

Connections Across the Indigenous Southeastern US and Mesoamerica (2025 Update)

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Abstract

Despite a century of research on this popular topic, solid evidence of routine or sustained interaction between the indigenous US Southeast and Mesoamerica remains elusive. Similarities in iconography and ritual are general and probably ancient. Mexican obsidian and tropical plants occur rarely and only at the outskirts of the Southeast, except for maize, which entered the Southeast from Mexico via the US Southwest. Early earthen mounds and later some Mississippian-like artifacts may have moved southward into Mexico. The most glaring (absence of) evidence is the lack of Mesoamerican products such as cotton, chocolate, and especially alcohol in the Southeast. Until we get targeted materials-science studies providing contrary hard evidence, we can only say that, in contrast with the more enduring cultural connections between Mexico and the Southwest, apparently only sporadic and limited interaction characterized relations between the Southeast and Mesoamerica, for both environmental and cultural reasons.

Keywords US Southeast and Mesoamerica, prehistoric continental interaction, prehistoric alcohol

Introduction

A perennial favorite in discussing ancient transcontinental interactions linking major American cultural regions is the relationship between the southeastern US and Mesoamerica (Figure 1). A century of research addresses the topic (White 2005a; White and Weinstein 2008), which nonetheless continues to be popular both on both public websites and in professional spheres (e.g., Claassen 2023; Kehoe 2007). After nearly two decades, is there any new evidence to keep talking about this? I present a summary and also some updates on the issues and arguments. The big picture is that, throughout the broader cultural chronology of continental connections, the Southeast, though part of vast North American economic networks extending northward and westward, remained mostly isolated from Mesoamerica. This is notable by comparison with the US Southwest, where interaction with northern Mexico and beyond is well documented. However, southeastern societies were the most populous and most complex north of Mexico, organized by late prehistoric times into powerful chiefdoms. Whether deliberately or not, and despite a general common New World cultural heritage, they may have resisted specific influences from Mesoamerica and charted their own paths. Inhospitable environments separating the two regions were undoubtedly also important. Only after European invasion and colonization was there an introduction of some ideas, people, and things from elsewhere in Spanish America into the Southeast.



Fig. 1. Culture areas of the southeastern US and Mesoamerica (hatched lines) showing important archaeological sites and hypothesized Gilmore Corridor.

History of the Question

The Southeast is the portion of the continent east of the Mississippi River, plus a small amount to the west along tributary streams of the middle and lower Mississippi. The region holds together as a reasonable anthropological “culture area” (despite the baggage of that term). Throughout prehistoric time, its material culture and inferred human systems differed greatly from those of the Plains, Southwest, Mesoamerica, and other North American regions. It held together as a distinctive region perhaps *because* it was arrayed along those waterway networks, which allowed the fastest transport of goods, people, and ideas.

Population densities were higher in the lushly forested, well-watered, and eventually agricultural Southeast, and societies there were more sociopolitically complex than any others north of Mesoamerica. These societies are harder to study because this was the first US region invaded by European invaders and colonizers in the early sixteenth century, and thus immediately and massively changed, with both huge indigenous depopulation and transformation of native cultural systems. But the peoples of the Southeast left a rich archaeological record. It demonstrates more connections with less-complex Great Plains foragers and Southwestern forager-farmers (and even then, very few) than with the hierarchical civilizations of Mesoamerica.

The relationship between the eastern US and Mesoamerica is a classic topic (I have been working on it since my minor paper required for my Ph.D. in the early 1980s). The regions are nearly adjacent along the Gulf Coast, and much material culture, including artistic designs and symbolic motifs and ideas, *looks* similar. As archaeology became professionalized, notable figures pursued the idea. For example, eminent eastern US archaeologist James B. Griffin (1945) went to Mexico to get “a firsthand acquaintance with Mexican” prehistory and study “possible connections with the Southeast.” Famous scholars published speculative articles over the decades (e.g., Phillips 1940; Willey 1985). Such notable artifacts as the 2000-year-old Adena pipe (Figure 2) from southern Ohio, portraying a man with a feather-bustle loincloth and large ear disks, looked like they came directly from Mexico. Bird-dancer figures engraved on shell artifacts from the Southeast and northern Veracruz obviously portrayed similar ideas of somebody strapping on wings, headdress, and other paraphernalia for magical, theatrical, or religious purposes (Figure 3). Winged beings and other decorative motifs that may have deep symbolism are similar, for example, the so-called sun circle or cross-in-circle motif of the late prehistoric Southeast and northeastern Mexico. Hall’s (1997) *Archaeology of the Soul* delved into the continent-wide roots of Native American religious symbolism. Stirrup-spout ceramic bottles, a South American form thousands of years old, appear in the Southeast (they may be post-contact; White and Weinstein 2008:240), and classic monitor-type platform pipes of Hopewell and other Middle Woodland archaeological cultures are also seen in San Luis Potosí in central Mexico (Dávila 2005; Zaragoza 2005)—except over 1000 years later. Mesoamerican stone pyramids with ritual buildings on top were considered obvious models for flat-topped late prehistoric Mississippian earthen mounds of the Southeast.

But disconnected details are insufficient. A more systematic attempt was Ford’s (1969) *A Comparison of the Formative Cultures in the Americas. Diffusion or the Psychic Unity of Man*. This landmark Smithsonian opus mapped influences from more complex Mesoamerican cultures moving north to the supposedly culturally simpler Southeast. Pages of foldouts showed pottery styles and other technology that advanced northward. Introductory textbooks emphasized the South American and Mesoamerican origins of anything complex in the Southeast (Widmer 2005). This same old-fashioned narrative of diffusion was seen on a map displayed at the Crystal River site in central peninsular Florida, which has Woodland platform

mounds, fancy artifacts, and three big upright marker rocks labeled stela. The map arrows showed northward movement of great ideas from Mexico, up the Mississippi, then out to the hinterland in the greater South (White and Weinstein 2008:Figure 13). On ABC Florida news (2025), a story describing a find of a prehistoric dugout canoe featured people saying it proved movement from Mexico to Florida. These diffusionary views mirrored typical mid-twentieth-century thinking on cultural foundations. Just as Western culture's roots were supposedly in ancient Mesopotamia and Greece (notwithstanding, say Arabic math, medicine, and science), the supposedly less complex societies of the eastern US had to be derived from Mexican stimuli.

Fig. 2 The Adena pipe, from the Adena mound in southern Ohio, dating between 800 B.C-A.D. 200. Photographed with permission at the Cleveland Museum of Art, December 2016, by N. White

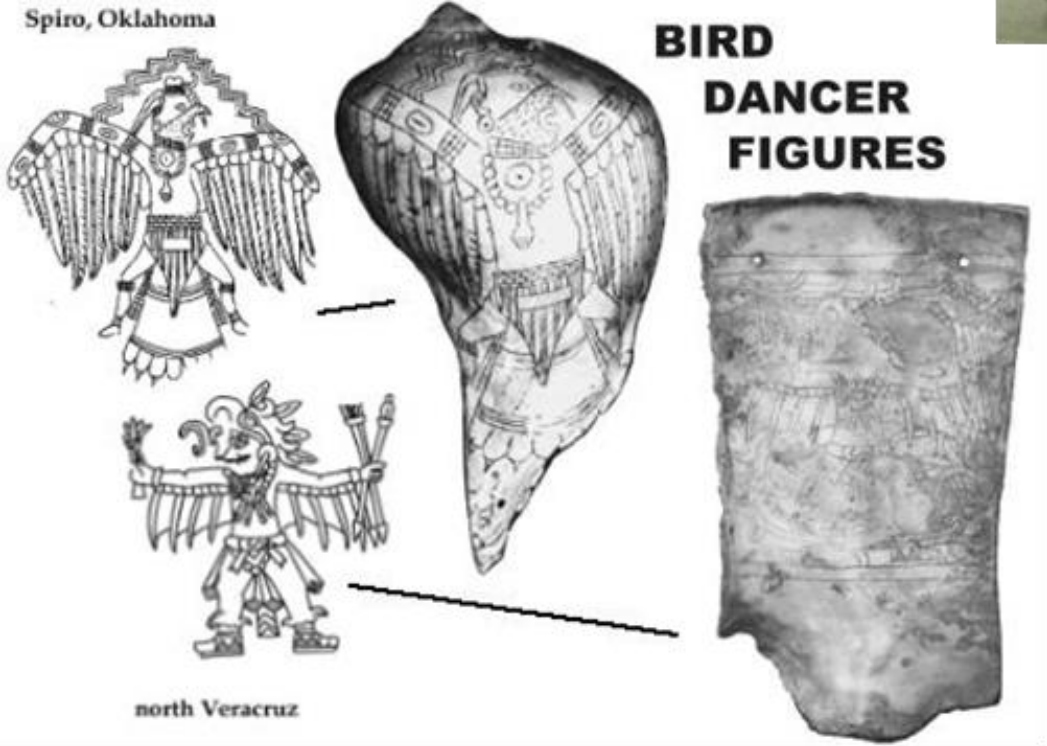


Fig. 3 Winged beings carved on shell from Spiro mounds, Oklahoma, USA, and northern Veracruz, Mexico, in Mississippian and Huastec forms, respectively (adapted from Zaragoza 2005:Figure 4:12)

Now we know that Middle Archaic earthen mounds in the Southeast, as early as 7000 B.P., were a millennium older than the first Mesoamerican pyramids. Southeastern fiber-tempered pottery appeared by about 4500 B.P., but the earliest Mesoamerican ceramics came some 2000 years later and were already elaborate (Garcia Cook 1998). So it is harder to make a case for Mesoamerican influence in the Southeast without different details, not to mention their integration into a cultural whole (and seldom do researchers ask about cultural stimulation from the Southeast moving into Mesoamerica). It is crucial to compare *integrated cultural systems*, not just individual traits (Muller 1971), and also to examine what we might expect to see archaeologically if interaction between the regions was at all significant.

The Geography of Travel and the Presence of Cuba

Geographically compelling is the difference between forested alluvial valleys in the Southeast and more inhospitable deserts in south Texas and northeast Mexico, as seen on the land cover maps (Figure 4). Gulf Loop Currents do carry things around. A palm-log canoe and other items apparently from Mexico have washed up on the Louisiana coast, and after a hurricane, a covered dock floated up to Louisiana apparently from Key West (Anonymous 2017). Those currents change seasonally, though Native American navigators would have known them well and had suitable watercraft. Coast-hugging travel would have been easier than paddling directly across the Gulf, though it would have required moving through those very dry zones that separate the two major culture areas. Maize did get to the Southeast. Krieger (1948) hypothesized that it moved from Mexico inland through what he called the Gilmore corridor along the base of the Edwards plateau in Texas (see Figure 1). However, evidence for food production or even much permanent settlement is scarce along this route (Kibler 2005). Many more trails lead from Mexico to the Southwest. Maize genetics suggest it moved (by human hands) from different parts of Mexico into the Southwest by 4000 years ago, and from there across the Plains, at least through west Arkansas, and into the Southeast—but much later, by about A.D.1000 (Fritz 2000; Ramos-Madrigal et al. 2025).

The map (see Figure 1) shows the two major areas, the big arid landscape in between, and also Cuba, which nobody talked about 15-20 years ago when we knew less of Cuban archaeology for political reasons. Now, though Cuba is still underrepresented in archaeological discussion, more data are available. Cuba is the largest island in the Caribbean, centrally located and covering 46% of the land mass (Roksandic 2016a:2). But the “topography of western Cuba is unlike anything seen in the United States as rows of ~300-m-high limestone hills rise vertically from flat valley floors” (Hine 2013:93). Valleys are of red clay and sandy soils, and mature karst topography includes mogotes or steep, rounded hills that often have caves and exposed, deformed volcanic rock. Florida is close, 150 km (90 miles) away—a distance easily covered in anything that floats (as Cuban migrants know). But Florida has nothing like this kind of physiography, and a major geological boundary, a fault system, separates the two areas (Iturralde-Vinent et al. 2016). Cuba is close to the same distance by water from the Yucatan peninsula (200 km or 120 miles) as from Florida. In the

face of early Spanish pressure, in 1511 Cuban Indians fled to Florida (probably having been brought there often already in forced service to conquistadores), and the succeeding years saw natives of both places traveling in both directions, maintaining continual contact in response to colonial conflicts (Worth 2004). But no evidence indicates that such close connections existed prehistorically. In fact, purported similarities between prehistoric Cuban ceramics and south Florida Glades pottery have recently been dismissed, using more precise dating and closer examination of styles and decoration; “the Cuba-Florida connection was forged in the colonial era” (Knight and Worth 2007:10).



Fig. 4 Land vegetation cover map (adapted from U.S. Department of the Interior 2019); green = forest, yellow = grassland, red = urban

Of course, people could have moved prehistorically from Yucatan north to south Florida with Cuba as a middle stop. Island-hopping is easy for fisherfolk, especially in shallow seas. The Caribbean was easily navigated and linked the Antilles, the Bahamas, the isthmus, and the southeastern US. However, crucial for the larger issue, whether Cuban peoples visited or communicated with Florida is less archaeologically important than whether south Florida was ever within the main aboriginal interaction networks of the Southeast. While there are a few indications of Caribbean influence in south Florida—chili pepper and papaya remains from the Pineland site near Fort Myers (Newsom and Scarry 2013)—nothing spread

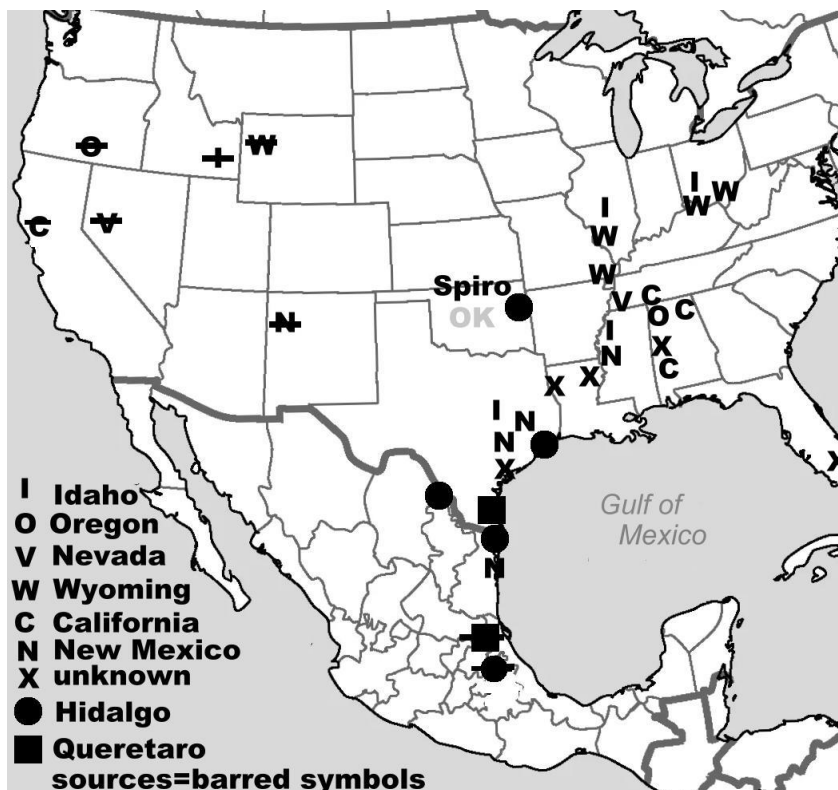
farther that we know of so far. The southern Florida peninsula is sometimes recognized as being peripheral to the greater Southeast, as it lacked agricultural societies, though it certainly manifested some Mississippian components (Carr 2012). Cuba seems to have remained relatively isolated from Mesoamerica and even more so from the US Southeast, as discussed more below.

Mesoamerican Materials in the Southeast US

Obsidian

For decades one focus has been on individual commodities that might show interaction between the regions (White and Weinstein 2008); work continues with these. For example, a few more finds of prehistoric obsidian in the eastern US are documented lately. Most are from the Midwest (in Hopewellian contexts) and the edges of the Southeast, from Archaic through Late Woodland contexts, and traceable to sources in the western US (e.g., Martin and Hughes 2016; Norton 2008; Peacock et al. 2006). Only a very few obsidian pieces are known to be found clearly within the Southeast (Figure 5), all from the western and northern margins of the region, and all sourced to the West except the scraper from Craig Mound at Spiro, Oklahoma (Barker et al. 2002), traced to Hidalgo, and other Mexican obsidian in south Texas on the Gulf and along the Rio Grande (or Rio Bravo in Mexico). There are connections between the Rio Grande area of southern Texas and Mexico, but little evidence of anything moving north or east from there. Spiro and south Texas are at the southern and western fringes of the Southeast.

Fig. 5 Map of obsidian sources (barred symbols) and southeastern US occurrences (obsidian at western/southwestern/ Mesoamerican sites not shown but of course numerous)



Three obsidian pieces were originally identified at Moundville, Alabama, a major Mississippian site. One proved to be bottle glass, one was apparently purchased in California, and one seemingly authentic specimen, a point dug from Mound W, is probably traced to Oregon, though there is a slight possibility it came from Guatemala (Hammerstedt et al. 2008). Obsidian fragments from Poverty Point, now totaling four, continue to defy classification, not matching any known North American or Mesoamerican sources, and possibly derived from modern knappers (Greenlee 2009). Obsidian flakes have recently reported from ancient Tequesta, in Miami, Florida (Ardren et al. 2023), though they have not yet been verified or sourced. Even with these examples, obsidian evidence is marginal and scarce. Though it would have been a highly desirable raw material, especially during Middle Woodland times, when flintknappers desired exotic stone, obsidian did not move much into the South, especially not Mexican obsidian.

Cotton

Other Mesoamerican material items that should be expected in the Southeast if there was significant interaction are completely absent. Cotton, grown on the Mexican Gulf coast by 1500 B.C., was apparently unknown prehistorically in the Southeast, though it became enormously important there historically. Cotton was known in the prehistoric Southwest but apparently did not spread eastward. Southeastern textiles were made from grasses, other plants, animal hair, and feathers. Only one cotton fragment is known, from—guess where?—Spiro, and thought to be a trade item from the Southwest (Brown and Rogers 1999; Drooker 1992:201-202). A recent study of dental calculus at the Late Woodland Danbury site in northern Ohio identified cotton fibers among the bacteria, phytoliths, starch grains, and other tiny particles on teeth of four individuals. Among all the many burials, these had whelk (*Busycon sinistrum*) shell pendants too, possibly signifying elite status. The researchers thought these two exotics, cotton and whelk, shared western Gulf Coast origins and may have passed through Spiro on their way to Ohio (Blatt et al. 2011).

Bows and arrows are thought to have diffused into the Southeast from the West and/or Plains regions by Late Woodland times (Blitz and Porth 2013). Discussing the connections of this new technology with subsistence intensification, social complexity, and warfare, Bingham and Souza (2013) note that the bow and arrow allowed development of military-police specialists in Mesoamerica, whose armaments also included thick cotton body armor. Though cotton was cultivated by the Hohokam in the southwestern US, and processed on complicated looms, the body armor apparently did not make it that far. One reason may have been that the available strains of cotton may not have been able to grow in the desert areas between there and Mesoamerica. Desert conditions in between the two regions may be even more of the reason that cotton did not spread to the Southeast.

Other Domesticates

Other domesticated species are also of interest. Cuba and the Caribbean had some domesticated small animals, including guinea pig (Rodríguez Ramos 2016), which would

have been easy to raise in the Southeast; but none has been found there in archaeological contexts. Among cultivated plants, an important one from Mesoamerica not present in the Southeast is cacao. It did get to the Southwest, and has been identified in residues on Ancestral Pueblo and Hohokam pots (Crown et al. 2015); it is speculated to have been exchanged for southwestern turquoise (Crown and Hurst 2009; Washburn et al. 2011), another item that did not make it into the Southeast.

Cacao (chocolate), first cultivated in Mesoamerica before 1500 B.C. (McGovern 2017:195), was produced mostly in the Maya area but was traded widely from central Mexico to Costa Rica. Considering the universal desire for stimulant drugs, it is interesting that *Theobroma* (“food of the gods”) cacao did not make it into the Southeast. A tropical tree, it has sensitive growing needs: fertile soil, shade, 90% humidity, annual rainfall of at least 155 cm, average annual temperature of 27 degrees C, and minimal climatic fluctuation. A cacao tree does not even yield fruit until it is 4 to 7 years old, and requires constant attention. It would be too cold even in the deep South for cacao to grow, but the beans can be stored for years (Bergmann 1969), and Florida sinkholes in the limestone bedrock might be perfect environments for its cultivation (Terry et al. 2021). However, even if not able to be grown, why was it not traded around the Southeast? Chocolate use is demonstrated archaeologically as early as 1000 B.C. in vessel forms, chemical signatures on pots, and charred wood. The origins of the cacao tree remain unknown, with scholars debating whether it came from South or Central America, how it was ingested (in liquid form or also the pulp?), and how different species were distributed and became part of different cultural practices (McGovern 2017:191; McNeil 2006; Zhang and Motilal 2016). Cacao pod/fruit pulp may have been preferred in South America instead of seed because there were many other plants (mate, coca, and others) with higher amounts of stimulants that did not require such elaborate, time-consuming processing. In Mesoamerica no other caffeine was available, so the seeds were more important for that stimulant. Processing required fermenting the seeds in the pulp, removing, drying, and sometimes roasting them, then grinding them. Seeds preserve and travel well, and were known to be paid in tribute by conquered communities in Mesoamerica. Cacao was enormously prized, available only to elites, used in ritual ceremony, and considered economically like a local currency. But cacao did not even get as far as Cuba (though local environments there would have supported it) until later, when it was introduced by the Spanish.

Perhaps the extremely high value placed on cacao seed by prehistoric Mesoamericans prevented its export to lands as distant as the US Southeast, though it certainly was traded widely within Mesoamerica and southward, and even northward into the US Southwest. The lack of accessible stimulants in northern Mesoamerica, where there was one of the highest concentrations of nonstimulant psychoactive plant uses in the world, is a possible reason that people experimented with and discovered processes to convert cacao seeds to ingestible, stimulating form (Bletter and Daly 2006:45-47). Perhaps southeastern US peoples did not need cacao because yaupon holly (*Ilex vomitoria*) tea, the traditional native

“black drink,” was a fine stimulant (and purgative in large doses), full of caffeine and easy to produce, harvested wild along the Gulf Coast, and easily transported as dried leaves (Weinberg and Bealer 2001). Another question arises, however about black drink: if it was far less trouble to make than cacao and easily carried, why did it not make its way into Mesoamerica (McGovern 2017:187), where the only stimulant source was cacao? Recently, documentation of residues high in caffeine on ceramics from the Southwest and northwestern Mexico have led to the suggestion that yaupon holly was used there between A.D. 750-1400, as well as the better documented cacao (Crown et al. 2015). Many of the specimens tested came from sites having other Mesoamerican trade goods.

The Absence of Alcohol

Though obviously absence of evidence is not evidence of absence, an even more crucial substance must be addressed: alcohol, the biggest thing missing from the prehistoric Southeast that should have been there if regular or even periodic interaction with Mesoamerica took place. The earliest concrete archaeological proof of a deliberately fermented beverage, residue in a Chinese jar, is at least 9000 years old. Alcohol was undoubtedly drunk far earlier, probably made by hunter-gatherer societies during the Paleolithic (McGovern 2009:8-12, 2017:15-16), certainly by more sedentary Neolithic peoples, and grain domestication and large-scale agriculture were associated with larger-scale alcohol production (Curry 2017). Many think grains and other plants were originally cultivated not for food but for alcohol production in the first place, with bread coming later (Kiple 2000:1706; McGovern 2017). Distinctive ceramics suggest that even distillation into purer alcohol was done as early as 2500 years ago in South Asia (Smith 2008:28), and research is underway investigating the possibility of ancient distilled spirits in west-central Mexico (McGovern 2017:243-252).

Alcohol is one of the most universally produced and enjoyed substances for humans. In natural form (fermented fruit or grain) it may have been ingested even by the earliest hominins just to release the serotonin, dopamine, and endorphins in the brain that make us feel good. Alcohol relieves pain, stops infection, eases social exchanges, contributes to health, happiness, and community solidarity, and is often linked to ritual and spiritual experiences (Hockings and Dunbar 2020; McGovern 2009:xi, 273). It contains vitamins and other useful nutrients, and is often safer to drink than water (Curry 2017), though of course it has negative consequences too. Animals ingest fermented fruits, which are also toxic substances that directly kill nerve cells (McGrew 2011), but may be beneficial in small doses. Paleogenetic research has demonstrated how a critical gene mutation in anthropoid species some 10 million years ago created an enzyme that markedly enhanced human and ape abilities to metabolize alcohol (Carrigan et al. 2015). Production of alcohol may be a human universal for all societies who have access to the materials (McGrew 2011:2). Humans have shown remarkable ingenuity in developing fermented beverages and incorporating them into social, political, and religious systems (McGovern 2017:17, 220). Material correlates of

“feasting” that archaeologists look for include evidence of alcohol (Jennings et al. 2005), and workers building ancient monuments were often paid in beer (Arthur 2020). Ethnographers document plenty of gatherings that involve alcohol as a practical way to store and use agricultural surplus, but also to express elements of social cohesion, fertility, happiness, funerals or other rites of passage, and both egalitarianism and hierarchy (Schiefenhövel and Macbeth 2011).

Mesoamerican cultures had an abundance of alcohol—corn beer (chicha); palm wine; agave cactus (maguey) wine (pulque or mescal); balche made from honey, tree bark, and roots—as well as many other pharmaceuticals. Fermented beverages were a crucial part of ritual and world view, and often portrayed in art and craftwork. How could these not have moved into the Southeast? The Spanish who invaded the Americas in the early sixteenth century were quite familiar with fermented beverages. They recorded everything about the American Indians’ behavior from ritual to family life to foods and drinks to sexual behavior, but they said nothing about preparation or drinking of alcohol in the Southeast, though they had plenty to say about it in Mesoamerica and South America (Earle 2014), including how it was manufactured (e.g., McGovern 2017:246). The Narváez expedition documented in 1528 the making of the black drink along the US Gulf Coast, as did the French later on the Atlantic Coast (Weinberg and Bealer 2001:256). But none of the earliest historic sources mentions anything about alcohol in the South, though during colonial times Spanish wrote of the consequences of use by Native Americans of the alcohol that Spaniards themselves had introduced.

Anthropologist Henry Bruman studied under geographer Carl Sauer, did fieldwork in the 1930s, and collected information on north Mexican use of psychoactive substances. He traveled throughout Mexico to obtain plant specimens, recipes, and documentary sources, and learn from native peoples how they made alcohol. Bruman found that there were so many alcoholic drinks in Mexico that pulque was limited to religious and ritual use, while other drinks were regional specializations and preferences, whether they were made from fermented maize, honey, agave, other cactuses, palms, jocotes (hog plums), or other plants, and especially at the time he did his fieldwork, when regions were more isolated from one other (Furst 2000:x-xi). Since colonial times, north Mexicans have also fermented introduced species such as sugarcane and coconut. Bruman (2000:3) was interested in delineating different drink areas in Mexico, including areas with no pottery or even agriculture, but where people nonetheless made alcohol. He found that the northern (northwestern) limits of aboriginal alcohol use were near the Gila River in Arizona, with the Pima (Akimel O’otham) people (Bruman 2000:3-8). Indeed, not far south of this limit, researchers have used archaeological data and contents of human dental calculus to confirm alcohol use and production up to 800 years ago at Casas Grandes/Paquimé (King et al. 2017). But Bruman’s first chapter, called “The Non-Alcohol Region in the North,” tries to explain how such a region, in northeast Mexico, could also exist.

In the Southeastern US and northeastern Mexico there was no dearth of fermentable substances, including many of the same plants that were fermented farther south and west (Bruman 2000:7). Maize easily ferments, as do any wild or domestic grains or seeds. Chewed quids of seed plants (domesticated or not) would have begun fermenting in a few days. Fruits ferment more readily as they need not go through the stage of converting starch to sugar as grains do (grains require introduced sugar or enzymes, often from saliva). While alcohol production in many cultures, including Mesoamerica, evolved into a complex process mobilizing great labor and planning efforts (e.g., Jennings et al. 2005), simple fermentation can happen to fruit on the tree, bush, or vine (I saw leftover fruit salad in an ancient fieldhouse refrigerator fermenting within three days and later drunk by brave fieldworkers!). In fact, the question becomes not only why did southeastern US Native Americans not receive alcohol or the knowledge of it from Mesoamerica, but also why did they not develop it on their own? There was no lack of suitable vessels for fermentation, nor extreme mobility that might have interfered with the process. The Hopi and Zuni made a chewed-corn pudding, which could be ground and mixed with water and taken as a drink; if left to stand a few days it could easily have fermented into chicha. Zuni also made a sprouted-corn drink, and west of them the Southern Paiute and other groups made a sweet drink from baked mescal, but none of these were fermented (Bruman 2000:8-9). Mapping the northern boundary for alcohol use at about 100 to 200 miles southwest of the Rio Grande (Rio Bravo), Bruman (2000:9) said “The very limited penetration of alcoholic beverages into northeastern Mexico as compared to the northwest is impressive.” He attributed this absence of alcohol to group mobility, lack of pottery, remoteness from “the great culture center of the south-central [Mexican] plateau, where several drink areas met,” and, significant for this discussion, “the presence of a local intoxicant [peyote] that made alcohol unnecessary.” But he does note that mobile groups such as the Chichimeca probably transferred the use of alcoholic beverages from their “sedentary linguistic kin to the south and their economic kin to the north and west.”

Trying to explain why alcohol was absent in areas above his northerly line, Bruman invoked possible unfavorable environments, sparse population, lack of fixed habitation, and language diversity as well as that presence of peyote. None of these was the case in the Southeast, where he could only suggest that black drink, from yaupon holly leaves, a strong stimulant like South American yerba maté and other teas containing caffeine, might have been drunk instead of alcohol. But South Americans had plenty of alcohol in addition to maté. One more hint comes from a footnote in the back of Bruman’s book: the information that suitable microorganisms for fermentation—yeast in the air—may have been absent, and that the early distribution of such organisms is unknown. Bruman (2000:109, footnote 1) says an agriculture specialist at UC Berkeley indicated that, even in late nineteenth-century California, there were viticultural areas “so deficient in suitable microflora that fermentation of grape juice in those areas did not occur.” Fermentation is converting carbohydrates to alcohol using yeast or bacteria. These microorganisms are usually in the air and on the skins of the grapes or other fruit. If fermentation does not happen, the results are “eventual molding and putrefaction”—in other words, the stuff rots. To evaluate this reasonable hypothesis would

require forensic historical ethnobotany/zymology, and a lot more research on yeasts in general.

I communicated with biomolecular archaeologist Patrick McGovern (2009, 2017), known for researching and replicating ancient alcoholic drinks. He thinks that civilizations emerged in tandem with the use of fermented beverages. He considers Bruman's hypothesis unlikely, because yeasts are ancient—appearing maybe 200 million years ago—and were everywhere, converting sugars to ethanol (Dashko et al. 2014), and so should have been available in the South. He agrees with Bruman that the reason for the absence of alcohol in the Southeast may be that those two other drugs—nicotine and caffeine from tobacco and black drink—may have served as the preferred pharmaceuticals. So alcohol was not needed, just like in other places where alcohol is absent (e.g., Melanesia, Micronesia, Polynesia) but other mind-altering drugs, such as betel nut are available. He thought hallucinogenic mushrooms might have been used from Siberia into North America (McGovern 2009:228) so there was less need or demand for other drugs such as alcohol. However, as noted, many other indigenous American cultures have had caffeine, nicotine, other hallucinogens, *and* alcohol. McGovern thought that perhaps more chemical analyses are needed to solve the mystery. Anthropological discussions of alcohol sometimes note its absence in most of prehistoric North America (and the Pacific), perhaps describing its use after its introduction (e.g., Arthur 2022; Hockings and Dunbar 2020, Marshall 1979; Smith 2008), but not why it was missing in the first place. Possibly alcohol was considered a poison (it is) or something people just did not ingest, much as Western cuisines usually do not include worms or cockroaches. However, given the general global demand for alcohol, this idea seems unlikely.

Ancient beer, made from grain, does not store well and so is made often or for local occasions, whereas wine from fruit has a potentially greater shelf life (Jennings et al. 2005), and so it could have been transferred in pots across long distances. In fact, even if the yeast organism was absent, it, too, could also have been transferred northward from Mesoamerica. The huge mystery is why it was not. Alcohol is so desired that it is brought in even where prohibited. During the Prohibition years in the US, outlawed alcohol was still of course plentiful and easily available. My experience living in a Muslim country (Malaysia) for three semesters and visiting other Muslim countries taught me how easy it was to get alcohol, and I met many Muslims who broke their rules and drank it. I visited tribal peoples in Borneo (East Malaysia) who traditionally made rice beer, which takes as little as 5 days and uses up the agricultural surplus over what people can eat and store for a long time. Its abundance is demonstrated at common drinking feasts in community longhouses. I attended one of these with Iban people that lasted two days and, in terms of alcohol consumption, made archaeology conferences look like Sunday-school picnics. When, elsewhere in Borneo, a fundamentalist evangelical church had converted some tribes and required that they abstain from alcohol, I saw how many resisted. I stayed in a Kelabit longhouse where it was defiantly served, and in a Kenyah longhouse where the woman in charge complained she could not

prevent her son from drinking. There is a strong tradition, however, that one must drink in social context, not alone; if there is no appropriate occasion, one calls over a few friends, then all can drink. Janowski (2011) reported a Borneo longhouse where fewer than 100 people drank 300 gallons of alcohol continuously over 2 nights and a day (ca. 2.7 gallons per hour). Social barriers break down, all are laughing, few social differences are evident, and there is altered consciousness through singing, dancing, and prayer. Also on Borneo Island, Brunei is a Muslim country so strict that there are no bars or alcohol sold, and I would have been jailed if I were found to have any in my bag during my visit. Yet even as a woman traveling alone, without asking, I was told upon arrival where to buy it. There is even a genetic mutation among 40% of Asians (unknown among western peoples) that causes flushed skin, nausea, and dizziness when carriers drink any alcohol (McGovern 2009:274-75); yet Asian cultures in general use plenty of the stuff. Japanese, Chinese, and Malaysian convenience stores sell hard liquor, while in some US and Canadian states one must find a specialized state-regulated liquor store to get it.

Other Drugs

About 90% of adult humans worldwide regularly use some kind of psychoactive (and really, toxic) substance, whether coffee, nicotine, heroin, chocolate, nutmeg, or something else, and whether for pleasure, pain relief, or medicating against parasites (Wilson 2023). Caffeine is an intoxicant that produces mental and physical stimulation; in large doses it induces nausea, which was done for purification (ok, vomiting) among southeastern US native cultures. It is the most popular drug on earth, though it may have evolved as a natural insecticide in various plants (Weinberg and Bealer 2001: 317-320). Caffeine is known to be associated with fertility and sperm motility in men; introduced during artificial insemination it doubles the chances of a pregnancy (Weinberg and Bealer 2001:285). Caffeine withdrawal is known to cause headaches and other symptoms. Many think having nicotine to complement caffeine provides enough drug stimulation; cigarettes increase the rate of caffeine metabolism (Weinberg and Bealer 2001:275-76). But neither is the same as alcohol in its effects upon the human body. Just like real cola nuts were sought all over Africa, guarana nuts in the Amazon, coca all over South America, khat in the Middle East, betel nuts in Southeast Asia and the Pacific, and many other natural stimulants (Weinberg and Bealer 2001:258-264), yaupon holly was prized and sought by cultures in the Southeast. But all those other places (except the Pacific) had alcohol, and the Southeast did not. So it is not enough to say southeastern Native Americans had a good-enough drug and thus did not need/want alcohol, especially in the light of Spanish and other colonial accounts saying that after alcohol was introduced, they could not keep it away from indigenous peoples. The conclusion is that Mesoamerican interaction with the Southeast had to have been minimal or else alcohol, since it is so desired, would certainly have moved in, at least along with maize, if it did not exist earlier (say, made from fruit or seed crops of the Midwestern agricultural complex).

Evidence of the hallucinogen datura (jimsonweed, *Datura stramonium*) is reported from Cahokia in the Midwestern US and from Arkansas and Oklahoma (Spiro) ceramics and shell cups (Emerson 2003; King et al. 2018; Lambert et al. 2022; Rafferty 2018). Datura was originally from warm temperate regions of the Mexican plateau (De-la-Mora et al. 2015), and is a weedy species that seems to have spread and diversified (Weaver et al. 1985) with monocrop agriculture, such as with maize (Warwick 1990). Ingesting the seeds brings psychoactive, often spiritual effects. However, no hard data so far demonstrate that datura moved to a significant extent into the wider US Southeast. Admittedly, prehistoric archaeological evidence for drugs is sometimes difficult to find, and further study of residues on pots or teeth could invalidate these conclusions. However, the absence of historical and archaeological indication for use of alcohol and other major drugs in the Southeast is a fascinating enigma.

Summary of the Circumstantial and Negative Evidence

Circumstantial evidence of Mesoamerican-Southeastern connections continues to be noted, such as similarities of design motifs on ceramics or other media. Such disconnected coincidences are not enough to demonstrate a relationship. The interlocking-scroll design on both Woodland and Mississippi-period ceramics of the Southeast is similar to that on traditional pots from Borneo tribes; incised-punctated pottery typical of Mississippian Fort Walton culture in northwest Florida closely resembles Italian Neolithic ceramics displayed in a Rome museum (Marrinan and White 2007:Figure3); and the typical Georgia-Florida protohistoric Lamar jar rims with notched appliqué strips look like Neolithic rim sherds I saw displayed in a Czech Republic museum. There is Aztec pottery in the Southeast, but it was brought in by Mexican natives accompanying the Spanish in the seventeenth and eighteenth century invasions and colonization (e.g., White 2024:110, 164). The tenuous clues of artifacts that resemble one another contrast with the lack of obvious systematic material relationships. I almost want to make this like a “police procedural” mystery and simply relate the evidence, bit by bit and however circumstantial, and then come up with the broader picture. We have circumstantial evidence, we have real evidence, and we have a lack of obvious evidence, as Sherlock Holmes would put it, like “the curious incident of the dog in the night-time” (in “The Adventure of Silver Blaze”) or why did the dog *not* bark in the night (because no stranger was there actually doing a murder; Doyle 2007[1892]).

I have used the example of the South Pacific, where islands are great distances from one another and ethnic groups are materially and linguistically diverse, yet interconnection is constant, even in remote prehistory (White 2005b). Obsidian sourcing has demonstrated this, even though earlier archaeological indication was nearly nonexistent. Most interactions were in impermanent or intangible things—marriage, warfare, perishable artifacts, songs, dances (Terrell 1998, 2001). Anthropologists now realize that few island societies have ever been truly isolated (Erlandson and Fitzpatrick 2006:15). But Pacific people were traversing open ocean, not deserts, and not across what might have been great cultural boundaries. What

prevented regular interaction between the Southeast and Mesoamerica may have been *both* those geographic factors—desolate, resource-poor landmasses and/or a large body of water to traverse—and powerful sociopolitical systems, collectively and individually, that possibly did not seek or deliberately resisted intercommunication.

South Florida and Cuba

Returning to geography, it is instructive to look again at Cuba. The archaeological record, as well as paleoethnobotanical data, place names, and human bone chemistry and DNA indicate that Cuba's human populations and cultural influences originated from more complex, multilinear systems than originally thought. Cuba was populated before 4000 B.C., in several waves of early migrations from different directions, including Mesoamerica, northern and/or southern Central America, other Caribbean islands, and northern South America (Rodríguez Ramos 2016:229; Rodríguez Ramos and Pagán Jiménez 2006; Roksandic 2016b:8-9). One of the important Cuban food plants, zamia, a poisonous native to Mexico, the Caribbean, and Central and South America, today exists in Florida and south Georgia (some planted in my yard near Tampa is thriving). It requires extensive processing to detoxify, including a special tool kit that has not yet been observed archaeologically in northeastern South America or Mexico, only in Central America (Isthmo-Colombian area) and the Greater Antilles. Zamia was called coontie, as used by historic Seminoles in south Florida, but its use apparently did not extend into the greater Southeast prehistorically. Precontact Cuban archaeological sites have now produced evidence for cultivation of maize, beans, sweet potato, and manioc as early as 1200 B.C.; the latter two of these crops had to have come from South America, probably via the Caribbean (Smith 2016). But there is little other indication of interaction between Cuba and the US Southeast.

The environment of subtropical south Florida is different from that of the rest of the Southeast. For example, not much acorn and no hickory has come from archaeological contexts there. While the Spanish reported that Native Americans made bread from roots, so far no archaeological expression of coontie processing is known, though as a root crop it is less likely to leave evidence. South Florida cultural groups are now known to have developed complex tributary chiefdoms while still maintaining a subsistence system of gathering, fishing, and hunting, but not maize agriculture as in most of the South (though maize and other cultigens may have been brought in from elsewhere). However, though the Spanish chroniclers did not mention it, the archaeological evidence does suggest that natives sometimes had “home gardens,” from whence the above-mentioned papaya and chili may have come. Manioc beer and possibly other alcoholic drinks from fermented plants were apparently made in Cuba in precontact times, and documented by Spanish chroniclers in the early 1500s. But Yucatec Maya plants such as sapote, avocado, and cacao did not arrive in Cuba until colonial times (González Herrera 2016:179, 183).

So Cuba and south Florida are not hugely connected, and largely ineligible for inclusion in the discussion anyway as they were mostly apart from the greater Southeast. Not that much spread from Mexico into the Southeast and when it did, it came via the Southwest. Much more Mexican influence ended up in the Southwest: macaws, turquoise, ball courts—all clear documentation for interaction. Driver (1969:111-115) lists among narcotics of prehistoric North American Indians only those in the Southwest and Mexico, such as peyote, jimsonweed, mescal, and mushrooms. Through there a few things ended up in the Southeast/Midwest, but only at big westerly centers such as Spiro and Cahokia. These two centers both participated in extremely long-distance prehistoric trade, such as obtaining whelk shells from the Gulf of Mexico (Kozuch et al. 2017). Spiro had olivella shell beads from the California coast (Kozuch 2002), copper from the Great Lakes, the chert from Hidalgo and cotton from the Southwest. If anything, Spiro was the outpost at the edges of the greater regions, or the hub uniting them to a small extent, like Istanbul between Europe and Asia. But there is little of actual Mesoamerican material in the greater Southeast, or vice versa, beyond the few and isolated examples, except for two cases with supporting evidence.

Good Possibilities for Interaction

One reasonably substantiated claim for interaction between the Southeast and Mesoamerica is the connection between the Huasteca or Teenek Native American region in northeast Mexico and the south Texas-Louisiana coast. Similarities in whole complexes of material culture and behavior include carved circular shell gorgets, earthen mounds, pottery (some decorated with black asphaltum), and projectile points. These strongly suggest influences moving *from* the US *into* northeastern Mexico (Dávila 2005; Ekholm 1944; Gidwitz 2010; Mason 1944; Zaragoza 2005), such as the obvious continuities shown in Figure 3. Linguistic researchers propose associations between the Totonac language on the Mexican Gulf and the Chitimacha of the Louisiana coast, including the possibility of this avenue for ancestral introduction of maize into the Southeast (Brown et al. 2014), though archaeological support for this hypothesis is lacking. The absence of alcohol in extreme northeastern Mexico documented by Bruman is further potential evidence that interaction extended southward somewhat down the Gulf Coast but perhaps not even as far as Veracruz. Engagement between the US Southeast and Mesoamerica may have been tenuous because northeastern Mexico itself was somewhat outside the realm of the complex Mesoamerican states.

The second major claim for interaction consists of general vague similarities in symbolism of belief systems in the two regions. Ancient shared general ideologies and practices throughout the New World include pyramidal mound construction, raised earthworks, roads, pathways, and enclosures (e.g., Mainfort and Sullivan 1998), imagery of various kinds (e.g., birds, feathered figures, etc.), aspects of mortuary and political ritual such as breaking or “killing” objects interred with the dead, and taking of trophy heads. An ancient affiliation between Mesoamerica and the Southeast seems to be reflected in generalized forms of shared knowledge, motifs and observances. What may have started out as common

canon evolved along divergent paths in the different regions over the millennia. For example, with significant celestial bodies, greater seasonal variation by latitude in daylight hours, not to mention different night-sky constellations, could be important. Hall (1997) used various motifs on pots, pipes, and other artifacts as symbolic expressions to relate the Morning Star sacrifice story of the Plains and eastern US, the worship of Mesoamerica's Xipe Totec, and cosmological systems of groups from the Pawnee to the Aztec. Vaguely similar designs and common practices such as pyramidal mound building, mound center layouts, and trophy head use may indeed show deep ideological, architectural, and artistic roots. Claassen (2023) suggests that several Aztec festival calendar rites derived from practices developed as early as the Archaic in the eastern US concerning earth-origin stories, deities, or other beliefs, and involving blade caches, shell beads, and other items, that moved southward into Mesoamerica over many millennia. But such kinds of attenuated phenomena and divergent material interpretations of shared general ideologies are widespread, easy to see today in, for example, Christianity, where a cross symbol is interpreted in so many different material ways in different places and times over 2000 years, from neon church signs to gold-filigree medieval jewelry.

Conclusions

The Southeast as an integrated cultural area had elaborate communication networks across as much as 1500 miles (e.g., Tanner 1989), and its American Indian groups shared wide knowledge of peoples huge distances beyond that. Hence the symbolic connections and some material similarities of cultural complexes from Paleoindian times onward. However, at present the evidence for significant *continuous* or *regular* interaction is insufficient. While individual prehistoric Native Americans must have traveled between Mesoamerica and the Southeast, such as the four Cahokia-area people with teeth filed in Mesoamerican fashion (Griffin 1966:129), such visits must have been sporadic and not significant. Environmental restriction and the sociopolitical complexities of the two regions, possibly the assertions of distinctive identity, or what in recent sociopolitical regimes we would call isolationism, of peoples in the Southeastern US may have worked against anything more than low-intensity, infrequent interaction with more southerly cultures. Further research could support these conclusions with more definitive data, for example, trace element studies of artifacts that look imported, determining sources for shell, obsidian, and other items that seem to have moved long distances, identifying plant and animal residues on stone and other artifacts as has been done in the Southwest, and of course ancient DNA determinations for human skeletal remains. Perhaps today, despite prevailing politics, archaeologists and Native Americans from both regions can ignore national boundaries and language differences, and work together to explore this topic further with physical and chemical tools of scientific archaeology.

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