed, and it could be inferred from data from the natural sciences. The archaeological record of a locality or geographic region is attributed to adaptation to the natural environment, including a Malthusian view of demography as a consequence of natural processes.

Manifest Destiny

By no coincidence, the notion of America cut off from the world until 1492 fits Anglo-American political rhetoric legitimating conquest and dispossession of American First Nations. International law, given lip service by Anglo politicians, recognizes title based on Right of First Discovery; unquestionably, the Indians were here, but aha! they were primitive, bestial fauna in an uncultivated, unimproved wilderness. Thomas Jefferson, in the Declaration of Independence, wrote of “the inhabitants of our frontiers, the merciless Indian Savages” who in fact were generally known as the Five Civilized Tribes (Cherokee, Creek, Choctaw, Chickasaw, and Seminole) because their economies were based on plantation agriculture and trade. In line with Jefferson's position, Chief Justice John Marshall, in *Johnson v. McIntosh*, 1823, ruled that

the tribes of Indians inhabiting this country were fierce savages, whose occupation was war, and whose subsistence was drawn chiefly from the forest. To leave them in possession of their country, was to leave the country a wilderness; to govern them as a distinct people, was impossible (quoted in Williams, 1990: 323, n. 133).

Again, the “tribes” under discussion were the Five Civilized Tribes. They would seem to have the Right of First Discovery; by the later eighteenth century they met John Locke's criteria of written title to land exchangeable for money, and improvements (Williams, 1990: 248). They competed with the Southern Colonies.

Claiming America was wilderness and its native inhabitants savages has been Anglo America's chartering myth. Jefferson used it politically (Wallace, 1997,

1999), Justice Marshall legally confirmed it, and by the 1840s it dominated American thought, entangled in the rhetoric of Manifest Destiny (Kennedy, 1994; Klein, 1997). It had been Johann Herder, in the 1780s, who formulated the contrast between historic nations and the Volk living outside time, "peoples without history" (Adams, 1998: 279; Lovejoy & Boas, 1935). Indian savages, fauna in the wilderness, have only paleontological history, the story of natural selection. American archaeologists' premise of ecological determinism has a long pedigree.

Using the Principle of Actualism

Similarities between American and Old World cultures have been noted for centuries. The pedigree of scientific discussion of the significance of similarities includes Alexander von Humboldt, writing in 1814, and the great twentieth-century scientist-scholar Joseph Needham (Lu, 1982). Needham and his collaborator Lu Gwei-Djen participated in a two-week peripatetic conference on pre-Columbian trans-Pacific contacts arranged by my colleague David H. Kelley and myself in 1977. We invited leading Mesoamerican archaeologists and several with expertise in Southeast Asian and Oceania research. The core group visited Teotihuacán, Tajín in Veracruz, Monte Albán in Oaxaca, Villahermosa, Palenque in Chiapas, and the collections of the Museo Nacional de Antropología in Mexico City, at each site assisted by an archaeologist who had worked there. Needham and Lu confirmed their evaluation of a number of artifacts pointing, in their estimation, to transoceanic contacts, and prepared an essay that eventually was published (Needham and Lu, 1985). We had planned an edited volume giving equal space to those participants who did not agree with the hypothesis of pre-Columbian contacts, but not one of the four submitted so much as a word—I am inclined to think that neither they nor the majority of American archaeologists have thought out a rational position on the issue. Instead, we hear "crossing the ocean without Age of Exploration ships would have been impossible" (see Table 1), "anyone who landed on an American shore would have been immediately killed" (Jefferson's Merciless Savages), and "you are a racist to think that American Indians could not have developed their cultures without Old World help."

The principle of actualism is called for. Humans used seafaring boats since Middle Paleolithic times, 60,000 years ago, as demonstrated by the settlement of Australia, which required crossing the strait between that continent and Indonesia/New Guinea. Archaeologist Donald Lathrap (1977) hypothesized trans-Atlantic settlement of eastern South American lowlands from Africa in the late Pleistocene, 14,000 B.C.—plenty of time for their descendants to expand southwestward through extensive zones of mosaic forest to Monte Verde, the Paleo-Indian site in Chile dated 11,000 B.C. Polynesians surely discovered America, considering they discovered, and returned to colonize, that remote speck in the ocean, Easter Island, not to mention Hawai'i and New Zealand

(Green, 1998: 109). Needham and collaborators have detailed at length, in various volumes of his series *Science and Civilization in China* (Cambridge University Press, 1954–), China's nautical technology and ventures. Edwin Doran expounded the characteristics and differences of the three great boat-building traditions he studied, in his terms the Chinese broad, flat-bottomed junk, the oceanic outrigger canoe (*vaka*), and the European keeled *nao* (Doran, 1973) (Fig. 1). Doran considered both the junk and *vaka* more seaworthy than the *nao*. Seagoing fishermen were in the North Atlantic in the first millennium B.C., and probably earlier, indicated by bones of deep-sea fish in coastal sites of northeast America and northwest Europe. Ground slate knives, suited to filleting fish, appear in these coastal sites and around the North Pacific in the late second millennium B.C.; the standard explanation is independent invention in all these places, somehow at the same time. The earliest ceramics in northeastern America are dated to about 1000 B.C. and closely resemble contemporaneous ceramics in northwestern Europe, but not earlier ceramics in the southeastern United States. Bone combs with carved handles are another artifact type on both sides of the North Atlantic at this time (Kehoe, 1971). Dennis Stanford of the Smithsonian and Bruce Bradley have recently argued for trans- or circum-North Atlantic migration in the Upper Paleolithic, c. 17,000 B.C., linking the European Solutrean to American Clovis on the basis of strong similarities in lithic technology (Chandler, 2001). Their claims have been vigorously rebutted by Lawrence Straus (2000), a good example of argumentation by piling on detail rather than regarding the broader questions. Up until five thousand years ago, Holocene rising sea levels drowned our continental shelves, rendering coastal sites largely beyond recovery.

Phoenicians or North African traders may have ventured across the mid-Atlantic, their voyages lost to history when Rome declared, “Carthago delata est” (146 B.C.). Rome was land-oriented (like the United States), building roads while neglecting seafaring. North of Roman power, Norse and Irish did use the sea, the Irish building hide-covered frame boats (*currachs*) similar to American bark canoes and Inuit *umiaks*. Tim Severin sailed a replica *curragh* from Ireland to Canada, proving its seaworthiness (Kehoe, 1998: 200). The Norse used plank-built boats on rivers through Russia to Byzantium and by sea to Sicily and North Africa and to Iceland and Greenland by the tenth century A.D. They were in the Gulf of St. Lawrence at A.D. 1000, demonstrated by Anne Stine Ingstad's excavations at L'Anse aux Meadows in Newfoundland (Ingstad, 1977). Although the Vinland colony of Eirik the Red's family did not succeed, Greenland Norse obtained timber from Labrador and traded furs and walrus products with Baffinland Inuit until late in the fifteenth century (McGhee, 1984). Incidentally, a fourteenth-century Icelandic couple, Björn Einarsson, called Bjarni Jerusalemfarer, and his wife, made a pilgrimage from Iceland to Jerusalem and back (Enterline, 2002: 142; Seaver, 1996: 150). Much controversy has attended the finding in northwestern Minnesota, 1898, of a boulder carved with a Norse runic inscription describing the massacre of part of a party of Scandinavians, 1362.

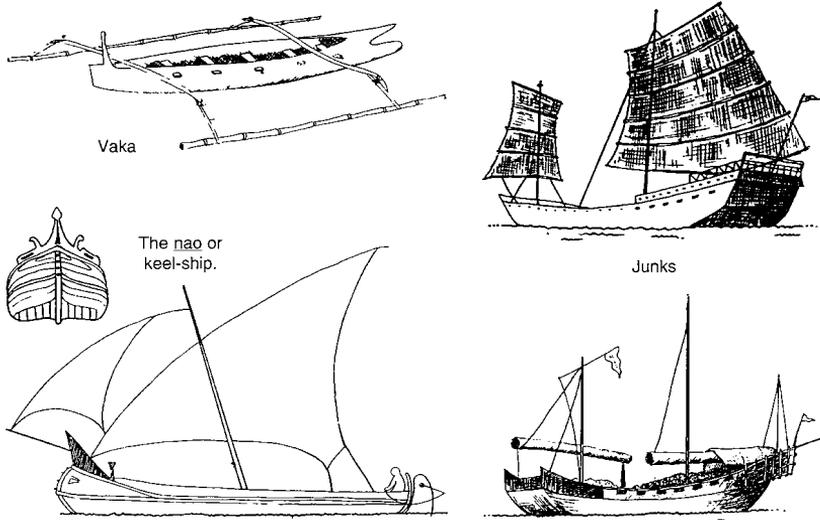


Fig. 1. The three major watercraft traditions: top left, the Oceanic *vaka*; bottom left, the Western *nao* (front and side views); and right, the Chinese junk (Doran 1973). Reprinted with permission of Texas A&M University. Composite of original Figures 19, 22, and 25.

Recently, the boulder was examined under a scanning microscope and the runes estimated to be older than a century, although the hard graywacke boulder weathers so slowly that no close dating estimate can be given. The inscription has been reasonably authenticated through linguistic sleuthing by Richard Nielsen (2000). 1362 was a crisis time in Scandinavia; it is very plausible that, two years after the Hansa took over the Russian fur trade, cutting out the Scandinavian kingdoms, a group of Norse ventured up the St. Lawrence and through the Great Lakes seeking new sources of fur. An earlier sign of Norse in the St. Lawrence Valley and possibly Great Lakes may be the skeletons with tubercular lesions in Upper Midwest Indian cemeteries dated to A.D. 1000 (Buikstra, 1981): the most parsimonious explanation of this tuberculosis epidemic is transmission from Norse, perhaps only at the mouth of the St. Lawrence, then Indian to Indian in a virgin-soil population.

Basque fishermen and whalers were probably in the Grand Banks/Davis Strait region in the late fourteenth and fifteenth century, necessarily landing on the Canadian coast for water, processing catches, and trading—there are Basque words in Canadian Algonkian and Iroquoian languages (Bakker, 1989).¹ At that time, they were, as Kurlansky (1999: 58) points out, “the best sailors, with the best ships, the best navigators, and a tradition of sailing the longest distances.” Basques were in the Faroes by A.D. 875, the same time Iceland was colonized by Norse. In 1412, twenty Basque whalers were sighted off western Iceland. One of the funniest stories in archaeology is that of Red Bay, Labrador. National Museum of Man archaeologists Robert McGhee and James Tuck carried out an

intensive foot survey of the southern Labrador coast, recording many Indian sites. Afterward, an English historian working in the archives of Bilbao in Spain wrote the archaeologists, inquiring on the location of the Basque whaling station used in the 1540s. She pointed out that tons of broken Mediterranean red roof tiles had been shipped over as ballast, then used to cover the sheds on the Labrador shore where whales were rendered into oil (Barkham, 1978). McGhee and Tuck had been crunching this red tile scrap underfoot at Red Bay, without recognizing how very odd it is to see tons of Mediterranean clay tiles in a Labrador village.

Needham and Lu's Criteria

"We often know very little of how transmissions took place, but as in all other fields of science and technology, the onus of proof lies upon those who wish to maintain fully independent invention" (Needham and Lu, 1985: 13). Alfred Kidder, considered the doyen of American archaeologists in the 1930s, admitted that it "is illogical" to deny contacts between the so-called Old and New Worlds while arguing, as was usual then, for a single "Nuclear American" cultural genesis in the New World (Kidder, 1936: 151). Under the burden of ecological determinism, the next generation of American archaeologists simply dropped the concept of Nuclear America, ignoring its basic fact that corn-*Zea mays*-is a cultigen domesticated from a teosinte mutant in western Mexico that could be carried nearly throughout the Americas only by human-to-human contact.

Needham and Lu proposed two major criteria for evaluating inter-societal borrowings (or, sometimes, stimulus [Kehoe, 1979]). The collocative criterion, similar to early-twentieth-century Austrian anthropologist Fritz Graebner's criterion of quantity, weighs number, specificity, complexity, and patterning of apparently similar traits or elements in two or more cultures (Needham and Lu, 1985: 12). Their time criterion notes time difference between the two or more occurrences of the traits. (Graebner had "form" as his second major criterion, allotting greater significance when neither raw material nor function seem to have dictated form [Lowie, 1937: 158; Lucas, 1978: 35-44].) Needham and his collaborators have demonstrated derivation across distance and time, often in the face of the most stringent barriers, as in the spread of gunpowder technology out of imperial China (Needham, 1986). Their very exacting documentation of collocations and paths of derivation are models of scholarship, unfortunately ignored, along with sociological studies of technology diffusion (e.g., Hägerstrand, 1967; Rogers, 1962), by mainstream American archaeologists.

At our 1977 conference, Needham pointed out what I call the "Manila galleon problem": contacts that not only are undocumented, but were deliberately hidden. Beginning in 1565, Spain sent galleons on an arduous round-trip between Acapulco, Mexico, and Manila, Philippines. Conditions during these voyages were so devastating for seamen that many deserted rather than make the return trip, although deserters were severely punished if caught. Therefore, whether Asian men fleeing from Acapulco or Indian men in southeast Asia,

deserters hid out in native villages and could have innovated such items as Asian stills for distilling liquor, reported ethnographically in western Mexico (Needham and Lu, 1985: 56). Similarly, throughout the sixteenth century, privateers, buccaneers, and pirates preyed upon Spanish galleons transporting treasure from Mexico via the Bahamas Channel and the Gulf Stream past the American coast. They frequented little-known harbors, relying on natives and taking pains to be undocumented. We thus have a protohistoric period of several centuries with thousands of probable contacts between American First Nations and men from Europe, Oceania, Asia, and Africa who either, like Basques and Bristol, England, merchants around 1480, wished to conceal their commercial sources from competitors, or needed to conceal themselves from the authorities who provide our historical documents.

Trans-Pacific Contacts

Among the similarities between Mesoamerica and Eastern Asia discussed by Needham and Lu after our 1977 conference is calendar astrology. On both sides of the Pacific, a millennium or more before Columbus, people divided the night sky into lunar mansions and the year into repeating sets of named days, all these associated with animals, colors, Nine Lords of the Night, and benign or malign fates. On both sides, people saw in the moon a rabbit that pounds plant extracts in a mortar to make liquor. Both China and America drew constellations as balls connected with lines (like Tinker-toys). Needham and Lu, (1985: 32) remind readers that Alexander von Humboldt published a lengthy, detailed exposition of these similarities in 1814. An excellent overview of the data is in Paul Shao's 1976 book *Asiatic Influences in Pre-Columbian American Art*; Shao (whom Needham refers to as Shao Pang-Hua) is a trained artist who conducted field research in both Asia and Mesoamerica.

A list of the principal items discussed by scholars includes, besides calendar astrology:

- Valuing jade as highly precious, carving jade (it is extremely hard), placing a jade bead in the mouth of a corpse (sometimes painted with cinnabar).
- Zero: In China, India, and the Maya nations, the same sign (small circle) stands for zero. The symbol (and the concept of zero) is earlier among the Maya than on the Asian side of the Pacific (Needham and Lu, 1985: 38).
- Wheeled grave effigy animals: Gordon Ekholm (1946) published a description of finds in Mexico of clay animal figurines attached to axles with wheels. These were assumed to be toys and were touted to be an example of a significant invention unappreciated by the barbaric Mexican Indians. Needham and Lu refer readers to Eurasian "bird-chariots" and other figurines on wheels interpreted, by Asian and European archaeologists, as tomb offerings and "cult figures" (Needham and Lu, 1985: 41).
- True versus corbelled arch: Three true arches are known from the Maya

Late Classic; Gordon Ekholm showed our 1977 conference group two low domed vaults at Tajín in Veracruz. Shao states that Southeast Asian temple centers were constructed with corbelled rather than true arches until the fifteenth century A.D., and that the corbelled arch preferred by the Maya is not only less difficult to build but is more earthquake-resistant than the true arch.

- Tiered pyramids in Southeast Asia, especially Cambodia, and Mesoamerica (the Pyramid of the Niches in Tajín is especially strikingly like Cambodian temples). "Forbidden City" layouts with a series of courts separated by gated walls are another architectural similarity (compare Teotihuacán in Mexico with Beijing's Imperial Palace).
- Paper: True paper made by felting shredded inner bark of mulberry trees, planted on farmsteads, was produced in China and Mesoamerica before 1492. Tapa cloth uses the same basic process, finishing at an intermediate stage. Stone beaters for the bark occur archaeologically in Southeast Asia, Oceania, and South America. In China and Mesoamerica, paper was (and still is by Otomí Indians in Mexico) cut out in effigy shapes and used for funeral offerings and rituals.
- Dyes and textile techniques: Cochineal from scale insects, royal purple from marine snails, indigo and madder red from plants are pre-Columbian in both hemispheres. "Tyrian" purple is perhaps most telling, since the snails' secretion is cream-colored until undergoing a multi-step process. Resist-dyed textile design processes such as ikat or batik, leaving sections of thread undyed by coating with wax before dipping into dye vat, are very similar on both sides of the Pacific.
- Domesticates: Sweet potato, maize (pictured on medieval temple bas-reliefs in Karnataka, south India), peanuts, and chickens (fighting cocks with Asian-type spurs, not eating or laying hens) are noted in pre-Columbian sites in Asia and the Americas. The sweet potato even carries the same name, *kumara*, in Oceania and America. Tobacco leaves, identified as American tobacco, were chopped up, along with narcissus leaves, and stuffed into the viscera of Pharaoh Ramses the Great, revealed by a French autopsy of the mummy published in 1986. Nicotine and coca metabolites have been identified by the German forensic chemist Svetlana Balabanova in hair, bones, and skin of Egyptian mummies from the first millennium B.C. to early centuries A.D. and in pre-Columbian skeletons from China and Europe (Jett, in press). Species of tobacco apparently grow wild (or feral, spread into wild from introduced cultigen?) on all continents, so Balabanova's data may indicate use in tea or medicinal drink, and tobacco may have been one of the exotic mystical plants smoked in hookah in India for at least two thousand years. Coca is more challenging, as it is known only from South America and its metabolized molecule is complex and distinctive. Another species of the same genus is reported to have been used medicinally in Madagascar but apparently no

longer is (according to several ethnographers working in Madagascar whom I have questioned), and whether it would produce the same metabolized molecule is unknown. The Egyptians analyzed by Balabanova might have obtained coca from India or Madagascar, if it was traded there, but ultimately it could have come from America, perhaps carried by Polynesians (Madagascar was settled by related people).

- Asian banana (*Musa*) phytoliths (minute, natural silica casts formed around plant stems or roots) have been found archaeologically in Cameroon, Africa, dated 1000 B.C., in sites with central Africa's earliest evidence of agriculture. A related banana was cultivated in Kuk Swamp fields, Papua New Guinea, 4000–5000 B.C.² These phytoliths may evidence ocean trading between New Guinea, Indonesia, and across the Indian Ocean (Mindzie et al., 2001: 5), about when Madagascar was colonized by Austronesians. Bananas in America, so far as is known, are post-Columbian (but phytolith research is relatively new, and phytoliths are the only archaeological evidence for this humid tropical seedless plant).
- Languages: Mary LeCron Foster connected Mexican Tarascan with Japanese, Andean Quechua and Mesoamerican Mixe-Zoque with Austronesian and Afroasiatic (Foster, 1999). Otto von Sadovsky (1996) connected California Penutian with Uralic, including a series of bow-and-arrow terms; he estimates the languages separated 2000 years ago, and that was when the bow-and-arrow appeared in North America. Mexican Nahuatl and Greek/Latin share some interesting words, namely *teo/deo* for "god," but although at least one modern systematic analysis has been carried out, the researcher (who attended our 1977 conference) has not published it. Johanna Nichols (1992) has challenged conventional linguists' focus on phyletic lineages, emphasizing the number and significance of borrowings; she doesn't directly address transoceanic contact issues, but the import is obvious.

One of the most focused scholarly studies of trans-Pacific contacts is Nancy Yaw Davis' *The Zuni Enigma* (2000), where Davis highlights a number of anomalies distinguishing Zuni from other Southwestern pueblos and suggests contact with medieval Japan. Davis postulates a Japanese Buddhist religious pilgrimage ultimately settling in Zuni by A.D. 1350.

Trans-Atlantic Contacts

Less attention has been paid to trans-Atlantic contacts, other than medieval Norse, than to trans-Pacific, although the Atlantic is narrower and more easily crossed. There have been claims of Hebrew (or Aramaic) short inscriptions engraved on stones found in the United States (McCulloch, 1988) and in Brazil (Gordon, 1968), some of the stones now disappeared, and of Roman amphorae in a vessel sunk in a Brazilian harbor (Marx and Marx, 1992), where an American archaeologist expert on Roman amphorae attempted to see them but

was denied.³ A little Roman figurine head, broken from its body, was excavated from a tomb in Toluca, Mexico, in the 1930s by a reputable archaeologist; it has now been confirmed to be Roman, but the tomb has been dated to the final pre-conquest period, A.D. 1476–1521, overlapping Columbus' voyages to the Caribbean (Hristov and Genovés, 1999). Thus it is possible that the cute figurine was found in southern Europe and carried to the Caribbean by one of Columbus' men, thence traded to Indians and eventually to one of the last native lords of Toluca. If this is not the true scenario, it remains to explain how, and where, a second-century A.D. figurine fragment endured a millennium before its burial with the Tolucan noble.

One interesting custom shared by Scandinavians and American Indians is the sauna, or sweat-lodge. Both users believe its use promotes health. Sweat-baths were standard in pre-Columbian Mexico, again as means of restoring or maintaining health. The antiquity of the custom is ambiguous because small structures with a firepit in the center could have been used to smoke meat or hides. Whether Americans taught it to Norse, or Norse to Americans, cannot be determined, but its near-ubiquity in America contrasted with limited historic distribution in Eurasia (Lopatin, 1960: 988–989) suggests Americans-to-Norse.

Across and around the Gulf of Mexico

Columbus saw two Mayan trading vessels (large canoes with sails) in the Caribbean. Ample evidence of trade crisscrossing the Caribbean, anchored in northeastern South America and the Florida-U.S. Gulf coast, exists both as foreign artifacts and in such early European observations. Maize, beans, and cucurbits (squashes, pumpkins) are Mexican domesticates carried southward to Chile and northward to the St. Lawrence Valley by two thousand years ago, along with tobacco. Much fuss was made when a wild squash was discovered in the Ozarks, but recent genetic studies indicate at least two domestications, one definitely in Mexico, and much interbreeding (Sanjur and Piperno, 2002). Agriculture utilizing hoe cultivation on raised beds, which may be ridge-and-ditch or corn hills, seems to have spread throughout much of America along with the cultigens. Archaeologist James A. Ford put it bluntly when he subtitled his monograph on circum-Caribbean similarities, "Diffusion or the Psychic Unity of Man?" (Ford, 1969).

The strongest similarities around the Gulf date to the Postclassic period of Mesoamerica, tenth century A.D. to European conquests. At Cahokia, the largest city north of central Mexico until late in the eighteenth century, a basically Mexican urban grid with massive pyramidal mounds was built at the beginning of the eleventh century and virtually abandoned two centuries later, coinciding with what the Aztecs called the Toltec empire. Exactly the same timing fits Chaco, the largest population center in the Southwest (although not nearly as large or urban as Cahokia). Chaco evidenced Mexican trade in remains of tropical macaws raised in pens, presumably originally transported by porters overland; what Chaco sold was turquoise, evidenced by New Mexican turquoise in central Mexican sites

(Bradley, 1999). Both Cahokia and Chaco had a few skeletons with filed teeth, a fashion popular in Mexico but not otherwise seen in Anglo-America.

After the collapse of the Toltec economic empire, Mississippian towns in the Southeast and pueblos in the Southwest evidence importation of religious ideas or symbols including the image of Quetzalcoatl as a horned and winged rattlesnake and as a dancing man. In the Southwest, these led to *katsinas* (*kachinas*) (Schaafsma, 1999), in the Southeast, to many engravings showing the figure wearing Quetzalcoatl's necklace of shell beads with a pendant made from the columella of the conch, representing in its spiral his dancing this world into life. Mississippian mounds at Spiro, on the Arkansas River in easternmost Oklahoma, contained burials accompanied by a blade of Pachuca obsidian from Hidalgo quarries (Barker et al., 2002) and numerous conch-shell chalices incised with Mesoamerican icons including Morning Star as a warrior wearing a diadem of stars and, particularly noteworthy, one with the Mayan Paddler gods in their serpent canoes (Phillips and Brown, 1978: 112), interpreted by Mayanists as gods circling the ecliptic in the sky (Stone, 1995: 175–176).

A number of other Mesoamerican artifacts and usages are seen in Anglo-America. "Medicine bundles" (portable shrines of icons kept rolled up inside mats or cloth), designs of face-painting representing Tezcatlipoca and other deities, myths of Hero Twins, and constellations are widespread. Historical geographer Helen Tanner⁴ considers Mobile Bay, Alabama, the major port in the United States for cross-Gulf trade; the lingua franca used throughout the Southeast and Mississippi Valley is called Mobilian Jargon, from its traditionally recognized center of origin.

In the sixteenth century, A Chesapeake Bay Indian nobleman later baptized "Don Luis" was picked up by a Spanish exploring ship in 1560, spent ten years mostly around the Caribbean but also in Spain, and in 1570 was returned to his homeland by a party of Spanish Jesuits planning to found a mission there. He put an arrow through the heart of the Jesuit leader and saw to the massacre of the missionaries early in 1571 (Lewis and Loomie, 1953). We do not know what ideas "Don Luis" carried to his people. Jamestown settlers a generation later got the impression that a local Pamunkey nobleman, Opechancanough, had been lord of a kingdom to the south and was driven out by the Spanish, taking refuge with the Powhatan. (He succeeded Pocahontas' father as king of the Pamunkeys.) These are small hints toward the possibility that the American Southeast should be considered the northern frontier of Mesoamerica (as the Southwest is definitely its northwestern frontier), with continuing trans-Gulf contacts.

Transcontinental Travels

The dominant model of American First Nations as small, simple, "tradition-bound" societies molded by their ecological circumstances leads not only to denial of transoceanic contacts but even of the transcontinental trade and travel

abundantly documented by archaeological finds and historical records (Kehoe, 1981). Two thousand years ago, Hopewell culture nobility in southern Ohio were entombed with imported obsidian from Yellowstone Park, Wyoming, conch shells from the Gulf of Mexico or Florida, mica from the Appalachians, and copper from the western Great Lakes. This wide net of trade continued into the historic period, with Mandan towns on the central Missouri River importing dentalium shells from the Pacific as well as products from eastern America. Historical evidence of trade and travel includes Spanish and French seventeenth-century references to a Jumano leader from Texas, Juan Sabeata, visiting Southwestern pueblos and Spanish outposts in Chihuahua, Mexico, Wichita Indian towns in Kansas, and Hasinai towns in east Texas (Hickerson, 1994); and the map drawn in 1801 by the Blackfoot chief Akai Mokti ("Ac co mok ki") for the Hudson's Bay Company trader Peter Fidler in Alberta, showing Akai Mokti's personal knowledge of a territory from northern Alberta to Wyoming and from the Mandan in North Dakota to the Columbia River flowing to the Pacific (Binnema, 2001)—this is the map Jefferson gave to Meriwether Lewis (Kehoe, 1993). Blackfoot, and people of other nations, would go on round-trip journeys of two or three years to Mexico, and people also went on lengthy pilgrimages to holy places such as Bear Butte in South Dakota, the Garden of the Gods in Colorado (an Indian, not a tourist, name), and the Sweet Grass Hills in northern Montana.

Conclusion

The probability of transoceanic contacts before Columbus is so high one might say it is a statistical certainty. This paper barely skims the surface of the arguments from oceanic wind and current forces, long-distance seafaring, archaeological finds, and linguistic analyses. I have not even discussed similarities in myths and rituals, musical instruments and scales, art styles, technology such as body armor and blowguns, or the Chinese ideographs recognized on a few pre-Columbian objects from western South America. Stephen Jett (1983) and Eugene Fingerhut (1994) provide good summaries. A new line of evidence is emerging from research into biological features such as DNA and antigens, of which Guthrie (2002) provides a valuable summary of occurrence "anomalies" in population samples.

Rational discussion of evidence is impeded by the naïveté of many archaeologists who parrot the assertion that pre-Columbian contacts were either impossible or the sailors inevitably promptly murdered. Other archaeologists, canny rather than naïve, fear jeopardizing their careers by engaging an out-of-favor topic. Some are simply uncomfortable talking with untrained enthusiasts eagerly embracing everything from dowsing and Goddess worship to the "golden" treasures and engraved tablets (engraved on commercial lithograph stone) allegedly found in Asian kings' tombs in Burrows Cave in southern Illinois and sold at auction to the public. Worse, these treasures are endorsed by

TABLE 1
Transoceanic Crossings^a

Date	Crossing
Atlantic Crossings	
1980	Gerard d'Aboville, a Breton, rowed from Cape Cod to Ouessant, France, 3320 miles, in an 18-foot boat in 72 days, the first documented solo crossing from mainland to mainland.
1981	Gerry Spiess made a 7800-mile Pacific crossing to Sydney in five months in a ten-foot sailboat; he had previously crossed the Atlantic in the boat.
1982	Bill Dunlop took 78 days to sail a 9-foot boat from Maine to Falmouth, England.
1983	Wayne Dickinson took 142 days to sail from Florida to northwestern Ireland in an 8'11" sailboat.
1984	Arnaud de Rosnay disappeared at sea from a sailboard going from China to Taiwan. Earlier, his longest of seven open-water crossings was a thousand kilometers from the Marquesas to Ahé in the Tuamotus.
1985	Two Frenchmen took 39 days to cross the Atlantic on a surfboard with a 20-inch-high hold for sleeping (one at a time).
1986	Alain Pichavant and Stephane Peyron took 24 1/2 days on a 31-foot sailboard from Senegal to Guadeloupe, whence they continued to New York. Peyron then sailed, in 1987, on a 25-foot sailboard from New York to La Rochelle, France, in 46 days.
1988	Rüdiger Nehberg pedaled from Senegal to Sao Luis, northern Brazil, in a small Fiberglas pedal-rowing boat, taking 74 days.
1991	British sailor Tom McNally sailed from Portugal to San Juan, Puerto Rico in a 5'4" boat.
1993	The record for smallest boat crossing the Atlantic is Hugo Vihlen, 1993 in Father's Day—5'4", 106 days, St. John's Newfoundland to Southern England (he sailed <i>The April Fool</i> , 5'11 7/8" [Boehm, ed. 1983: 352], Casablanca to Fort Lauderdale, Florida, 85 days in 1968).
1999	Tori Murden (36 year old woman) rowed a 23 ft. boat, <i>American Pearl</i> , 3000 miles from the Canary Islands westward to Fort-du-Bas, Guadeloupe, in 81 days; first American and first woman to row alone across mid-Atlantic. Murden also first American and first woman to ski to the South Pole.
Pacific Crossings	
1972	John Fairfax and Sylvia Cook rowed 8000 miles in a 35-foot boat from San Francisco, drifting down the coast to Mexico before crossing to Hayman Island on the central Australian coast. Fairfax had rowed from the Canary Islands to Florida in 180 days in 1969.
1978	Webb Chiles left San Diego to circumnavigate the world in an 18-foot open boat; two years later, he sailed into Cairns Harbor, 1250 miles north of Sydney, Australia, having stopped over on islands.
1980	On November 30, six Japanese researchers arrived in Chile, six and a half months after leaving Shimoda, Japan in a 43-foot catamaran, the Yasei-Go. They took the Kuroshio Current east to the Northern Pacific Current, taking that to San Francisco, then sailing down the coast to Chile (<i>Milwaukee Journal Sentinel</i> December 1, 1980).
1982–1983	Peter Bird rowed from San Francisco almost to Australia (Great Barrier Reef).
1987	Ed Gillet paddled a kayak from Monterey Bay to Maui, Hawaii, in 63 days.
1991	Gerard d'Aboville rowed a 26-foot boat from Japan to Ilwaco, Washington, in 134 days.

TABLE 1
Continued

Date	Crossing
1999	Kenichi Horie (60 years old), 103 days San Francisco to western Japan on sailboat made of 528 empty stainless steel beer kegs with sails made of recycled plastic bottles; 1996, Horie crossed on solar-powered "yacht" made of melted-down aluminum beer cans; 1962, 23-yr-old Horie crossed on 19-ft yacht. (All solo crossings; 1999 crossing was 6800 miles. (<i>Milwaukee Journal Sentinel</i> July 9, 1999)
2001	Jim Shekhdar, 54-year-old British former computer salesman, rowed alone from Peru to Brisbane, Queensland, Australia, 274 days (June 2000–March 30, 2001), 8060 mi., fastest Pacific crossing (<i>Milwaukee Journal Sentinel</i> March 31, 2001)—beating Peter Bird, 1983, by 20 days.

^a In my 1971 *Man Across the Sea* paper, I reviewed the probability of pre-Columbian trans-Atlantic voyaging. These contenders for the title of smallest boat crossing are added to that list.

a neo-Nazi who served time in the federal penitentiary in the same area, the "cave" being announced about when he was released (Martin and Flavin, 1995).

Sociology of science studies has not yet ventured into the ripe field of archaeology. The probability of and evidence for pre-Columbian transoceanic contacts highlights the power of underlying social factors to set boundaries to acceptable science. With Manifest Destiny still echoing in American political rhetoric and a conservative nineteenth-century model of scientific method still perpetuated in popular education, the stereotype prevails of American Indians outside history, prey to ecological determinism. A fringe is constructed, drawing the romantic and gullible to self-proclaimed heroic outsiders such as the late Barry Fell, a marine biologist identifying obscure and forgotten writing symbols on rocks. The few competent archaeologists, historical geographers, and linguists persevering with the transoceanic evidence find their conventional research respected but their work on the "taboo topic" dismissed.

Notes

¹ In contrast to these conclusions by an experienced linguist, enthusiast Cyclone Covey writes "The clinching evidence of a possible Solutrean connection trans-Atlantic is pre-Indo-European Pleistocene speech persisting in the earliest dialects (th, n, and y) of Algonquin Cree, cognate with West-European Euskera before its Indo-Europeanization as modern Basque". (Covey, 2000: 83). Aside from the strange notion that modern Basque has undergone "Indo-Europeanization," it is highly unlikely that Pleistocene speech features can be recognized in Cree recorded ten millennia later.

² Personal communication, Robin Torrence and Luc Vrydaghs, Society for American Archeology annual meeting, Denver, CO, March 20, 2002.

³ Elizabeth Will, personal communication, April 18, 1989.

⁴ Helen Tanner, personal communication, June 3, 2002.

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