

1998 ARIZONA ARCHAEOLOGICAL SOCIETY LECTURES:  
PALEOINDIAN AND ARCHAIC TRADITIONS IN THE  
SOUTHWEST (MODIFIED 2001)

TERMS AND DEFINITIONS

TRADITION:

A pattern of human behavior which is identified by a particular technology and which occurs over a long period of time. Minor changes occur through the duration of a tradition. For example, the pattern of manufacturing stone projectile points of lanceolate (leaf-like) shape identifies the Eastern Paleoindian Tradition, though the points are shorter and fluted early in the tradition and longer with parallel flaking later on.

CULTURES, OR WHAT CORDELL SOMETIMES CALLS "COMPLEXES":

These units of archaeological analysis or interpretation are identified by a suite of attributes of the archaeological record – such as a style of projectile point and a pattern of subsistence and settlement – that are believed to be the product of a particular human population. The population is thought to have lived in a certain territory at a certain time, to have shared common customs and lived in much the same fashion, and probably to have communicated through use of a common language.

HORIZONS OR PERIODS:

These are time units. Often we do not know the true antiquity of an episode of time; only that it is older or younger than some other episode. It is not unusual to name a horizon or period after a complex or culture that existed at that time. Thus we often speak about the Clovis culture as existing during the Clovis horizon.

STAGES:

These units are often given the same name as cultures or horizons, but are really quite different. A stage is an episode of cultural evolution that is characterized by a particular form of adaptive behavior. The prevailing theory of cultural evolution applicable to North American prehistory recognizes five stages of cultural evolution: Paleoindian, Archaic, Formative, Classic and Postclassic. The Paleoindian Stage is characterized by the earliest form of cultural adaptation to New World conditions. The Archaic Stage is characterized by the economic behavior of hunting and gathering modern (not extinct) forms of plants and animals. The Formative Stage is characterized by economic patterns involving sedentism and food production. These stages of cultural evolution are not necessarily sequential in any given area. Some complexes that evidence

the characteristics of the Archaic Stage, for example, are much younger than some that evidence the characteristics of the Formative Stage.

## INTRODUCTION

This course is set up to allow one lecture period to deal with the archaeology of the Paleoindian Horizon and one lecture to deal with the Archaic Horizon. Though this arrangement isn't surprising in such a course, I find it curious. It isn't surprising because courses in Southwestern archaeology traditionally emphasize the dramatically elaborate and sophisticated cultures of later horizons, with their abundance of architectural and ceramic artifactual detail. Most archaeologists, as well as most members of the general public, think about Southwestern US archaeology in terms of puebloan communities, cliff dwellings and the like, and books like Cordell's cater to that perception. The history of archaeological research by American scholars also has been important in setting this tone, for during the first half of the 20<sup>th</sup> century archaeologists were thought to have the job of pushing the boundaries of known history back ever more deeply into the pre-Columbian period. This meant archaeologists concentrated on working back from the so-called "ethnographic present" of such aboriginal societies as the Navajo, Apache, Pima, Zuni and Hopi to the time of their immediate ancestors.

This course organization is curious, though, because in combination the Paleoindian and Archaic Horizons account for at least 10,500 years of Southwest prehistory – possibly twice that amount of time – while all the other archaeology you will hear about in the course, combined, will cover only the 1800 years between 300 BC and 1500 AD. Because so little time is available to me to lecture about the archaeological record that encompasses such a long period of

time, I have to take certain shortcuts. First, I will not speak much about the nature of the artifacts and the sites that make up the archaeological records of these horizons. I leave that to Cordell's text and to additional readings I hope you will find it interesting to find and pursue. Second, I will encourage you to question the substance of my lectures and bring up ideas for discussion. There may not be too much of that in this first lecture, because you'll just be getting used to my style. But if you prepare yourself for my second lecture by reading Cordell's Chapters 4 and 5 carefully, I think you may have a number of interesting questions for me that will engage others in the class as well. By the way, notice that I said it would be helpful to read the text carefully. Cordell is pretty easy to read, but I think you'll find that like most things written by archaeologists there's a great deal more to a given paragraph or section of the text than first appears. Careful reading of archaeological work often means that you have to go over it a second or third time, and you may have to outline how a chapter or section of a chapter is organized, to get most of the good out of it. Third, if I find that the Paleoindian lecture and question period which follows it have not taken up all the time allotted tonight, I may start the discussion of the Archaic Horizon this week and not wait until next week to begin it.

## **PALEOINDIAN**

I'm going to skip over the problems that would be involved determining the duration of the Paleoindian Horizon by speaking first about the Paleoindian

Culture Stage. That is, my lecture will begin by dealing with the episode of cultural evolution characterized by the earliest form of adaptation to conditions existing throughout the New World, as well as here in the Southwest.

Analyses of Culture Stages focus on adaptations. As we speak of the Paleoindian Stage, then, you must keep in mind that human adaptation is not the same as that of any other organisms we know of on our planet, because humans are the only cultural animals. Human beings adapt to their biophysical and their social environments through both somatic, or genetic, mechanisms like any other animal and through culturally conditioned behavior. So human adaptations are more complex than those that control the evolution of other organisms on two grounds: first, human adaptations may be either genetically or culturally controlled, and, second, human social environments are more complex than those of any other animal and are thus subject to more rapid and more frequent changes. Human adaptation, then is a much more dynamic phenomenon. So human evolution proceeds in ways and at a pace that is quite different from that of other organisms.

I could present this discussion in terms of the ways archaeologists have researched the character of the adaptations of the Paleoindian Stage, but that's not the way we've actually come to know about such things. What archaeologists who specialize in these matters have done is to identify six issues of archaeological interest which are usually posed as questions:

(1) When did people colonize the New World?

- (2) What was the culture they brought with them from the Old World; particularly, how were they pre-adapted to any new biophysical and social environments they encountered in this hemisphere?
- (3) What route did they take?
- (4) How was their culture changed or otherwise affected by the character of Pleistocene and Early Holocene environmental conditions and change?
- (5) What are the major outlines of cultural history that occurred during this stage of cultural evolution?
- (6) What are the major varieties of cultures that developed during this stage of cultural evolution?

To understand archaeological thinking about the answers to the first three Of these issues, you need some historical perspective. You must remember that radiocarbon dating was not invented until the late 1940's, so for the first half of the 20<sup>th</sup> century the only secure way to tell how old an archaeological culture was was to relate it stratigraphically to something whose geological antiquity was already known. Until the mid-1920's, no archaeological materials had been found in the Americas that could be geo-stratigraphically dated as more than 3000 years old. Prevailing opinion was that though some stone tools were cruder than others, so could be older than those dated in this way, one couldn't trust the assumption that crudity was an index of antiquity. So human colonization of the Americas was though not likely to have occurred much more

than 4000 years ago. The reason that the Folsom discovery was so important is that it demonstrated that human beings had hunted an extinct form of bison in North America. According to geological estimates, those animals did not survive the mass extinction which occurred at the end of the Pleistocene, so people had to have hunted in North America prior to 10,000 years ago. Then came the evidence of an even older archaeological culture, Clovis, whose population had hunted mammoths.

Since the Pleistocene was the time of the ice ages, during the 1930's and 40's archaeologists theorized that the original colonists of the Americas were Late Pleistocene hunters who followed big game animals such as mammoths across the Behring Sea on an ice bridge that linked Siberia and Alaska. This reconstruction fit neatly with the evidence that modern Native Americans shared more biological features –such as eye and skin color and hair form—with the modern peoples of Siberia and Mongolia than anyone else, and with the evidence that Late Pleistocene human groups in Europe and in Asia were big-game hunters. This is the way things looked when I first began graduate work in archaeology 50 years ago.

In the mid-50's, when radiocarbon dating placed Clovis mammoth hunters in Arizona at 8,900 BC, it looked like Clovis was the earliest American culture, and all others derived from Clovis and evolved from Clovis populations as biophysical and social conditions changed over the subsequent millennia. This “Clovis First” theory was generally accepted until 1995. It was reinforced by our learning that human migration could have occurred on a land bridge rather than

an ice bridge, and that linguistic and physical anthropological evidence suggested that the genetic ancestors of modern Indians came to the Americas from Siberia in three waves of migration beginning about 12,500 years ago.

But there was evidence that the Clovis First theory wasn't accurate. For one thing, Clovis radiocarbon dates cluster in the 500-year interval between 9,300 and 8,800 BC. Since Clovis culture archaeology exists from Southern Canada to Guatemala, it was difficult to understand how an original population of migrants that was so small it left no archaeological record in Alaska at all could have increased fast enough to spread from the Atlantic to the Pacific in only 500 years.

In the 1960's, Paul Martin – a zoecologist and paleoecologist at U of AZ – provided an answer in his “overkill hypothesis”. He argued that Clovis hunters moved south through a narrow ice-free corridor between the eastern and western glaciers, to find themselves in a hunter's paradise on the Plains of North America. There they would have encountered more game than anyplace, including Africa, that man had ever been before, and those animals had never been exposed to human predation so had no fear of man. Martin computer-simulated the effect if a human population of only 10 groups of 30 people, killing only two large animals per week and moving only 50 miles per year, was to enjoy a 50% birth rate in each generation. His calculations indicated it would be less than 500 years before the continent was populated and the megafauna were so decimated that their birth rate could not compensate for their losses and they'd become extinct.



You'll find this hypothesis viewed sympathetically in textbooks dated 1995, though by then competing hypotheses and new data were shaking the Clovis First position. Work by Canadian geologists and archaeologists failed to confirm the idea that an ice-free corridor existed during the thousand years preceding the Clovis Horizon. Also, by the 90's a number of sites had been found that generated claims for pre-Clovis antiquity in Alaska, the Western US and the Eastern US. Almost all these claims were debunked in various ways, but as Adavasio wrote in an article published in 1993, there were three sites with data that seemed to satisfy all the standard tests for reliability: Meadowcroft Rockshelter in PA, Bluefish Caves in Washington State, and the Monte Verde site in Chile. Late in the 80's, an alternative to the Clovis First model began to be discussed, also. The alternative is that the first Americans arrived not across the land bridge, but by coastal voyages with frequent stopovers over the course of many generations. They could have traveled northwards from the Pacific coast of Siberia, east along the southern shore of the land bridge, then south around the Gulf of Alaska to the Pacific Shore of British Columbia before pushing into the interior. During these journeys, they would have lived the sorts of lives that modern Aleuts live, with an economy focused on hunting marine mammals and collecting fish, shellfish and bird's eggs.

Since the mid-90's even this picture has changed dramatically. First, an archaeologist named Stuart Feidel argued that the 500-year time span for Clovis isn't real, but an artifact of the technology required for radiocarbon dating. When

calibrated against a larger body of geochronological information, the dates for Clovis sites actually span 1500 years, from 13,500 to 12,000 years ago. Then came publication of the second volume of the Monte Verde site report, and a visit to the site sponsored by the National Geographic Society by both the most prominent Clovis First adherents and the most prominent archaeologists advocating denial of that position. When this group had opportunity to personally view the stratigraphy and assess the recovered artifacts in the field, they universally agreed that the radiocarbon dates for the site were valid and that the site was not only older than Clovis but represented a cultural population that was totally unrelated to Clovis culture.

Then new information became available on the character of artifactual assemblages recovered stratigraphically below Clovis at a series of sites in VA and SC and, in the Southwest, from Pendejo Cave in NM.

Thus, today we do not know the answers to any of those first 3 questions. A Pacific Coastal route seems more likely than an inland route if Monte Verde represents the earliest Americans, but I suspect it doesn't because dated archaeological evidence from Pendejo Cave and Meadowcroft hint that significantly earlier North American sites are yet to be found. If the first Americans came over the Behring land bridge from Siberia, they probably brought a culture adapted to big game hunting and Arctic conditions with them. But they might quickly have adjusted to a mixed hunting-fishing pattern in Alaska and an even broader hunting and plant gathering economy after that. At this point, the consensus opinion is that Clovis is not the culture of the first

Americans. But we have no firm data to tell us when the first migrants arrived in the New World, or by what route, or what their relation to Clovis might be. There is so little consensus on any of the first three issues, and it is presently such a hot topic for debate, that over 100 papers on Paleoindian archaeology have been accepted for presentation at the Society for American Archaeology meetings to be held this April in Denver.

The 4<sup>th</sup> and 5<sup>th</sup> questions are the ones that Cordell primarily addresses in her book. We don't really have sufficient information on the nature of pre-Clovis cultures to answer either question confidently at this point, actually. But that has never stopped an archaeologist from arguing the case for an answer to a question, or from proposing multiple different answers to the same question at once. Maybe that's because professionally trained archaeologists are also trained to be professors, and a professor's job is to answer questions. We'll give you an answer to almost any question we're asked; it isn't necessarily an answer we think is true or one that makes a lot of sense, but it's an answer.

Cordell's analysis of cultural history during the Paleoindian Culture stage in the Southwest uses the concept of technological traditions. Like most Southwestern archaeologists, she does not accept the evidence from Pendejo Cave that there were any pre-Clovis human groups in this region at all, so she only talks about traditions that date between 9,000 and 5,500 BC. She sorts the artifact complexes of this antiquity into an Eastern lanceolate point tradition and a Western stemmed point tradition. The early complexes of the former include

Clovis, Sandia and Folsom; the early complexes of the Western stemmed point tradition include the San Dieguito, Lake Mohave and Great Basin complexes.

Besides containing projectile points manufactured in quite different ways, the two traditions incorporate other sorts of distinctive technology. Flaked stone crescents and pulping planes, for example, occur commonly in Western stemmed tradition sites, but not in those of the Eastern lanceolate tradition. Western tradition sites also evidence different hunting patterns and economic orientations. Their artifact assemblages suggest that hunting was focused on game no larger than deer and plant food gathering was quite significant. Though Eastern lanceolate point tradition sites also contain remains of smaller game, the artifacts suggest that the hunting pattern was oriented towards such big game as mammoth, horse, bison and tapir and plant foods were not very important.

Both stratigraphy and radiocarbon dating suggest that the cultural populations that manufactured Folsom and Midland projectile points were descendents of the population that manufactured Clovis points. Yet later descendents manufactured other sorts of lanceolate projectile points and other artifacts, which we recognize in the Firstview, Cody and Jay complexes. Each of these later Paleoindian artifact assemblages is thought to reflect a somewhat different strategy for hunting bison.

As to the sixth question, different archaeologists hold quite different opinions. 30 years ago, the consensus view was that as time went on and Pleistocene climatic conditions gradually changed over to be more like those we know today, small isolated cultural populations grew larger and more interactive,

and their economies shifted from a hunting orientation supplemented by gathered plant foods to a more mixed hunting-gathering economy. Today there is no consensus view, because we've learned that there are exceptions to almost every aspect of what we thought we knew in 1970. We've learned that Pleistocene environmental conditions did not gradually change as the glaciers waxed and waned. Temperature and moisture values bounced around dramatically on time scales measured in human generations. A hunter might easily have found that the kinds of animals that were abundant in a hunting territory when he or she was taught to hunt as a child had become uncommon in the area when it came time to teach his or her own child to hunt. We've learned that what we assumed was adequate evidence of the existence of small population groups was probably misleading. For example, none of the Clovis big game kill sites in southern Arizona is more than 150 square meters, and the occupation sites are much smaller. But we've found what some archaeologists are arguing is a single Clovis occupation site in Sonora that is 5 square kilometers in extent.

We thought that there was probably little interaction among earlier Paleoindian groups, but now we know of Clovis age sites with so many hearths that they appear to represent seasonal gathering places. If anything, it now looks as if there was significantly less cultural interaction about the time of the end of the Paleoindian Horizon than at its beginning. We thought that earlier Paleoindians practiced hunting economies (especially big game hunting) and hunting gathering came later. Now we have good evidence that hunting-

gathering preceded Clovis elsewhere in the Americas and some evidence that some of the earliest Western stemmed tradition hunter-gatherers might actually represent an economic pattern older than Clovis big game hunters.

Cordell says the primary adaptation of all Southwestern Paleoindian culture stage populations was a product of their having mixed hunting-gathering economies. Frison says that some of the later Eastern lanceolate point complex populations were hunters almost exclusively, while others who made the same artifacts took bison occasionally but had greater reliance on plant foods, mountain sheep and mule deer.

To sum up this lecture on the Paleoindian culture stage of Southwestern prehistory, I'll leave you with 3 thoughts:

First, to understand any aspect of archaeology, or any aspect of Southwestern archaeology such as the Paleoindian Horizon or Paleoindian cultures, just learning what facts are known will get you nowhere. Walter Taylor, who was my mentor and one of the most prominent of theorists of modern archaeology, emphasized that there are only three kinds of archaeological facts: There is the fact of the physical-chemical character of anything you find, such as its shape, its weight, what it is made of, etc.; there is the fact of where it was found, such as in what spot on the globe and at what depth; and there is the fact of how many of them have been found. There are no other facts – from that point onwards archaeology is all interpretation of the facts. And, unlike physics or mathematics, the facts do not lead to obvious interpretations unless one accepts a number of untestable assumptions and theories about what people are

like. Remember high school geometry? To make the math work for you you first must accept the axioms. To understand archaeology, then, you must understand what the archeologist you think may have interpreted the facts correctly has assumed about what people are like. Usually, he or she won't tell you, directly, and you must read between the lines and figure his or her assumptions out for yourself. That makes it even more of a challenge. Believe me, very few people meet this challenge wholly successfully. Getting a PhD in archaeology only means that some other people who have tried to meet it have agreed that you've shown your attempts to do so meet a higher than minimal standard. Though you must be aware of the nature of the facts, you won't understand archaeology until you begin to challenge yourself to think about and to evaluate the credibility of the interpretations of the facts. If the interpretation doesn't stand up to what your experience tells you people are really like, either you're wrong or the archaeologist is wrong. Trying to figure out why is where archaeology really becomes fun. Much more fun, actually, than discovering facts in the field or laboratory.

Second, most archaeological interpretations take the form of models. Normally, they are reconstructions of events, such as a model of when or where the first migrants set foot on the Western Hemisphere. Or they are reconstructions of patterns of human behavior, such as a model of how someone manufactured a Clovis projectile point or what strategies people who made Folsom points used to hunt bison. Or they are reconstructions of integrated systems of cultural behavior, such as a model of how the suite of customs that

were blended into a residence and settlement system was related to the suite of customs that were blended into the economic or political systems of a society. In archaeology, different models that reconstruct behavior are usually linked into larger models that allow us to address cultural questions. This is necessary for determining, for example, which events or behaviors came earlier and set the stage for later events. It is also the way that archaeological information is used to address anthropological issues, such as the issue of whether there are particular rules that govern how human migrations occur. The problem with these larger models, of course, is that if any of the group of smaller models that have been linked together is wrong, the larger model also is wrong. So there's another challenge for you to face to understand archaeology.

Third, because it is a science the models archaeologists propose have to be based on interpretations of facts, not on interpretations of information that might be facts but cannot be confirmed as such. But the search for new facts is constant, and new facts can often demonstrate that the conventional interpretations of previously available facts cannot be valid. Also, the search for new models that will interpret available facts in a different way is constant. And to compound the difficulty, interpretation requires that some facts be ignored or considered less significant than others. Often, for example, the kind of bones or the kind of soil that is associated with a suite of artifacts will not be considered when interpreting the meaning of the artifacts. This may be reasonable, but on the other hand the character of those observations may lead another investigator to consider different interpretations more likely.



The lessons to be learned from this lecture, then, are not what the facts of Paleoindian archaeology in the Southwest are, nor what the models that derive from interpretation of those facts are. While they are interesting, I assure you that sooner than you expect those facts will be seen as less significant than other facts and the models presented as most likely in textbooks such as Cordell's or lectures like this one will be abandoned. I've told my students that the archaeologist who expects his conclusions to outlast his or her lifetime is going to be very disappointed. No, the real lessons are what assessment of those facts and models teaches us about the character of archaeology. For most people, what archaeology is at first is some interesting objects and the realization that people of the past must have lead lives that can be reconstructed through study of those objects. Then, if they gain some field or laboratory experience, archaeology becomes the fun of discovering things and information nobody has ever seen or known about before, and the sense of wonder about how it all fits together in some giant puzzle. A very challenging puzzle for, as I've told my students, an archaeological site is like a jigsaw puzzle. Except that there's no picture on the top of the box, most of the pieces of the puzzle have been destroyed or decayed long before the box could be opened, and many other pieces exist only in the form of clues to what they once were. Field and laboratory archaeology involves opening the box so carefully that none of the clues are lost, then figuring out which pieces are missing from what the edges of the existing pieces look like, then figuring out how they must have fit together and what picture they create.

The final challenge, which is yet more difficult and consequently yet more satisfying to try to meet, is figuring out how the pictures of one site puzzle box related to those of all the others. I hope the lessons of this lecture provide clues on how to do that as well as I know how.