The History of North American Education, 15,000 BCE to 1491

Milton Gaither
Messiah College, mgaither@messiah.edu

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Introduction

In an earlier work I provided quantitative evidence for the claim that the recent historiography of American education is characterized by an increased emphasis on the recent past to the detriment of the colonial, early national, and even antebellum eras. In that piece I noted off-handedly that there has been next to no work done on the history of American education before the arrival of Europeans. This article is my attempt to initiate the process of filling this appalling gap. Anyone so foolhardy as to hazard a history of education before European contact in the land that is now the United States, however, must deal at the outset with at least four theoretical and methodological concerns.

The first pertains to source material. Anyone writing about what many still call prehistory must come to terms with the fact that there are “no written records, no first-hand accounts.” Instead, precontact historians are forced to rely on four sources: surviving oral traditions, descriptions of natives written by the first Europeans to visit North America, material artifacts discovered by archaeologists, and a sophisticated set of scientific techniques that have been creatively applied to the deep past by linguists, geneticists, climatologists, epidemiologists,

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2 The one standout exception is the seminal article by Don Warren, “‘We the Peoples: When American Education Began’” in *American Educational History Journal* 34, no. 2 (2007): 235-247.
3 Foolhardy is the correct word. I would like to thank several individuals whose feedback on this article has made it at least a bit less foolish, especially Don Warren, Michael Marker, Bernardo Gallegos, and Corin Pursell. All of them and many others will no doubt still find much with which to disagree herein. My hope is that future scholarship will improve on what I have begun.
and other kinds of biological scientists to extract all possible information. Each source type has its problems. The oral traditions that survived European colonization are just as full of bias and propaganda as our records are today, and they often mask as much as they reveal. The early European records likewise must be approached very critically, as the documents often say more about European prejudices and commercial interests than about actual conditions in the New World. The archaeological finds, as intriguing as they are, are seldom complete enough for archaeologists to avoid filling in the gaps with speculative and debatable theories. Finally, the powerful data coming from the hard sciences that has over the past few decades transformed the basic outlines of the archaeological accounts possesses a complexity that is well beyond the pay scale of most educational historians, and teasing out educational implications for all of this research can be quite a challenge.

A second problem is historiographical. Not very long ago most historians writing about pre-contact native cultures were as prejudiced as were the European sources on which they relied. The venerable Samuel Eliot Morison was only parroting the commonplaces of his and many previous generations when he described the Indians being displaced by English colonists as “pagans expecting short and brutish lives, void of any hope for the future.” Though more recent scholars would doubtless be more respectful, very few have so much as glanced in the direction of pre-contact Indian culture. Partly this is due to the hyperspecialization that plagues contemporary history writing in all subdisciplines. But even among educational historians who

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deal explicitly with Indian history the pre-contact period has been shortchanged. A 1993 book-length history of American Indian education devoted 19 out of 266 pages to pre-contact history.\footnote{David H. DeJong, \textit{Promises of the Past: a History of Indian Education in the United States}. (Golden, CO: North American Press, 1993).} A similar 2004 book gave it two paragraphs.\footnote{Jon Allen Reyner and Jeanne M. Oyawin Eder, \textit{American Indian Education: A History} (Norman: University of Oklahoma Press, 2004).} Leading textbooks in our field either ignore this vast era or cover it using dated secondary sources to make bland and generic claims or to argue patronizingly for native “contributions” to the later European project.\footnote{See, for example, Wayne J. Urban and Jennings L. Wagoner, Jr., \textit{American Education: A History} (New York: Routledge, 2009), pp. 1-10. Axtell, \textit{Natives and Newcomers}, p. x.} It’s clearly time for a fresh look.

A third problem is archaeological. The historian of education who delves into the archaeological literature soon discovers that much of what is being written traffics as much in heat as it does light. There are warring camps of archaeologists on many important question of pre-contact Indian life. Moreover, the conclusions archaeologists reach and the methods they use are viewed with antipathy by many surviving Indians themselves. Indian creation myths do not characteristically depict a migration from Asia (much less Europe\footnote{As was argued for in Stanford and Bradley, \textit{Across Atlantic Ice.}}) but have the ancestors emerging from the ground or through rents in the sky on this continent. Tribes today do not take kindly to DNA findings suggesting otherwise or to studies that find their ancestors responsible for the mass extinctions of Pleistocene era megafauna like mammoth and mastodon.\footnote{Bryan Sykes, \textit{DNA USA: A Genetic Portrait of America} (New York: Liveright Pub. Corp, 2012), p. 217-218. The most robust Indian rebuttal of the archaeological project is Vine Deloria, Jr., \textit{Red Earth, White Lies: Native Americans and the Myth of Scientific Fact} (Golden, CO: Fulcrum Publishing, 1997).} Some historians and anthropologists have thus argued that the only way to get native cultures right is to discard our empirical, linear epistemology and to embrace native cosmology.\footnote{Calvin Martin, \textit{The American Indian and the Problem of History} (New York: Oxford University Press, 1987). Peter Nabokov, \textit{A Forest of Time: American Indian Ways of History} (Cambridge: Cambridge University Press, 2002).}
archaeological mainstream has kept faith with empiricism but given the lack of evidence tends to be divided into various camps, two prominent ones being a “cultural ecology” or “processual” group that stresses environmental causes for societal change and a “socio-cultural,” or “post-processual” group that emphasizes human agency. Most current anthropologists tend to blend both points of view in varying degrees depending upon their theoretical assumptions and the empirical evidence they have available. Educational historians enter into all of this at our peril.

A final issue that must be confronted is our field’s eternal preoccupation. What is education anyway? What aspects of American Indian life are going to be covered? Do we go broad and think of education in the Indian context as “the process of cultural perpetuation and change?” Do we narrow our focus to something specific like the childrearing practices in a particular tribe? In what follows I will try to move from the broad to the specific. I will begin by tracing in a very cursory fashion the established periodization for the vast period under discussion. With that background in place, I will discuss three forms of education: landscape learning, meaning the acquisition and impartation of knowledge about the land and its plant and animal resources; cultural learning, meaning the acquisition and impartation of human technologies and beliefs; and learning from mistakes, meaning the corrective consequences that emerged after some colossal failures in landscape and cultural learning.

The Big Picture

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16 Don Warren, “We The Peoples,” p. 236.
18 The term “Landscape Learning” comes from David J. Meltzer, First Peoples in a New World: Colonizing Ice Age America (Berkeley: University of California Press, 2009). Chapter 7 of his book was the single most helpful source in working out an educational history of pre-contact North American Indians.
Developments in climate science and DNA mapping over the past few decades have transformed the study of North America’s indigenous populations. Though the details are still much disputed, and though there are a few archaeologists who hold out for other scenarios, the majority view now goes something like this.

About 70 to 65 thousand years ago an ancestral population somewhere in the vicinity of 5,000 persons migrated out of what is now Ethiopia and colonized the rest of the world. By 46,000 years ago descendants of this original group had made it by boat to Australia, strongly suggesting that migrations were common by boat along coastal routes. Some of these coastal migrants travelled up the coast of Asia and were able to spread from there to the Polynesian islands and, it seems, to the western coast of North and South America perhaps as many as 30 but at least 14 thousand years ago. However, because most of these coastal settlements are now underwater, very few artifacts from these original settlers have been identified.19

Beginning around 13,500 years ago a second group of Asians, perhaps responding to warming temperatures climate scientists dub the Bølling-Allerød Interstadial, migrated to North America, probably by boat but possibly also by the Beringian land bridge and the ice-free corridor children still learn about in textbooks. Linguistic, dental, and DNA evidence (of both humans and their domesticated dogs) has convinced most scholars that this migration (or series of migrations) came from the same genetic strain of humans who eventually colonized east Asia.20 Unlike the first migration, this one seems to have spread quickly throughout North

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20 In addition to the sources cited in footnote 17 see also Jake Page, In the Hands of the Great Spirit: the 20,000-Year History of American Indians (New York: Free Press, 2003) and Meltzer, First Peoples.
America hunting game large and small. Material evidence suggests that tribal groups had much interaction with one another. So called “Clovis points,” spear tips named after their discovery in Clovis, New Mexico, date from this period and have been found throughout North America across linguistic and genetic divisions.21

The evidence suggests that these so-called Clovis people were hunter-gatherers who ate everything available, especially big game. But the longer they lived in North America the less big game there was to hunt. After a roughly one thousand-year interval ending about 11,500 years ago, when much of North America was again covered in glaciers (called the Younger Dryas), North America warmed again and the human population exploded. With big game extinct and population growing, a gradual shift toward more sedentary modes of life began in various regions of North America.22

This shift is called by many names. Environmentally, it is a shift from “Pleistocene” to “Holocene,” from the last ice age to the warmer climate we are still experiencing today. Pleistocene peoples are typically called Paleo-Indians (with Clovis technology that spanned the continent), and Holocene peoples are called Archaic Indians (with a broader array of rock weapon and tool styles, each with a more limited geographic distribution). More controversially, this shift is associated in some way with the development of agriculture in the millennia after 6000 BCE. The conventional view was that the development of cultivated plants led to sedentarism, but more recent scholarship suggests that the relationship may have gone the other way. Recent scholarship has also questioned the simple distinction between hunter-gatherers and

21 Meltzer, First Peoples, 239-255.
agriculturalists, describing the situation more like a continuum between these two options, with most groups falling somewhere in between based largely on available environmental resources and human competition. When it was no longer possible to follow the animals into virgin territory, hemmed-in tribes had to settle down and find other ways to feed themselves.\(^{23}\)

This gradual shift to sedentarism and agriculture took thousands of years and did not take place everywhere or along the same time frame. Generally speaking it happened sooner in more southerly latitudes, and eventually agricultural production led in what is now Mexico to teeming cities that tended to rise and fall in quick succession due to a combination of climate and cultural factors. Further north, the population was less dense due to colder climate. Glottochronologists studying the Algonkian languages native to New England, for example, have found that they all derive from a common ancestor language that appeared in the Northeast no more than three thousand years ago, when New England finally emerged from glaciation. A leading candidate for this late colonization of the virgin territory of New England was one of the thriving civilizations to the south and west called Hopewell.\(^{24}\)

Hopewell was but one of several mound building civilizations that prospered in North America. The earliest undisputed site is Watson Brake in Louisiana, dated to about 5400 years ago. But about 3000 years ago mound building civilizations grew increasingly common in the southeast of North America and quickly spread northward and westward, spawning complex cultural types like Adena (1000 BCE-200 BCE), Hopewell (200 BCE-500 CE), Coles Creek (700 CE-1200 CE) and Mississippian (1000 CE-European Contact). One of these cultures


\(^{24}\) Mann, 1491, 43-44. Cronon, Changes in the Land, 41-43.
produced a sprawling urban center, called Cahokia near modern-day St. Louis, which at its peak covered five square miles and housed at least 15 thousand people.\textsuperscript{25} By the time the first Europeans arrived in the eastern United States the entire region was a complex “patchwork of communities, each with its preferred terrain, way of subsistence, and cultural style,” all interconnected by dense trade networks.\textsuperscript{26}

On the other side of the continent sedentarism and agriculture emerged as well. Southwestern cultures all benefited in one way or another from the Mesoamerican civilization known as Olmec (1500 BCE-500 BCE), whose roots go all the way back to the Tabasco farming culture of about 7000 years ago. Olmec is the source of around 3/5 of today’s harvested crops: maize, tomatoes, peppers, squash, and many varieties of beans.\textsuperscript{27} The Olmec settlement pattern, social organization, and political history were the template for later civilizations in North America’s southwestern quadrant. At the center of Olmec society were priest-rulers whose rituals ensured productive harvests. So long as beneficent weather conditions obtained, these rulers were honored. But when nature turned against them, the consequences could be devastating. The sprawling Mesoamerican city of San Lorenzo, for example, flourished from 1200 to 900 BCE and then was abandoned, its religious and political symbols desecrated. Shortly thereafter the nearby city of La Venta arose, which flourished for hundreds of years and then was likewise abandoned around 400 BCE.\textsuperscript{28}


\textsuperscript{26} Mann, \textit{1491}, 44.


\textsuperscript{28} Diehl, \textit{The Olmecs}.
In the Southwest of North America similar if smaller scale polities emerged, each with centers that rose to prominence, flourished for a time, and were eventually abandoned. The most notable of these have been classified by archaeologists as Mogollon (500 BCE-1500 CE), Hohokam (300 BCE-1450 CE), Anasazi (100 BCE-1300 CE), and Fremont (400 CE-1250 CE), based on commonalities among recovered artifacts. Some of these cultures at their height produced, likely by slave labor, palatial Great Houses for priest-rulers who performed elaborate rites, one important function of which was to mobilize the powers of nature so crops could grow. When these rites failed, the people abandoned or rebelled against their leaders. During wet periods these cultures would expand into new territories, but during dry periods, especially during the decades-long drought that began around 1250 CE, they would contract or even collapse.

Even as these established populations were developing increasingly complex and environmentally precarious societies, new arrivals of hunter-gatherers were moving in. A so-called third migration of Asians had been coming in successive waves into Alaska from 4000 to 1000 years ago, speaking Na-Dene and Eskimo-Aleut languages. Many of these groups settled in the now habitable northern parts of the continent, and by 1300 CE the Athabaskan linguistic subgroup was moving south to challenge the agriculturalists in the American Southwest. In the centuries just prior to European contact these and other hunter-gatherers pushed out, claimed the abandoned territory of the agriculturalists, or even settled among alongside farmers. Their more aggressive resistance to military and settlement incursions by Europeans is why tribal groups by

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names such as Apache, Navajo, Shoshone, and Comanche are familiar to many Americans today, and why in old Hollywood mythology American Indians were hunters, not farmers.\textsuperscript{31}

One final point needs to be made about this entire history. Many tribal groups’ own names for themselves mean something like “the original people” or “the true men,” and their names for their enemies are often pejorative. None of them would have recognized themselves as a common category “until named and treated so by the colonial invaders.”\textsuperscript{32} It is only in hindsight that we can see through the animosities, epithets, and mutual recriminations to describe a group of people with common ancestors and “strikingly similar” lives.\textsuperscript{33} That similarity, however, especially its genetic component, would prove the undoing of native cultures throughout the Americas, as European diseases ravaged every group, killing as many as 85-90\% in just a few decades and making subsequent colonization by Europeans, and the erasure of the Indian past, much easier, and our efforts to reclaim that past much harder.\textsuperscript{34} In what follows I will stress some of these shared cultural traits, making generalizations about Indian cultures that risk obfuscating the point that we’re discussing thousands of different groups over several thousands of years of historical continuity and change.

**Landscape Learning**

Excavations of Pleistocene sites have revealed that many bands possessed intricate and accurate knowledge of the environment. At Broken Mammoth in Alaska’s Tanana River, for example, archaeologists have found evidence that an amazing variety of plant and animal species were consumed by these early hunter-gatherers despite Arctic conditions. To be able to exploit


\textsuperscript{32} Taylor, \textit{American Colonies}, xii.

\textsuperscript{33} Axtell, \textit{Natives and Newcomers}, 20.

\textsuperscript{34} Mann, \textit{1491}, 33-150.
such an array of animals, birds, fish, and plants in such a harsh environment required elaborate knowledge. The tools used to harvest and process all of this food were equally important. Clovis-age sites are nearly always found at places where major rivers and streams (which were their transportation systems) intersect with geological outcrops of desirable stone.\textsuperscript{35}

Knowledge of animal habitats, migratory patterns, and nutritional value was of course essential for survival, but plant knowledge was also very important. It was likely acquired in one of two ways, first by observation of animal behavior and second by experimentation. The combined results were remarkable. As one scholar put it, “No one has ever found a plant native to North America with any medicinal value not known to and used by American Indians.”\textsuperscript{36} It is very likely that this encyclopedic knowledge of plant varieties and uses was acquired and perpetuated by women, and it was women who were probably the ones who first domesticated these plants and bred them to be more useful to the tribe. It was also they who likely passed this knowledge on to their children.\textsuperscript{37} As population grew and mobility declined, sophisticated processing techniques were developed to exploit all possible local food sources. Acorns, for example, must be rinsed for days with running water before consumption to remove the tannic acid, a process Dalton Bands in Southern Mississippi had mastered by the Holocene period.\textsuperscript{38}

One key to understanding the history of landscape learning is the concept of mobility. When the “New World” really was new for humans, mobility was easy. But DNA evidence has shown that even after settlement became dense there was a long “history of pervasive genetic

\textsuperscript{35} Meltzer, First Peoples, 217-226. Quote on 226.
\textsuperscript{36} Cited in Meltzer, First Peoples, 227.
\textsuperscript{38} Meltzer, First Peoples, 308-309.
exchange across linguistic boundaries.”

Mobility, especially of the sort that leads to “genetic exchange” meant that knowledge one group acquired about the sea or land could travel quickly to other groups. Mobility of course made practical sense for hunter-gatherers who followed game and seasonal variations in wild flora. Studies of living hunter gatherers have found that a good hunter might travel 185,000 square miles in a lifetime. An early 20th century study of Netsilik hunters found that males in the tribe could sketch accurate maps of up to 400,000 square miles, even of places they had never been but only heard about from other Netsilik.

Mobility put a premium on environmental knowledge, discouraged the accumulation of goods, and explains why hunter-gatherer Indians did not really respect property boundaries but did respect elders (who would be living encyclopedias of landscape learning) and the process of tribal decision making (which would allow for the pooling of everyone’s knowledge) when planning when and where to move.

Passing on the encyclopedic knowledge obtained by the group and archived in the elders would have been the most important thing a tribe could do for ensuring its long-term success and trans-generational survival. No single generation or single tribe could amass the requisite knowledge for success in the North American or any other environment, and there is abundant evidence that landscape learning was readily shared.

Clovis points make a great example. To date over 13,000 Clovis points have been found from about 1,500 locations across North America. All of them, coast to coast, are made using the same difficult chipping style, called by archaeologists outrepassé. Radiocarbon dating of

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39 Meltzer, First Peoples, 163.
40 Meltzer, First Peoples, 221.
these stones suggests that it took between 200 and 500 years for Clovis era hunter gatherers to span the continent, far too little time for one group to do so by sexual reproduction and migration alone.\textsuperscript{42} The proper inference to draw is thus that the technology itself, once developed, spread quickly among groups of Indians already living in North America. How? By education. Indians who knew the technology spread it via mobility to others while engaging in trade, genetic exchange, diplomacy, or even war. Pleistocene peoples, as we’ve seen, were highly mobile, and their technologies would travel with them. A dramatic example of this mobility was uncovered in 1980 by archaeologist Steve Loring, who found a fluted Clovis point in Vermont that had clearly come from a chert quarry in what is now Labrador, Canada, which during its era was glaciated. To get from the quarry site to the Champlain Sea where the point was found would have required a 1500 mile trip by boat. Whoever made that trip would have had to know about the chert supply and know how to get there and back again on rough seas. Landscape learning on a scale like this could only be sustained by deliberate and perpetual education.\textsuperscript{43}

What sort of education? Much of what an Indian would need to know would be acquired via what we might call \textit{osmotic learning}. Osmotic, or natural learning, is a universal human feature. It has even been observed in humans’ closest primate relatives. Young chimps in the Ivory Coast, for example, learn how to crack open nuts using stones as hammers by watching their parents, while chimps in the Gombe whose parents don’t do this never acquire the skill.\textsuperscript{44} Humans, through the process called neoteny or pedomorphic evolution, have evolved to be far more curious about the environment than other primates. Humans specialize from early infancy


\textsuperscript{43} Stanford and Bradley, \textit{Across Atlantic Ice}, 234-235.

\textsuperscript{44} A. Whiten, \textit{et al.}, “Cultures in Chimpanzees” in \textit{Nature} 399, no. 6737 (17 June, 1999), 682-685.
in observing and imitating adult behavior.\textsuperscript{45} When we add the mutation in the FOXP2 gene which allowed human languages to evolve along with sociality, we get the biological basis for osmotic learning all humans would have brought with them to North America.\textsuperscript{46}

Language clearly played a special role in osmotic learning. To learn North American Indian languages in many cases was to learn the landscape. Names of the month, for example, tended to differ by tribe based on that tribe’s mode of sustenance. Northern hunter-gatherers tended to name months after the animal that was abundant at that time, while southern agricultural tribes named their months according to the relevant corn-based activity.\textsuperscript{47} Place names could be just as educational. For example, an island might called by an Algonkian something like Azioquoneset, which literally means, “the small island where we get pitch.” Seconchquut was “the late spring or summer place.” The Eackhonk river was “the end of the fishing place.” Indians “used ecological labels to describe how the land could be used,” and their children would learn all of this valuable information just by learning the names of things.\textsuperscript{48}

Language was also the medium through which elders passed on the accrued wisdom of generations through tribal myths and stories.\textsuperscript{49} Cultures like our own that are awash with words in print and on the screen have difficulty understanding the sacredness of the spoken word or of American Indians’ “profound belief in the efficacy of language.”\textsuperscript{50}


\textsuperscript{47} Cronon, \textit{Changes in the Land}, 43.


Indians who did not speak the same language still shared a wide range of non-verbal signs, which were the basis of a robust inter-tribal communication. Painting as well, with its colors and shapes, carried meanings that crossed linguistic boundaries. These pan-linguistic forms of communication facilitated another key method of landscape learning: trade. Archaeology of all time periods from the Pleistocene to the Holocene has uncovered consistent and pervasive evidence of the dramatic mobility of goods. Though ideas do not leave similar remains, it can be safely inferred that Indian traders shared knowledge as well as goods with one another. This was perhaps especially the case at major rendezvous events, where thousands of Indians might congregate over a period of days for religious rites, trade, and feasting. At the Lindenmeier site in what is now northern Colorado, for example, which was a popular gathering place due to its abundant stone, animals, and plants, several distinct types of Folsom points (9500 BCE-8000 BCE) have been found that were made from stone quarries up to 95 miles away. Such gatherings must have provided abundant opportunity for inter-tribal knowledge sharing.

A final opportunity for landscape learning was warfare and its cousin, gaming. Archaeologists studying Neolithic peoples the world over have consistently found that these societies engaged in frequent and deadly war. Sometimes war was more pageantry than battle, but night or early morning raids were often massacres. This kind of stealth war of course required very accurate knowledge of the terrain as well as of enemy habits. There could be any number of reasons for a raid, but revenge for prior injuries was always high on the list, and a

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53 Meltzer, First Peoples, 302-303.
54 Axtell, Natives and Newcomers, 170.
55 For a good introduction to the vast literature on this question see Pinker, Better Angels of our Nature, 2-3, 31-58. See also Wade, Before the Dawn, 151-153.
common aim was to take hostages that could replace tribe members previously lost, especially women and children.\textsuperscript{56} Once assimilated into their new tribe these hostages could themselves become conduits for knowledge exchange. Should they eventually be rescued, that exchange could go the other way as well.

War also had a more indirect impact on landscape learning. The state of fear and the threat of tribal annihilation accompanying warfare led farsighted leaders to concoct alternative methods of resource acquisition and maintenance. Tribal leaders often rose to prominence on strength of their ability to facilitate peaceful economic exchange with neighbors rather than war. Their influence with neighbors and with spirits who might bring misfortune on the tribe was the source of their power and was reflected in the prestige goods they possessed, especially exotic items from far away. Chiefs and other leaders wore and stored such items to symbolize their power to make alliances, which is why when leaders died their hoard of valuables was often buried with them. Chiefs also organized inter-tribal sporting events, which could serve as less lethal methods of satisfying the human penchant for animosity against outsiders. \textit{Chunkey}, a game popular among Mississippian Indians, is a standout example. Wherever Mississippian culture spread (and it spread very far), the tribes that came under its influence competed against one another at \textit{Chunkey}, which both cut down on wartime fatalities and facilitated a culture of exchange premised on shared interests.\textsuperscript{57}

\textbf{Cultural Learning}

Not all Indian learning pertained to the environment. Much of it had to do with uniquely human behaviors. Some of these behaviors were efforts to manipulate the landscape better to meet human ends, and some of it pertained to the uniquely human search for meaning.

\textsuperscript{56} Pinker, \textit{Better Angels of our Nature}, 31-58.
Archaeologist Robin Ridington has described Indian technology as “a system of information rather than an inventory of objects.” It is these systems of information that I want to call “cultural learning,” a learning grounded in human artifice. An exhaustive treatment of Indian cultural practices is well beyond the scope of this article. I will focus here on three specific examples: fire, maize, and spiritual beliefs and practices.

Archaeologists studying Paleolithic peoples around the world have found that many of them frequently set their landscapes aflame. Early European visitors were astonished and perplexed by this practice. Some reported that Indians carried with them at all times a pouch full of flints which they used, as Thomas Morton put it in 1637, to “set fire to the country in all places where they come.” Why would they do this? It was a cultural practice that resulted from centuries of studying the animals on which Indians depended. They learned that herbivores’ favorite grazing sites were “edge habitats” right on the cusp of forests. Constant burning of undergrowth extended the edge habitat, increasing the number of herbivores, which brought predators, which made human hunting of both easier. Indians burned areas near their settlements and coastal areas with regularity, but any place they wanted to hunt would be burned. In 1792 Peter Fidler travelled with groups of Indians in what is now southern Alberta and observed first hand this dramatic and to him frightening scene of massive, intentional wildfires. As disorienting as the phenomenon was for him to watch, he understood why they did

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60 Quoted in Mann, 1491, 285.
62 Cronon, Changes in the Land, 183.
“these fires burning off the old grass, in the ensuing Spring and Summer makes excellent fine sweet feed for the horses and Buffalo, &c.”63

A second example of how human culture altered the landscape was the development of maize corn. Maize was imported from Central America into North America between three and four thousand years ago, but in a form that we would hardly recognize today. North American Indians, through a centuries-long process of cultivation that spanned many generations, gradually developed the larger and more nutrient-rich variety known as maiz de ocho that became the basis of the many varieties of corn at the center of sedentary North American Indian economies.64

Maize technology was not only about engineering a better corn. It also entailed proper mixing of plants to optimize nutritional intake and to keep fields fertile. Beans and squash were cultivated alongside corn in a symbiotic agricultural context. The beans would grow up the corn stalks, their roots providing nitrogen for the soil and their seeds providing protein corn did not offer. Squash’s broad leaves provided abundant groundcover, cutting down on weeds and evaporation, and its fruit and seeds offered vitamins and amino acids that offset corn’s deficiencies. In Central and South America, wild beans and squash grow up the stalks of the teosinte grass that scientists believe to be the natural precursor to maize. Indians elaborated on nature to produce something uniquely adapted to human flourishing.65

As maize cultivation moved northward, even more dramatic technologies had to be invented to ensure productive harvests. Hardier varieties of maize were engineered. Irrigation systems were initiated, improved upon, and

63 Cited in Mann, 1491, 287.
65 Mann, 1491, 20, 225-226.
enlarged, sometimes to the point that entire rivers were diverted and their courses permanently altered.66

A third form of cultural learning has its origin not in the landscape but in human consciousness itself. Evolutionary psychologists still disagree over how and why religion evolved. Whether it was adaptive, an accidental byproduct of other adaptations, or something else entirely, belief in a spirit world is clearly pervasive in human civilizations, and it was pervasive among North American Indians.67 Though they differed on specifics, all bands and tribes believed in some sort of spirit world. Many groups believed that living things possessed souls or spirits capable of unrestricted movement in time and space that could help or harm others. In many traditions these spirits knew the past and future and could be influenced by ritual. Dreaming was especially important for many groups, for in dreams a person’s spirit leaves the body and can receive messages from other spirits crucial for the person or tribe to thrive. Dream-like or trance-like states were thus desirable, and substances like tobacco that led to altered states of consciousness were prized. In death, according to some groups, the spirit left the body for good to go to the afterlife, which was essentially an idealized version of the present—a land of good hunting, plenty of ripe plants, and ideal weather.68

The spirit world was often hierarchical. Above the lesser spirits and souls in many cosmologies were guardian spirits who could metamorphose into a particular exemplar of their essential form. The spirit of the bear, for example, might temporarily take the form of an actual

bear. An individual Indian might go on a vision quest in search of one of these guardian spirits who had taken physical form.\textsuperscript{69} Above the guardian spirits in some cosmologies was the Master Spirit, the all-powerful creator, and his opposite the trickster or destructive evil spirit, who had to be appeased lest great harm come upon the individual or tribe. While many variations on these themes existed, in general it can be asserted that “spiritual power in the native universe was double-edged, capable of both good and evil.”\textsuperscript{70}

The shift to agriculture left its mark on the spirituality of Indian tribes who made it. Origin stories for hunter-gatherers tend to begin with some kind of humanized animal bringing up earth on which creatures and people can live from the primordial waters. Many agricultural origin stories, in contrast, stressed the progression from one world to another, often through some kind of narrow passage assisted by an ancestral spirit (often a grandmother).\textsuperscript{71} Agriculturists’ spiritual power tended to reside less in shamans who communicated with animal spirits and more in priestly leaders whose intercessions and ceremonies were thought to influence the spirits controlling weather patterns.\textsuperscript{72} But both orientations shared an underlying commitment to the spiritualization of competence. A hunter’s success was imputed as much to his spiritual power as to his training or scientific study of animal patterns. If a priest succeeded in bringing forth a bountiful harvest, it was due to his mediating role with the spirits, not his luck at living during a beneficial climate cycle. Even advancements in technology of hunting or of agriculture were interpreted “less as mechanical aptitude than as spiritual power.”\textsuperscript{73}

\textsuperscript{72} Kantner, \textit{Ancient Puebloan Southwest}, 65-66.
\textsuperscript{73} Taylor, \textit{American Colonies}, 19. Axtell, \textit{Natives and Newcomers}, 22.
How was this cultural learning passed from one generation to another? While osmotic learning certainly was a factor, more intentional methods were used as well. We might call these methods induction and indoctrination. Two standout examples of induction are vision quests and public ceremonies. Vision quests were often rites of passage constructed by adults for children, and there could be many of them. In some tribes a child’s first appearance outside the home dwelling might come at the age of two, when a child would “walk out” and around the teepee to great fanfare as a ceremonial recognition of the child’s passage from babyhood to tribal membership.\(^{74}\) As the child grew, more elaborate rites might be devised by adults. An Ojibwa story captures this approach well, describing the experience of a youth called Wunzh who, when he reached the right age had a lodge built for him by his father “in a far-off place where he could live alone for a while and find his guardian in life.” The boy fasted and lived in the wild, eventually experiencing vivid dreams. After seven days of fasting, Wunzh’s father returned with food.\(^{75}\) Boys like Wunzh were encouraged to keep the esoteric knowledge they gained during such experiences private, demonstrating only gradually as adults the powers given them and slowly revealing the details of their dreamlike encounters with animal spirits.\(^{76}\) In agricultural communities quests might entail long and arduous journeys, perhaps even to central America, whence a hopeful ruler might return with exotic goods and esoteric knowledge that could help the tribe ensure good harvests. This knowledge might be used by such rulers as a form of social control.\(^{77}\)

Indian societies had many kinds of public ceremonies that would have imparted cultural knowledge to children. Here are just a few examples. The Anasazi of the Southwest spent

\(^{74}\) Whitecap, “Education of Children,” 37.
\(^{75}\) Story related in Page, In the Hands of the Great Spirit, 63-64.
\(^{77}\) Pauketat, Cahokia, 148.
generations making astronomical observations, which led to massive public building projects to produce a communication network across multiple high-altitude sites. All of this building facilitated trade and inter-tribal cooperation, symbolized at major gatherings filled with public ceremony.\textsuperscript{78} Across the continent at Cahokia mass sacrifices were made with “spectacular pomp and pageantry” as gathered worshippers consumed thousands of butchered animals and enough tobacco to give “all smokers a hallucinogenic buzz.”\textsuperscript{79} Children were right in the thick of it all, participating in vivid liturgical rites that brought to life the underlying mythic symbols and religious tropes that gave their tribes meaning and identity.

In addition to mass public gatherings, several smaller sorts of ceremonies could be conduits of meaning. Many tribes required menstruating women to withdraw during menses to a small hut in the woods where they would live alone. When the prescribed days were over she would wash herself and anything she had touched and return with ceremonial rites back to the village.\textsuperscript{80} Girls would learn quite a bit from ceremonies like this. Boys would learn as well from the ceremonies preparatory of a hunt, which often included special prayers and human enactments with men disguised in animal skins.

A final example of tribal ceremony comes from accounts written by Europeans captured by Indian tribes during the colonial period. Many described public ceremonies that included running a gauntlet where their Europeanness was ritually beaten out of them, followed by a ceremonial washing where the white was cleaned off. Then solemn words were said and the captives were inducted as full members into the tribe. Once admitted, captives were, in the

\textsuperscript{78} Craig Childs, \textit{House of Rain: Tracking a Vanished Civilization across the American Southwest} (New York: Little, Brown, and Co., 2007).
\textsuperscript{79} Pauketat, \textit{Cahokia}, 109.
\textsuperscript{80} Axtell, \textit{Natives and Newcomers}, 155.
words of one such captive, “set on with hugging and kissing from the women and crying for joy.” “They treated me,” said another captive, “in every way as one of themselves.”

Taken collectively, this culture of deep and thick public ritual was a very effective means of inculcating tribal identity and mythic consciousness into young members, at least among the Algonquian groups typically encountered by Europeans.

A second method of instruction in cultural learning was indoctrination. Figure one serves for me as a powerful metaphor for the type of indoctrination a tribal child might receive. Chinook Indians would literally mold the heads of their babies beyond the wildest dreams of any phrenologist. Children’s mental states were molded just as profoundly by a constant stream of indoctrination.

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81 Cited in Axtell, Natives and Newcomers, 201.
European observers were often impressed with the childrearing methods of Indians they encountered. John Brickell, who spent four and a half years among the Delaware, called that tribe “the best people to train up children I ever was with. Their leisure hours are, in great measure, spent in training up their children to observe what they believe to be right.” Europeans were especially struck by the moral integrity of Indians, especially when compared with the hypocrisy of so many ostensibly Christian whites.

Europeans enumerated several attributes of Indian society that made it appealing. Europeans described how kinship networks and ritual gift giving sustained among Indians an attractive sense of communal identity, relative equality, and interdependence. Indians also tended to be far more tolerant of differences of belief or opinion than were Europeans. As Recollect Joseph Le Caron noted in 1624, “we are not in a country where savages put Christians to death on account of their religion. They leave everyone in his own belief.” Europeans also noted, often with perturbation, the freedom Indians enjoyed. It was symbolized most profoundly by the elaborate hairstyles Indian men wore, but it was also apparent in the relative ease of daily life. Even women, who farmed, prepared food, and made clothing, worked at a leisurely pace that made European colonial women, accustomed to a life of constant drudgery, jealous, and in many regions Indian women frequently terminated romantic relationships, moving between tribes with ease. Into all of this Indian children were indoctrinated. Howard Russell summarizes:

82 Quoted in Axtell, Natives and Newcomers, 211.
83 Axtell, Natives and Newcomers, 212.
84 Richter, Before the Revolution, 26.
85 Quoted in Axtell, Natives and Newcomers, 169.
86 Axtell, Natives and Newcomers, 164.
87 Axtell, Natives and Newcomers, 150-151, 168.
The children picked fruit, watched on raised platforms against crows, blackbirds, and other marauders in the fields, helped their mothers plant and reap, and were encouraged to learn the innumerable details of woods, weather, animal, bird, and insect life. Day after day they acquired the arts and skills of the tribe, memorized its legends and signals, and built the physique that they would need later. Meanwhile, with the approval or forbearance of elders, they enjoyed childhood to the fullest.88

Perhaps the best sources for information on Indian indoctrination, at least among tribes in the Eastern woodlands, are the many narratives written by European captives. The captivity phenomenon was a real puzzle to Europeans, who had had little success converting Indians to European and Christian ways. Hector de Crèvecoeur noted in 1782 that “thousands of Europeans are Indians…and we have no examples of even one of those Aborigines having from choice become Europeans!”89 Many, many other Europeans made the same observation.90 What was it about Native educational methods that gave them such success at converting Europeans?

For one, Indian ways were premised on the landscape and cultural learnings we’ve discussed already. In general the Algonkian cultures Europeans encountered worked with nature (including human nature) rather than against it. The first thing a new captive would receive, for example, was a pair of moccasins, which were much more comfortable than English shoes. Indians treated the captives well, sharing all food equally, and, to the Europeans’ amazement, not violating the women.91 While older captives often took longer to assimilate and occasionally never did, most children took to Indian ways in a period of months. First came language

89 Cited in Axtell, Natives and Newcomers, 191.
90 See Axtell, Natives and Newcomers, 191-197, 376.
91 Axtell, Natives and Newcomers, 196-197.
acquisition, which took most children six to eight months. Then came physical conditioning, for Indians considered whites physically weak. For boys especially this was made a challenge and an adventure. One captive described how his adoptive uncle:

> Used to raise me by day light every morning and make me sit down in the creek up to my chin in the cold water, in order to make me hardy as he said, whilst he would sit on the bank smoking his pipe until he thought I had been long enough in the water, he would then bid me to dive. After I came out of the water he would order me not to go near the fire until I would be dry. I was kept at that till the water was frozen over, he would then break the ice for me and send me in as before.  

Captive men and boys rambled through the woods learning to hunt after the Indian fashion. Captive women and girls were indoctrinated into Indian women’s work. Captive Mary Jemison explains:

> In the summer season we planted, tended and harvested our corn, and generally had all our children with us; but had no master to oversee or drive us, so that we could work as leisurely as we pleased…. In the season of hunting it was our business, in addition to our cooking, to bring home the game that was taken by the Indians, dress it, and carefully preserve the eatable meat, and prepare or dress the skins.  

What was remarkable to Jemison, however, was what she did not have to do, the ceaseless “Spinning, weaving, sewing, stocking knitting” and other domestic chores that occupied every moment’s time for most colonial women. Historian James Axtell provides a succinct summary of why so many Europeans took to Indian indoctrination:

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93 Cited in Axtell, *Natives and Newcomers*, 211.
They stayed because they found Indian life to possess a strong sense of community, abundant love, and uncommon integrity—values that the English colonists also honored, if less successfully. But Indian life was attractive for other values—for social equality, mobility, adventure, and, as two adult converts acknowledged, “the most perfect freedom, the ease of living, the absence of those cares and corroding solicitudes which so often prevail with us.”

Learning from Mistakes

There is a final, more speculative theme in Indian education suggested by the archaeological and climatological evidence. When we compare Indian ideology as Europeans described it with earlier Indian practice, it is possible to surmise that many groups of Indians learned from mistakes their ancestors had made and passed this acquired wisdom down to their descendants through rituals, moral codes, and mythic stories. In this section I will discuss two examples of learning: the Pleistocene extinctions and experiments with urban hierarchical governance.

The topic of Pleistocene extinction has been one of the most controversial issues in a field full of controversies. No one doubts that shortly after the spread of humans across the New World all of the hemisphere’s megafauna, its largest beasts, both herbivore and carnivore, became extinct. Did humans cause these mass extinctions by overhunting, or what is called in the literature “overkill?” Were the extinctions a natural result of climate change? Was it some combination of the two factors? To make the educational point I’d like to make here I have to

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94 Axtell, Natives and Newcomers, 213.
96 The leading advocate of the overkill thesis was Paul Martin. His most expansive account can be found in Twilight of the Mammoths: Ice Age Extinctions and the Rewilding of America (Berkeley: University of California Press,
take a side, and it does seem to me that overkill advocates have the better arguments. Without going into great detail, the fact that megafauna had survived earlier climate cycles, combined with the evidence from Australia that megafauna extinctions happened well before the Holocene when humans arrived there and from several isolated locations where megafauna lived on well into the Holocene until the arrival of humans, all convince me that it is very likely that human hunters of the Clovis culture were at least partly responsible for the extinctions of about fifteen genera of large mammals in North America.97

One of the reasons the overkill thesis has been so controversial is its implications for subsequent cultural evolution. Several species of horse and at least two species of camel, all of which might have eventually been domesticated as beasts of burden, were among those that went extinct around the time of Clovis. Much has been made by comparative geographers of the lack of large beasts of burden among American Indians. It has been offered as an explanation for why the wheel was never invented on this hemisphere and for many other factors that made European civilization more technologically advanced.98 All of this has of course been quite offensive to contemporary American Indians, who resent the implication that their ancestors

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were somehow responsible for European triumph due to their short-sighted and profligate hunting.  

Nevertheless, if we assume that Pleistocene overkill is true an important educational implication emerges. European observers reported with dramatic uniformity on the conviction North American Indians had about maintaining the balance of nature in the hunt. As one scholar put it, “They regarded constant ritual exertion as essential to prevent nature’s collapse into chaos.” Hunting was transfigured from a pragmatic method for gaining food into a “way of thinking about humans in relation to all other beings and natural forces.” Animals became parts of creation “with whom humans had to establish a sense of trust and understanding.” It may have seemed to European observers that such views reflected Indian values that went back to the dawn of time, but if Pleistocene overkill is true, they may instead have been insights born out of painful experience. After hunting several species of big game to extinction, penitent Indians might have shifted strategies, learning that long-term survival meant hunting in more sustainable ways. Given the mythic oral culture of these tribes, such an insight would have taken the form of spiritual stories and moral codes about the proper relationship between humans and their animal prey. The much praised Indian ecological harmony, in short, may have been the fruit of a disorienting educative experience.

A second example of learning from mistakes happened not so long ago and is thus less speculative. Earlier I described the development of agriculture in the American Southwest and Southeast. Let’s return to that phenomenon for a final example of how mistakes could be educational. In the centuries on either side of our year zero agriculture began to spread in the

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99 Mann, *1491*, 182-186. For a spirited critique of the overkill thesis from an Indian point of view see Vine Deloria, Jr., *Red Earth, White Lies*, 93-160.

100 Taylor, *American Colonies*, 12.

American southwest. With it came population growth and increasingly complex social organizations. Pottery making, probably learned from Mesoamericans, became common after about 300 CE, and canal-building, which had begun earlier, was improved on and expanded.\textsuperscript{102}

By 1150 several distinct cultures covered the American Southwest. Groups classified by archaeologists as Hohokam had spread from their base along the Salt and Gila Rivers as far north as what is now Flagstaff, AZ. They had adopted from the Salados people elaborate adobe brick houses as dwellings and public buildings, were building mounds as public ritual gathering places, and had lavish networks of canals spread out for hundreds of miles.\textsuperscript{103}

In the same region other groups with distinct cultural patterns were seeing a similar rise. The Mogollon and Anasazi began the transition to agriculture about 200 CE and are known for their underground ceremonial chambers called \textit{kivas} and for their elaborate masonry storage rooms. Settlements like Mesa Verde, Mimbres, and Chaco Canyon grew into teeming cities with populations in the thousands, networks of roads, and, at Chaco, a turquoise money-like exchange system. In all of these societies elites with special charisma conducted elaborate ceremonies, one of whose purposes was to secure good harvests, and were buried with great honor.\textsuperscript{104}

As these population centers grew ever more complex, densely settled, and utterly dependent on agriculture, they eventually reached the limits of the land’s carrying capacity even in the best of environmental conditions. The archaeological record at Mesa Verde, for example, reveals that large game grew increasingly scarce in the local diet, that tree cover decreased, and that rates of child mortality, anemia, and dental disease increased over time.\textsuperscript{105} When a local

\textsuperscript{102} Page, \textit{In the Hands of the Great Spirit}, 73-75.
\textsuperscript{103} Page, \textit{In the Hands of the Great Spirit}, 75-77.
\textsuperscript{105} Kantner, \textit{Ancient Puebloan Southwest}, 195-232.
drought struck in 1130 that lasted for fifty years, these settlements began to experience “a massive loss of complexity and cohesion.” Wealthy leaders, whose status was predicated on their ability to secure beneficent weather, were deposed or fled. Commoners began to disperse. Then the overall climate cooled, and agriculture in these regions became much more difficult. By 1300 the old, hierarchal massive civilizations had disbanded, replaced by smaller, more egalitarian groupings with new rituals and social arrangements that are recognizably Pueblo. Whereas in the past only elites participated in ceremonial dances or enjoyed elaborate burials, in Pueblo societies everyone wore a mask, danced, and received honorific burial. Archaeologists point to climate change and the internal political and religious struggles it precipitated as the cause of this civilizational collapse, but for Pueblo groups like the Hopi, whose oral histories chronicle this collapse, the fault was with the leaders. They allowed the people to get too worldly, the ceremonies too lavish, the culture too decadent. So the Spirits responded with drought or floods, thus chastening the people. Places like Chaco Canyon became a bad memory, a warning symbol used by elders to teach the young “to shun hierarchies and spurn elites.” For the Pueblo descendants of these people, the great centers of complex civilization were remembered with shame as a horrible mistake. For groups like the Navajo who arrived after the collapse, places like Chaco were remembered as evil sites where a king-like ruler, neither Navajo nor Pueblo, had enslaved all peoples of the region and forced them to build palatial homes for himself and his family. The people eventually overthrew the tyrant and developed new ceremonies emphasizing communalism and egalitarianism. It was these ideals that permeated the American southwest when Europeans began to arrive it in the mid-1500s.

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The same thing happened in the American Southeast, most conspicuously at Cahokia. Mississippian culture didn’t embrace agriculture until around 800 CE, but once it did population skyrocketed. Of all the mound-building complex agricultural civilizations in North America Cahokia was the greatest, reaching a peak population of about 16 thousand. Exotic goods from all over the continent flowed into this ornate, highly stratified religious and political center. The mounds, the largest in North America, had originated as burial sites but had grown into astronomically-oriented staging grounds for grand rituals, one of whose main purposes was to facilitate crop growth.\textsuperscript{110}

This shift to agriculture in the southeast marked a dramatic shift in land use for the region’s Indians, who had previously used fire to maintain terrain ideal for hunting game. But with massive clearing of tree cover, especially along river valleys, came the unanticipated consequences of floods and mudslides. Scholars studying sediment layers have found that between about 1100 and 1300 CE “cataclysms afflicted Indian settlements from the Hudson Valley to Florida.”\textsuperscript{111} This sort of resource mismanagement seems to have happened on an especially grand scale at Cahokia. For centuries the city had required incredible quantities of game and crops to sustain its population. Animals grew scarce, the soil grew depleted, and skeleton evidence reveals that malnutrition and disease were rising. Cahokia creek was at one point re-routed to add to the city’s water supply, but the result was a series of massive floods. The elaborate ceremonies that elites had conducted to ensure the support of the spirit world were clearly not working. Finally, in the early 1200s a “catastrophic earthquake” hit. The result was civil war. By 1350 Cahokia was virtually abandoned.\textsuperscript{112}

\begin{itemize}
\item\textsuperscript{111} Mann, \textit{1491}, 301.
\item\textsuperscript{112} Mann, \textit{1491}, 303-304.
\end{itemize}
Similar collapses happened to other Mississippian civilizational centers in the decades after 1300. As in the Southwest, processual Archaeologists emphasize climate change, but Indian memory emphasizes the evils of the ruling class and its hierarchical practices. European colonizers reported on practices by descendants of these Mississippian societies that emphasized small-scale living in harmony with nature and egalitarian practices like Choctaw burials that gave the same honors to everyone or the Cherokee oral tradition celebrating the violent overthrow of “a corrupt, oppressive priestly class called the Aní-Kutání.”\(^\text{113}\) Likewise, as in the Southwest agriculture itself was not abandoned. Spanish and French explorers in the 16\(^{th}\) and 17\(^{th}\) centuries encountered Indians that were basically Mississippian in orientation—they practiced Maize-based agriculture, lived in permanent settlements, played sports that were similar to those that had been popular in the great Mississippian centers, produced pottery, and practiced religions strikingly similar to earlier precedents.\(^\text{114}\) What had changed, however, was the political order that led to the crisis. Indians throughout the region turned their backs on hierarchy and espoused the ideals of living in harmony with the spirits of beast and plant. Sediment studies show that after 1300 there was much less erosion of cropland, suggesting that Indians had learned from their mistakes how to farm more sustainably. These were the societies that encountered Europeans in the centuries after 1492.\(^\text{115}\)

The encounter with Europeans would begin a new and tragic chapter in the history of American Indian education. The lessons learned in these earlier years would provide both resources for and hindrances to further education. Resources include the superior landscape learning Indians enjoyed over their European rivals (including their warfare techniques), their

\(^\text{113}\) Richter, Before the Revolution, 33.
\(^\text{114}\) Pauketat, Cahokia, 8.
\(^\text{115}\) Mann, 1491, 301-302. Richter, Before the Revolution, 35-36.
enculturated capacity to endure hardship, their loyalty to kin, and the sense of meaning their rituals and stories provided them. Deficits included first and foremost their genetic similarity, which left them highly vulnerable to devastating outbreaks of European diseases, their lack of domesticated animals and lower grade weapons, their susceptibility to novel inebriants, the tendency of many to prize wampum and other seemingly exotic European goods, and their inter-tribal prejudices, all of which would be exploited by Europeans. But I have tried to show here that this later story should neither eclipse nor limn the contours of the earlier one. Taken on its own terms, we have seen that the pre-contact period was one rich with learning about land, about cultures, and from past experience.