

ARCHAEOLOGY



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Archaeology (Ruth)

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This text was compiled on 04/06/2025

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1.1: Portals to the Past



Figure 1.1.1: Hands at Piedras Marcadas by Ian Irving. (licensed under [CC BY 2.0](https://creativecommons.org/licenses/by/2.0/).)

Archaeology is only partly about discovering things; for me, archaeology is about thinking about things. —Stephen Lekson

Taking a noon-day break from excavating on Albuquerque's windswept West Mesa in the summer of 2002, we stretched our legs, cramped from kneeling in a small square pit since six that morning. Someone started a game of hacky sack. Reaching down to retrieve the hack, I saw something black and shiny in the sand. "Gotta be cultural", I thought. The crew gathered around, and we soon realized that I held in my hand an obsidian Folsom point, a kind of spear tip made of volcanic glass. The person who last touched the point lived more than 10,000 years ago, at the close of the last ice age. The artifact and its maker belonged to a different geological epoch—the Pleistocene—also known as the ice ages. Ultimately, our excavation would show that a small band of people were hunting a species of giant bison at the edge of a small lake. The point, along with other artifacts recovered at the site and the context in which they were found, are portals to the past. Within 10 years, the area would be transformed into a modern neighborhood on Albuquerque's Westside.

Who hasn't thought about traveling in time to the distant future or the remote past? Personally, I would love to spend one day hanging out with ice-age humans, or witnessing the Easter island moai being carved and moved, or simply stand on the same sands as the Egyptian Sphinx and pyramids in their heyday. While we can't blast back in time through a wormhole or in a tricked-out DeLorean, we humans can go anywhere in our minds, free of charge. This mental time travel may not be totally unique to humans, but certainly no other animal is obsessed with the past and future like human beings. We are captivated by stories of galactic wars of long ago, a future planet ruled by apes, and the daring deeds and misdeeds of our ancestors. These are not mere stories, but shared narratives that bind us together and shape how we view the world. Archaeology is a kind of story-making, but one grounded in the physical facts, and important to understanding who we are as a species.

Our interest in the past is not just a modern obsession. The ancient Maya, who were fanatics for calendars and tracking time, inscribed dates well into the 5th millennium A.D.—the 4,000s. In this course, we'll take a journey to our planet's human past, visiting those who have come before us and stood where we now stand, whether it's the West Mesa of Albuquerque or the Valley of

the Kings in Egypt. We'll examine who these people were, what were their lives like, and how have they shaped who we are today. We will also consider the ethical questions of who gets to tell these stories, who gets to visit sites, what kinds of artifacts should be displayed, and whether some things are better left in the ground or reburied.

Writing and Material Culture

Short of a time machine, one way to know the past is to read what people have put down in writing. Of course, spoken language and oral traditions are much older than writing, which has only existed for around five thousand years. Even when writing systems were in place, many of the stories of the ancient world were not written down, but instead recited orally as poems, songs, and narratives. German fairy tales were terrifying children long before they were put to paper by the Brothers Grimm. Even though Homer's the *Iliad* and *Odyssey* were immortalized in writing, they continued as oral traditions alongside their written counterparts. Religious stories of the Bible, Torah, and Vedas were originally orally transmitted. For indigenous people of North America oral traditions were and continue to be important ways of passing along histories and cultural values. Today, oral traditions are even used to connect archaeological remains to modern-day tribes.

The term "history" is often defined as the study of written documents. Early writing did not emerge everywhere, but rather only in a few areas like the Middle East, China, Egypt, India, and Mesoamerica. The written word can have a powerful, almost magical quality. The ancient Maya revered the writings of their ancestors and believed that reading ancient texts literally brought their ancestors back to this plane of existence, a literal portal. Not so differently, the astronomer Carl Sagan wrote of the magical quality of books in *Cosmos*,

"One glance at it and you hear the voice of another person, perhaps someone dead for thousands of years. Across the millennia, the author is speaking, clearly and silently, inside your head, directly to you. Writing is perhaps the greatest of human inventions, binding together people, citizens of distant epochs, who never knew one another. Books break the shackles of time—proof that humans can work magic."

Despite its power, writing is also a fragile medium. The ambition of the Library of Alexandria, built more than 2,000 years ago, was to collect all the written knowledge in the world and house it under one grand roof. Hundreds of thousands of papyrus scrolls are thought to have been curated there. Portions of the library were infamously burned by Julius Caesar in 48 B.C. But equally devastating was the neglect the library received with changes in ruling parties. As different leaders came to rule the city under the influence of various religious ideologies, the knowledge contained within the library came to be viewed as a threat, and the once-thriving library deteriorated due to lack of funding and neglect.

In perhaps an even more drastic example, Catholic bishop Diego de Landa intentionally burned nearly all the Maya codices (books), regarding them as blasphemous texts. More recently, ISIS burned thousands of books and manuscripts in the libraries of Mosul, Iraq. As writer Robin Wright (2017) put it, "ISIS sought to kill the ideas within its walls—or at least the access to them." Written documents continue to be susceptible to loss today. One prevailing concern is how will we store the unprecedented amount of data we generate today. Our storage devices will likely be obsolete just a few years from now, making storage of information as tenuous as ever. In a surprising twist, scientists are considering using DNA to store data indefinitely, with the benefit of being able to store huge amounts of data, circumventing the problem of picking and choosing the information to save. Some suggest we have the potential to save all of it (Zielinski 2017).



Figure 1.1.1: “[Sumerian Cuneiform Clay Tablet](#)” by Gary Todd. (licensed under public domain)

Prehistory is the term often used to describe the study of times and places that did not have written records. Most of “history” is in fact prehistory, because for most of human existence, there was no form of writing. The term “prehistory” is a bit loaded, because it makes writing a kind of benchmark of success and casts writing as a hallmark of human progress. In reality, not every culture had a need for written records, which in fact had its origins in the ignominious task of keeping track of debts and taxes. What’s more, it was not uncommon for only the wealthy elite to be educated in reading and writing, while peasants remained illiterate. We see this today in some societies where certain people, like girls, are denied an education and are illiterate, whereas boys and men are able to read and write. From this perspective, a culture can be simultaneously historic and prehistoric.

Since we are unable to read documents from cultures that lack writing systems, we must instead rely on something called material culture, or physical things that people left behind. Archaeologists specialize in understanding the past through these material residues. Material culture has some advantages over written documents. First, it tends to be more durable than written records. Sometimes, the durability of material culture is quite surprising. Archaeologist Bill Rathje’s famous garbology project unearthed a 1940s-era hotdog from the “Fresh Kills” landfill on Staten Island (Rathje and Murphy 2003). While more durable, material culture is not invulnerable, as when the National Museum of Brazil burned in 2018 as a result of underfunding, neglect, and the absence of a sprinkler system. Second, everyone leaves behind traces of their existence, so archaeologists are not limited to studying just the kings and queens and their great conquests and accomplishments. Through material culture, archaeology can investigate everyday people’s existence, not merely the pharaohs and priest-kings who actively tried to preserve their legacy through writing.

Another disadvantage of written records (and oral accounts) is that they are often biased, inaccurate, and sometimes outright fabrications. As *New York Times* writer Witold Rybczynski (1992) put it, “Garbage doesn’t lie. The evidence of junk-food wrappers, liquor bottles, and girlie magazines often flies in the face of what we tell ourselves—and what we tell others—about what we do.” If we relied solely on self-reporting and written accounts of history, we’d have a warped and overly flattering understanding of current and past human behavior.



Figure 1.1.1: Dresden Codex by Chris Protopoulos. (licensed under public domain)

In the United States, archaeology is often classified as a subfield of anthropology. Anthropology is the study of people from a holistic perspective, considering all aspects of their humanity—culture, language, biology, as well as their past. Holistic simply means that anthropologists are interested in humanity as a whole, and not just one aspect of our species. Anthropologists want to

understand how entire past societies operated. As mentioned, anthropology, and therefore, archaeology, is interested in everyone—peasants, merchants, artisans, scribes, soldiers, priests, slaves—not just the glamorous, high profile celebrities of the past. In other countries like Great Britain, archaeology is considered a division of history. Wherever archaeology is situated from an academic point of view, the boundaries between archaeology and other areas of inquiry are largely artificial. Archaeology draws on many disciplines—biology, history, political science, economics, psychology, geography, and sociology. Truth be told, archaeologists routinely use both written documents and material culture to investigate what our human ancestors were up to.

In addition, to being concerned about the human past, archaeology is increasingly interested in how the past has shaped the present and how it will impact the future. Subjects like environmental destruction, plant and animal extinction, and the concentration of political power are recurring themes in archaeology. A cursory look at ancient civilizations reveals that we are not the first to modify our landscape beyond recognition, use resources unsustainably, or to concentrate power in the hands of a few. The empty ancient ruins of the Americas, the Middle East, Egypt, Europe, Africa, and Asia should give us pause to reflect on our own civilization and what the future will bring.

Every discipline has a foundation and methods with which they seek to build knowledge. Knowing is especially challenging in archaeology because of the time elapsed since the events occurred. The verb “to know” is one of those rare words that is universal, found in all languages. Knowing is the cornerstone to understanding. Epistemology is a very useful term that refers to *how* we know what we know. You can think of it as “knowledge-ology”, the study of how we know things. What constitutes a good method, good evidence, and reasonable inferences? These are questions that are debated in every discipline, not just archaeology. Archaeologists generally try to test hypotheses, which are informed guesses that can be tested. A theory, in contrast, is a well-tested idea that has stood up to rigorous attempts to disprove it. Since scientists are in the business of proving each other wrong, when an idea gets elevated to theory level, it’s a big deal. Examples of theories include germ theory of disease, atomic theory, the theory of relativity, and evolutionary theory.

Archaeologists are interested in both large- and small-scale questions. Small-scale questions are straightforward such as What was in this pot? Where did this stone come from? What did this person eat before he died? Large-scale questions that interest archaeologists include things like: Why did the domestication of animals and plants emerge? Why did some areas develop cities while others did not? Why do civilizations collapse and disappear? Archaeology considers these types of questions and everything in between. Often there are different levels of confidence when investigating the past. We can generally be more confident about things like diet, trade, tool use, and construction techniques than we are about the large-scale “why questions” of the past. Additionally, understanding the values and symbols systems of past societies is quite challenging, and yet is one of the most interesting aspects of archaeology and targets what we often think of as human culture—that complex web of shared meaning that underpins how we see the world.

While hypothesis-testing is common in archaeology, there are different methods to test those hypotheses. Some archaeologists collect quantitative data. Quantitative data is information that is measurable. An archaeologist, for instance, might measure the length or projectile points, or count the number of pollen grains in a soil sample, or record the quantity of animal bone on a site. Other archaeologists are more interested in qualitative information, that is, descriptive information. Archaeologists interested in art and the use of symbols might be more interested in describing the nature of the artwork and its context. Of course, this is a simplified dichotomy, and archaeological studies routinely consider both quantitative and qualitative data simultaneously. Indeed, archaeologists regularly use many different types of data and lines of evidence to investigate a question.

Archaeology draws heavily on sciences including biology, genetics, chemistry, and physics. These applications of scientific techniques are collectively called archaeological science. For example, archaeologist Patty Crown at the University of New Mexico along with Jeffrey Hurst of the Hershey Corporation, discovered the chemical signature for cacao in ancient cylindrical vessels at Chaco Canyon, New Mexico using a technique in chemistry called chromatography (Crown and Hurst 2009). Not only does this research show that liquid chocolate was in the ceramic vessels, but also because cacao does not grow in New Mexico today, we know there must have been extensive trade to the south. The research sets the stage for archaeologists to further develop and test questions of trade and exchange between the American Southwest and other regions.

Another approach that archaeologists have used to gain insight into past behavior and to test hypotheses is experimental archaeology. Experimental archaeology replicates ancient objects and activities to gain insight into the past. The usefulness of reconstructing the conditions of the past is that it reveals whether a particular activity or solution was possible. Unlike archaeological science, experimental archaeology is not the “white lab coat” kind of investigation. For instance, archaeologist Bruce Huckell at UNM wanted to know if a certain type of stone spear point could penetrate the hide of a mammoth. When an elephant at the local zoo died, Huckell (1982) showed that stone points could penetrate the elephant skin, which had similar quality

and thickness as a mammoth skin. By reconstructing the conditions of the past, Huckell demonstrated that it was possible for the spear points in question to have been used to hunt mammoths. Recreating the stone tools themselves is another example of experimental archaeology. In my face-to-face courses, I often invite Ron Fields, an archaeologist at Salinas Pueblo Missions National Monument in New Mexico and expert in stone tools, to show students the basics of making stone tools, also known as flint knapping. By attempting to make stone tools for themselves, students can experience first-hand the challenges people faced when making stone tools.

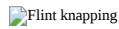


Figure 1.1.1: CNM Students learning the basics of stone tool manufacture. (Photo: Sue Ruth)

Archaeology, like many of disciplines, has different schools of thought or paradigms. Some archaeologists are more interested in how ecological factors like climate, population size, and access to resources influence human behavior. Others are more interested in the values, symbolic systems, and power structures of the past. When learning about archaeological research, it is useful to think about how an archaeologist is approaching a problem and the lines of evidence used to answer questions about the past. Archaeologists interested in different aspects of the past typically collect different types of information, use different techniques, and make a different kinds of inferences. Some questions to ask yourself when you read about archaeological studies are: Is this a small or large-scale question? What kind of techniques is the archaeologist using? Does the archaeologist use quantitative or qualitative information? What evidence is presented? What is the archaeologist's general approach? Answering these kinds of questions will be useful in both understanding and evaluating archaeological claims.

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1.2: Down to Earth



Figure 1.2.1: “Head of Bog Body Tollund Man” by Sven Rosborn. (licensed under public domain)

I’m holding a silver and turquoise necklace of Bastet, the Egyptian cat-headed goddess in my hands. It belonged to my mother, and even though she is now passed, the necklace remains a connection to her. Objects, especially personal ones, have a quality beyond their simple materiality. In World War II, Nazis collected the eyeglasses, shoes, and other personal effects of Jews killed in gas chambers. Witnessing these piles of personal effects is deeply moving and disturbing, as they seem to still house the essence of living breathing people. Some cultures ritually “kill” personal items of the deceased to release the spirit within. Artifacts are much the same, providing a connection to real people who lived hundreds or even thousands of years before. The idea that old objects contain special qualities is not just a modern one. The Inka of the Andes collected the much earlier Moche pottery and Romans displayed ancient Egyptian artifacts in their homes. “Pot drops”, piles of pottery found on sites in the American Southwest, are thought to be offerings to much earlier sites as a means of connecting with and honoring the ancestors. Artifacts are not just objects, they are conduits to the past.



Figure 1.2.1: Eyeglass of victims, 1945 by Bundesarchiv Bild. (licensed under CC-BY-SA 3.0)

Before Archaeology

Given the power and beauty of ancient objects, it is not too surprising that the initial European interest in ancient objects was for their aesthetic quality and not so much their ability to provide information about the past. Before there was archaeology, there was something called “antiquarianism.” In the Age of Antiquarianism (roughly 1600-the 1800s), aristocrats in Europe were interested in spectacular ancient art objects, with little concern for their method of procurement, what they were used for, or in many instances the context they came from.

At the time, museums often competitively sought beautiful objects in order to foster national pride and ethnic supremacy. Excavations were conducted on a grand scale, and in worse-case scenarios, anything not museum-worthy was ignored or discarded. Beautiful ancient works of art were routinely removed from their countries of origin to be displayed in the galleries of Europe. Italian engineer Giovanna Belzoni (1778–1820) pilfered the colossal head of the famous “Young Memnon” (Ramesses II) from Egypt and it still today resides in the British Museum. The “Elgin Marbles,” sculptures from the Parthenon in Athens, Greece, were infamously taken by nobleman Thomas Bruce, a.k.a. Lord Elgin, to the British Museum, where they remain the subject of a debate of ownership. Artifacts were also diplomatic currency. Egyptian collections were regularly gifted by the Egyptian government to European countries in order to establish diplomatic relations.

In contrast to his contemporaries who acquired artwork on dubious terms, Egyptologist Sir William Flinders Petrie (1853–1942) was more interested in understanding the past. He was a pioneer in recognizing that even mundane artifacts and sites are worthy of consideration and can provide information about the past. He was also a big believer in recording the location of artifacts, a practice which today is routine. Petrie’s work initiated the shift away from antiquarianism and toward modern archaeology, where mundane objects were recognized to have value in terms of the insight they could bring to the human past. Petrie’s other claim to fame is that he sometimes appears as a character in Amelia Peabody’s (Egyptologist Barbara Mertz) series of mystery novels set in Victorian-era Egypt.

Elves and Fairies

For the field of modern archaeology to arise, at least two basic realities had to be recognized. The first seems obvious now; Artifacts had to be recognized as objects made by people. In Europe, it was not uncommon for people to ascribe artifacts to the work of mythical beings like Thor or even elves. In Scotland, arrowheads were called “elf-arrows,” and could be worn to protect against “elf-shot” (Jones and Fellow 1731:58). Gradually, people began pointing out that these mystical curiosities of Europe were not much different from the everyday tools used by people encountered during the colonization of Africa, Australia, and the Americas by European powers. In 1699, Edward Lhuyd, Keeper of Ashmolean Museum in Oxford concluded that mysterious objects found in Scotland were not the work of elves, but just plain old arrowheads (James and Fellow 1731:124):

I doubt not but you have often seen of those Arrow-heads they ascribe to elves or fairies, they are just the same as the chip’d flints the natives of New England head their arrows with at this day: and there are also several stone hachets (sic) found in this kingdom, not unlike those of the Americans.

The second realization that paved the way for modern archaeology was the recognition of the long period of time that humans have occupied the Earth. Many scholars attempted to calculate the age of the Earth and/or people on the Earth using the available texts. Archbishop James Ussher's calculation used, in part, the genealogies and reigns outlined in the Bible along with known dates of rulers. Ussher calculated the beginning of creation (as in Genesis) to 6004 BP (Sunday, October 23 in the Julian calendar). Calculating the age of creation was a serious matter of the day, as virtually everyone in Europe was a creationist at the time. Even Sir Isaac Newton attempted an estimate.

While Ussher's estimate was extremely influential, the physical evidence was not aligning well with this relatively short time frame of human existence. In the 1790s, John Frere, great-great-grandfather of famous paleoanthropologist Mary Leakey, excavated stone tools four meters (that's about 12 feet) below the ground surface in ancient lake deposits in Suffolk, England. How did these artifacts get to be so deep in the ground? Going against conventional thought, Frere concluded somewhat tentatively, "The situation in which these weapons were found may tempt us to refer them to a very ancient period indeed." A similar situation was coming to light in France. In the 1840s, a customs official named Boucher de Perthes uncovered stone tools associated with extinct elephant remains (mammoth) deep in ancient Somme River gravels in France. Like Frere, he concluded that the human presence in Europe had to be older than what the Biblical and historical accounts implied. Today, thanks to these early observers and thousands of subsequent archaeological and geological investigations, the deep age of the earth and human existence presence is overwhelmingly clear. Humans have been in Europe for at least 40,000 years and other related species like Neanderthals were there for hundreds of thousands of years. Chapter 3 goes into more detail about the earliest human sites.

The Three Principles

Both Frere and Perthes were using a concept basic to geology, paleontology, and archaeology, called the Principle of Superposition. The Principle of Superposition is the straightforward observation that lower rock or soil deposits are older than the deposits found higher up. More formally, the Principle of Superposition states that in a sequence of undisturbed strata (layers of cultural and natural deposits) the overlying layer is younger than the one below it. At the Murray Springs Site in Arizona, the strata, or layers, can clearly be seen in a stream channel. Just below the thin black "mat-like" deposit, mammoth bones and evidence of early people were found. Above the black line, the mammoth and most other large-bodied ice-age animals are gone and the tool tradition changes.

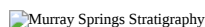


Figure 1.2.1: The Black Mat at the Murray Springs site, Arizona. (by Sue Ruth)

The second principle that Frere and Perthes used was the Principle of Association. The Principle of Association states that when remains of the past are near each other, they date to the same time period. Finding stone tools associated with mammoths at numerous sites indicates that humans were living alongside these now-extinct creatures. In the case of the Folsom site in New Mexico, a spear point was found in and around the bones of an extinct form of giant bison (*Bison antiquus*) that we know lived more than 10,000 years ago. This direct association with ice-age mammals and human tools led to the discovery that people were here in New Mexico during the last ice age.

Archaeology and other disciplines interested in the past rely strongly on the Principle of Uniformitarianism. Paleontologists and geologists also make use of this principle. Very simply put, the uniformitarian principle is the idea that the Earth and its life forms developed by the same natural processes in the past as the present. Using this simple principle, that the processes of nature have remained the same over Earth's history. That is the processes of mountain building, erosion, and basic chemistry and physics are the same as they were in the past. To use some very simple examples, archaeologists assume that stone tools will produce similar marks on bone today as they did in the past or that clay must be fired to the same temperature as it did in the past to become chemically altered into ceramic.

Based on what we see in the archaeological record, it becomes clear that people of the past were in every respect human, with the same intellectual capabilities, artistic impulses, and capacities for violence. While it may be entertaining to consider the role of outside influences like aliens, lost races, or mythical beings like elves and fairies as contributing to our past, these claims have not stood up to the critical evaluation that extraordinary claims require. Often, people making these extraordinary claims have something to gain. Erich von Däniken, for instance, who popularized his ideas of aliens interacting with ancient cultures in his wildly popular book *Chariots of the Gods*, was later convicted of fraud, forgery, and embezzlement and served time in jail. Very often ancient people are vastly underestimated and their achievements are simply assumed to be the work of a more intelligent society or even a species outside the planet. Sometimes this assumption is even overtly racist as in the case of the Great Moundbuilder debate which we will discuss later. In their book, *The Enigmas of Easter Island*, John Flenley and Paul Bahn argue it is remarkable what can be achieved with "simple technology, lots of time and muscle power, and some ingenuity" (p. 114).

The Three Great Questions: When? Where? What?

When

There are three essential questions that are important to investigate the past. These can be distilled down to When? Where? and What? There are several dating techniques used in archaeology to understand when something occurred. Two general categories of dating are relative and absolute dating. Relative dates refer to the age of something compared with something else but do not provide a specific date. The Principle of Superposition is an example of a simple relative dating technique. A relative date tells you whether something happened before or after something else. Absolute dates are an estimate of an actual calendar date. It is important to keep in mind that absolute dates are estimates of an actual date and are not necessarily perfect. Two common methods of absolute dating are radiocarbon dating and tree-ring dating, though they are many more and often used in tandem with each other. Radiocarbon dating works only on samples that were once living and is based on how much radioactive carbon has been lost after the death of the organism. We will discuss this method in more detail in a later chapter.

Tree-ring dating or dendrochronology is another absolute dating technique. Dendrochronology relies on the fact that trees add a ring of growth each annually. The pattern of tree rings over time varies due to increases or decreases in rainfall and other factors. By overlapping and matching the pattern in tree rings of living trees with that of archaeological samples, we can date when a tree was cut in the past by counting rings from the rings from present to past. If you visit the New Mexico Museum of Natural History in Albuquerque, you can see an example of a long series of tree rings going back to the First Crusades around 1,000 years ago, also the time period in which the famous Mimbres pottery was made in the American Southwest.

Looking at alterations in the pattern of tree ring growth, we know that the volcano Sunset Crater in Arizona erupted around the 1060s-1080s. Because the rings provide an estimate of a particular date in time, it is an example of absolute dating. In addition, the eruption also left a visible ash deposit on many pueblo village sites in the area. Archaeological remains above the ash date to sometime after the volcanic explosion, and artifacts below the ash date to before the eruption. Using the layer of ash to determine the date of archaeological remains is a good example of relative dating.



Figure 1.2.1: Example of tree rings from the New Mexico Museum of Natural History in Albuquerque. (Photo: Sue Ruth.)

Archaeologists use several different types of dating conventions to refer to time. Typically, for very old sites on the order of thousands of years old, archaeologists will use B.P. meaning “before present.” For more recent sites and artifacts, archaeologists tend to use BC/AD or BCE/CE. The terms BC and AD (Anno Domini) stand for before the birth of Christ and “in the year of our lord” or after Christ’s birth, respectively. The terms BCE and CE stand for “Before Current Era” and “Current Era” (also called Common Era). In short, BCE and CE are equivalent to BC and AD. The abbreviation for circa (ca.) meaning “approximately” is commonly used in archaeology because dates tend to be estimates and not exact dates, especially for very old sites not affiliated with written records. The shorthand “kya” stands for thousands of years ago and “mya” stands for millions of years ago.

Notations for Time

B.P. Before present time

B.C. Before Christ

A.D. After Christ's birth (Anno Domini)

B.C.E. Before Current Era

Where?

As mentioned, context is critical to making inferences about the human past. Together, the provenience, matrix, and associated material culture make up an artifact's context. The term matrix is used to refer to the surrounding soil or sediments. Provenience refers to an artifact's actual physical coordinates, both horizontally and vertically—where is it on a map and how far down is it in the Earth? An archaeologist is also interested in how an artifact relates to other artifacts, features, and structures. Without context, artifacts lose their ability to inform the archaeologist about the past. Spatial context is why archaeologists dig square holes. Square holes or “units” are a way of knowing how much volume of the matrix has been removed with a little simple geometry. Archaeologists also dig in “levels,” removing one layer at a time in each square hole. Every artifact from that layer is bagged and labeled with the provenience, as in “Unit 1, Level 1.” In the lab, archaeologists can get a better sense of the overall site by analyzing the spatial location of artifacts using spreadsheets and mapping programs. This is a very far cry from the antiquarian days of old.


 recording the location of an artifact

Figure 1.2.1: Recording with a GPS unit the spatial context of basalt grinding stone at Petroglyph National Monument. (Photo Sue Ruth)

When people think of archaeology, they typically think of people who excavate for ancient remains. A lot of archaeological work does not involve excavation at all. Survey occurs when surface remains are recorded. A survey is typically conducted in order to ascertain where archaeological sites are and to provide a plan for avoiding them when planning development projects. People are sometimes surprised to hear that after archaeologists record artifacts on a field survey, most of the time they leave them in place, or in situ. When CNM students surveyed part of the Petroglyph National Monument, no artifacts were collected; rather, everything was mapped using a GPS unit. There are at least three reasons for this. First, it is not feasible to collect everything and curate (store and protect) them in museums indefinitely. Secondly, archaeologists are more interested in what artifacts can tell us about the past than in amassing a collection of interesting objects like the antiquarians of old. And thirdly, and very importantly, the cultures affiliated with the artifacts often prefer to have them remain where they are.

What?

The final basic question in archaeology deals with the remains themselves. This category is vast because it can cover shape, size, color, texture, hardness, and physical and chemical characteristics. Form also called morphology is especially important. The morphology of a spear point, ceramic vessel, or building can suggest function—how it was used in the past. The style of pottery or architecture can inform archaeologists about what culture it was affiliated with. The composition of an artifact can indicate where the object ultimately originated. For instance, the chemical composition of the bluestones at Stonehenge was used to identify their sources in the Preseli Hills, 140 miles from Stonehenge itself.


 Pompeii Body Casts

Figure 1.2.1: The bodies at Pompeii were in situ. The bodies were vaporized instantaneously following the volcanic blast and pyroclastic flow of Mount Vesuvius. The cavities left by their bodies were then filled in with plaster by early investigators. “Body shapes in the Garden of the Fugitives, Pompeii” . (licensed under CC BY 2.0)

Type of Artifacts: A Few Common Terms

Archaeologists classify material culture into a few useful categories in order to discuss them quickly and easily. Artifacts are defined as portable objects made or modified by humans. The famous “Venus figurines” or woman figures of Europe's Upper Paleolithic are good examples of artifacts. Archaeologists often use the word assemblage to refer to a group of related or spatially associated artifacts, as in the “ceramic assemblage” at a site. Ecofacts are organic and environmental remains resulting from human activity such as charcoal, pollen, and animal bones. Often, ecofacts are called by more specific names, for instance, animal bone, pollen samples, charcoal remains, soil samples, and so on. Features are non-portable objects modified or made by humans, such as hearths (fireplaces), pits, and ovens. Structures are simply the remains of houses, ceremonial chambers, shelters, temples, and other examples of architecture. Often only a portion of the structure remains as in the Roman house pictured below.

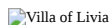


Figure 1.2.1: Remains of a structure at the Villa of Livia, Prima Porta, Italy. (Photo: Sue Ruth)

Human remains include human bones, teeth, and other tissues, and are typically studied by specialists in humans called osteologists. Finally, the term site (not sight) refers to spatial clusters of artifacts, ecofacts, features, human remains, and structures.

What's Left to Observe?

Only a small fraction of the material culture that was in use survives today. Organic remains, those made from once-living things, like plant fibers, wood, and animal hide are the most fragile and prone to decay. The most resistant materials include stone, ceramics (fired clay) and glass. In an intermediate category are carbonized remains and metals. The matrix within which an artifact is located impacts its preservation. Bone, for instance, preserves well in alkaline soil environments but disintegrates in acidic ones. In cases like the ancient Maya of Mesoamerica, preservation of bone is very rare because of the highly acidic soils. Factors that promote decay include:



Figure 1.2.1: Differences between preservation and decay (Copyright; Ruth)

Because oxygen increases the speed of any chemical reaction, including decay, its absence helps preserve archaeological remains. An illustrative example of how freezing conditions can promote preservation is Ötzi, the Iceman of the Italian Alps. The Iceman was found eroding out of a glacier in 1991 by hikers and was originally thought to be a forensic case of a hiker who had gotten lost and perished on the glacier. After a few missteps, the investigators eventually realized, based on examination of the artifacts, that this was not a modern corpse at all. In fact, the Iceman dates back 5,300 years (ca. 3,300 BCE) and is the oldest example of a natural mummy in Europe. The Iceman also had with him wonderful examples of the technology of his day including a stone knife, a quiver of arrows, a longbow, and a copper ax. The ancient corpse was remarkably well preserved with the skin intact because it had been frozen in the ice.

Another remarkable story of preservation is the bog bodies of northern Europe, mainly Denmark, the Netherlands, England, and Ireland. The bog bodies are preserved in peat bogs. The bogs were low in oxygen because the rotting plant matter takes up the oxygen and the acidic peat naturally tans the skin. Sphagnum moss in the bogs also acts as an anti-bacterial agent further preserving the remains. While the skin and internal organs tend to preserve, bones dissolve in the acid matrix. Tollund Man of Denmark (ca. 2100–2200 BP) is the most famous bog bodies because of his astonishing preservation and serene countenance. The truth seems more grisly, however. Tollund Man had a rope around his neck and was likely intentionally killed. Most of the bog bodies date between 2500 BP (500 BCE) and 1500 BP (500 AD) and many were likely human sacrifices. Similarly, but not as grisly, because of the lack of oxygen, charred loaves of bread and other organic objects have been preserved under the ash at Herculaneum after the eruption of Mount Vesuvius in 79 AD.

Excellent preservation also occurs in landfills. William Rathje, the “garbologist” mentioned earlier, found that landfills, being deprived of oxygen are remarkably stable. Nothing decays beyond a certain point. That’s good news for archaeologists interested in old trash, but bad for the current problem of where to put all our modern trash. Excellent preservation also occurs when sites are sealed by volcanic ash like Pompeii in Italy (A.D. 79) or Akrotiri on the Greek island of Santorini (ca. 1627 B.C.). Both these sites have remarkably well-preserved wall frescoes. The ash is sealed in the sites, preventing decay via oxygen, water, and wind. Organic material is also often preserved in arid locations. The American Southwest has excellent preservation, especially in dry caves. Arrows, baskets, sandals, seeds, and cordage (rope) are all preserved in dry caves. At McEuen Cave in Arizona, ancient pumpkin seeds look exactly like pumpkin seeds do today.

How Do You Find Sites?

Probably the number one question that archaeologists get asked is “How do you find sites?” One truthful response is that we don’t. People who are curious and observant typically find the most interesting sites. kids, with their natural curiosity, are especially good at finding sites. Plus, they’re closer to the ground. The history of archaeology is filled with intelligent avocational archaeologists who read everything they can about archaeology and know where to look and what to look for.

Another possible truthful response is that we look for them systematically and only when we have to. Federal agencies or projects that are supported with federal money are required to determine if the project will impact significant archaeological sites. In these situations, archaeologists systematically walk the landscape looking at the ground. Archaeologists train their eyes to spot stone tools, ceramics, tell-tale stone alignments. Finding things becomes second nature like riding a bike. It is typical for an archaeologist, myself included, to see the tiny bead in the sand, but miss the rattlesnake.

When artifacts, features, ecofacts, or sites are encountered, they are recorded and the data is entered into a database. This is required because of legislation called the National Historic Preservation Act of 1966 (NHPA), which seeks to protect and preserve important archaeological and historical sites. If nothing is deemed significant enough to be added to the National Register of Historic Places, then the archaeologists' work is done and the bulldozers and backhoes come in and development continues. If the site is deemed to have information potential, then portions of the site being excavated, and the data is recorded, a report is written, and the artifacts are curated, and then the development proceeds. In very rare instances, a site is found that is so significant that the project is redesigned or canceled. Most archaeologists are involved in conserving and managing sites, a profession called cultural resource management or CRM. When CNM students participated in a survey at the Petroglyph National Monument on federal lands, they were acting under the NHPA because the Monument had plans to refurbish the trail which could impact archaeological sites.

Sometimes sites are found accidentally during the course of development. For example, when the Jeanette Stromberg building on CNM's Main campus was renovated in 2011, a portion of a historic cemetery dating to the late 19th and early 20th centuries was encountered (The TVI Cemetery Site). The cemetery was previously excavated in 1984 when the building was first constructed. Archaeologists from the Office of Contract Archaeology excavated the three burials, and osteologists at the Human Osteology Laboratory at UNM analyzed them. Once the burials were analyzed and a report was completed, renovation continued. (Google search "Jeanette Stromberg" and "ghost").

In addition to protection on federal land, archaeological sites are subject to state laws on state-owned and private land. For example, burials, marked or unmarked, are protected in New Mexico on both private and public land under the New Mexico Cultural Properties Act of 1978. Under this same legislation, it is unlawful to excavate an archaeological site with heavy machinery on private land. Excavation on state land requires a special permit.

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1.4: The Earliest New Mexicans

We have seen that modern humans have been in Europe for at least 40,000 years and in Africa for even longer. Humans also occupied Asia, Siberia, and Australia during the Pleistocene as well. But what about North and South America—the “Americas”? Were people here in what is today New Mexico during the Pleistocene? The question of when and how people got to the Americas is not a new one and is the source of continued debate, in which the state of New Mexico figures prominently.

The Earliest People in New Mexico

New Mexico, as it turns out, is world-famous for its pivotal role in understanding how people got to the Americas—sometimes referred to as the “peopling of the Americas.” Influential osteologist (human bone specialist) Aleš Hrdlička was certain that people had only been in the Americas for a few thousand years. This issue, like so many in archaeology, was not purely academic. In the 1800s, North American natives were often depicted by European colonizers as relative newcomers to the Americas. These presumed barbaric newcomers were thought to have cast out a former glorious “race,” who had built the impressive monuments that archaeologists encountered. This view of native peoples as newcomers fit nicely with the drive to colonize the American West.

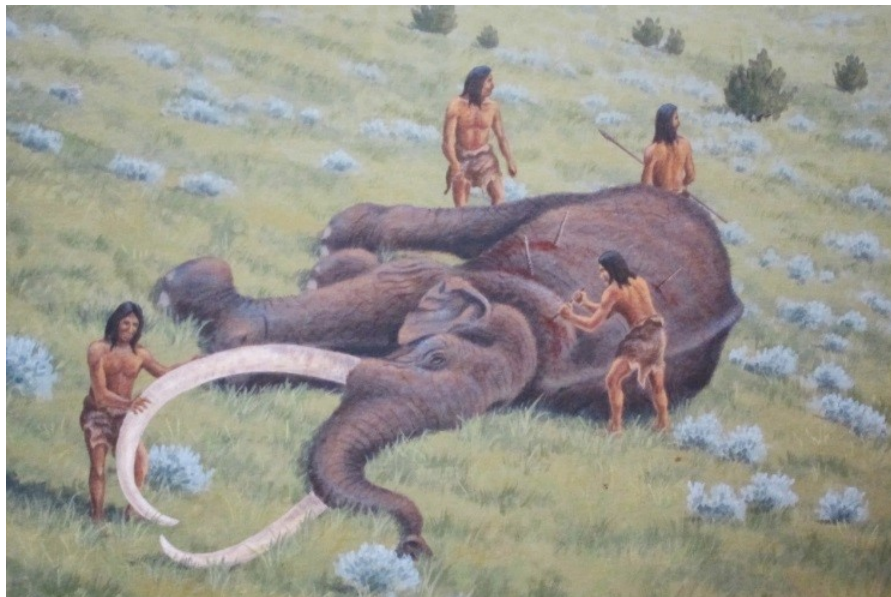


Figure 1.4.1: Mural at the New Mexico Museum of Natural History. (Photo: Sue Ruth)

The site that changed the face of American archaeology and contradicted Hrdlička’s ideas is called the Folsom site. Like so many significant archaeological discoveries, the Folsom site was found not by a professional archaeologist. Cowboy George McJunkin was searching for lost cattle following a devastating 1906 flood near the town of Folsom in far-northeastern New Mexico when he discovered some odd-looking “cow” bones. These bones turned out to be the fossilized remain of an extinct form of bison called *Bison antiquus* that lived during the Pleistocene. Later, in the 1920s, excavation at the site revealed humanly made dart points in direct association with the bison. Using the Principle of Association, it was indisputable that people were in North America during the Pleistocene. Like Frere and de Perthes before him in Europe, McJunkin’s find revealed a much deeper time depth to human occupation than was previously accepted.


 Aleš Hrdlička

Figure 1.4.1: “Aleš Hrdlička (1869-1943)” by unknown. (licensed under public domain)

Radiocarbon Dating

Early archaeologists had to rely on the Principle of Association, the Principle of Superposition, and with an understanding of soil development rather than techniques like radiocarbon dating to determine how old sites were. Radiocarbon dating had yet to be invented. The technique was developed by Willard Libby and colleagues in 1949, for which he won a Nobel Prize in Chemistry in 1960. Radiocarbon dating takes advantage of isotopes or variants of elements that have different numbers of neutrons. All carbon has 6 protons, but the number of neutrons can vary. Carbon-14 is an isotope of carbon with 6 protons (like all carbon) and 8 neutrons. Adding the number of protons and neutrons (6+8) together yields 14, hence, carbon-14. Radiocarbon dating uses the fact

the radiocarbon or carbon-14 is radioactive and decays at a known rate called a half-life of 5,730 years. That known rate of decay is used to estimate how old things are.

So, how does radiocarbon dating work? All living things contain an abundance of carbon-12, a stable isotope that does not decay, and a tiny amount of carbon-14. You, for example, have a small amount of carbon-14 or radioactive carbon. You are slightly radioactive. Once an organism dies, the stable carbon-12 remains unchanged, but about half of the radiocarbon will decay to nitrogen in 5,730 years. Chemists can measure the carbon in an archaeological sample and use the ratio of carbon 12 to carbon 14 to estimate how old something is. The technique has been used effectively for decades and has been refined by comparing the dates to other dating techniques, especially tree-ring dates. Willard Libby, who championed the technique, radiocarbon dated objects of known ages including redwood trees, Egyptian funerary objects, charred bread from the Pompeii eruption, a linen wrap from the Dead Sea Scrolls, all objects with known historical dates to test the efficacy of the method. Libby's "Curve of Knowns" ushered in a new era in archaeology called the Radiocarbon Revolution. Libby won a Nobel Prize in chemistry for his work.

The Paleoindian Period

The term Paleoindian period is often used to refer to the human occupation of North America during the end of the last ice age. Unlike the Upper Paleolithic of Western Europe, the vast majority of Paleoindian sites are open-air sites, rather than cave sites. Because of this, the preservation of Paleoindian organic remains like shells and bone is scant. A few beads, needles, and other bone artifacts exist, though these are rare. As a consequence, Paleoindian archaeologists have a very little material culture with which to reconstruct the past. The Paleoindian Period is divided into periods based on changes in tools. Once Folsom sites were recognized for what they were, even older sites, called Clovis sites, began to emerge in the archaeological record. Clovis-aged sites are about 13,000 years old and Folsom-aged sites are around 11,500 years old. A "Clovis site" is short-hand for "Clovis-aged site" and refers to any site that dates to the Clovis time period. During the Clovis period mammoth, horses, camels, dire wolves, and other Pleistocene animals roamed North America. Mammoth and bison, and to a lesser extent elk, were the primary targets of Clovis hunters, who likely used atlatls for hunting just like people did in Europe. If you visit the New Mexico Museum of Natural History in Albuquerque, you can see a reconstruction of a Columbian mammoth, a camel, a sabercat, and dire wolves—Pleistocene mammals that were here in New Mexico. The mural on the wall depicts Paleoindian hunters around a mammoth carcass.

A distinct Clovis technology consisted of stone points that are grooved or fluted partway up the point. (Doric Greek columns are also fluted if that helps you remember the term). This fluted technology, as it is called, is unique to the Americas, and occurs nowhere else in the world. Clovis points are diagnostic of the Clovis period, meaning they were unique to this time period. So, if you ever find a fluted point on a leaf-shaped point, it is on the order of 13,000 years old, a very rare and important find.

Another interesting feature of the Clovis period is caches (Kilby and Huckell 2013). Caches are deliberate deposits of artifacts for ritual or functional purposes. A functional cache is simply a cache for a practical purpose. Clovis people may have been placing stone and stone tools in pits in the ground with the idea of returning when they were low on stone and needed to replenish their supplies or raw material. (Stone is often referred to by archaeologists as raw material). Clovis people appear to have been highly mobile and engaged in long-distance trade, as evidenced by their raw material, which can be traced hundreds of miles from their source. Some Clovis caches were potentially ritual in nature, bearing traces of red ocher, the same mineral pigment found in 100,000-year-old caves in South Africa, on Upper Paleolithic Venus figurines, and in ice-age burials of Siberia and Eastern Europe. The Anzick Cache in Montana contained not only red ocher but infant human bones, suggesting the cache was part of a funerary rite and that red ocher had a ritual significance.

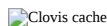


Figure 1.4.1: Clovis cache by Bill Whittaker. (licensed under CC BY-SA 3.0)

Extinction of Pleistocene Mammals

One of the most famous Clovis sites called the Blackwater Draw site is located near Portales, New Mexico. The site actually has many different Paleoindian occupations, or episodes of human use, and is open to the public. At the site, you can see the strata of earlier Paleoindian layers at the bottom and later ones at the top. The excavators have preserved a portion of the excavation in situ, so you can see the bones of Pleistocene megafauna in place.

The site of Blackwater Draw also has the earliest human-made wells anywhere, associated with a prolonged drought during the Clovis period. The same drought likely contributed to the demise of the mammoth and other Pleistocene megafaunas like horses, camels, and dire wolves. According to a study by scientists at UNM, the drought was so severe that nothing like it had occurred for at least 40,000 years that they examined. Some argue that drought caused vast habitats of the giant grazing mammals to shrink and fragment, leading to herds dwindling to extinction through lack of forage. During the extinction event, fully 3/4 of all mammalian

genera (35 genera) in North America went extinct, including mammoths and mastodons, all camelids (camel species), and horses, all but one species of bison—all within 1000 years of each other. Some larger Pleistocene mammals (including elephants in Africa and bison in North America) became smaller toward the end of the Pleistocene, which is one adaptive response to a reduced food supply.



Figure 1.4.1: The stratigraphy at the Blackwater Draw Site. (Photo: Sue Ruth)

This massive drought in North America appears in the stratigraphy at Clovis sites and is called The Black Mat, which represents the mud at the bottom of a dried-out water source. You can see it clearly at the Murray Springs site in Arizona. Below the mat, there are mammoths, horses, and other Pleistocene megafauna, and above the mat, they do not appear. In fact, *Bison antiquus* survived the extinction event, but reduced in size over time to become what we now know (erroneously) as “buffalo.” The climate change hypothesis supporters also point to the fact that megafauna is not the only species of animals that went extinct after the Pleistocene. About 40 percent of small mammals like voles and other rodents, mink, martens, weasels went extinct, as did about 40 percent of mollusk species. Similar extinctions occurred in Europe, northern Asia, and Australia as well. Tropical areas like central Africa and south and Southeast Asia were much less affected—megafauna like elephants and rhinoceros still exist there, at least for the time being.

Another hypothesis for the Pleistocene extinction is the Overkill Hypothesis. The Overkill Hypothesis holds that Paleoindians colonized a continent with numerous mammals that were unfamiliar and unafraid of humans. Secondly, Paleoindians were hunting specialists that concentrated on a few large species which could provide a huge return in meat and fat, but also result in the demise of numerous species. Evidence for megafauna specialization includes, for example, the fact that of the 14 known Clovis kill sites in western and central North America, 11 contain the butchered bones of mammoth or mastodon. Archaeologists Todd Surovell and Nicole Waguespack argue that the number of Clovis elephant kill sites is exceptionally high if you look at elephant kill sites on a global scale. They also argue that human colonization tracks mammoth extinction throughout human prehistory.

Proponents of overkill also point to several other previously unoccupied landmasses of the world where megafauna disappeared simultaneously with the colonization of humans. Australia, for example, was populated with a series of giant species of kangaroos and grazing marsupials that went extinct when humans first colonized the island-continent sometime between 40-60 thousand years ago. On Madagascar, the giant lemur *Archaeoindris*, about the size of a male gorilla, went extinct around the time that humans reached Madagascar more than 2,000 years ago. New Zealand is another case in point. Several species of giant flightless birds called moas (*Dinornithiformes*)—some stood up to 12 feet tall and weighed up to 500 pounds—existed in New Zealand before the arrival of the first humans from Polynesia around AD 1250-1300, then became extinct within 200 years of human occupation. One reason for the swift demise is that the native species had no defensive fear of humans and could be easily approached and killed.



Figure 1.4.1: Climate change display at the New Mexico Museum of Natural History. (Photo: Sue Ruth)

The principal weakness of the overkill hypothesis is that there is no direct material evidence for hunting camel, horses, giant beavers, ground sloth, and the like, which all went extinct near the end of the Pleistocene. It is not even clear when some species actually went extinct. Surovell argues that less abundant species, like the American cheetah, are less likely to be found in the fossil record and therefore might falsely appear to go extinct before human arrival.

A combination of the two factors contributing to the demise of megafauna—climate and human predation—is quite possible. Habitat loss due to climate change would have fragmented the large, interconnected populations of steppe animals. Indeed, we know that habitat fragmentation is a key factor in species extinction today. Human hunters could have delivered the final blow by overhunting the dwindling populations that remained.

Folsom

The Folsom period followed the Clovis period and the extinction event, beginning around 11,500 B.P. Folsom hunters focused on *Bison antiquus* as their main prey. Folsom points are diagnostic of the Folsom time period. Like Clovis points, Folsom points are fluted, but the flute travels the full length of the point. Folsom points also have tiny pressure flakes around the margins of the points and are very thin. These subtle distinctions are important because they indicate the time period of a site. No other points anywhere, at any other time, look like Folsom points. In fact, Folsom points reveal such astonishing craftsmanship, that modern archaeological experimenters, with all our technological improvements, have difficulty replicating them. Indeed, entire conferences have been devoted to understanding Folsom points alone.

Both Clovis and Folsom points are finely made artifacts crafted by skilled knappers. They used the most workable stone material and often chose raw materials with beautiful colors and patterns. In many cases, the raw material came from distant sources. For example, at the Boca Negra Wash Folsom site on Albuquerque's West Mesa, some of the obsidian (volcanic glass) has been sourced to the Jemez Mountains (Shackley 2016). The chemical procedure used to identify the source is called X-ray fluorescence. Other types of sourcing that involve identifying minerals can also be used to source the stone material.

Sandia Man

We now know that New Mexico has two world-famous Paleoindian sites, the Folsom site and Blackwater Draw (aka the Clovis site). Many people have also heard of another site called Sandia Man Cave located in the Sandia Mountains of Albuquerque. The site was investigated by Frank Hibben who taught anthropology for many years at the University of New Mexico. Hibben's team found the now-famous Sandia points and claimed that these were stratigraphically below a Folsom level and also older than Clovis. The only other site to produce Sandia points is the Lucy site, also in New Mexico. The site was visited by Hibben himself. Unfortunately, the stratigraphic context at Sandia Cave that Hibben thought was pre-Clovis in age turns out to be hundreds of thousands of years old—much too old for Clovis or Folsom and older even than Blombos Cave in Africa—and not nearly as pristine as Hibben described. Since then, dating problems with all the Sandia point finds have emerged, and unlike Folsom and Clovis, only a handful of Sandia sites, all highly questionable, have been discovered. Today archaeologists universally do not accept the Sandia period or Sandia points.

Surf or Turf? The Peopling of the Americas

As early as the 1500s, speculation began about how people arrived in the Western Hemisphere. José de Acosta (ca. 1540–1600) proposed that there must have been a land bridge connecting the northern reaches of the New World and Siberia. At the time, the geography of this region was completely unknown and unmapped. Much later, it would become clear that a land bridge did indeed exist between Siberia and unglaciated Alaska during cold periods of the Pleistocene called glacials. During glacials, ocean levels dropped as ice sheets on land grew. Note that while the word “ice sheet” suggests a thin layer, ice sheets were as much as a mile thick during the Pleistocene.

This region of exposed land (now submerged and called the Bering Strait) is called Beringia or the Bering Land Bridge. The word “bridge” is also a bit misleading as it implies a narrow strip of land. The Bering Land Bridge was, however, about 1,000 miles north to south at its greatest extent. People could have walked across the Bering Land Bridge from Siberia into the New World following herds of mammoth and bison. Certainly, they wouldn't have known that they were occupying a region completely uninhabited by people. The land bridge would have been exposed between ca. 30,000 B.P.–10,000 B.P. allowing people to enter during this time frame.



Figure 1.4.1: Changing Beringia, Wikimedia Commons. (Copyright; Public domain)

The entering immigrants could, however, go no further than Alaska, because standing in their way were two huge ice sheets, the Laurentide and Cordilleran, blocking entrance into what is today Canada and the lower United States. If people took the land route, they would have had to wait until a warming trend for the ice sheets to melt enough to pass. This warming trend occurred around 13,000–14,000 years ago, creating the Ice-Free Corridor. The opening of the corridor happens roughly at the same time that we see Clovis sites in the United States, around 13,000–13,500 BP.

The Land Bridge Hypothesis has several weaknesses. First, there are no Clovis remains or early fluted points in Alaska. However, a very recent find suggests that people may have been in Canada around 24,000 years ago, putting people in a position to later come down the corridor. Second, there are no early sites in the Ice-Free Corridor. Thirdly, the timing of the opening of the corridor is very close to the time when sites begin to show up in the lower U.S. They would have to really “hustle” to get from Alaska to say, Montana. Finally, there are claims of Pre-Clovis sites that pre-date the opening of the corridor.

Because of these problems, archaeologists began to speculate that people may have come by sea from Siberia. In his book *Bones, Boats, and Bison*, archaeologist James Dixon proposes that people could have “island-hopped” down the coast of Canada and into the interior. This would help explain the absence of early interior sites as well as the presence of some early coastal sites. We know that people were using boats at this time, because Australia was colonized 50,000 years ago, but was never connected to the mainland by a land bridge—people *had* to get to Australia by boat. So, theoretically speaking, peopling of the Americas by boat is a possibility.

A third hypothesis suggests people boated across the Atlantic along the ice shelf to the coast of what is today the United States. Popularly called the Iberia, not Siberia Hypothesis, this idea points to similarities in morphology (form) and flint knapping techniques between Upper Paleolithic Solutrean points and Clovis points. This hypothesis suffers from a timing problem (the Solutrean points are 4,000 years earlier than Clovis). And the artwork that characterized the Upper Paleolithic in Europe, like Venus figurines, does not appear in the Americas.

DNA from ancient remains provides some evidence as to the origins of the Paleoindian people. Recently, the DNA of a Clovis child from the Anzick Cache in Montana—the only known Clovis burial—was analyzed. Two types of DNA were analyzed, mitochondrial and nuclear. Mitochondrial DNA is located within the mitochondria and is separate from nuclear DNA in the nucleus of cells. Mitochondrial DNA is passed along only through the mother and so provides a glimpse inside the maternal line of Anzick Boy. Nuclear DNA inside the cell nucleus, in contrast, is a combination of the mother's and father's DNA. The results of the DNA analysis reveal Anzick Boy to be most genetically similar to indigenous people of the Americas (especially in Central and South America) with other similarities with modern East Asians and western Eurasians (Rasmussen et al. 2014). The DNA of the Anzick boy, being linked to modern Native Americans and extent Asian populations, does not support the Iberia not Siberia Hypothesis of colonization. After the study was completed, the remains of the child were reburied in Montana according to a ceremony attended by multiple tribes. Though the analysis revealed that Clovis people were related to modern natives peoples of the Americas, many were unhappy with the analysis on principle. Armand Minthorn of the Umatilla Confederated tribes stated, "These are our ancestors' remains, they are not artifacts. I hope that the people who come after us remember this as well" (Brett 2014). These types of analyses are often the center of ethical debates in archaeology about how to treat both human remains and artifacts. In the next chapter, we will discuss legislation called NAGPRA which addresses this very question.

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1.5: Mesolithic, After the Ice


 Mesolithic house

Figure 1.5.1: Reconstructed Mesolithic round-house. (Copyright; Andrew Curtis)

The survey crew was recording sites on the Fort Bliss military base near El Paso. We came upon a site with no pottery, but lots of debris from making stone tools along with ground stone for processing plants. I reached down and found a stone point, thick and made from a dull-gray basalt. “These Archaic Bajada points are so chunky and ugly compared to Paleo points.” He took the point in his gnarled hands (he had lost two fingers in two separate accidents). “Do you know how hard it is to make a point out of this crappy material? The person who made this knew what they were doing.” Well, that was a good point and I never forgot it. In general, people were not as mobile after the Pleistocene and did not have the same access to the best stone material. That, in turn, had consequences for their tools. Archaic folks weren’t getting dumber, they were just adapting to the dramatically new conditions of the Mesolithic/Archaic.

The end of the last Ice Age was a major turning point in the history of the human species. The Earth’s climate became warmer, and the fluctuations in the average global temperature of the Pleistocene ceased. This warm, stable period is termed the Holocene epoch, in which we live today. Many of the large animals upon which Paleolithic hunters had built their lives disappeared. As a result, human foragers broadened the range of animal and plant foods they depended on for survival, and this in turn required major shifts in technology and settlement strategies (where people live and when they occupy those areas). The dramatic leveling out of climatic conditions would eventually lead to the domestication of plants and animals and the development of social inequality, urbanism, states, and empires. The shift in climate at the end of the Pleistocene changed the world forever. In this chapter, we will explore how these momentous changes manifested themselves in cultures around the world.



Figure 1.5.1: Quartz sandstone sculptures from 6300-5900 B.C.E. on display at the Museum Lepenski Vir. (Credit Mickey Mystique, via Wikimedia Commons)

The Mesolithic is not a uniform time period and goes by different names such as the Archaic period in North America and the Epipaleolithic in Southeast Asia. During this time, hunting and gathering continued, but human diets diversified to include more fish, shellfish, migratory birds, gazelles, deer, rabbits, tortoises, and many other small animals. In temperate zones, the most commonly used types of plant foods were the seeds of annual plants like wild cereals, beans, peas, lentils, squash, and tree nuts. In tropical zones, plant foods more commonly took the form of tree fruits and tubers, such as the wild forms of manioc, yams, sweet potatoes. The diversification in diet is called broad-spectrum foraging. Most noticeably, people made greater use of marine resources during the Mesolithic. The material remains from the use of marine foods are unmistakable. Huge piles of empty seashells called shell middens, along with wooden log boats 30 feet long, fishnets and traps, and bonefish hooks attest to this shift in dietary emphasis.



Figure 1.5.1: A closeup of a shell midden in Argentina by Mikel Zubimendi. (Mikel Zubimendi, CC BY-SA 4.0)

At the Mesolithic Ertebølle site in Jutland, in Denmark, the shell midden is 6.5 feet thick, 460 feet long, and 66 feet wide. Soils in shell middens tend to be a deep rich black to brown color from the decay of organic matter. Shellfish provided a highly reliable source of food in addition to other marine foods. At Lepenski Vir, a Mesolithic community along the Danube River in Serbia, the shift in food resources is reflected in unusual stone carvings of fish-like creatures.

In general, stone tools become smaller during this period. For example, microliths become a much more important flaked stone tool in the Mesolithic of Europe and Asia. Microliths are small pieces of sharp stone made from sections of longer blades and flakes and make more efficient use of stone. One way microliths were used was to set them into a wooden or bone/antler handle, to use as a sickle. High-quality stone became more difficult to procure due to more permanent settlements and microliths became a way to conserve stone. In other cases, as in the archaic of the American Southwest, people made do with lesser quality material.

Although the atlatl continued to be used, the bow and arrow came into common use in Europe during the Mesolithic. (Arrows were likely used much earlier in South Africa during the Pleistocene). In Europe, Mesolithic arrows with microliths affixed with resin have been recovered from bog deposits. Another important technology that becomes prevalent in the Mesolithic is ground stone. Ground stone tools were made by pecking and grinding and constituted a huge time investment. Ground stone was an essential technology for grinding seeds to make them digestible. Ground stone axes were made for cutting and clearing woods and forests. As people become increasingly sedentary, they had to intensify their efforts to get more resources out of the same area of land in order to subsist, initially by starting to consume foods that were previously lower on the preference list—foods that required additional processing in order to make them edible. A good example is acorns. Acorns are shelled and contain tannins and phytic acids, and thus require processing to make them into an edible meal. Acorns need to be cracked up to remove the nut and then ground into flour. The tannins and phytic acids are removed by leaching them in water.

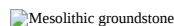


Figure 1.5.1: Mesolithic mortar and pestle by Gary Todd. (licensed under public domain)

In many Mesolithic/Archaic cultures, pottery was not used at all. There are some examples of pottery from Pleistocene contexts, most notably from China, which represents the earliest use of pottery (Wu et al. 2012). Jomon hunter-gatherers of Japan who lived some 16,000 years had a ceramic tradition that is well documented. Among more mobile foragers, however, pottery tends to be a liability. Pottery becomes far more prevalent when people begin to practice agriculture and live in more permanent villages. Mobile foragers are thought to have used basketry to transport and store items.

What People Ate

There are numerous ways to infer what people ate in the ancient past. Plant remains, animal bones, human stomach contents, and chemical residues on artifacts can all provide clues to diet. Another way is through bone chemistry analysis. From chemistry, we know that an isotope is a variant of an element that has the same number of protons, but the number of neutrons can vary. Examples of isotopes are carbon-12, carbon-13, and carbon-14. Different plants take up different ratios of isotopes. Marine plants and animals, for example, take up relatively more carbon-13 to carbon-12 than do terrestrial resources. By looking at human bone chemistry from Mesolithic coastal settlements and comparing them to later agriculturalists, archaeologists see a dramatic shift in the isotopic signatures. Mesolithic people had high concentrations of carbon-13, revealing that they were relying more on marine resources for food than their later agriculturally-based counterparts.

It is also possible to examine reliance on plants versus animal food using bone chemistry. As one moves up the food chain, nitrogen-15 becomes more concentrated in the body. If you eat more meat, the more nitrogen-15 enriched you will be.

Archaeologists can look at the ratio of nitrogen-14 and nitrogen-15 in archaeological samples to get an idea of whether the diet was plant or animal-based.

The First Domesticated Animal



Figure 1.5.1: Watercolor tracing made by archaeologist Henri Breuil from a cave painting of a wolf-like canid, Font-de-Gaume, France dated 19,000 years ago. (Copyright; Ruth)

Domestication refers to interfering with the reproduction of another species to produce favorable genetic changes. The earliest known domesticated animal species is the dog. While the dog becomes more common in the Mesolithic, they appear to have been domesticated in the Upper Paleolithic. In one recent discovery at Předmostí in Siberia, a dog was found with a possible mammoth bone in its mouth. A few other Upper Paleolithic sites with dogs are also known. Recent work on the dog genome suggests that dogs may have diverged from wolves in the Pleistocene perhaps 30,000-40,000 years ago. Biological Anthropologist Pat Shipman even argues in her book *Invaders* that dogs may have given modern humans the competitive edge to out-compete Neanderthals.

In post-Pleistocene Europe, Southeast Asia, and North America, there are dog burials in the same areas as human burials. In one famous example in the Middle East, a woman was buried with a puppy. At the 8,000-year-old Archaic Koster site in Illinois, archaeologists discovered the remains of four dog burials located in the same area as human burials.

Dogs appear to have been selected by foragers for docility or “tameness.” Some think that humans began to keep wolf pups, selecting for tamer traits which over time led to dogs. Hunter-gatherers are known to take in wild animals like monkeys, eagles, and armadillos, and care for them. The Ache of Paraguay and the Kichwa of Ecuador will sometimes adopt armadillos and monkeys, for example. Others think that dogs may have domesticated themselves in a sense. Human-tolerant dogs would be attracted to human settlements and trash dumps, and eventually, the offspring of these docile animals would be taken in by humans. One very clear advantage that dogs provide is their sense of smell, which becomes useful in hunting. We’ve got good eyesight, great dexterity, but we’re just not great smellers compared to dogs. In addition, dogs can pull loads, provide warmth, and of course, offer companionship. In a pinch, they can also be eaten.

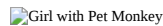


Figure 1.5.1: “Girl with pet monkey at Pacayaku” by Heather Cowper (licensed under CC BY-NC-SA 2.0)

Dogs, as opposed to the wolves they evolved from, are recognizable in the archaeological record by morphological changes. The snout becomes shorter, the face more indented at the rostrum, and the teeth are reduced. One way these morphological changes might have occurred is the selection for docility alone. In the famous “silver-fox experiments”, Dmitri Belyaev and Ludmilla Tutt demonstrated that breeding the most docile wild foxes resulted in very social foxes. But they also changed in form. These highly social foxes look a lot like dogs, some with patchy coats, wagging tails, shortened muzzles, and floppy ears. They even whine and bark, which wild foxes do not do. Selecting for docility alone, whether through human selection or natural selection, could have resulted in a fairly quick metamorphosis from wolf to dog.



Figure 1.5.1: (by aalnik96 from Pixabay)

Warfare and Violence

Humans can be remarkably cooperative, but we also have our dark side. Specialists in human bone called osteologists can examine ancient skeletal remains for signs of violent death. Evidence for lethal violence dates back more than 400,000 years in Neanderthals at Sima de Los Huesos in Spain. Skull 17 bears evidence of blunt force trauma to the front part of the skull (Sala et al. 2015). At some Mesolithic sites, there is clear evidence for violence as well. In some cases, violence is obvious. Arrowheads are found embedded in human skeletons at the Mesolithic sites of Téviec, France, and Skateholm, Sweden. At a site called Ofnet in Germany, two caches of skulls were found representing men, women, and children who all bore evidence of bludgeoning and decapitation. Recent work at Nataruk in Kenya revealed a massacre of 27 individuals, dating to around 10,000 years ago. The skeletons revealed evidence for blunt-force trauma, stone points lodged in the skull and thorax, and bound wrists. Like modern humans, clearly, early foragers were not living in a garden of Eden oblivious to violence. And yet, at many other Mesolithic sites, there is no evidence for violence.



Figure 1.5.1: Mesolithic burials with evidence of violent death. Téviec, France. ([CC-BY-SA-3.0 <http://creativecommons.org/licenses/by-sa/3.0>)], via Wikimedia Commons, Photo: Didier Descouens)

Kennewick Man



Figure 1.5.1: Kennewick Man. (By Erin Blakemore SMITHSONIAN.COM)

Kennewick Man, also known as The Ancient One, is one of the earliest skeletons found in the Americas and dates to ca. 8,500 years ago, at the end of the Pleistocene and the beginning of the Holocene. Kennewick Man, like so many other remarkable finds, was found accidentally. Two college students found the skeletal remains while wading in the Columbia River in Washington on Army Corps of Engineer land (federal property) during a boat race. Thinking it was a forensic case, they called in the authorities. At first, he was thought to be an early European explorer, but radiocarbon dating quickly revealed the ancient age. Because it wasn't clear who Kennewick Man was, a controversy ensued over who had rights to his remains. The legislation called NAGPRA or Native American Graves Protection and Repatriation Act of 1990 stipulates that Native American tribes and Hawaiian organizations have a right to claim human remains and other culturally important items found on federal lands. When human remains or objects are returned to affiliated groups, it is called repatriation. Most repatriations are non-controversial, and there is an established link between ancient remains and modern people. With Kennewick Man, the link from past to present was so distant that some scientists questioned whether a legitimate claim could be made.

The Umatilla Tribe claimed Kennewick Man as their ancestor, asserting that the tribe had been in the area since the beginning of time. The Umatilla objected to the treatment of Kennewick because ancestors are of vital importance to their culture and disrespect for remains not only violates their religious beliefs but also could have serious real-world consequences. Initially, no DNA could be gotten from Kennewick Man and he went into legal limbo and was stored at the Burke Museum. In 2015, however, scientists managed to extract his DNA and compared it to modern people. Kennewick Man turned out to be most genetically similar to indigenous Americans. Following this research, he was repatriated and reburied collectively by five different tribes in 2017.

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1.6: Emergence of Domestication

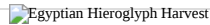
 Egyptian Hieroglyph Harvest

Figure 1.6.1: Egyptian hieroglyphic of people harvesting crops. “An early Ramesside Period mural painting from Deir el-Medina tomb depicts an Egyptian couple harvesting crops”. (licensed under public domain)

‘It’s not what you find; it’s what you find out.’—attributed to archaeologist David Hurst Thomas

Domestication refers to the genetic alteration of plants or animals as a result of human control of reproduction. Agriculture refers to the reliance on domesticated plants for food. The first domestication of plants and animals developed independently in several different parts of the world within a narrow window of time in the early Holocene, between around 10,000 and 5,000 years ago. The Holocene refers to the geological epoch following the Pleistocene, and is marked by an increasingly stable climate. Domestication of plants did not begin until after the end of the Pleistocene, suggesting that the climate stabilization that happened in the Holocene might have made domestication of plants possible. Domestication has rightfully been seen as a major turning point in the history of the human species. One of the big questions in archaeology is: why and how does domestication occur in some areas very early on and much later or never in others?

The Idea of Diffusion

The earliest theories about the origins of domestication were strongly tied to the idea of human progress—the idea that we are constantly getting smarter and improving the human condition. These early ideas invariably emphasized discovery and invention. Since “savages”, as hunter-gatherers were referred to, did not have domestication, it must have been a difficult concept to master—kind of like prehistoric “rocket science”. Domestication was thought to be such a complicated notion that it must have been invented only once or twice by “seed geniuses” and then diffused or spread out to the rest of the world from there. Secondly, early theories of domestication tended to assume that domestication is such an obviously beneficial innovation that anyone who saw it or learned about its practice would immediately drop whatever they were doing (i.e., hunting and gathering) and start farming and herding. Basically, it was thought of as an idea waiting to happen.

This idea of cultural diffusion was taken to ridiculous extremes in the early 20th century by Grafton Elliot Smith a British anatomist-turned-anthropologist who published *The Egyptians and the Origins of Civilization* in 1923. Noting that, for example, the practice of embalming was found earliest in Egypt, and was now found all over the world, he decided that it had been invented there and diffused out to the rest of the civilized world. From this simple starting point, he then concluded that all the early hallmarks of civilization—agriculture, calendars, monumental architecture, metallurgy, the idea of centralized government—had been invented first by the Egyptians and diffused to the rest of the world, across the Atlantic and the Pacific, from there. William J. Perry, a British anthropologist, published several books promoting this view of civilization origins including the popular *Children of the Sun* (1923), in which he argued that the Polynesian practice of building monumental stone temples called heiau reflected the diffusion of the Egyptian pyramid construction to the Pacific. He also argued that European megalithic monuments like Stonehenge were a case of the same process of diffusion from Egypt.

Hyper-diffusionists thought the trappings of civilization began in Egypt and traveled the globe. The view that Egypt was the source of all civilization was strongly influenced by the finding that the Egyptians had produced the earliest known form of writing (this is almost true: The Sumerian cuneiform script is probably a little earlier). Since everybody knew that writing was the *sine qua non* of civilization, the idea that everything else necessary for civilized life was invented first in Egypt just logically followed. The fact that Tutankhamun’s undisturbed tomb had just been discovered in 1922 by Howard Carter and Lord Carnarvon only contributed to the Egyptomania of the 1920s.

Archaeologist Glyn Daniels called this kind of “Egyptocentric” thinking hyper-diffusionism. Keep in mind that the diffusion of cultural traits does occur—there is nothing inherently wrong with the idea of diffusion as a mechanism for cultural change. But independent invention happens too. One of the most basic questions one asks in considering any cultural innovation is whether the idea came from somewhere else, or whether it was invented or re-invented independently by way of chance or necessity. From what we know now, the practice of farming and herding developed independently in six or so core areas of the world, and it did so several thousand years prior to the development of anything we would now call “civilization”. So the focus of explanation for domestication has shifted from “how and why agriculture diffused from the centers of civilization” to “how and why domestication developed in response to local environmental and social conditions”.

Domestication: Where and Why?

The idea that the invention of agriculture actually needed an explanation is a relatively new one. According to the Old Testament, Cain was the first human born, and he was already a metals smith and a tiller of the earth. Domestication just came with the human package. But with the discovery of the Upper Paleolithic and the recognition of the antiquity of the earth, the question of why people began to domesticate plants and animals emerged. V. Gordon Childe, one of the great early archaeologists, suggested that as the Pleistocene ended people began to closely observe plants and animals for the first time around oases, and discovering their true nature led to their domestication. We know from studying Upper Paleolithic cave art that early humans were quite familiar with animals and cognizant of seasonal changes and migrations. Moreover, hunter-gatherers, in general, must make their living by observing wild animals and plants and figuring out the best ways to turn them into food—their lives depend on it. While Childe was right about the timing of domestication, he was probably wrong that hunter-gatherers just didn't have a clue about plant and animal reproduction.

Investigating the beginnings of agriculture in the mid-1900s, American archaeologist Robert Braidwood showed that plant domestication in the Near East began in the hilly flanks of the Fertile Crescent, the natural habitat of the wild progenitors of the first domesticated plants. In fact, these grasses were so abundant that experimental archaeology showed the hunter-gatherers could easily live off of them without even domesticating them. This period where wild grains were harvested before domestication is called the Natufian. This point that grains could have been harvested by hunter-gatherers was brought home by a simple experiment carried out in the summer of 1967 by a member of Braidwood's archaeological team at the site of Çayönü in Turkey. Jack Harlan was an American crop scientist who had been hired by Braidwood to consult on the growth of wild cereals. Çayönü is an early Neolithic site located in the foothills of the Taurus Mountains in the prime habitat of a wild form of wheat called einkorn (You can still einkorn cookies in some stores. They are delicious).

Harlan noticed that dense stands of wild einkorn covered the hillsides of rich volcanic soil around the site, as they had back in the early Neolithic when the site was occupied. Acting on a hunch, Harlan reconstructed a Neolithic-style hand sickle using a wooden handle with microlith blades embedded in it, using archaeologically recovered examples for models. Using the hand sickle and some locally made baskets, Harlan was able to harvest up to 2 pounds of wild cereal grain per hour from the wild stands around the site. Furthermore, since the site was located on a hillside, Harlan found he could move up the hill and harvest more newly ripened grain as the summer season progressed to higher elevations. From these results, Harlan estimated that a family of four could harvest enough wild einkorn to feed themselves for a year in the space of only three weeks, by moving up the hillside. Once again, experiment archaeology showed what was possible, but raised further questions. Jack Harlan's wheat harvest raised the question: Why bother to become a farmer when you can live as a hunter-gatherer off the land and let the wild plants sow themselves?



Figure 1.6.1: Neolithic sickle with microliths embedded. (By Wolfgang Sauber (Own work). [GFDL (<http://www.gnu.org/copyleft/fdl.html>) or CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0>)], via Wikimedia Commons)

What's the advantage of domestication?

It is commonly thought that agriculture gives people more free time—that it is some kind of labor-saving device. It isn't. In fact, ethnographic research (research on modern-day people) has shown that agriculturalists generally spend more hours of work per week in subsistence activities than hunter-gatherers do. Agriculture requires clearing land, weeding, creating technology to harvest crops, hours of processing (grinding) seeds, and cooking not to mention the labor involved in making and maintaining permanent structures. This is why many archaeologists maintain that in order to explain why people began to domesticate animals and plants, it is first necessary to explain why people found it necessary to work harder in order to survive and reproduce, assuming that people will only work as hard as they have to do so. Domestication allows people to live off a smaller unit of land by putting more effort into food production. From this perspective, you can see that domestication could be a reasonable choice in the face of population growth and resource depletion, where one might have to get by on a smaller unit of land. The only option would be to intensify effort to get more out of less. In turn, sedentary life appears to promote increased population, or at least population densities. Rather than seeing domestication as a serendipitous discovery that freed humanity from the risks and privations of life as a hunter-gatherer “savage”, domestication and subsistence intensification have come to be as a grim necessity. In the long scheme of things, the history of “improvements” in subsistence practices is the history of declining individual work efficiency.

The Evidence for Domestication

During the Mesolithic, changes in diet with domestication brought about changes in settlement and technology. The archaeological tool tradition or suite of tools, associated with the domestication of plants and animals is called the Neolithic, or New Stone Age. Houses (domestic structures) required increased labor to construct as villages became increasingly permanent. There was an even greater emphasis on grinding stones with an increased need to process grains. Some grinding stones at the site of Abu Hureyra in Syria were in fact gigantic, attesting to the amount of cereal processing going on at the site. Because agriculture is a seasonal activity, grains had to be stored for future consumption. During the Neolithic, pottery, grain bins, and storage pits become common. Because domestication involves genetic alteration of plants by selective breeding, the morphology of seeds changes during the Neolithic. For starters, they become bigger as people favor plants that produce larger seeds. Secondly, they develop a stronger rachis, the part of the plant that holds the seed onto the plant. A stronger rachis prevents the seed from doing what it does naturally to reproduce—blow away in the wind. If you look at an ear of corn, you can easily see what we’ve done to this plant. The rachis is so strong, that it can no longer reproduce without the assistance of people. The same is true of wheat. Second, the glume or seed coat of domesticated grains is weaker. The weaker seed coat is good for humans because it makes the seed softer and therefore easier to process and digest.

Some of the earliest evidence for domesticated plants comes from the flanks of the Fertile Crescent on the margins of the Taurus and Zagros Mountains in the Near East in Iraq, Iran, Syria, and Turkey. The site of Abu Hureyra in Syria, excavated in 1974 by A.M.T. Moore, is a tell, or an accumulated mound created by continuous occupation. The site now lies beneath the Lake Assad reservoir near the Syrian border with Turkey. The site dates to the late Mesolithic/early Neolithic, around 8,000–13,500 B.P. About 11,000 B.P. the village’s inhabitants started growing cereal grains, rye being the first known domesticated grain. During the later occupation at Abu Hureyra, architecture consisted of mud bricks structures covered by mud plaster. Houses had plaster floors and were equipped with storerooms for keeping food and hearths for cooking.

Excavations at Abu Hureyra showed the expected change in morphology for seeds from wild to domesticated:

“What we expected to find from the hunter-gatherer levels at the site was lots of wild cereals. These are characteristically very skinny and we found plenty of them. But then, at higher and later levels, we found things that did not belong there. There were these whacking, great fat seeds, characteristic of cultivation. “(Gordon Hillman, University College, London, on Abu Hureyra excavations).

Another fascinating discovery for the Neolithic occupation of Abu Hureyra is that osteologist Theya Molleson could determine who was doing the laborious grinding of seeds based on skeletal abnormalities. She discovered a window into the sexual division of labor, the way in which people organized tasks by sex. A final tell-tale sign of domestication, especially in the New World, is dental caries, or cavities. During the Archaic period (the Mesolithic of the New World), the incidence of cavities is low. Later in the New World when populations become supported largely by maize, which contains sugars, the incidence of cavities skyrockets. The domestication of wheat, rye, and barley spread out from the flanks of the Fertile Crescent to Cyprus, Crete, mainland Greece, and Europe. Domesticated animals also came with these domesticated plants. The conversion from hunting and gathering to farming in Europe did not all happen at the same time, and some populations remained foragers for longer periods than others. A major debate in archaeology is whether people migrated to these areas with their domesticated, or whether the domesticates diffused “down-the-line” as well as the route into Europe that migrants took. The genetic markers (male Y chromosome and SNPS) for southeast Europe and Greece indicate ties to the Near East, while in Germany, France, and northeastern Spain there is less evidence of eastern migrants. The study of ancient DNA, which is rapidly becoming more feasible, will hopefully further clarify how domesticates spread. It is clear though that migrations of people into Europe from the Near East is not just a modern phenomenon. So while Kennewick Man is clearly connected to Native Americans, it is less clear how modern Europeans are related to people of the Upper Paleolithic.



Figure 1.6.1: Agriculture began along the flanks or hill slopes of the Fertile Crescent. (CC BY-SA 4.0-3.0-2.5-2.0-1.0 (<http://creativecommons.org/licenses/by-sa/4.0/>), via Wikimedia Commons)

Following the introduction of plant and animal domesticates to Europe, a number of different archaeological cultures sprang up. In western Europe, people began to build large stone monuments like menhirs, large standing stones, in the 5th millennium B.C. (4000’s B.C.) along with earthen mounds called “long mounds”. In the Balkans (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Kosovo, Republic of Macedonia, Montenegro, Slovenia, Romania), enormous villages, and even tells, formed. Copper and gold mining and production of sumptuary goods can be found at the Bulgarian Neolithic site of Varna along the Black Sea. One male burial, 40-50 years old, contained gold beads, rings, bracelets, hair, and body ornaments (including a golden penis sheath). He also had copper axes and a stone ax scepter. Some scholars think that with the spread of domesticates to Europe also

came the Indo-European languages common in Europe today, including Germanic, Slavic, Italic, and Celtic languages (other Indo-European languages include Farsi, Urdu, Hindi, and Kurdish). Thus, the English in which this text is written may have had its roots in the spread of agriculture from the Near East. This debate continues to puzzle both linguists and archaeologists alike.

Domestication also began independently in China with millet and rice around 9,000 BP. Settlements and pottery begin to become prevalent (though there is evidence for even earlier pottery in China). At the site of Banpo (ca. 6,000 BP) near Xi'an in China, houses are circular and excavated deeply into the earth. Pits were excavated into the structures for the storage of food. The Neolithic of China also contains evidence for the world's earliest alcohol dating to around 9,000 years ago. Patrick McGovern is a biomolecular archaeologist who specializes in ancient alcohol made from rice, fruits, and other ingredients. McGovern uses techniques like infrared spectrometry to analyze residues on pottery fragments in order to determine the ingredients of ancient alcohol. This technique bombards a sample with infrared light, and the absorption of the light reveals what kinds of bonds are present in the sample. Each organic compound will respond differently and can potentially be identified.

Domestication in the New World

The first New World domesticate was squash, ca. 8,000-10,000 B.P. in southern Mexico and South America. Domestication is marked by increased seed length, increased peduncle (stem) diameter, and changes in overall shape compared to wild species. While there were other domesticates, the big story of domestication in the New World revolves around maize. Among modern Pueblos, for example, corn is life, corn is mother. While the Old World has several cereal crops, maize was the New World's one major native grain. Other native grains, such as chenopodium and quinoa, were also domesticated, but are not as productive as maize. Guilá Naquitz, in the Valley of Oaxaca, Mexico, is the site of the earliest evidence of maize cobs dating to ca. 6,200 B.P. Other evidence on grinding stones from Xihuatoxtla Shelter in Mexico indicates an early form of maize around 8700 BP. These remains called phytoliths a kind of "plant fossil" made from silicon dioxide (SiO_2) provided direct evidence for maize. Plants take up SiO_2 , which gets incorporated into their cell structures. Phytoliths are used extensively in archaeology to infer diet. (Phytoliths can be found in dental calculus as a direct index of what an individual ate). Most biologists agree that teosinte, a wild grass that grows in the vicinity of Guilá Naquitz today in the Balsas River Valley, is the wild ancestor of maize. To begin, maize was tiny, and artificial selection (traits selected by people, not nature) produced slow increases in maize productivity over time. Only around 4,000 B.P. was maize large enough to support village life.



Figure 1.6.1: Neolithic burial at Varna, Bulgaria . (Photo: Yelkrokoyade [GFDL (<http://www.gnu.org/copyleft/fdl.html>), CC-BY-SA-3.0 (<http://creativecommons.org/licenses/by-sa/3.0/>) or CC-BY-SA-2.5-2.0-1.0 (<http://creativecommons.org/licenses/by-sa/2.5-2.0-1.0/>)], via Wikimedia Commons)

Maize spread from southern Mexico northward into what is today the U.S. and southward into South America. So, maize ultimately comes from Mesoamerica, from central Mexico through Central America, an area we will discuss later in this book. This is a legitimate case of diffusion. It arrived first in the American Southwest ca. 3,000 B.P. reaching the eastern woodlands of the U.S. by around AD 1-200. Like the flanks of the Fertile Crescent, the Valley of Oaxaca was the source of a major domesticate that spread far and wide. Ultimately, maize became the basis for major civilizations throughout the Americas: Olmec, Maya, Aztec, Moché, Inca, Ancestral Pueblo, and Mississippian, which we will discuss in more detail in future chapters.

Ground stone

As we saw in the Mesolithic and Archaic, archaeologists use the term ground stone to refer to stones used in the processing of grains. In the Old World, the grinding slabs are called querns rather than metates. These slabs and stones become increasingly larger and more elaborate with the emergence of the domestication of cereals (the grains of grasses). The making of ground stone is labor-intensive and the grinding of cereals could take hours each day. Processing like this increases the number of calories that are

available to humans to eat, which helps explain why someone might spend hours a day processing grains. Early in the domestication process, people were likely parching grains or even making popcorn rather than spending time making flour. In many cases around the world, there is evidence that women were largely responsible for this task, especially as the importance of domesticates in the diet increased.

Animal Domestication

Like plants, animals undergo morphological changes with domestication as well. We have already discussed some of the changes from wolf to dog. In addition to morphological changes, the population structure of animals can change. Female animals may be kept for breeding purposes, while males might have been used for labor or food. Male cattle or oxen might show wear and tear on their skeletons from the plow. By identifying males and female animals and their ages from the skeletal record, along with wear skeletal abnormalities, archaeologists can see how animals were used. Of course, not every animal is conducive to domestication, which explains why some animals were originally domesticated and continue to be used as food today. The following outlines the factors influencing animal domestication:

- The animal's diet should not compete with the human diet.
- The animals' growth rate should be rapid (e.g., great apes have slow growth).
- The animal should not be too aggressive (e.g., bears, hippos, rhinos, African buffalo).
- The animal should not have a tendency to panic (e.g., deer, antelope).
- The animal should live in permanent herds and have a well-developed dominance structure. Humans can then assume the top position in the hierarchy.

Cattle, pigs, goats, and sheep have qualities that make them amenable to domestication by humans. Grazing animals like cattle are especially productive domesticated animals because they digest cellulose and convert it to energy and protein "on the hoof". They can also eat the stalks and leaves of grasses, while humans harvest and use the seeds.

Today, domesticated animals have now reached epic proportions with around 1 billion cattle in the world. Beef production is a billion-dollar industry. Animal husbandry is not what it used to be in the Neolithic; they are now raised on a massive scale. Cattle take up a huge amount of land to raise along with a huge amount of water. In the U.S. they eat mostly soy and corn, which they are not built to eat, causing additional problems like the production of methane and the use of antibiotics. While wild (non-domesticated) animals grace the pages of children's books, in the real world wild animals pale in comparison to the number of domesticated animals. Domestication has changed not only how humans eat and live, but affected all the earth's animals. F. Dalton prophesied in 1865 in "The First Steps Towards the Domestication of Animals":

It would appear that every wild animal has had its chance of being domesticated, that those few which fulfilled the above conditions were domesticated long ago, but that the large remainder, who fail sometimes in only one particular, are destined to perpetual wildness. As civilization extends they are doomed to be gradually destroyed off the face of the earth as useless consumers of cultivated produce.

Consequences of Domestication

We know one consequence of agriculture is the ability to live off a smaller area of land by increasing the energy put into production. Agriculture can support more people per unit of land, and so population size or density tends to increase. This has consequences. First, trash builds up and attracts vermin and bacteria, which are vectors for disease, and can also pollute water sources. Secondly, domesticating animals brings animal tissues and feces in contact with humans spreading zoonotic, or animal-born, diseases. Examples of zoonotic diseases include chickenpox, hantavirus, mad cow disease, swine flu, yellow fever, ebola, hantavirus, and many, many more. Another consequence of agriculture is that people become very concerned about land rights because even very small areas of land are a family's lifeline.

People become sedentary, investing more in houses and storage units. At Catalhoyuk in Turkey, people live near a source of plaster and become what Ian Hodder calls "plaster freaks", constantly refurbishing and remodeling their houses. As populations increase, there are few other options but to defend one's land rights or migrate to a completely new area. As people become more sedentary and reliant on one area of land, they begin formulating ways of justifying rights to land, often through the establishment of ancestral ties to an area. At Abu Hureyra and other Neolithic sites in the Near East, the interesting phenomena of plastered skulls occur. These are actual skulls that were covered in plaster to resemble a face, not so different from a forensic reconstruction. A combination of realistic and caricature-like modeling of facial features on the skulls suggests individual identities remained with the skulls of the deceased. The skulls may have been modeled and decorated in a manner that captured the essence of a personal

trait or quality that reminded the living of the deceased. After burial or excarnation (removal of flesh), skulls were retrieved and used in other contexts. These plastered skulls have been found buried separately from bodies and sometimes they occur in “caches.” The murals of vultures and heads at Cataloyuk in Turkey may represent the defleshing process, following which the skull could be retrieved for use. The plastered skulls appear to represent a form of ancestor veneration a common phenomenon in agricultural societies. Modern people sometimes retain portions of dead individuals in order to retain an association with that individual, especially if he or she held power. Retaining the skulls of powerful ancestors may have legitimized and reinforced claims to land and other resources, particularly as populations grew and land became scarcer. In a way, this practice of displaying important social figures after death is not so removed from modern life. Vladimir Lenin’s body is on display in a mausoleum in Moscow’s Red Square. The mausoleum incorporates elements of ancient burial monuments such as the Temple of Inscriptions in Honduras (see Chapter ** The Classic Maya) and the Egyptian Step Pyramid (see chapter ** Dynastic Egypt). The preserved remains of Jeremy Bentham (1748-1832), for example, are on display at the University College in London at his own request. He has even “attended” council meetings where he is list as present, but not voting. Bentham serves as a kind of totemic ancestor for the university.

 Neolithic Plastered Skulls

Figure 1.6.1: Neolithic skulls may have been on display or buried in homes. “The three plastered skulls in situ at Yiftahel” by Viviane Slon, Rachel Sarig, Israel HersHKovitz , Hamoudi Khalaily, Ianir Milevskiis. (licensed under CC BY 2.5)

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1.7: Rapa Nui



Figure 1.7.1: The fifteen moai of Ahu Tongariki. “Los 15 moais del ‘Ahu Tongariki’” by Carlos Reusser Monsalvez. (licensed under public domain.)

Easter Island has been called the world’s greatest open-air museum, and indeed the entire island can be seen as one huge archaeological site.

—John Flenley and Paul Bahn, *The Enigmas of Easter Island*

Everyone knows something about Easter Island, or Rapa Nui as it is called on the island. Rapa Nui National Park covers much of the island and is listed as a World Heritage Cultural Landscape. The island is remarkable just for the fact that it is inhabited at all. Easter Island, so named because it was encountered in 1722 by Dutch explorer Jacob Roggeveen on Easter Sunday, is located more than a thousand miles from any other landmass. What’s more, it’s one of the tiniest inhabited islands in the Pacific, a volcanic speck in the Pacific Ocean, just 66 square miles. The island contains more than 950 stone statues, called moai (mo-eye), about 50 of which were transported over long distances, and 150 ahu, the stone constructions that supported many of the moai. At least one moai has been exported from the island and others are likely buried and unknown to archaeologists.

The moai, which are thought to represent venerable ancestors, are massive heads with torsos made from volcanic tuff from the interior and exterior slopes of an ancient volcano called Rano Raraku on the southeast side of the island. In their book, *The Enigmas of Easter Island* Flenley and Bahn write: “From the islander’s testimony and other Polynesian ethnography it is virtually certain that the statues represented high-ranking ancestors.” (p.109).

Standing moai range from 6 to 35 feet in height and weigh as much as 82 tons. The red top knots (pukao) that adorn some of the moai were made from red volcanic rock from Punapau Crater. The exteriors of the moai were originally smoothed, and sometimes carved, but are now mostly eroded. Some of the moai were installed on stone platforms called ahu. The moai were toppled for unknown reasons sometime after the initial European contact (post-1722), perhaps clan warfare, but re-installed in modern times.



Figure 1.7.1: Rapa Nui moai. (Photo: Louis Vest)



Figure 1.7.1: Distribution of moai statue sites on Rapa Nui. (From Richards et al. 2011, p. 192 By Eric Gaba (Sting), translated by Bamse [CC-BY-SA-2.5 (<http://creativecommons.org/licenses/by-sa/2.5>)], via Wikimedia Commons)

Where did they come from?

Norwegian adventurer Thor Heyerdahl (1914–2002) proposed an early idea about how Polynesia, in general, was colonized. Heyerdahl thought that the Polynesian islands were colonized by the indigenous inhabitants of South America, based on perceived similarities in watercraft, architecture, and oral history. He demonstrated the feasibility of traveling from South America to Polynesia by piloting a balsa wood raft from Callao, Peru to the island of Raoria in 1947—some 4,000 miles—which he describes in fascinating detail in *Kon-Tiki*. This was perhaps the most ambitious experimental archaeology ever conducted. Today there is even a museum dedicated to the journey in Oslo, Norway. Heyerdahl was interested in a story told by Rapanui about two peoples, “Long Ears” (or slim people) and “Short Ears” (or stocky people). Heyerdahl thought the Long Ears represented the original inhabitants from South America who arrived around AD 400 according to radiocarbon dates; These people, he supposed, were the ones who built the remarkable stone monuments. The Short Ears, he argued, were Polynesian interlopers who came sometime later and clashed with the Long Ears, effectively killing them off around 1680 along with their spectacular culture based on the moai. Today, the genetic, linguistic, and archaeological evidence does not support large-scale South American colonization. Though a recent study suggests that modern Rapanui have genetic overlaps with South Americans, analysis of prehistoric skeletons would be necessary to make a solid claim for South American colonists because the Rapanui were known to have traveled as slaves to South America, but returned to the island later. Future genetics could reveal a very different story of Easter Island. Critics of Heyerdahl have pointed to the absence of South American domesticates (maize, beans, squash), the lack of pottery, and the absence of pressure flaking techniques so common in the Americas. Many have noted that sailing craft like the one used by Heyerdahl did not exist until after European contact and also his watercraft was towed out fifty nautical miles before setting sail, avoiding a northward current. Other critics have been more scathing in their critique. Writer Paul Theroux quipped that the *Kon-Tiki* expedition showed that “sexy middle-class Scandinavians could successfully crash-land their craft on a coral atoll in the middle of nowhere”.



Figure 1.7.1: Image of Thor Heyerdahl at the Kon-Tiki Museum in Oslo, Norway. (Photo: C Nilson)

The island had the South American sweet potato and bottle gourd, so contact of some sort of contact is not out of the question, but certainly not demonstrated. There are parallels to Rapa Nui monuments elsewhere in the Pacific, so South American masons and hyper-diffusionism do not have to be invoked in order to explain the stone monuments on Rapa Nui. Shrines/ceremonial houses called marae on other Polynesian islands is similar to the ahu of Easter Island. Other Polynesian islands built monumental structures, such as the trilithon of Tonga or the Takaii of Hiva Oa. On nearby Pitcairn, the mutineers of the Bounty pushed stone statues installed on a platform off a cliff (the island was uninhabited when the mutineers landed there). Some have suggested that Polynesians contacted South Americans and not the other way around. Whatever the exact history of colonization of Rapa Nui, Heyerdahl's sailing exploits are legendary, though his ideas have not been substantiated.



Figure 1.7.1: Marae on Tahiti, an ancient temple. (Photo: Pierre Lesage)



Figure 1.7.1: Tonga trilithon made of coral blocks. “Ha’amonga trilithon” (by Vilimaka Foliaki is licensed under CC-BY-SA 2.0)



Figure 1.7.1: Ahu Nau Nau. Note the “long ears” (Photo: bmeabroad licensed under

Getting There

Polynesians were master sailors. Based on computer simulations, it would have been impossible to colonize the furthest reaches of Polynesia without a sail, though there are documented cases of rafts (without sails) drifting off course from islands. Moreover, it is thought that colonizing remote islands would have been a one-way affair, with no hope of returning home. The dating of Rapa Nui colonization is contentious. Early work by Heyerdahl suggested a date around A.D. 900. More recently, the dating of the earliest occupation has come into question. The early radiocarbon dates were from an unidentified sample of wood and are therefore questionable. There is a problem with dating wood samples that might date earlier than the human deposits. This is the old wood problem. Inner tree rings will radiocarbon date earlier than outer rings. More recent dates from excavation suggest the earliest occupation may have been much, much later—as late as A.D. 1200. Clearly, this is yet another mystery of Easter Island.

Island Devastation: Alternative Views

Rapa Nui was formed from volcanic seafloor eruptions and is today marked by rocky lava-covered terrain. There are no permanent streams or rivers, and water exists in the volcanic craters and springs. Three extinct volcanoes dominate the landscape. Today, Rapa Nui is a barren landscape, sometimes described as a moonscape. When explorers like Captain James Cook, landed on Rapa Nui, they noted the island's limited resources and largely treeless terrain. Cook remarked, "Nature has been exceedingly sparing of her favors to this spot". If you go to Google Earth and check out the images from other Polynesian islands, you can see why Cook and others would have been so unimpressed with Rapa Nui.

Studies of ancient pollen grains preserved in old lake bed sediments indicate environmental change over time. The study of pollen is called palynology and is useful in the reconstruction of ancient environments. Drilling down into the bed, one can get a core of accumulated sediments, including seeds, charcoal, and pollen. According to the pollen record, the island was once covered in the palm forest, including a giant species with a trunk up to a meter in girth. Evidence of the roots of these giant palms is seen below the human occupation (recall the Principle of Superposition). Later, the forest pollen vanishes from the record and is replaced by grass. In addition, there is evidence of soil erosion and the use of smaller plant remains as opposed to wood.

One account of the failed environment comes from ornithologist and popular writer Jared Diamond. In this account, Diamond argues that the highly productive environment supported the great chiefdoms that built the moai. Forests were burned down to clear agricultural fields (slash-and-burn farming), or cut for fuel, canoes, or to build transport sleds in the zeal move statuary. The population of the island increased, and the greed of the chiefs in their drive to build more moai, which required wood, finally overtaxed the environment. In short, it was a kind of ecocide. Statues in progress were abruptly abandoned in the quarries and along

transport routes. Civil war and even cannibalism ensued, and the statuary was toppled by rival groups.

Rats!



Figure 1.7.1: Chilean wine palm may have been similar to palms that originally grew on Rapa Nui. (Photo: Natalie Tapson)

An alternative view to the ecocide hypothesis was recently proposed in a book by Terry Hunt and Carl Lipo called *The Statues that Walked*. The authors radiocarbon-dated the arrival of people to the island at A.D. 1200. They point to other studies that show the disappearance of most of the island's wood by 1650, after which people began to burn grass, ferns, and other plant material for fuel.

Hunt and Lipo's explanation for the environmental change was altogether different than Diamond's. In colonizing islands, Polynesians often brought dogs, pigs, chickens, and rats with them to use as a food source. In order to understand their argument, it

is necessary to look at another Pacific Island, Hawai'i. Polynesian researcher, Steve Athens, studied the deforestation of Hawai'i which lost most of its native forest by 1500. Lakebed pollen cores 26 feet thick showed that the decline began around 1200 in Hawaii, soon after people landed on its shores. Yet, deforestation appeared to precede human-caused fires. In addition, many native birds had begun to go extinct. In a total plot twist, Athens, a former UNM graduate student, blamed the Polynesian rats for the destruction. Rats, who had traveled to the island with humans, had occupied parts of the island that humans had not yet occupied. The sediment cores were also full of rat bones. At the same time rat remains showed up in the core sediments, there was also evidence for forest decline and the birds became less prevalent. Essentially, the rat was seen at the scene of the crime, but not humans.

Ecologists have shown that rats can devastate an environment, voraciously feeding on nuts such that new trees do not regenerate and leaving little for bird populations. On Lord Howe Island, a natural UNESCO Cultural Landscape due to its unique plant and animal communities were infested with black rats when a steamship ran off-course on the island. The rats have been implicated in the loss of birds, invertebrates, and plants. Hunt and Lipo argue that a similar "plague of rats" contributed to the decline and ultimate demise of the Rapa Nui forests.

As with the Hawaii sediments cores, Hunt and Lipo found an abundance of rat bones in their excavations of cultural remains. Documents of the Cook expedition of 1774 also indicated that Rapanui ate rats. Hunt and Lipo concede that palms were also cleared and burned for agricultural purposes, but this, they argue, was not what devastated the landscape, ruining the island paradise. Rather, they argue that soils on Rapa Nui were always poor and that the Polynesian colonists made the most out of the resources they had. The story of Rapa Nui, they claim, is not one of human ecocide but of persistence and resilience in which the islanders employed innovative approaches and a willingness to invest massive amounts of labor. Hunt and Lipo write, "Rather than a case of abject failure, Rapa Nui is an unlikely story of success."

It is easy to draw moral conclusions from the archaeological record. On the one hand, Rapa Nui environmental decline can be used as a cautionary tale about extravagant use of sparse resources. Or the record can be used to celebrate human ingenuity in the face of a difficult environmental situation. Whatever the truth, archaeologists need to recognize how these potential biases might color one's approach to the past. We have to at least be aware of how our own motivation and current environmental concerns might affect our thinking.

Farming Ingenuity

Rapa Nui is a wonder for its monuments, for the fact the people found it at all, and that people managed to grow anything. The soils are notoriously poor. The Rapanui had ingenious farming techniques. Small circular enclosures with high walls made of a rock called manavai protected the fragile plants from the elements. The soils inside the features were much richer than those outside of them, indicating they were enriched with organics. These features have been located, using satellite images and ground-truthing, walking the landscape to verify features found on the satellite images. More than 2,500 of these features were found within a mile of the coast of the island. In other areas of the island, other techniques were used to increase the productivity of the soil. Graduate student Joan Wozniak surveyed, walked the landscape systematically, other parts of the island, finding nothing but a field of rocks. Excavations, however, revealed stone tools, pits, and broken rock. She also noticed modern farmers on Rapa Nui placing rocks around their plants. Based on these findings she suggested that the inhabitants of Easter Island practiced "lithic mulching", or placing rocks around a plant to improve the temperature and nutrient leaching from the rocks. Where earlier explorers and researchers had seen a barren rocky landscape, this keen-eyed student had seen an ingenious agricultural trick that got the most of the soil conditions. Given the vast stretches of rock on the island, the people of Rapa Nui were busy moving rocks and a lot of them.

The Moai

Some moai are positioned on stone "stands" called ahu facing inward to the island. Some, but not all had red pukao resting on their heads. These additions might have represented hair or headdresses of authority. Indeed, islanders were very interested in European-style hats and many were swiped off the heads of sailors never to be seen again. An early account suggests these moai were important parts of ancestor veneration rituals. We learned in the last chapter that ancestor veneration is often important to farming societies.

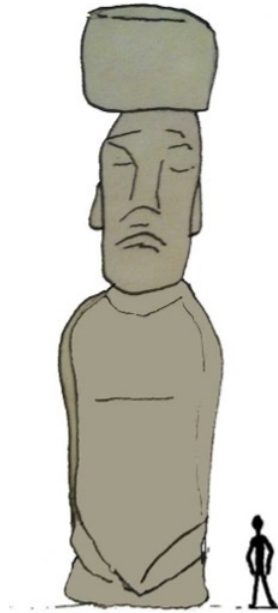


Figure 1.7.1: The relative size of the largest standing moai is called Paro. (Sue Ruth)

Dutch explorer Roggeveen related, “What form of worship of these people comprises we were not to gather any full knowledge of, owing to the shortness of our stay among them. We noticed only that they kindle a fire in front of certain remarkably tall stone figures they set up; and after squatting on their heels with heads bowed, they bring the palms of their hands together and alternatively raise and lower them.” (p. 118). Many ahu have canoe-shaped bases, and the front ramp of the ahu is covered with poro or smooth sea boulders. In front of the ahu complex is a plaza, perhaps an area for ceremonies. Crematoria, an area for human cremations, are located on the seaward side of the ahu. Installing the ancestral figures at the edge of land and sea is consistent with the Polynesian concept that after death the soul travels westward to the sea to the point of origin.

Other moai are not housed on ahu, but rather are located in and around the quarry Rano Raraku. There, hundreds of volcanic moai are located. The volcano is comprised of distinct bays that have their own individual style of quarrying. The Rapanui used harder basalt axes called Toki (check them out here) to carve the relatively soft tuff, and hundreds of them appear in the quarry. Ax marks can be seen on the quarry walls. Erich Von Danniken, who thought the Maya king Lord Pascal was piloting a spacecraft (we’ll discuss this later), did not think it possible that the Rapanui could carve the moai without modern equipment. And yet the tools and evidence are everywhere. In Polynesian cosmology (world-view) volcanoes are important conduits between this world and the interior world. As such, the volcanic quarries may have had symbolic meaning in addition to supplying suitable stone for working into moai and pukao as well as freshwater. On other Polynesian islands, volcanoes are thought to be both living and self-replenishing. Eye sockets carved into quarry bays at Rapa Nui suggest the possibility that these areas were conceived of as living entities. The relative size of the largest standing moai is called Paro.

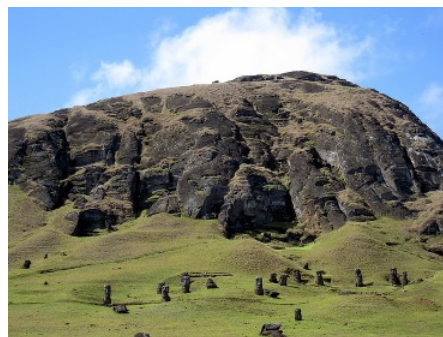


Figure 1.7.1: Quarry at Rano Raraku. (Photo: Stefan Krasowski)

Partially completed moai reveal the stages of carving. The largest moai ever carved, El Gigante (65 feet, ca. 260 tons), lies at Rano Raraku unfinished. The carvers began the giant sculptures in both vertically and horizontally oriented stone. Faces appear out of the

rock with the bodies unfinished, indicating that the carvers started with the facial features first then completed the head, then the body. Stone was chipped away from all but a single keel attaching it to the rock face. Some of the moai at the quarry are partially buried. One school of thought claims that the moai, once extricated from the quarry, were then slid down to the base of the volcano into trenches where they could be worked further. Others think they were installed there on a permanent basis. These “heads” are not in fact just heads. These quarry moai, like the ones installed on the coastal ahu, have full bodies that appear to have been buried naturally. Recent excavations by Joann Van Tilburg show that carvings still remain on these moai, preserved in the sediment. Though some think that moai were installed permanently on the slopes of the quarry, others believe that when completed, all moai were intended to make their journey along roads to the sea to be installed on an ahu facing landward. There on the ahu, the eye sockets would be added along with the coral irises, obsidian or red volcanic pupils, and back carvings that might have represented tattoos.

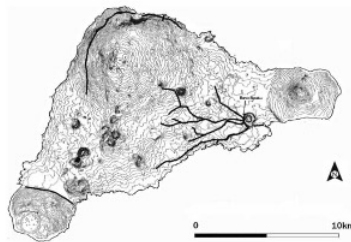


Figure 1.7.1: The ancient road system on Rapa Nui. (From Richards et al. 2011:198)

The ahu are stone platforms that support the installed coastal moai. These were made by building the interior foundation and filling it with rubble. In some cases, as at Ahu Vinapu, massive blocks of basalt were cut to fit snugly together. This tightly fitting masonry is sometimes cited as evidence of South American origin, being similar to South American masonry. Unlike South American masonry, however, the interior stones are not snugly fit.



Figure 1.7.1: Moai was abandoned in progress named El Gigante, about 260 tons. (Photo: Bradley Stabler)

The contrast between the stark environment of Rapa Nui and the colossal sculptures has led people to suppose that the indigenous populations could not have managed the feat. Wilds ideas, like moai being catapulted out of volcanoes, have been offered up instead. Yet, moai roads have been reported since Cook’s expedition and documented in more detail by Katherine Routledge in the early 1900s. Remnants of these moai roads have been recently recorded using detailed satellite imagery and ground-truthing. Of course, parts of the road system have been obliterated by modern use or converted into horse trails and modern roads. Yet, the roads extend out of known quarries like Rana Raraku and lead down to the coast. The roads were intentionally raised up in places and depressed in others in order to level the slope.

Moai on the Move

Two general competing ideas have been put forth to explain how the moai were moved from their quarries to the seaside: horizontally and vertically. Experimentation shows that with A-frame sleds, it is possible to slide moai with about 40 or so people. Getting the moai to its ahu in a horizontal position requires the use of levered sleds. In short, it can be done. Thor Heyerdahl tested the horizontal hypothesis through experimentation in the 1950s. Rapanui insist that the moai “walked” to their current positions. In 1986, Czech engineer Pavel Pavel seriously considered the “walking moai” idea and concocted a 12-ton cement moai with ropes attached, and with the help of 16 men, managed to move the moai, tilting it back and forth in the way one might move a

refrigerator. Heyerdahl invited Pavel to come to Easter Island to try his idea out on real moai, which he did. It worked. The moai were walking, just like the natives said they could. As it turned out the natives even had a word, *neke neke*, for the motion the statues took while walking, which translates into “walking without legs”.

Indigenous archaeologist Sergio Rapu pointed out that the moai of the quarries are shaped differently than the moai installed on the seaside ahu. They were wide at the base with big bellies with a low center of mass, as well as angled to lean slightly forward. The moai on the ahu was considerably pared down. Rapu proposed that the moai were “engineered to move”. (i, p. 87) following Rapu’s insight, Hunt and Lipo conducted a similar archaeological experiment to Pavel’s with some adjustments, also showing that the moai could move vertically. Hunt and Lipo are of the school that the moai were all intended to be installed on ahu, some of which made it, some of

which did not. They point out that more than 50 moai were abandoned along the roadway, facing away from the quarry and aligned with the direction of the road. The breakage of moai also suggested to them that they broke during transport with some force. When the moai were moving upslope, they tended to be on their back, and downslope on their fronts. Moreover, they find wear on the basis of the moai that they argue is consistent with vertical movement. Finally, they

suggest that no wooden apparatus was needed, and indeed palm would have been ineffective, being crushed by the weight of the moai.

Moai as Boundary Markers

Others reject the idea that moai were abandoned along roadways on their way to the ahu, but rather served to mark territorial boundaries or were stationed along roads for symbolic purposes. The coastal moais installed on ahu are thought to represent the coastal boundaries of territories. Early ethnography indicated the existence of territorial boundaries based on lineages of the original founder of the island Hotu Matua. Using Geographic Information Systems (GIS), a mapping program, a group of researchers mapped out the interior moai and overlaid these on top of the early recorded territorial boundaries. iii GIS has become an enormously important technology in archaeology, allowing archaeologists to compare all kinds of datasets—soils, terrain, roads—with the material record. The authors found that moai not associated with roads corresponded well with ethnographic (historically recorded) territorial boundaries. Large stones that appear near these fallen moai may have served as platforms. Also, erosional patterns suggest that these may have stood for some time before falling. Some scholars have suggested the moai may have been used as a kind of competitive display between territories. The moai may have embodied mana, the pan-Polynesian idea in which nobility contains a powerful life force. The mana emanating from the statues could have served to protect the village and territory, perhaps not so different from Neolithic ancestor veneration in the Near East. Today, there is still a royal lineage on Rapa Nui, the Miru, who are the descendants of the island’s founder Hotu Matu’a.

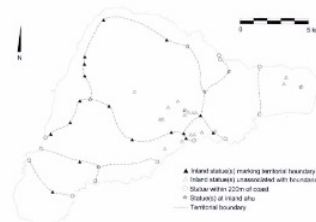


Figure 1.7.1: Potential lineage territories marked by moai. (Shepardson 2005: 174)

Island Life

As we will see, like the Maya temples and Chaco Canyon great houses, the early research emphasis of Easter Island was the monuments—the moai. Less was known about how people lived their daily lives. Early accounts indicate that houses were mainly for sleeping and that many activities took place outside the house. Flenley and Bahn write that the elite houses were closer to the coast and more humble ones further inland. They argue that hare paenga, canoe-shaped houses with an outlined basalt stone foundation were high-status dwellings, as was thought by early Spanish explorers. Hare paenga are found close to platforms. Hunt and Lipo argue that these were merely communal houses and find no evidence for social rank. Near houses are ovens called *umu pae*, a stone-lined earth oven. *Manavai* are garden enclosures designed to protect gardens from the wind as well as provide additional shade and water. Hare moa (see image) was apparently ossuaries, places to house human bone, but were later used as stone chicken houses. Skulls from the royal clan were thought to increase egg yields. Food remains include dolphin bone, palm nuts, squash, fish, shellfish, chicken, and rats. Since Rapa Nui has no extensive reef, fishing seems to have been less important compared to other Polynesian islands. Human leg bone fish hooks are known. Flenley and Bahn suggest that the northwest portion of the island specialized in fishing, which was a high-status food, while the southeast was mainly dedicated to cultivation.



Figure 1.7.1: Hare paenga, boat-shaped house. (Photo: Josie.)

Egg Dash

At Orongo at the southwestern tip of the island, there was a ceremony practiced in historical times. Young male candidates were nominated by warlords from different tribes. Taking place in September, the object was for the young men to travel from the 1,000-foot sheer cliff off the Volcano Rano Kau into the ocean and swim through shark-infested water on reeds, to the islet Motu Nui. There, each man would have to find the brown-speckled egg of the sooty tern and carry it back to his warlord host in his headband. The warlord then became the new sacred birdman, Makemake's (god) representative on Earth. The birdman's group had access to the eggs on the island or in later years other privileges. By 1878, the ceremony became a test of skill and had no ritual or political meaning. Numerous birdman petroglyphs (473 on the entire island) occur in the area of Orongo along with ceremonial dwellings. One of these contained an unusual basalt moai, partially buried. The moai, Hoa Hakanana'i (Stolen Friend) was later taken to the British Museum (and later laser scanned for a 3D model). Ethnologist Katherine Routledge recorded a list of 86 sacred birdmen.



Figure 1.7.1: Cliff at Orongo overlooking Motu Nui and Motu It. (Photo: Eduardo Llanquileo)



Figure 1.7.1: Manavai. (Photo: Sheep"R"US)

Disease

The island was contacted several times beginning in 1722 by the Dutch, then by the Spanish in 1770, Cook in 1774, the French in 1786. Rapanui were captivated with the boats, metal, and for some reason, the hats, of the Europeans. They measured the boats using string devices, impressed it seemed with the length of the wooden planks used. In some cases, the Europeans used muskets against the Rapanui who were prone to swiping cloth and hats from the Europeans. As with the Inca, the Rapa Nui had no immunity to Old World zoonotic diseases. Recall that zoonotic diseases are ones that first began in animals, then "jumped species" to humans. People in the Old World had a greater tolerance for the disease, while the newly contacted people had none, with devastating effects. Since Native Americans, Australians, and Polynesians had few domesticated animals, the devastation by

zoonotic disease was a one-way phenomenon. Venereal disease likely also took hold on the island, as there are explicit accounts of sexual encounters between European men and Rapanui women. While early explorers indicated thousands of people on the island, Cook's expedition reported 600–700 people. Following the Cook expedition, whalers came to the island sporadically, sometimes kidnapping both men and women, creating hostility between the islanders and foreign ships. Later, Peruvians came to the island and indentured more than 1,000 Rapanui to work in guano (bat feces) mines and other forms of servitude. By 1877 the island had just 110 people left. In 1896 most of the island was purchased by a Chilean merchant who set up a sheep farm, further devastating the island, causing the extinction of native plants and erosion.

With the arrival of Thor Heyerdahl in 1955, things began to change for the island, as it became a tourist destination because of the moai, helping the economy. Eventually, in 1966, the islanders gained full Chilean citizenship with an indigenous governor who is also an archaeologist Sergio Rapu. Yet, the tourist trade is causing its own problems, as it tries to maintain an infrastructure to support it. In 2012, the island was visited by about 70,000 tourists. Landfills, sewage, groceries have all become a problem with the renewed interest in the island. The island is heavily reliant on supplies from the mainland.

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1.8: The Southwest



Figure 1.8.1: Chaco Canyon Door. (Copyright; Sue Ruth)

As related in oral histories, the Puebloan people did not disappear—they simply moved, sometimes covering hundreds of kilometers during their migrations. And, for many Pueblo people today, the places they left today are considered sacred homelands, their points of origin.

—John Kantner, *Ancient Puebloan Southwest*, p. 195

When people think of the American Southwest, images of pottery, maize, and pueblos come to mind. But if we look at the archaeological record, we see that these features so characteristic of the Southwest today, weren't always there. The Paleoindian Period (ca. 13,500—8,000 B.P.) which we discussed in Chapter 4 is the earliest known occupation of the Southwest. The time period following the Paleoindian period is called the Archaic period. The term “Archaic” is equivalent to the Mesolithic in Europe (Chapter 6). As with the Mesolithic, the Archaic does not represent a single ethnic or linguistic group, but rather, it refers to a subsistence strategy and architectural style. The Archaic period in the Southwest (ca. 8,000 .P.–1,500 B.P.) was characterized by semi-mobile/semi-sedentary hunter-gatherers. Late in the Archaic, people began incorporating maize into their diets and practicing a mixture of farming and foraging (see Chapter 5).

From ca. 200 BC to AD 700, people in the Southwest were living in farming villages in structures called pithouses, which are houses partially excavated into the ground. By this time, people were growing maize, squash, and beans, and likely moved between the growing seasons in order to hunt and gather foods, since crops could not be grown year-round. Ceramics appear in the archaeological record in the Southwest around AD 200 and become common around AD 500.

Three Traditions

After AD 700, three southwestern archaeological traditions that relied on agriculture emerged. These are called Hohokam, Mogollon and Ancestral Pueblo (formerly called Anasazi). These groupings refer to similarities in material culture, notably pottery, architecture, and burial customs, and not necessarily to ethnic identities. Considerable variation existed within each of these traditions and their boundaries were in no way fixed. All agriculturalists of the Southwest relied on maize as the basis of their subsistence system. As at Neolithic sites in the Near East, there is an abundance of ground

stone in the Southwest for grinding maize into flour, testifying to the reliance on maize as a staple crop. These tools are called manos (the smaller stone held in the hand) and metates (the basin stone) and become larger and increasingly more elaborate as reliance on maize intensified. As you can see from the map, the term Southwest is not very accurate since it comprises a large portion of Northwest Mexico as well as the American Southwest. While we tend to think in terms of modern nation-borders, there was no boundary between Mexico and the United States in prehistory. For this reason, archaeologist Randall McGuire refers to the region as the Southwest-Northwest. In this chapter, we will focus on the agricultural periods, and three key sites/regions: Snaketown (Hohokam); Chaco Canyon (Ancestral Pueblo); and the Mimbres region (Mogollon). Manos and Metates for grinding maize.

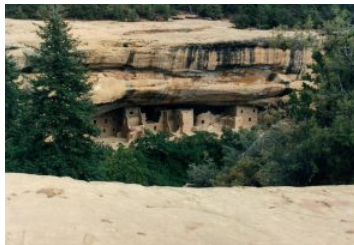


Figure 1.8.1: Spruce Tree House, Mesa Verde. (Copyright; Sue Ruth)

The Hohokam

The Hohokam culture area was located in the Sonoran Desert of southern Arizona, Sonora, and Chihuahua, but centered in the Salt-Gila River Valley in Arizona. The name comes from the indigenous O'odham inhabitants of the region and translates as "all used up" (huhugam). The descendants of the Hohokam are likely the O'odham, and the ancient Hohokam figure into O'odham oral histories (Donald Bahr in Fish and Fish 2007:123).

Many Hohokam sites are now under modern-day Phoenix. The Hohokam tradition is characterized by red-on-buff pottery, architecture, cremation burials, and irrigation system. This long-lived tradition (AD-450–1450) has been dubbed by archaeologists Suzanne and Paul Fish the Hohokam millennium (AD-450–1450). Changes in material culture and architecture occurred during this long span of time, and not every Hohokam site had every feature of Hohokam society.

The Hohokam hunted rabbits and deer and cultivated the Southwestern trio of corn, beans, and squash, which were originally domesticated in Mexico. Corn, beans and squash are sometimes called the Southwestern trio or Three Sisters because they provide benefits to each other. Maize acts as a trellis for the beans to grow on. Beans were a critical component of this trio. Nitrogen is necessary for plant life, and modern fertilizers contain nitrogen that plants can use (Chapter 6, Chemistry in Context). Not all forms of nitrogen can be used by plants. This is where beans come in. The bacteria on the roots of the bean "fix" nitrogen from the atmosphere and convert it to a form that plants can use such as ammonia (NH_4^+) or the ammonium ion (NO_3^-). Thus beans helped to keep the soil fertile for other plants. The bacteria on the beans are in turn fed by sugars from the corn. Finally, the squash provides protection from the sun with its broad leaves. The Hohokam also grew agave and cotton. Cotton takes a lot of water to grow and the Hohokam may have traded cotton textiles around the Southwest (Doyel 1979). Remnants of cotton clothing have even been found, including a child's cotton poncho (Crown, in Fish and Fish 2009:25). Children are also visible in the Hohokam record through pottery. Dr. Patty Crown of UNM has argued that paintings on Hohokam and other Southwest pottery bears the mark of inexperienced potters, likely children.



Figure 1.8.1: Southwest culture areas. (By derivative work: Arkyan Anasazi.svg; Modifié par historicaire 00:26, 9 April 2006 (UTC) (Anasazi.svg) [CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0>)], via Wikimedia Commons)

The Hohokam region received so little precipitation, less than is necessary to grow maize, that maize agriculture without canal irrigation would have been impossible. To solve this problem, the Hohokam engineered the largest canal system north of Mexico. Hohokam canals were major undertakings. Some of the canals are up to 12.5 mi. (20 km) in length and can still be seen today. The largest Hohokam canals were massive—75 feet wide at their widest point and irrigated up 70,000 acres! These canals required skilled engineering as well as labor to produce and maintain. The canal could not be too steep as the rapid flow would erode the channel, while too shallow of a grade would cause build-up. The grade was about 1 or 2 feet per mile, and evidence of water control gates has also been found (Howard). Archaeologists have used equations from engineering to estimate the amount of soil removed to build the canal, the labor to build the canals, the water flowing through the channel, the crops it could have watered, and the number of people it could have supported (Howard). The largest Hohokam villages were populated with around 1,000 or 2,000 people. Today, the Phoenix Basin is one of the fastest-growing metropolitan areas in the country. Groundwater has lowered more than 500 feet, and many of Arizona's rivers, like the Gila, are dry or nearly dry. As a consequence of Arizona's burgeoning population and water problems, a massive canal system diverts water from Colorado to major cities in Arizona. Since the construction of Glen Canyon Dam, the Colorado River, the same one that carved out the Grand Canyon, no longer flows to the sea.

Snaketown The heyday of the Hohokam was between AD 700 and 1150, called the Pre-classic period. Snaketown, located in the Phoenix Basin at the confluence of the Gila and Salt rivers some thirty miles southeast of Phoenix, is the largest and best known Hohokam site. Snaketown (AD 1–AD 1150) reached its height in the mid-1000s and might have served as a political-ritual center for smaller outlying settlements. People lived in wattle and daub structures built in shallow pits (a shallow pithouse) and in distinct clusters around a courtyard. Wattle and daub refer to a stick structure covered with clay or soil. These houses may have looked something like O'odham houses (see image). While we tend to think of houses today as something that we spend most of our time in, the Hohokam likely did much of their daily activity in the courtyards. Unlike the Ancestral Pueblo structures, Hohokam structures tend not to be highly visible on the surface.

Larger and better-quality houses were located in the central part of the site, suggesting it was used by higher-ranking individuals. The extent of the social hierarchy of the society at Snaketown is still unclear.

From about AD 550–1100, the Hohokam used a characteristic red-on-buff (light brown) pottery with both geometric and figurative designs. This pottery was shaped by paddling the exterior with a piece of wood, leaving characteristic flattened areas. The Hohokam also had pyrite mirrors, mosaics, birds, and copper bells from western Mexico (Doyel 1979). The Hohokam also made clay figurines of humans and animals. The human figurines show headbands, jewelry, and sometimes ballgame paraphernalia. Decorative bone hairpins have also been uncovered depicting a bird eating a snake (also depicted on Mexico's flag!). Unlike the Mogollon and Ancestral Pueblos, the Hohokam cremated their dead and placed them in cemeteries. Schist pallets are associated with Hohokam cremations. The figurines coupled with cremations located beneath plazas suggest to research archaeologist Henry Wallace that ancestor veneration was part of the Hohokam belief system (Fish and Fish 2007:19).

Ball Courts

More than 238 Hohokam ball courts have been found (Abbott). Snaketown also contains two ball courts—one being the largest in the Hohokam region. The ball courts reached their greatest extent in the 1000s. Hohokam ballcourts were oval-shaped and defined by curved earthen berms. The Hohokam likely played a version of the Mesoamerican ballgame, a ritualized game associated with fertility, sacrifice, and militarism. The Hohokam were likely playing the “commoner game” version of the ball game, which involved keeping a ball in the air, rather than knocking it through a circular disk (McGuire). Depictions of this game are known from west Mexico. Rubber balls made from the local plant (Guayule) were also discovered in dry caves in the Phoenix area. As

with the game of chunky at Cahokia, the game was likely tied to ritual, and the Hohokam may have hosted a ballgame between villages, and the game may have functioned to integrate Hohokam villages. It is thought that some type of social hierarchy in the form of chiefs would have been necessary to organize the construction and management of the canals, ball courts, and platform mounds (Doyel 1979). And yet, the ball courts were open structures and appear to have served the Hohokam community as opposed to a small cadre of elites.



Figure 1.8.1: The excavated ball court at Snaketown, Arizona. (Copyright; public domain)



Figure 1.8.1: Wattle and daub. (Copyright; aFlickr, Creative Commons. By Joan)



Figure 1.8.1: Pima House. (Copyright; Ruth)

Snaketown also had low platform mounds made of clean desert sediment, which are found on other Hohokam sites as well. The mounds were built up incrementally and increased in size over time. Their function, however, is unclear but is likely ritual in nature. One mound, Mound 16 at Snaketown, was palisaded. In at least one case, a parrot was buried inside the mound. These mounds may have been inspired by those to the south in northern Mexico. The Hohokam were legendary for their use of shells. If Catalhoyukians were “plaster freaks”, the Hohokam can be considered “shell freaks”. Most notable are the Glycymeris “armlets”, which came from the Gulf of California in western Mexico. Craft specialization means that people make more goods than they use for their own families. Archaeologist Barbara Mills found that Hohokam households located on platform mound compounds made and used more shell items than did households further away from the platform mounds, suggesting that elite households were directly involved in the production and use of craft items. In some cases, whole villages specialized in the production of goods. Los Colinas, a large Hohokam site located at the end of the canal system, appears to have been a major producer of pottery for an entire canal system. This is an example of village-level specialization, in which a village produces goods for an entire group of villages.

After AD 1150 Snaketown and other large settlements were largely abandoned and the population shifted to the Salt River Valley. Some people moved from houses in pits to above-ground adobe structures in walled residential compounds that were tightly clustered. The move may have been influenced by an overall climatic downturn that may have led to the abandonment of Chaco Canyon (see next section). Ball courts declined while more and larger platform mounds with 1 to 30 rooms on top of them were erected (Elson, in Fish and Fish 2007: 52). These were made of river cobbles, trash, adobe, and silt (Elson, in Fish and Fish 2007: 51). These ritual features seemed to have functioned differently than the open ball courts, often being inside a walled compound with restricted access. This more limited access compared to the open ball courts suggests a change in ritual and also increasing social differentiation and inequality.



Critical Thinking Question

After AD 1150, trade and production of palettes along with the characteristic red-on-buff pottery and figurines declined. Around AD 1300 large multi-storied adobe structures called “big houses” like the one at Casa Grande in Arizona were built. During this time, it is thought that social hierarchy, cultivation, and population size increased (Fish and Fish 2007, 9). Large settlements become much larger with between 6,000-10,000 people. After AD 1450, the system of large sites disintegrated, followed by smaller more modest settlements. When Father Kino, a Spanish Jesuit missionary arrived in the region in the 1680s, the people bore little resemblance to the ancient Hohokam.

Ancestral Pueblo

The Ancestral Pueblo (formerly called Anasazi) was located in the Four Corners region of the American Southwest on the Colorado Plateau. They are the best known of the three agricultural traditions in the Southwest because of the spectacular preservation of ruins and artifacts. Perhaps the most famous site in all of New Mexico is Chaco Canyon (ca. AD 850–1150), a World Heritage Site. Chaco Canyon is located in San Juan Basin in northwestern New Mexico. The canyon itself is 9 miles long and has little permanent water and few trees grow in this environment. Chaco Canyon contains 14 great houses—large masonry complexes of several hundred rooms standing as high as four stories. It is estimated that a single room at Pueblo Bonito took as much as 44 tons of sandstone to be cut from the cliffs (Plog 1997:102). The great houses appear to have been built according to a preconceived plan. Each great house also had at least one great kiva—a large semi-subterranean (partially underground) ceremonial room with specialized features such as floor vaults, sipapu, masonry bench, raised firebox, deflector, and attached antechamber—which played a central ceremonial role in community activities, along with several smaller kivas. The sipapu is a hole that

represented the point of emergence from the underworld. Great kivas were between 30 and 60 feet in diameter and could be up to six feet deep (Plog 1997: 105).

Large great houses are located mainly on the north side of the canyon. Smaller residential sites, more typical of earlier Ancestral Puebloan pueblos, are located on the south side of the canyon but occupied at the same time as the Great Houses. Pueblo Bonito is the largest of the great houses in Chaco Canyon with 650 rooms. It was built in major, planned construction episodes. Estimates of the population at the site range from a few hundred to a few thousand. Some suggest building activity at Chaco was related to the supernova of 1054 (SN 1054), the residual of which is the crab nebula (Plog 1997:100). A great house Pueblo Peñasco Blanco, there is a nearby pictograph (painted rock art) of a waning crescent moon and a starburst image, which may represent the supernova. Chaco Canyon is the source of much debate. It is not clear whether the site was residential, with full-time inhabitants, or purely ritual in nature. Few hearths were found in any of the rooms, suggesting little residential activity, but top floors had collapsed and in modern Pueblos, the habitation rooms with hearths are found on upper levels. So, the evidence for habitation may not have preserved the ravages of time.

Chaco Order

The great houses at Chaco are not randomly built. Some have looked at Chacoan architecture and use of space and found commonalities with modern pueblos. Of course, not all pueblos are exactly alike in their cosmology (world order), but some general trends are common. Fritz noticed that most great houses were symmetrical east to west. This may reflect the idea of duality so common modern Rio Grande Pueblo cosmology today. The upper world and under are mirror images of each other, the sun rising in the east and setting in the west in the upper world, the reverse in the underworld. Humans first emerged from the underworld into the upper through a hole in the north. Solstices and equinoxes are an important way to divide up the calendar year, and people may be divided into two groups each responsible for different ceremonies. At Chaco, most of the great houses and circular great kivas are in the north, paralleling the pueblo oral tradition of emergence. The great kivas may be a metaphor for the original point of emergence. There is some suggestion of social power at the site. Room number 33 at Pueblo Bonito contained 14 people. Two of these were buried beneath a wooden floor with hundreds of grave offerings: thousands of turquoise beads, hundreds of turquoise pendants, 40 shell bracelets, a shell trumpet, and a cylinder-shaped basket covered with turquoise that was also filled with turquoise and shell beads. In addition to the 12 people above the wooden floor were turquoise beads and pendants along with shell bracelets, cylinder vessels, carved sticks, and large wooden flutes. "Other individuals buried in nearby rooms were laid to rest on a mat bulrushes and wrapped in feather-cloth robes and cotton fabrics" (Plog 1997:109).

A total of 375 crooked staffs were found in Room 32 at Pueblo Bonito. Shearin reported that crooked sticks were used by Pueblos as symbols of authority and power.

The individuals were 2 inches taller than the average Chacoans with less evidence of anemia, suggesting better nutrition and access to food than the average Chacoan at smaller sites. Deer and antelope bones are also more common at the great houses than at the smaller sites (Plog 1997:109).

Additionally, inside some rooms at Pueblo Bonito and other Chaco great houses were found unusual and rare items such as intricately carved wooden objects, copper bells from Mexico, shell trumpets from the Gulf of California, effigy pottery shaped like humans or animals, turquoise, macaw remains, cylinder jars, and parts of headdresses and altars. Great Houses also occur outside of Chaco; these are called "Chacoan outliers". The Canyon imported a huge amount of pottery and other commodities from outlying areas. The exact type of relationship between Chaco and these outlying communities is not fully understood.

Chaco Chocolate

Work by Patty Crown on Chaco ceramics is revealing that Chaco had clear ties to Mesoamerica in the form of liquid chocolate which was an item used only by elites. She has found chemical markers for theobromine, an alkaloid in chocolate inside of pottery fragments from cylinder vessels at Pueblo Bonito. Crown currently holds field schools at Chaco Canyon, in historically excavated portions of the site only. New excavations at Chaco are not possible as modern Pueblo Nations do not want this sacred site disturbed.

Dendrochronology and Wood

Prior to the 1920s and 30s, before tree-ring dating, Southwest archaeologists had a tough time knowing when things happened. They looked at changes in pottery styles at historically known places like Pecos Pueblo east of Santa Fe to get an idea of how pottery styles change over time. Archaeologists knew there were stylistic changes over time because they could see them in the stratigraphy at Pecos Pueblo. They knew, for example, that black-and-white pottery was earlier than more colorful multi-colored,

polychrome, pots. Archaeologists used these sequences of changes in pottery styles to estimate dates for sites across the Southwest. Needless to say, it was a huge job.

Tree-ring dating, or dendrochronology, changed all that. Dendrochronology uses the annual growth rings on trees as a dating method. Tree rings were obtained from preserved wooden beams found at archaeological sites. The technique was first applied in the Southwest by A.E. Douglass. Each sequence of tree rings is unique in terms of the varying thickness of the rings because of changes in time in rainfall. If we begin with a modern tree-ring sample (some Bristlecone pines have lived to be 5,000 years or more) and match up the ring pattern with successively older wood samples, we can create a sequence of tree rings widths that go farther and farther back in time. Since each ring represents a year of growth, we can count the rings to get the age of the wood. This is called a calendar date, which is simply an actual date of the wood. Once we have an overall master sequence, archaeologists can compare a sample to this master sequence, and get a date. This technique has been used to check the validity of radiocarbon dating. Importantly, inner rings provide older dates than outer rings, because the inner rings are older than the outer rings. This is called the old wood problem. For this reason, archaeologists like to use short-lived plants, seeds, or twigs when radiocarbon dating a wood sample, otherwise the technique might date the earlier growth of the tree and not the time when it was cut and used by people. Today, tree-ring dates go back about 8,000 years. One of the foremost dendrochronologists and wood specialists in the Southwest, Tom Windes, came to my face-to-face archaeology class in the fall of 2013.

Not only can dendrochronology provide a date estimate, but it can reveal the season in which the tree was cut. The light-colored portion of the ring represents the period of growth in spring and dark rings represent dormancy in winter. The outermost ring indicates the season of cutting. If the outermost ring is light, the tree was cut during its season of growth. Most tree harvesting at Chaco took place during the growing season in the spring/early summer. Tree rings also provide information about climate. Droughts can be seen in smaller sequences of rings and times of relatively high rainfall larger rings. Coupled with tree rings, ancient pollen remains found in ancient packrat middens can also be informative about past climate. These packrat middens or nests are solidified and preserved by a substance called amber, crystallized urine in the nest, and reveal the types of pollen that were in the area at the time. Long records of climate change have been created based on these middens. Needless to say, packrat urine is a very important tool in Southwest archaeology. If you go to the New Mexico Museum of Natural History, you can see a small exhibit on packrat middens.

As wondrous as dendrochronology is, there are some problems. In many cases, wooden beams were reused for generations! This makes dating structures imprecise because house beams might date much earlier than the actual house use. Yet, only about 10 percent of wood at Chaco was recycled—they were wood connoisseurs, or as Ian Hodder might put it, “wood freaks”. Their use of wood was sometimes extravagant. Some kivas, for example, had cribbed roofs—basically logs stacked on top of each other in a circular fashion. Also, tree-ring dating requires trees that put on annual rings, many desert plants do not. The dating method, therefore, wasn’t so useful for the desert Hohokam cultures. Despite the problems, the sheer number of tree-ring or radiocarbon dates in the Southwest is around half a million, giving Southwest archaeologists a very good sense of when things happened.

The Chaco Wood Project has documented every piece of wood at Chaco, some 9,400 pieces. Wood came from a number of sources including:

- Vigas: primary roof support beams
- Latillas: secondary roof support beams
- Door lintels: beams above doorways

Chaco Canyon is mostly treeless with some pinon and juniper on the mesa with a few pockets of stunted Douglas fir, ponderosa pine on the higher mesa elevations to the east. Dean and Warren (1983) estimate that more than 200,000 trees were used to make Chacoan Great Houses. Chacoans likely met this demand by procuring wood from the Chuska Mts. (80 km west) or the Zuni Mts. (80 km south). Most of the wood imported was Ponderosa pine. Stone axes would have been used to cut down trees, but there is a notable lack of axes in the core sites at Chaco. The Chuska Mountains, however, are reported to be “covered” with stone axes, reminiscent of Ranu Raraku being covered in tiki! To reduce the weight of beams, they were likely debarked and cured for a year or more before being transported to Chaco. Could the Chacoans really have moved those beams all that way? There are numerous accounts of small groups transporting heavy loads at great distances. Nepali porters (sherpas) carry loads of 220 pounds for 59 miles in 15 days. Not only did they move large beams, but the Chacoans were not satisfied with using rough-cut beams, but put a great deal of time and effort into making the beams aesthetically pleasing by carefully shaping their ends. When I show stone axes to my face-to-face course, some students look at them doubtfully. Could these tools really cut down Ponderosa pines? How long would that take? Experimental archaeology suggests that primary beams (vigas) could have been felled in just 30 minutes. Morris

cut down a 10-cm Ponderosa pine in 10 minutes. Delimbing, debarking, and end-finishing, however, likely took seven times as long as felling.

Roads and Astronomy

The Hopewell weren't the only ones with ceremonial roads. The Chaco road network connects great houses and extends out from Chaco Canyon to outlying areas and Great Houses. These roads, consisting of hundreds of miles of networks, can be seen in aerial photographs (Plog 1997:110). When barriers were encountered, stairs were carved out of the rock so the roads would continue in a straight line. The exact nature of the roads, however, is not known. They may have been used for ritual purposes, for races, or even transport of wood for distant mountains. Surprisingly, the roads don't appear to have been trading routes. Most of the road segments don't go very far (.6 miles) and few fall even close to paths that would have minimized travel time between communities. So, they don't appear important to trade. The roads, however, tend to connect great kivas, very large kivas, and ceremonial sites. In contrast, almost all roads appear to fit more closely with explanations that see the roads as having served localized religious, integrative, or political functions.

Keeping track of time using the moon and sun has been important to people all over the world for thousands of years. Some of the earliest calendars in Sumeria in the Near East were based on cycles of the moon, and only later cycles of the sun. At the Neolithic site of Stonehenge, the famous circle is oriented to the rising sun at the summer solstice. The Maya, as we will discuss later, used a number of different systems for tracking time.

The ancient Chacoans were no different. Rising 135 meters above the canyon floor at Chaco Canyon, Fajada Butte contains a spiral petroglyph, an image pecked into rock, which is partially obscured by stone slabs. The 2-3 meter sandstone slabs, probably naturally oriented, cast shadows of the late morning and midday sun to indicate both solstices and equinoxes. During the summer solstice, for example, a dagger of light bisected the spiral. The feature is therefore been named the Sun Dagger. It has been argued that the Sun Dagger was likely more ceremonial than practical. Ancestral Pueblo farmers, like their hunter-gatherer forebears, knew what they were doing; they knew when to sow and when to harvest based on their own observations. For those who think Chaco Canyon was a pilgrimage center, the Sun Dagger was watched over by priests who sent up the signal by smoke as the dagger approached the central position, announcing the commencement of religious ceremonies and festivals. Some controversy exists over the use and accuracy of this feature. The dagger of light appears near the central spiral a month before the solstice and then barely moves position. Due to the shifting of the slabs, the site has been closed to tourists.



Figure 1.8.1: Chaco stairway. (Copyright; National Park Service, public domain)



Figure 1.8.1: Fajada Butte, Chaco Canyon, New Mexico. (Photo: Sue Ruth)

What can we do about these delicate sites being "loved to death" as one past student put it, while still allowing people to connect with the past? One thing that people have tried is 360-tours or virtual tours. No, it's not the same as being there, but it allows people to see what the sites are like and enjoy and appreciate them from afar. Another way is to

simulate how they functioned. If you go to the New Mexico Museum of Natural History, in Albuquerque, there is an interactive display that shows you how the Sun Dagger works. Also, near CNM's Rio Rancho campus, CNM instructor Jaymes Dudding built "Chaco Rising" inspired by the Sun Dagger. What is Chaco? Alternative Views Chaco remains a mysterious place. Even though archaeologists know about particulars—what was in the pot, how much labor was involved, when was it built—there is little consensus about the larger picture about what kind of site it was. One of the reasons is that excavations at Chaco took place before standard excavation techniques were in place. The second reason is that there are very few features in the rooms at the great houses. The third early problem was the comparison with modern-day Pueblo architecture. The rooms at the great houses were assumed to be apartment houses where people lived. Tom Windes, at UNM, estimated the population size at Pueblo Bonito to be no more than 12 families at the most at any one time. He did this by counting hearths. Windes' study made it clear that the great houses were not apartment buildings where a large population lived. If not houses, what then? Critical Thinking Question: Why did Tom Windes count hearths instead of just counting up rooms?

Today, some archaeologists think Chaco Canyon was a largely empty ceremonial center and pilgrimage site, where just a few priests resided, who would call people in periodically for feasts. In this scenario, the great houses served to integrate people and no one was much more powerful than anyone else. There is some evidence for integrative feasting in the Canyon. This squares well with modern Pueblos who regularly hold integrative feasts and emphasize community over the individual. The rooms could have served as guest quarters, though they are surprisingly bare. Others think Chaco Great Houses were clan houses. Clans are lineages commonly tied to a distant ancestor, frequently an animal. Others, like Stephen Lekson, think that Chaco great houses really were grandiose houses, associated with politically important families. In this scenario, some had far more power and access to wealth than others. The elaborate burials, exotic goods, and crooked staffs suggest power held in the hands of few. The modern-day Pueblo focus on harmony, cooperation, and community was a reaction, he argues, against the corruption of power that occurred at Chaco. Some oral histories also square with this view. The rooms, in this view, would be used for storage of surplus grain (though storage vessels and evidence of spilled grain have not been found). In other areas, people did use masonry structures as storage facilities and lived in wattle and daub structures. Another idea is that the rooms are built for show, in order to support a massive, conspicuous building. Lekson objects to what he called "up-streaming", or assuming that modern pueblo people were basically just like pueblo people of the past. He argues that not only is this bad archaeology but robs pueblo people of their history.



Figure 1.8.1: Chaco Rising is a modern sculpture inspired by the Sun Dagger. It was built by CNM instructor Jaymes Dudding. (Photo: Sue Ruth)

Perhaps the most interesting take on Chaco Canyon comes from members of Southwest Native American nations. Rina Swentzell of Santa Clara writes: Even then, my response to the canyon was that some sensibility other than my Pueblo ancestors had worked on the Chaco Great Houses. It was clear that the purpose of these great villages was not to restate their oneness with the earth but to show the power and specialness of humans.

Leigh J. Kuwanwisiwma, Director Hopi Cultural Preservation Office associated Chaco great houses with Hopi clans. Chaco is prominent in Hopi oral history. He writes:

The appearance of the supernova of 1054...is today represented by the Blue Star Katsina, who routinely appears in the mixed Katsina dance. According to Hopi oral literature, the "blue star" was the supernatural sign to the Hisatsinom (ancient ones) to end their migrations and begin to converge on certain sites, including Yupköyvi (Chaco).

Dine people (Navajo) have a close relationship with Chaco Canyon. Many Navajos participated in excavations at Chaco in the 1920s (as homesteaders competed for land) and worked to stabilize Chacoan Ruins in the 1930s. Richard Begay of the Navajo Nation related Chaco Canyon to the story of the Gambler. He writes The Gambler "He enslaved the people, and his orders became more severe and exacting." Lekson suggests that this Gambler story represents "kingship" as embodied at Chaco Canyon.

Connections to the South

In the early 1800s, writers of the Southwest, like Albert Gallatin, thought the Southwest was connected to Mesoamerica via the Toltec, a Mesoamerican culture based on maize agriculture. Others thought it was the homeland of the Aztecs the name of a prominent archaeological site in northern New Mexico "Aztec Ruins"). At the time, the Southwest was a part of Mexico. The Mexico-American War of 1849 separated the Southwest from Mexico and opened it to settlers. with the Great Moundbuilder debate, the idea that modern pueblos were relative newcomers and mere copiers of Aztec culture, was used to justify the displacement of Pueblos from their traditional lands. By the 1900s, archaeologists began to cast doubt on the idea that the now American Southwest was the homeland of the Aztecs and began to see it as a separate entity.

Today, the Mexican influence on the Southwest has become undeniable. For example, One hundred and eleven cylindrical jars were found beneath a room at Pueblo Bonito. Using a technique called liquid chromatography, Patty Crown at the University of New Mexico and her colleague Jeffrey Hurst at Hershey Corporation found evidence that Chaco cylinder vessels were used for drinking liquid chocolate. Cacao trees, which produce the seeds from which chocolate is made, are tropical plant and do not grow anywhere near Chaco Canyon. Chocolate was used as a luxury item for elites only in Mesoamerica, and cylindrical vessels were used for preparing and drinking chocolate among the Classic Maya, which we will discuss in more detail later). Chocolate in some form must have been coming from the south. Exactly where is not yet known.



Figure 1.8.1: “Chaco Canyon Ceramics” by Gary Todd. (licensed under public domain)

As we will see in the Mimbres section other exotic goods were coming from the south as well. We today have altered our landscape in numerous ways—mining for fossil fuels, clearing land for domesticated animals to graze, and creating dams for power. Archaeologists and students of archaeology need to be careful not to read what they want to see in the archaeological record—that is, we need to be leery of social and political agendas. Ancient peoples of the Southwest and elsewhere also altered their environment. And we see evidence that people were not necessarily living in ecological harmony with their environment. At Chaco Canyon, packrat middens show that the area was cleared of the native pinon and juniper, and huge amounts of wood were brought in from neighboring areas. In addition, there is evidence of social hierarchy in the burials and exotic goods at Pueblo Bonito. While modern pueblo ideology focuses on harmony and balance, it is possible that this was not always the case in the Southwest.

Leaving Chaco

The Great Houses at Chaco Canyon were abandoned in the mid-1100s, perhaps associated with the drought that hit at the time. The last beam at Pueblo Bonito was cut in 1129 (see dendrochronology below). Some of the outlying communities, like Aztec to the north, continued. But people didn’t entirely disappear from the area. Some people came back into Chaco Canyon after the drought of the mid-1100s. They remodeled the great houses for use as residences—adding hearths, sealing up old doors, creating interior walls, depositing trash and burying dead in old rooms. This is not so unusual—people evidently lived in the Colosseum in Rome in medieval times! Some places in the Southwest flourished after the decline of Chaco, but no single pattern emerged. One site in northern Arizona called Wupatki emerged. Huge quantities of turquoise, shell, copper bells and macaws were discovered there. Wupatki may have been particularly productive farmland due to the cinder cone volcanic eruption at Sunset Crater in 1085 (or so), which covered the soil with beneficial ash. Another site called Aztec in New Mexico may have been the “new Chaco”. Mark Elson is researching the effect of the Sunset Crater eruption and how it might be able to inform us about how humans respond to

catastrophes. The ash plume from the volcano would have been visible from Chaco Canyon. This is especially relevant today with catastrophes like hurricanes, earthquakes, tsunamis, and flooding becomes more and more evident. He argues that the cinder cone eruption, which initiates from a crack in the earth with loud cracking and popping coming from the center of the Earth, along with the ensuing lightning, lava flows, ash, and cinders, would have had a significant impact on the surrounding populations—psychologically, religiously, and practically. Impressions of maize in lava were carried away to other areas. Investigators did an archaeological experiment at Hawaii lava flows to see if a detailed impression of maize could be made, and discovered they could not be made very easily. Mark Elson thinks the impressions were made near spatter cones of very hot and fluid lava as part of a ritual, and later carried to a habitation. In areas with thick cinder cones cover, maize agriculture was no longer possible, and people became “volcano refugees”. Experimental archaeology has shown that lighter cinder cover actually serves as a mulch, whereby maize can grow. The volcano refugees subsequently moved to these areas, where maize was previously impossible.

Fracking Chaco?

Chaco Canyon is located in the San Juan Basin, an area rich in fossil fuels. More than 10,000 natural gas wells currently exist. More recently, the Mancos Shale has been eyed for hydraulic fracking for oil. The Bureau of Land Management (BLM), which manages much of the land around Chaco Canyon, has issued more than 200 permits already. Because the original cultural (and environment) assessment was done in 2003 before fracking was possible, environmental, archaeological, and tribal groups have raised concerns. The courts are now considering a moratorium on new oil permits in the area and the decision could also shut down existing fracking operations that have already begun.

Mimbres Mogollon

The descendants of the Mimbres Mogollon were also likely the modern-day Pueblos. Like the Hohokam, the early Mimbres Mogollon lived mainly in pithouses. There is an emphasis on hunting and dry farming with some evidence for irrigation. Around A.D. 900–1000, a fundamental change occurred; the Mimbres Mogollon people shifted to above-ground structures. Cross-culturally, when people live in pit structures they are almost always seasonally mobile. Above-ground structures are associated worldwide with a shift to agriculture and the need for storage of grain.



Figure 1.8.1: Sunset Crater. (By Mikesanchez1109 (Own work) [CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0>)], via WikimediaCommons)

Mimbres were heavily reliant on maize. The shift to above-ground “pueblos” appears to be associated with increased reliance on maize and increased sedentism. Today, Mimbres architecture is not much to look at, because it was made from large rounded cobbles and fell apart easily, unlike elegant Chacoan architecture. Archaeologist Stephen Lekson called Mimbres architecture “artfully stacked river cobbles.” Because of this deterioration, Mimbres sites seemed less spectacular than sites to the north and were ignored for many years. That is until Mimbres pottery was discovered. In contrast to the great houses at Chaco Canyon, Mimbres house clusters, or room blocks, grew gradually over time as populations increased. Mimbres pottery is the iconic Southwest pottery that inspires Southwest art even to this day. The pottery has a sparkling white background with black mineral paint, and vessels are hemispherical, like half a globe. The images that appear on Mimbres- Black-on-white pottery as it is called include geometric and figurative designs. Women, men, and composite animals can be found on the pots. Females are identifiable by their aprons, which have been found in cave contexts with menstrual blood. Butterfly whorls, a Hopi hairstyle of girls of marriage age, appear on the pots. Men are easily identifiable by genitalia and often appear on hunting scenes. Throwing sticks, historically used for hunting rabbits are identifiable. Indeed, jackrabbit bones occur in huge numbers on Mimbres sites. Wooden swords and crooked staffs, perhaps symbols of authority, also appear. While some scenes appear to depict everyday activities, others are clearly other-worldly. Marc Thompson, who has lectured in my face-to-face courses, argues that the vessels depict the Hero Twins, who are also prominent in Mesoamerican iconography and origin narratives. The Maya Hero Twins are known for battling monsters in the underworld. Warrior twins also appear in Pueblo and Diné (Navajo) narratives. Images resemble corn maidens and katsinas (kachinas), or ancestral beings, prominent in modern Pueblo religion. Some have suggested that the Mimbres pottery is the first evidence of the katsina in the archaeological

record. Also, there are a lot of crescent-shaped rabbits on Mimbres Black-on-white. Many different indigenous tribes of North America believed a rabbit resided in the moon; This rabbit shape can be seen today if you look at the full moon. One depiction shows a crescent-shaped rabbit and kind of starburst, thought to represent the 1054 supernova event in the constellation Taurus, which would have occurred during a crescent moon.

Some Mimbres vessels appear to have been used for domestic, everyday purposes, while others are clearly linked with burials. As at Çatalhöyük, many Mimbres burials were intramural—located inside structures and beneath floors. The face of the deceased often had black-on-white bowls inverted over them. These bowls were ritually “killed” by punching or drilling a hole in the center (remember the Hopewell platform pipes?). The hole has been a metaphor for the sipapu, the conduit or portal between this world and the spirit world. The sipapu is the place of emergence from the underworld and was represented in kivas by a small hole through which the spirits could enter. The vessel itself could have been a metaphor for the dome of a sky. Ruth Bunzel quoted a Zuni consultant: “The sky, solid in substance, rests upon the earth like an inverted bowl”. For the Hopi, upon death, the spirit traveled to the underworld, and upon death in the underworld the spirit returned again to the upper world, creating a cycle (Plog 1997:18). It may be that these killed bowls acted like portals for the return of the soul.

Mimbres bowl thought to represent 1054 Supernova

In the 1970s, prior to laws against unmarked grave excavation, many Mimbres sites were bulldozed by looters looking for spectacular Mimbres pottery which occurred mainly in burials. While sites like the Galaz Ruin were destroyed by heavy machinery. Today, they are completely gone. Who Made the Pots? Most potteries of the Southwest were made by coiling, using long ropes of clay to build up vessel walls. These coils are evident in the finished product. There was no potter’s wheel or pots made from molds. Patricia Gilman looked at the Mimbres pottery to evaluate craft specialization—whether certain individuals or sites were responsible for the manufacture of goods. She found that all of the known Mimbres sites have evidence for production. This finding suggests that Mimbres pottery production was probably not specialized, in the sense that each village was making pottery for themselves and not depending on just one village for these special pots. Steven LeBlanc examined and identified individual potters on Mimbres pottery based on similar styles of depiction. Patty Crown points out that it can take 10 years or more to become a proficient potter and painter, and so there must be some evidence of this learning process in the archaeological record. She identified several poorly executed vessels that were likely painted by children. Because Mimbres Black-on-white vessels were often burial goods and contain potentially religiously charged images, their display in museums and even in digitally accessible databases is controversial. If you go to the Maxwell Museum of Anthropology on the University of New Mexico campus, you will see that some vessels have been removed under consideration of NAGPRA (remember Kennewick Man?). Ancestors continue to be important.

Trade and Exchange

We know that the Hohokam had shells from the Gulf of California and a version of the Mesoamerican ballgame. Chacoans had chocolate ultimately derived from Mesoamerica. Mimbres pottery and material culture make these southern connections even more vivid. Long distances were not a problem for early Southwesterners. Archaeologist Steven LeBlanc suggests the Mimbres acted as middlemen for trade from Mexico to Chaco Canyon.

Mimbres also had Glycymeris shell armlets from the Gulf of Mexico and even depicted these on ceramic vessels. Jett and Moyle (1986) identify 20 fish species, 18 of which are marine fish. They argue that the Mimbres were traveling 1500 miles to the Gulf of California to trade in marine shells and other exotic goods. One image has even been interpreted as a whale, though there is no evidence for aboriginal whaling in that area. Others, like Marc Thompson see fish as representations of souls traveling to the Underworld. Several people have pointed out that the Mimbres fish have odd ventral fins that resemble feet. Interestingly, there is very little evidence that of using fish as a food resource. Note that the fish have four leg-like appendages. Fred Kabotie, a Hopi author and artist, wrote that there is a Hopi story in which children fall into the water and become fish. He suggests the Mimbres might have had a similar story.



Figure 1.8.1: Mimbres Black-on-white bowl that has turned red from an oxidizing atmosphere. (Copyright; public domain)

Perhaps most spectacular are the macaws and parrots depicted on Mimbres pots. Scarlet macaws have been imported from lowland Mexico, but military macaws and the thick-billed parrots might have been obtained from closer natural ranges in Mexico. Macaws occur about 700 miles away from the Mimbres region in the rainforests of Mexico in La Huasteca, but they may have been found in west Mexico as well (McGuire). Macaw and parrot skeletons, feathers, and artifacts have been found at Mimbres sites and other sites like Chaco throughout the Southwest. Feathers continue to be important ritual objects in the Southwest. Parrots and macaws were important to Mimbres culture and appear to have had ritual significance, and women are shown handling them. This association is interesting because men in Pueblo society traditionally controlled kivas, masks, and altars. The ritual association of women suggests that women may have had significant ritual obligations, particularly with regard to exotic birds, in the past. Significantly, many macaws are able to mimic human voices. It is thought that macaws were brought in as young birds. These birds would have required specialized care in order to survive and flourish during the long journey. Based on skeletal development, year-old macaws were sacrificed in the spring, perhaps during the equinox, and ritually buried. They were likely killed after their long tail feathers grew in. Copper bells from Mexico are found in the Mimbres region and might have been traded along with the parrots and macaws.

Post-Chaco, Post-Mimbres

The 1200s saw increased aggregation in apartment-style complexes we now call pueblos. That is, we know people were living in them year-round. The famous Mesa Verde site with its cliff dwellings and large-scale with large populations sites are a good example. This was the beginning of the “Little Ice Age”, a period of widespread cooling.



Figure 1.8.1: CFish on Mimbres bowl. (Copyright; Flickr, Creative Commons. By Shannon Mollerus)

the growing season brought on by the onset of the Little Ice Age may have pushed people to aggregate and may also be responsible for the violence seen in the archaeological record. Aggregations may have afforded some protection and secured access to land. These aggregations led to close quarters for people, along with their garbage and excrement, which as we have discussed, are not ideal living conditions. In a study of coprolites, ancient feces, from a Mesa Verde community, all samples showed evidence for pinworms.

Compounding the problems of the Little Ice Age, a severe drought referred to as “The Great Drought” struck between ca. 1275 and 1300. This drought precipitated the virtual abandonment of the Mesa Verde region, though people had been migrating out for decades. By 1300, no one was left. In popular literature, we often hear that the Anasazi “disappeared”. We know that they did not disappear but simply moved. Many Pueblo oral histories recount migrations of clans and even tales involving cliff dwellers. Mesa Verdeans in many cases moved south to various areas that were already inhabited, including the Rio Grande Valley. The

immigrants met with other people, who sometimes resisted the newcomers violently. In other places, the immigrants brought with them Mesa Verde architecture and artistic styles associated with pottery, and multi-ethnic communities formed. It has been suggested that the newcomers received less profitable land, setting up inequalities between the original residents and the incoming people from the north. Whatever the nature of the cultural contact, most of the petroglyphs (rock art that is pecked or scratched into the rock) at the Petroglyph National Monument here in Albuquerque were created during this time.

At least twelve aggregated villages were in place in the central Rio Grande Valley when Coronado's Expedition came in the early 1540s in search of gold. A battle between Coronado and the Pueblos may have taken place at a site here in Albuquerque called Piedras Marcadas. Later, the Spanish quest to convert the Pueblos began in earnest, and at sites like Quarai and Gran Quivera south of Albuquerque, indigenous people built churches at the behest of Catholic officials. Pueblo people, of course, still live in the Southwest in 21 different sovereign nations and many still speak their native languages. They maintain traditions that connect them to their ancestral past—kivas, katsinas, and maize farming remain a central part of many Pueblo Indian nations today. We have seen the importance of ancestors in the Neolithic near the east and Ranu Raraku. The same is true in the Southwest, where archaeological sites themselves are sacred ancestral sites. Because of this, archaeological excavation is often seen as a desecration rather than an opportunity to learn about the past. As a result, southwestern archaeologists are increasingly using non-invasive techniques like surface recording and ground-penetrating radar, and electrical resistivity that show what is beneath the surface of the earth without destroying it in an excavation. Still, excavations do take place when a site is already slated for destruction in the course of building a school, a pipeline, or some other project on state or federal land.

Athabaskans

Early Athabaskan-speaking people in the Southwest, have long been thought to have been relatively late arrivals, coming into the area in the 1500s. These are the ancestors of the Apache and Navajos or Diné. The term Protohistoric is sometimes used to refer to this time between the prehistoric period and the presence of historic documents. That is, there are a few written accounts but widespread historical documents are lacking. Like prehistory, the protohistoric is kind of an odd way to divide up the timeline, but it is still used in a kind of nebulous way. Some scholars think Athabaskans came into the region through a mountain corridor along the border of New Mexico and Arizona, the earliest known dates for Athabaskan sites coming from the mountainous regions. Entry could through the Plains likely occurred as well. The early archaeological record for the early Apaches in the Southwest is scant, but new genetic and artifactual research suggests that small numbers were in the Southwest in the 1400s and perhaps as early as the 1300s, earlier than previously thought. This early Apache presence was in no way uniform throughout the Southwest, exhibiting different forms of adaptations in different environments. Late Apachean (the late 1800s) presence in the Southwest is marked by tipi rings, micaceous pottery (pottery with flecks of mica in it), and projectile points made from metal, especially barrel rings, or glass.

While there are numerous books and conferences dedicated to Chaco Canyon, little has been done to synthesize Athabaskan archaeology. For example, in all of the classic textbooks, *Prehistory of the Southwest*, by the late Linda Cordell, only four pages are dedicated to Athabaskan and Ute archaeology. Other historically based texts have been written, but none explicitly archaeological in nature. One of the most interesting archaeological applications to understanding Apache history comes from my former employer Karl Laumbach, who writes about a skirmish between the Apache and cavalry unit of buffalo soldiers. By using metal detectors, the field workers were able to identify the rifle and pistol cartridges (metal casing for bullets) of the military men and the Apaches, who used a variety of rifles. The data were entered into a Geographic Information Systems (GIS) Database to develop a visual representation of the skirmish. Not only that, but each weapon leaves a particular mark on the cartridge, which enables researchers to establish that there were more than 180 weapons, and each individual weapon could be tracked across the landscape.



Figure 1.8.1: Quarai Mission, built by indigenous people of New Mexico. (Copyright; Sue Ruth)

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1.9: Moundbuilders

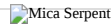


Figure 1.9.1: erpent effigy, Turner Group, Mound 4, Little Miami Valley, OH by Daderot. (licensed under public domain)

When I reached the foot of the principle mound, I was struck with a degree of astonishment, not unlike that which is experienced in contemplating the Egyptian pyramids. What a stupendous pile of earth!

—Henry Marie Brackenridge to Thomas Jefferson, on encountering the remains of Cahokia

p>Thousands of prehistoric earthen mounds are known throughout the Mississippi and Ohio River basins and throughout the southeastern United States. The people who built these earthen mounds are known collectively as the Moundbuilders, but they were by no means a distinct and unified culture. The Hopewell Tradition (ca. 100 BC-AD 500) refers to a large network of trade and exchange connected by a similar belief system. The Hopewell tradition encompassed a huge area of disparate peoples across what is today the eastern United States. However, these groups shared a religious ideology, or belief system, as evidenced by similar burial practices and symbolic prestige goods. Hopewell Hopewell earthworks, monuments made of earth, include enclosures, processional (parallel mounds connecting enclosures). Hopewell enclosures appear to be have been sacred spaces rather than defensive works. Habitation sites (where people lived) were located away from enclosures and burial mounds.

Another moundbuilder culture (there were several) called the Effigy Mound Culture built effigy mounds or mounds in the shape of animals. Serpent Mound, the largest effigy work in the world, is 1,330 feet long and three-foot high. Serpent Mound dates somewhat later than the Hopewell, but is one of the most famous examples of a Moundbuilder earthwork. Like many spectacular archaeological sites, it has seen its share of abuse. Frederic Putnam, an early advocate for preservation, wrote in 1886:

Hundreds of persons visit the place every year, and among them have been vandals who have dug into the embankment and left unfilled the holes they made. As a consequence, the rains, the trampling of cattle and visitors, have caused such places to wear away and thus seriously injure this sacred work, the only one of its kind.



Figure 1.9.1: Serpent Mound Spiral. (Copyright; Hieronymus Rowe at English Wikipedia [CC BY-SA 3.0 <http://creativecommons.org/licenses/by-sa/3.0>] or GFDL (<http://www.gnu.org/copyleft/fdl.html>)), via Wikimedia Commons)

The Hopewell tradition is also characterized by elaborate mortuary mounds in which the dead were interred. Mortuary mounds increased in size as burials were added to a central burial mound. At least one study at the Hopewell Mound Group site in Ohio has looked at genetic relationships between people buried in the mounds. Mill's work suggests that people buried in the mounds were not closely related, and share commonalities with diverse Native American tribes like Apache, Iowa, Micmac, Pawnee, Pima, Seri, Southwest Sioux, and Yakima. In addition to elaborate earthworks, the Hopewell tradition is characterized by prestige goods, items used by elites, people with a disproportionate amount of wealth and power, which circulated over a wide area.

This extensive trade network is often referred to as the Hopewell Interaction Sphere, centered in the Scioto River Valley of south-central Ohio. Trade goods included copper from Lake Superior, obsidian from Yellowstone, Knife River flint from the Dakotas, pearls from the Ohio and Tennessee Rivers, shell from the Gulf and Atlantic coasts, and mica, steatite and chlorite from the Appalachians. Hopewell trade networks obtained grizzly bear teeth and claws along with Knife River Flint from the Northern Plains. Obsidian from the Obsidian Cliffs source in Yellowstone National Park in Wyoming was traded as large biface blanks that were then finished into large ceremonial points. Sheets of mica, a mineral silicate that separates into sheets, from the southern Appalachian Mountains were cut into elaborate plaques that perhaps were used in public ceremonies in order to evoke connections to the supernatural and validate the ritual and political power of the bearer. Exotic Hopewell goods included artwork of copper from the Western Great Lakes. The copper was either cold hammered or annealed (heated then hammered) not smelted from ore. We'll talk more about metal-working later in the semester.

Perhaps most interesting of all, are Hopewell platform pipes. Typically made from Ohio Pipestone, the pipes sometimes took the form of animals, with the figure facing the smoker. Most of the pipes, like most Hopewell prestige goods, have been recovered from burials. One interesting idea put forth by Robert Hall is that political leaders smoked tobacco in these pipes as part of ceremonies designed to mediate interaction between different cultural groups participating the Hopewell Interaction Sphere. These ceremonies might have been much like the historic Peace Pipe Ceremony, in which violence was forbidden when pipes, called calumets, were passed. This type of approach to understanding the past, where modern people are linked to past ones, is called the direct historical approach.

As with the later Peace Pipe Ceremony pipes, early Hopewell pipes were made in the form of weaponry, the atlatl. Also, many of the pipes are found in mortuary contexts and appear to have been deliberately broken. At first, this might seem an unusual practice, but ritually killing of objects is quite common even today. In the American Southwest certain pottery types were “killed” by drilling or punching a hole through the center and then placed over the deceased head. This ritual killing might have released the spirit associated with the object.



Figure 1.9.1: A Raven Effigy Pipe. rdikeman. (Copyright; Creative Commons Attribution-Share Alike 3.0 Unported)

Vikings had a similar practice of killing swords by heating and bending them, and burying them with the fallen warrior. The swords had powerful magical qualities, and were thought to have been killed to avoid retribution. Even today in some cultures, pots and pans, shoes, and other personal objects of a loved one are destroyed and removed from the home to facilitate passage to the next world.

Hopewell exotic goods were probably made by craft specialists, people who produce more goods than they use for their own families. In more complex societies, there are often craft specialists who are devoted full-time to making goods. Craft specialization is an important concept in archaeology. It shows that some people are supported by others for their work as artisans. Secondly, the existence of prestige goods and the specialists that make them, indicates at least some degree of social hierarchy, that is, some people have more power and prestige than others. While prestige goods may have been traded along the same routes as foodstuffs, exotic goods were likely exchanged between high-status political leaders only and eventually buried with them. Indeed, most Hopewell exotic goods occur in burials. Some Hopewell graves contain many exotic goods, while others are simple cremations, suggesting differences in status. Examination of differences in mortuary treatment is a key way that archaeologists make inferences about political structure, or who had power and made decisions. The high status Hopewell burials are thought to have been leaders who gained prestige through their accomplishments, called achieved status. Children, who could only have inherited their status, are rarely found with elaborate grave goods. In later Moundbuilder cultures, the distinction between the powerful and the populace becomes even more distinct, as we will see. Leadership in these later cultures is thought to have been hereditary, or inherited.

In addition to copper goods, stone tools are also found in high-status Hopewell burials. Large caches of extremely well made bifaces—stone worked on two faces—and finished projectile points of high quality raw materials are found in high-status Hopewell burials. More than 7,000 bifaces of high-quality Burlington chert were found in a single burial mound at Mound City. Obsidian from the Obsidian Cliffs source in Yellowstone National Park in Wyoming was traded as large biface blanks that were then finished into large ceremonial points. Obsidian from the Obsidian Cliffs source in Yellowstone National Park in Wyoming was traded as large biface blanks that were then finished into large ceremonial points. As with people living tens of thousands of years ago in the Upper Paleolithic, the Hopewell sought to distinguish themselves, and leaders in particular, with personal adornment. Elaborate copper pieces worn at the neck called gorgets, along with headdresses, earspools, and ceremonial celts set apart the political leaders from the populace. As we will see in later chapters, it is very common for elites to set themselves apart in terms of dress and even alter their biological features.

Hopewell Subsistence

The Hopewell phenomenon, with its monuments, long-distance exchange, craft specialization, and status differentiation was based largely on hunting and gathering. There were some native domesticates, like goosefoot and amaranth, but nothing nearly as productive as maize. Hopewell shows that social complexity (differences in wealth, specialization, monumental structures) can arise in primarily hunting and gathering cultures. Social complexity in hunting and gathering societies seems to be possible in environmental regions that are highly productive.

The Great Hopewell Road

In Frederic Putnam’s day, development and farming were destroying the mounds at an alarming rate, and he began to raise funds to purchase the sites like Serpent Mound to preserve it. Journalist Ephraim Squier and physician Edwin Davis began a large-scale survey of mounds in the Ohio Valley and created maps of mounds that are still used today. Much was lost, however, and we will

never know the full-scale of the Hopewell. Technology, however, has revealed some surprising traces of the Hopewell. Bradley Lepper read early descriptions of Hopewell earthen enclosures and noticed a reference to a causeway or road. The road was essentially bounded by two parallel earthen banks 150 feet apart. Investigating, he noticed traces of these parallel lines of aerial photos from the 1930s that could have joined two separate major Hopewell ceremonial centers, Newark and Chillicothe, which are sixty miles apart. He calls this The Great Hopewell Road. More recent technology called LiDar, Light Detecting and Ranging, uses lasers to map the surface of the Earth, and can reveal subtle features not detectable with the naked eye. LiDar has been used to help try to track the course of the Great Hopewell Road. Ceremonial roads like this one, as we will see, are quite common in the human past and have been discovered in Neolithic England, the American Southwest, in Mesoamerica and other archaeological cultures.

The Great Moundbuilder Debate

Who built the mounds? By the early 1800s two models developed to account for these earthen mounds. The Lost Race Model contended that the mounds were constructed by a “lost race” of non-Indians that was displaced by more recent Indians. Others suggested the moundbuilders left to become the splendid Maya or Aztecs to the South. The natives who occupied the area at the time, were thought to have driven out this spectacular. Remember that it was George McJunkin, the discoverer of the Folsom site, who changed that story forever. The Native Model contended that the ancestors of recent Native American Indians made the mounds. You will learn in this week’s video how this debate played out.

The Mississippian

The Mississippian Moundbuilder culture occurs well after the Hopewell around AD 800–AD 1500. Well-known Mississippian sites include Moundville in Alabama, Spiro Mounds in Arkansas, and Cahokia in Illinois. While maize appeared perhaps as early as 100 BC in Florida and its use was widespread throughout the east by AD 400, it did not become the primary staple crop in the eastern part of the United States until around AD 800. Remember that maize was first domesticated in central highland Mexico, and had to travel to North America. Maize agriculture tied people to land, and created the opportunity for large food surpluses, urban centers, and dense populations. Surplus production allowed segments of the population to be freed from agriculture and provided the potential for differences in wealth and status. The frequency of the stone hoes and stone-lined storage pits indicates that reliance on intensive maize agriculture and food storage became more important during the Mississippian period. Cahokia, a World Heritage Site in modern-day Illinois, just east of East St. Louis, became the largest prehistoric city north of Mexico—perhaps the only one true city north of Mexico. Once regarded as a mostly empty ceremonial center, it is today regarded as a true city, as big in its day as London. The site is located in the fertile Mississippi floodplain called the American Bottom, and was a hub of exchange, with flat-topped mounds, fortifications, planned settlements, and a definite social hierarchy, in which some people were afforded higher social status. Cahokia was at its height between AD 1050 and 1300, with more than 100 earthen mounds in an area of 5 square miles. While maize supported the Cahokian economy, the diet was supplemented by wild turkey, aquatic resources, and local plants. At least 25 mounds were completely leveled, including the second largest, during the founding of St. Louis, and so archaeologists will never have the full picture of the scale of this city. Cahokia Beginnings: Alternative Views Cahokia archaeologist Timothy Pauketat, notes that the construction of Cahokia began abruptly in the AD 1050s, near the time of the 1054 supernova which could be seen in daytime near the crescent moon for 23 days. The celestial event was recorded by Chinese astrologers. Pauketat suggests that this event may have been viewed symbolically and caused the “big-bang” of Cahokia. Others object to the idea that a symbolic event can produce such a major change and focus more on the productivity of the area and population growth as motivating factors. We see in action a contextual approach and ecological approach at odds.

The Central Precinct

The central ceremonial precinct at Cahokia called “downtown Cahokia” was surrounded by a palisade or wall enclosing approximately 200 acres. The palisade was made from wooden logs and mud and was rebuilt several times over a period of 200 years. This central precinct acted like a gated community, with elite residences on top of platform mounds and ceremonial temple mounds located inside the palisade. Elites living atop the mounds were both socially above and physically above the general populace. This is not such an unusual idea. Early presidents of the United States atop “mounts” like Mount Vernon, Monticello, and Montpelier. Outside the palisade the residences are more modest, and likely housed the general populace. Residential hierarchy refers to differences in the location and elaboration of houses, and is a useful indicator of social differences. The inner precinct also contained a ceremonial plaza. The palisade may have more than just a social barrier. It was built with upright logs set into a trench and then covered with a coating of clay, presumably to prevent burning by attackers. Though there is no evidence of invasion, the wall could have served defensive purposes.




Figure 1.9.1: moundville, Mississippi. (Copyright; Altairisfair. public domain)

The Mounds

As with the earlier Moundbuilder cultures, earthen mounds continued to be used for burials during Mississippian times. In addition, new platform mounds were used for both elite residences as well as temple mounds. These platform mounds were used by people of high status. Public ceremonies were likely conducted atop the temple mounds to solidify the social status of high-ranking people.

The largest prehistoric structure north of Mexico, Monks Mound is 30 meters (c. 100 ft.) high and covers 14 acres at its base. Like the palimpsest of bison paintings at Altamira and the layers of occupation of tell Abu Hureyra, Monks Mound wasn't created in a single episode. The mound was constructed in 14 stages between AD 600 and 1250 and supported several structures. Cahokians got the earth to build the mound by excavating an enormous borrow pit, which was later filled in with trash of all kinds which was still decaying when the excavation pit was opened (it apparently reeked). More than a million charred seeds from borrow pits filled with trash indicate they were smoking tobacco.

Today, you can actually climb to the top of Monk's Mound. During excavation, lenses (lenticular-shaped deposits) of different colored sediment could be observed in the excavation profile in Monks Mound. Each lens represents a single basketload of earth carried by a laborer. Approximately 21 million cubic feet of earth were moved in the construction of Monk's Mound.

Mound 72

Mound 72 at Cahokia sound innocuous enough, but its contents reveal much about social hierarchy and religious belief at Cahokia. The mound is long and ridge-like and oriented to the rising sun at the winter solstice. Mound 72 was used repeatedly for elaborate burial rituals that included high-status people with abundant offerings accompanied by human sacrifices. A total of 261 burials spanning a 100-year period was recovered during the excavation of Mound 72. At the base of the mound, one male in Mound 72 was buried on a wooden litter—a stretcher-like platform. The skeleton lay on a bed of more than 20,000 shell beads that were once sewn onto a cape in the shape of a falcon. Below him was buried another male. The males were in shrouds indicating they may have died some time before internment.

Associated with the caped male in Mound 72 were, young female human sacrifices, including a mass burial of 50 young women lined up on wooden litters. The victims were likely killed nearby and carried on the litters to a pit in the mound. These females do not show evidence of violent treatment. Looking at the carbon and nitrogen isotopes in these women's skeletons compared to the high status burials, it became clear that the women ate more maize and less meat than the central male figures. Corn is missing vital amino acids found in meat, and these women may have suffered from poor nutrition. Dental studies suggest they may not have even been from Cahokia proper. Historic accounts of the Natchez Indians, who also built earthen mounds, indicate that female relatives were sometimes strangled upon the death of a high status male. In one account a French reported:

"The death of a chieftain touched off a sacrificial orgy when several aides and two of the man's wives and three children were strangled so they could escort him into the next world." (Indian Tribes of the Lower Mississippi Valley)

It is therefore possible that these women in Mound 72 might have been strangled wives or female kin of the deceased, which would have left no physical evidence of violent treatment on the skeleton. Other sacrifices occurred in association with the caped man along with mounds of grave goods. Some of the skeletons occurred in bundles, indicating that they had died much earlier, and subsequently placed in the pit. Charnal houses are places where dead are interred to decompose, and the bones are later retrieved for burial or reuse. We saw a similar practice in the Neolithic where bodies were buried, then later re-excavated and the skull removed. The skulls were then used in other contexts and sometimes reburied in skull caches. Associated with the central caped male burial were mounds of grave goods. Caches of distinctive projectile points, arrowheads, of different styles and different materials occur as grave offerings in Mound 72. Because of their similar orientation, the points were probably hafted onto arrow shafts when they were interred. Darker-tipped points pointed to the winter solstice sunrise while lighter-tipped points pointed to the summer solstice sunset. The orientation of other caches suggests the points were not hafted. The tri-notched projectile point of these caches is characteristic of the Cahokia region. The use of different styles and raw materials for the projectile points may indicate that mourners, perhaps subjects or allies, came from outlying areas to pay their respects to the deceased chief. Non-local point style from the Caddoan Mississippian (southwest of Cahokia) along with points made from an Arkansas black chert were discovered in Mound 72. The orientation of other caches suggests the points were not hafted. The tri-notched point is characteristic of the Cahokia region.

Mica flakes and shell disks were also burial offerings in Mound 72. Chunkey stones, historically used in the game of chunky, also occur as burial offerings in Mound 72. In historic times, the chunky stones would be rolled on edge down the playing field. Depending on the game, players would either throw their spears to where they thought the chunky stone would fall over, with the closest player winning the round, or players try to knock the chunky stone over with their spears. Like the Mesoamerican ballgame, the game of chunky may have had both social and religious connotations. Large pipes depicting men about to roll the chunky stone have been found at several Mississippian sites. You will read more about this game in this week's readings.

Figure 1.9.1:  (Copyright; By Herb Roe, www.chromesun.com – Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=11214315>)

Other high-status shrouded burials occur in the mound as well, including men, women, and children. Beneath these burials were more human sacrifices. These, unlike others, showed evidence of a violent death, including decapitation, and were not carefully placed. These execution appears to have been conducted at the mound with the bodies falling into the pit. Finger bones dug into the fine white sand that lines the bottom of the pit, suggesting that some were not dead when buried. No offerings were associated with these individuals. In another pit, four males linked at the elbows were both beheaded and beheaded. These people might have been enemy war captives slain to honor the passing of a high status leader. Many other sacrifices occur in the mound as well as surrounding mounds. Mississippian iconography at other sites reiterates themes of violence and human sacrifice. The Ramey Tablet is a sandstone tablet that has been interpreted as depicting a tree or rack with severed heads found in Mound 72. Images of skeletons with severed heads, severed heads alone, headless bodies, and fortifications are interpreted as evidence of warfare during Mississippian times. Ceramic vessels depicting apparent possible decapitated and tattooed heads also occur in the Mississippian. It is not clear, however, if they represent trophy heads, or honored dead.

Connecting past and present through historical connections, like the historical Natchez use of mounds and human sacrifice, is called the direct historical approach. The dramatic difference in burial elaboration along with clear evidence for human sacrifice is indicator of differences in wealth and power in Cahokian society. Residential hierarchy, the central precinct, and burial distinctions clearly indicate that some people had far more wealth and power than others. These distinctions are so pronounced, that status was almost certainly hereditary, or inherited.

Several regional variants of later Mississippian culture were found in the eastern United States, from the eastern shore of the Atlantic, to the margins of the plains. Each variant had different local forms of pottery, projectile points and other material culture objects, but were unified by common ritual iconography, which is sometimes referred to as the Southeastern Ceremonial Complex. SECC motifs include birds, hands, rattlesnakes, spiders, cats, stone maces and death images. These motifs appear on shell, pottery, copper and stone. The above image shows the hand-in-eye motif and intertwined rattlesnakes from Moundville, Alabama. The opposite side was concave and used for pigment grinding. Elaborated bifaces and maces are also found throughout the Mississippian and were likely symbols of power. Engraved shell gorgets and conch are expertly carved with symbols of the SECC. It has been suggested that the conch shells may have contained the so-called Black Drink made from holly leaves that was used historically in the American Southeast for ritual purposes. Recently, archaeologist Patty Crown at the University of New Mexico examined the organic residues absorbed into porous ceramic mugs or “beakers” from Cahokia and surrounding areas. The pores help preserve the residues from degradation. They used a technique called liquid chromatography. You’ll read this week about what she found. Today, 300,000 visitors visit Cahokia each year.

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1.10: Classic Maya

Figure 1.10.1: CMayan ruin – Palenque, Mexico, Yucatan region. (Copyright; Flickr, Creative Commons. Photo: ashabot)

We can view the **Classic Maya**, not as a “less developed” society trying only to control the forces of **nature** and to survive economically. Instead, **they** can be regarded as fellow travelers—who simply chose a different path— through the darkness.

—Arthur Demerest

Mesoamerica and the Classic Maya **Mesoamerica**—Chiapas, Tabasco, Yucatán Peninsula in Southern Mexico, Guatemala, Honduras, El Salvador, and Belize— was the home of a number of civilizations. Mesoamerica is a region of tremendous environmental diversity. The uplands include volcanic mountains and various types of tropical forests and the lowlands are tropical. One of the civilizations of Mesoamerica was the Classic Maya (AD 300–900) of the “Maya lowlands” the humid subtropical rainforests of Guatemala, Belize, **western** Honduras, and the Yucatan peninsula. **Features** of the Classic Maya appeared centuries earlier at sites in both the lowlands and highlands. Like the Pueblos of the Southwest, the Maya still live in the area and speak **their** native languages, although they no longer live in kingdoms with elaborate architecture.



Figure 1.10.2: Terrace farming in Guatemala. (Copyright; Flickr, Creative Commons, Photo: Magnus Franklin)

Like the later Southwest Cultures and the Mississippian, the Classic Maya were reliant on **maize** along with beans and squash for food. **They** supplemented this diet with fruit trees and cacao (bean from which chocolate is made), kept bees for honey, and hunted animals of the rainforest. In the Maya lowlands, there are a variety of microenvironments, but generally, soils are thin and delicate, and easily exhausted. The Classic Maya used a diversity of techniques to farm these diverse environments. In addition to the three staple crops, the Maya had stands of fruit trees, like avocado and papaya, and left areas of rainforest uncleared for hunting and fuel. They used a number of different farming strategies including **slash and burn** (also called swidden), where areas were cleared, burned, and then farmed. This technique eventually depletes the soil, and the area must be left to rejuvenate and a few years. This practice continues among the Maya today.

The Classic Maya likely left more massive trees standing which would have allowed the rainforest to recover more easily. Also, the use of human waste as fertilizer would have improved production. Another technique used was terrace farming in which hillslopes were leveled into “steps” and the constructions of retaining walls which reduced erosion and kept in moisture. A third technique was used in swampy areas; sediments in these areas were piled up and cultivated. These “raised fields” are called chinampas. Box gardens, where soil and muck were brought in from swampy areas have also been documented.

Most of the populace of Maya centers lived in dispersed communities in and around major centers. The center of Classic Maya florescence, the Peten of Guatemala, was far more populated in the past than it is today. Today, modern farming techniques focus on single crops and widespread clearing and have destroyed vast stretches of rainforest in this area. One of the most studied periods of the Maya is the Classic Maya (AD 300–900). The Classic Maya had several distinguishing traits:

- Competitive “kingdoms” or interacting polities
- Divine kingship (called K’uhul Ajaw)
- Ceremonial centers with masonry pyramids
- **Elite** burials
- Warfare
- Ball courts
- **Mural** paintings
- Decorated ceramics
- Writing
- Calendars (general obsession with time)

- **Maize agriculture** (slash and burn, chinampas, terraces)

The Classic Maya society was hierarchical with a number of different classes of people. The ruling class included kings who also served as priests, along with their families. That is, there was no separation of church and state. Rulers were associated with divine beings, not unlike Julius Caesar being descended from Aphrodite. This state of affairs is in no way uncommon in the history of civilizations. The ancient Egyptian pharaohs claimed to be gods, the Babylonian ruler Hammurabi claimed to be appointed by God, and the Mycenaean kings had absolute power. Yale historian Donald Kagan suggests that it is we who are the “oddballs” in separating the affairs of church and state. Those that threaten this system, he adds, have the weight of human experience on their side.



Figure 1.10.3: CCopan **Ballcourt**. (Copyright; Flickr, Creative Commons)

Elite Maya women participated in bloodletting rituals and other ceremonies, but rarely held political power. In the absence of a male heir, women could serve as regents or occasionally queens, and pass on the title. The nobility were titled people, scholars, architects, merchants, warriors (women sometimes held noble titles). Commoners were farmers and laborers, which included the majority of the population. Finally, Maya society also consisted of slaves, criminals, and prisoners of war.

The Classic Maya were organized into competing kingdoms. Warfare was commonplace and victories and defeats were recorded on Maya stone monuments. They competed through ritual pageantry and **conspicuous consumption**—ostentatious building projects and elaborate **prestige goods** like carved jades and liquid chocolate. Early scholars of the Maya, before the Maya writing was deciphered, thought that the Classic Maya were peaceful gentlemen scholars, debating finer points of science and art in their jungle campuses. This romantic view turned out to be only partially true; The Classic Maya were no different from any other complex **culture**—with warfare, science, writing, and great art. Divine Rulers Maya kings were especially important to the Classic Maya. They were the embodiment of the axis mundi or World Tree, the divine connection between **supernatural** worlds and this one. Rituals and pageantry associated with the K’uhul Ajaw served to propitiate the gods.

These divine rulers were buried within the masonry temples themselves. At the Maya **site** of Palenque, ruler **Lord Pacal** (K’inich Janaab’ Pakal) was buried deep within the **Temple of Inscriptions**. The stairway leading to his **sarcophagus** was filled with rubble that took four years to remove. The five-ton sarcophagus depicts the deceased Pacal lying at the base of the World Tree (axis mundi) falling into the Great-Maw-of-the-Underworld, based on standard and well-known Mesoamerican iconographic representations. Maya kings were the **personification** of the World Tree connecting the planes of the Maya cosmology. The sarcophagus was famously interpreted by popular writer and convicted con-man Erich Von Daniken as Pacal piloting some form of flying craft—apparent **evidence** of the extra-terrestrial nature of the Maya culture.



Figure 1.10.4: (Copyright; Sue Ruth)

Inside the sarcophagus was a jade mask of the deceased ruler. Jade was a highly prized exotic raw material used in the production of esoteric ritual paraphernalia. These items were used in public displays to verify the social status and supernatural sanction. Beads, ear spools, and shells filled with **red ocher** were found (remember the 100,000-year-old Blombos in South Africa?). For most of the Maya populace, the deceased were buried beneath the floor or in shrines, typically including only a pot or two. The discrepancy in the burial of different members of the population is called burial hierarchy and is a common piece of evidence archaeologists used to identify differences in wealth and power.

As we have seen, humans, in general, are interested in their appearance, decorating themselves since the **Upper Paleolithic**, and gazing in pyrite (**Hohokam**) and obsidian mirrors (Catalhoyuk). The Classic Maya were no different. The **elite**, in fact, strove to look dramatically different from everyone else and engaged in some remarkable body modification. Most striking are the long, sloping foreheads of the elite created by binding that reshaped the skull. Ears, noses, and lips were pierced. Jewelry was made from jade, shells, wood, and bodies were tattooed and painted. Commoners also decorated themselves, enhancing their teeth with inlaid stones.

Classic Maya “kingdoms” centered around masonry four-sided pyramidal temples, elite residences, plazas, and ballcourts. In the early 1900s, the Maya were believed to reside in vacant ceremonial centers, inhabited by small groups of priests (Remember that this is also an idea regarding the use and **function** of **Chaco Canyon** in New Mexico). It was thought that the thin delicate soils of the rainforest could not sustain large populations. The priests were thought to direct rural, peasant populations through periodic rituals at the centers. More recent investigations have revealed thousands of mounds at the site of Tikal in Guatemala that has been identified as residential **structures**, indicating that thousands of people lived in these centers. Maya commoners lived in wattle and daub, stick and mud houses, houses on low mounds around the ceremonial center, similar to these houses used by the Maya today. The dispersed nature of Maya farms and the variety of farming techniques allowed the Classic Maya to flourish in a delicate area. At Tikal and other Classic Maya centers, most people lived in more modest homes of wattle and daub. In the lowlands, these houses were built on low earthen mounds to keep them above the water. While these more ephemeral (short-lived) houses are now gone, the mounds they once stood on remain. Archaeologists use mounds to identify where farmers lived and how populated the area around major centers was. Among the Classic Maya, people were loosely distributed in farming villages out from the center.



Figure 1.10.5: Maya House Mound. “Ruins Unsettled” by Josh Kellogg is licensed under [CC BY-NC-ND](#)



Figure 1.10.6: Modern-day Maya house, “La vida de los mayas en México, desde la península de Yucatán-5” by Ana Ruth Rivera is licensed under [CC-BY-NC-SA 2.0](#)

The site of Tikal located in the Peten Basin of Guatemala is not only a World Heritage Site, but is also featured as the rebel base in Star Wars! The site has two temples facing each other —Temples I and II—on either side of a great plaza or court. Temple I was built as a mausoleum for ruler Jasaw-Chan-K’awiil. The carved wooden lintel on Temple II depicts a royal woman, perhaps Jasaw-Chan-K’awiil’s principal wife, who was buried there. The exceptionally hardwood of the Zapote Tree was used for lintels to hold up the temple doorways. The Temple of the Great Jaguar (Temple I) is over 150 feet high. The tops of the pyramids were rooms used for sacred ceremonies. The whole thing was topped with a roof comb. Tikal’s lords lived and conducted their activities in the Central Acropolis, south of the great plaza, spreading over four acres and containing 42 multistory buildings. The acropolis at Classic Maya sites grew from repeated rebuilding and expansion resulting in “hills” of architecture. The north side of the plaza is framed by the North Acropolis, a huge platform that appears to have been a burial place for Tikal’s nobles. Several other examples of monumental architecture are found at Tikal and these are connected by causeways or scabies. These were raised paths covered in white plaster that linked buildings to the Great Plaza. These roadways connecting important monuments might remind you of the Great Hopewell road connecting moundbuilders sites or even the road system at Chaco Canton.



Figure 1.10.7: Tikal. Flickr, Creative Commons. Photo: Dennis Jarvis.

Maya Religion

Maya religion reflected the fundamental role of agriculture in their society. The Maya creation narrative, the Popol Vuh, recounts Maya creation in which the gods created human beings out of maize and water. The Hero Twins figure prominently in the Popol Vuh (and also appear in Pueblo narratives in the Southwest and perhaps on Mimbres pottery). In the Maya religion, gods kept the world in order and maintained the agricultural cycle in exchange for honors and sacrifices. The Maya believed the shedding of human blood would prompt the gods to send rain to water the maize. Sacrifice took many forms, including auto-sacrifice, the offering of one’s own blood, especially the K’uhul Ajaw. Elite women performed bloodletting rituals in which they collected blood from their tongues onto paper and sacrificed it by burning it; men practiced genital bloodletting. One lintel depicts a bloodletting rite with a vision serpent. Lady 6-Tun, a wife of Bird Jaguar, has used the stingray spine in her basket perhaps to make a hole in her tongue. The rope is then run through the hole to collect the blood, which drips onto the bark paper. Bloodletting also involved prisoners of war. The frescoed murals at Bonampak in Chiapas, Mexico in the Temple of the Murals depict mostly naked prisoners with bleeding fingertips. One prisoner is subjugated by a ruler grabbing his hair. Note that some of the men presiding over the ritualized torture or wearing jaguar pelts (At Catalhoyuk, Turkey, there are murals with men wearing leopard skins).



Figure 1.10.8: Depiction of Lady K'ab'al Xook practicing auto-sacrifice by pulling a rope through her tongue. Yaxchilán lintel 24 by Rafael Torres is licensed under CC BY-NC-ND 2.0.

Writing

True writing systems indicate the sounds and words of a language, not just a general idea. The term ideographs are sometimes used to refer to **image** that conveys some generic meaning but are NOT symbols that stand for the sounds of language. The Maya had the most complex writing system in all of Mesoamerica, which was the only area in the New World to have written. And they wrote on everything they could get their hands on, from stone **stelae** (upright stone monuments), wooden door lintels, pottery, murals, cave walls, carved jades, shells, and other precious objects. The glyphic stairway at Copan, Honduras, contains more than 2,000 glyphs, the longest known Maya text. The Maya also had bark paper books called **codices** (singular codex). **Codices** are screen-fold books of bark paper bound with deerskin. These mainly contain astronomical and calendrical information. Some 15,000 examples of Classic Maya writing have been discovered from monuments, pottery, tombs, and other sources. All but three codices were burned by Spanish Bishop Diego de Landa:

*We found a large number of books of these **characters**, and as they contained nothing in which there were not to be seen superstition and lies of the devil, we burned them all, which they regretted to an amazing degree and which caused them much affliction.*

Religious or ideological zealotry has not been good for the preservation of ancient remains. In AD 397 Cyril and his monk army destroyed the Memphis Serapeum along with other ancient Egyptian temples. More recently, the Taliban destroyed the Bayamin Buddhas.

Much of the Mayan writing on monuments such as stelae is political propaganda, used to legitimize a king's right to rule. Maya stelae, or upright stone monuments, recorded births, ascensions, conquests, marriages and alliances, sacrifices, deaths of rulers as part of this political aggrandizement. Maya's writing was a specialized craft. The Maya scribe was an important and respected professional, with a noble lineage. The Ah k'u hun was the chief scribe or keeper of the Holy Books or Royal Librarian. It is thought that the general populace was illiterate and that reading and writing were the privileges of the elite. Classic Maya texts were written in a courtly Mayan language, functioning somewhat like Latin in Medieval Europe. The Maya did not use an alphabet,


with each letter representing a small unit of sound. Instead, they used glyphs that represented whole words or syllables (clusters of sound).



Figure 1.10.9: Maya glyphs. “Codex” by Pietro Izzo is licensed under [CC BY-NC-ND-SA 2.0](#)



Figure 1.10.10: Maya Codex. “Los Codices Maya” by Dave Cooksey is licensed under [CC BY-NC-ND-SA](#)

Mayan art and writing were not completely separate. Indeed, the word for writing, *tz’ihb*, refers also to painting. Maya art contains densely coded information and incorporates glyphs into the design. The Maya logogram for “baby” looks like a baby on its back. In the depiction of Lord Pacal on his sarcophagus, we see that he is in the same position as he is reborn as the lightning god. Maya art also uses glyphs or abbreviated glyphs to identify colors, material, smell, shininess, and so forth in the depiction. For example, the Maya glyph for wood is . We can see parts of this glyph on canoes, trees, and other wooden objects depicted in Maya art. Specific

gods can also be recognized by their **earspools**, headdresses, paraphernalia, and body markings. Chahk, the rain god, is often depicted with scales and an ax, usually in the act of chopping a baby jaguar.

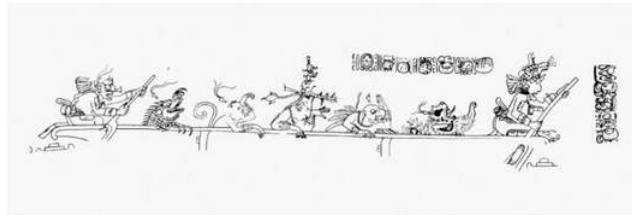


Figure 1.10.11: Maya Canoe [Scene](#)

The place where an incident in real life or fiction occurs or occurred.

Term details

" href="https://mytext.cnm.edu/glossary/scene/" class="glossaryLink cmtt_English 1101 Glossary">scene. Note the abbreviation for wood on the canoe at the lower right.

The Maya Rain God Chahk.



Figure 1.10.12: Maya maize god as scribe. Note the shell used to hold ink. Public domain.

Mesoamerican Ballgame

Before there was the Olympics, there was the **Mesoamerican ballgame**—the ultimate team sport. The Classic Maya and other Mesoamerican cultures discovered that the extract of the rubber tree could be made into a very bouncy ball by adding juice from the morning glory plant. A few balls have survived to this day and many are depicted on figurines. The Mesoamerican ballgame found throughout Mesoamerica, and depiction occurs on murals and statuary.



Figure 1.10.13: Ballcourt at Uxmal. Flickr, Creative Commons. Photo: Mark Bellingham.

The players wore a yoke made of cloth, wood, or leather around their mid-section for protection from the hardball decorated with a hacha. The uniform and rules varied by culture. The Mesoamerican **ballcourt** was built of limestone masonry like temple monuments and painted. Classic Maya ballcourts were in the shape of an “I”, with the endzones the top and bottom of the “I”. The “benches” at the base of ballcourts were decorated with scenes of **human sacrifice**. The ballgame was not just a sporting event but a religious one as well. The losers, at least in some cases, appear to have been sacrificed. Stone relief at El Tajin in Veracruz depicts a ballplayer being sacrificed by having his heart cut out. At the popular honeymoon destination of Chichen Itza, ballplayers are depicted as being decapitated with a large obsidian knife.

Chocolate

Cacao, (from kakawa, a Mayan word) from which chocolate derives, was a precious commodity consumed mostly by nobles and the seeds were even used as a form of currency. Chocolate was usually consumed in liquid form. There appears to have been a number of different Maya recipes for liquid chocolate. Liquid chocolate was poured between cylinder vessels to produce a froth, the most delicious part of the drink. The process of producing chocolate from cacao seeds is quite elaborate. Cacao pods contain a sweet white substance in addition to the cacao seeds. The seeds must be fermented in the sweet white substance for a few days. The seeds are then roasted and crushed to make chocolate liquor. Not all cacao is the same, but the variety that grows in the Maya region still produces the best-tasting chocolate today. Milk and sugar weren’t added to chocolate until after the Spanish arrived.



Figure 1.10.14: Cacao pod”. Flickr. CreativeCommons. Photo: Rosie tulips



Figure 1.10.15: “Tajin Sacrifice [Scene](#)

[The place where an incident in real life or fiction occurs or occurred.](#)

[Term details](#)

" href="https://mytext.cnm.edu/glossary/scene/" class="glossaryLink cmtt_English 1101 Glossary">Scene" by Thomas Aleto licensed under CC BY 2.0

Calendars

The Maya were astronomers in the sense that they kept track of the cycles of the moon, sun, Venus, and stars. They used the cycles to make future predictions; That is to say, astrology. The Maya also had several ways of tracking time, not unlike archaeologists. Perhaps the one that most people are familiar with is the **Long Count**, which was used for tracking very long time periods of time. The Maya invented the **concept** of zero and used a symbol to represent zero mathematically, which facilitated the manipulation of large numbers. The Long Count is basically a count of days forward from a base date, specifically 3114 **B.C.E.** in the Gregorian calendar. The base date is very much like **A.D.** (Anno Domini) or **C.E.** (Current Era). We also have rotating cycles, seven days named after Norse gods with months named after Roman gods and emperors. A Long Count date appears at the beginning of every Maya monumental writing. Mayan numbers are very simple. A dot means “one” and a bar means “five”. Two bars mean “ten”, and so on. The Maya did not have other units of time that are equivalent to ours, however. There was no 7-day week for example. Instead, they carved up time using 20 as a base. Here is how the Maya organized time in the Long Count:

Kin= 1 day

Uinal= 20 days

Tun=360 days

Katun= 20 tuns (7,200 days, about 19.7 years)

Baktun= 400 katuns (144,000 days, about 394 years)

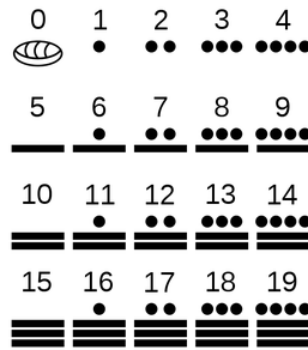


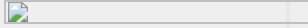





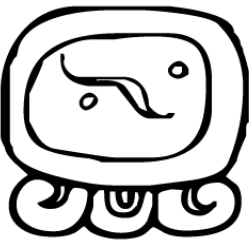



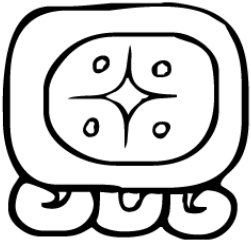
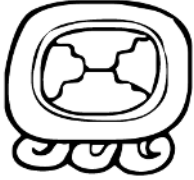
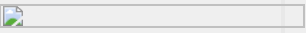
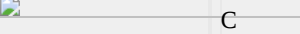




Figure 1.10.16: Maya numerals by Bryan Derkson is licensed under CC BY SA 3.0

Long Count dates are often written like this in English: 13.0.0.5.10. However, the Maya wrote numbers vertically with the largest unit at the top and the smallest at the bottom, similar to the familiar thousands, hundreds, tens, ones, system. Now you can see why it is called the Long Count. It was the Long Count that set off a frenzy of panic in some circles in late 2012. That was the date for the Long Count cycle to come to an end. After 13 baktuns, the Long Count “turns over” and starts again, or according to some, the world ends. Given that the Maya themselves inscribed dates beyond the end of the 13th baktun it appears that even the ancient Maya didn’t think it was cause for alarm. But wait, that’s not all. The Maya had two other calendars at play. The Maya had a 260-day calendar called the **Tzolk’in** and a 365-day solar calendar called the **Haab**. The Tzolk’in was a ceremonial calendar that marked important ritual days, which continues to be used to this day. The Haab was the civil calendar, used to keep track of days in accordance with the changing seasons. The combination of the two calendars called the **Calendar Round**, returned to its starting point, 4 Ahau 8 Cumku, every 52 years. (The smallest number that can be divided evenly by 260 and 365 is 18,980, which equals 52 years). This was an occasion for building monuments, ceremonies, and celebrations.

Seq · Nu m. ¹	Day Name ²	Glyph example ³	16th -c. Yuc atec ⁴	reconstruc ted Classic Maya ⁵	Seq · Nu m. ¹	Day Name ²	Glyph example ³	reconstructed Classic Maya ⁵
01	Imix’		Imix	Imix (?) / Ha’ (?)	11	Chuwen		Chuwen (unknown)

02	Ik'		Ik	Ik'	12	E b ,		E b (unknown)
03	Ak'b' al		Akb al	Ak'b'al (?)	13	B , e n		B eC'klab n
04	K'an		Kan	K'an (?)	14	I x		I Hix (?) x
05	Chic han		Chic chan	(unknown)	15	M e n		M e(unknown) n
06	Kimi		Cimi	Cham (?)	16	K , i b ,		C i(unknown) b
07	Mani k'		Man ik	Manich' (?)	17	K a b , a n		C a bChab' (?) a n

08	Lama t		Lama t	Ek' (?)	18	E t z , n a b ,		E t z (unknown) n a b
09	Mulu k		Mul uc	(unknown)	19	K a w a k		C a u(unknown) a c
10	Ok		Oc	(unknown)	20	A j a w		A h Ajaw a u

The Tzolk'in can be visualized by two rotating wheels. Wheel 1 has thirteen numbers and Wheel 2 has 20 named characters. The combination of the first number and a day won't repeat for 260 days. The Haab is somewhat more familiar having months. There are 18 months of 20 days each, plus one month of 5 days for a total of 365 days. That last awkward month of only 5 days was said to be bad luck and may have even gotten you sacrificed. If you want to know when you were born according to the Maya calendars try this [link](#) The Maya had still other forms of tracking time. The Katun cycle was particularly important (about every 20 years) and was a cause for monument building and celebration.

Collapse?

The Maya "collapse" occurred in the 700s. most archaeologists do not like to use the word collapse, especially in the Maya case, because the Maya continued in other areas. Nonetheless, something different began to happen around the 700s. During this time monument building began to decline along with hieroglyphic texts and some long-distance trade contacts ended, and warfare increased. And yet, because the environment was so variable and the kingdoms so diverse, the collapse happened differently in different areas. Some areas were depopulated, others built fortifications, some areas even flourished during this time period while others saw a slow decline. The phenomenon that universally disappeared during the collapse was the idea of the holy lord, the K'uhul Ajaw, with the associated stelae and tomb temples. In this way, the word "collapse" does not necessarily mean the disappearance of a people, but the disappearance of a particular ideological system.

Some have argued that the system of the holy lord was inherently unstable and the constant competition for power, costly displays, and warfare were ultimately unsustainable. Others point to climate change and population sizes as being a major factor in the collapse. Some have argued for a disconnect between climatic, demographic and ideological factors that could no longer be sustained. The Maya passion for plastering public monuments is a good example. Lime plaster, so important in the maintenance of the theater state of the K'uhul Ajaw, required burning of limestone, which in turn required fuel. In this way, the material required to support the pageantry of Maya kingdoms may have directly contributed to environmental degradation in the form of rainforest clearing and subsequent erosion. The pageantry of the K'uhul Ajaw was incompatible with the delicate nature of the rainforest.

Research continues today to try to understand how the collapse of the K'uhul Ajaw unfolded in different regions.

Acid Rain and Maya Monuments

Oil refineries and tour busses produce chemicals that can lead to acid rain in the Maya region today. The oil refineries produce nitrogen and sulfur oxides (Nox and Sox), eventually producing sulfuric and nitric acid as they react with water and oxygen in the air. Pemex, which is government-run, owns the oilfields, which are economically important to the region. The Maya constructed their monuments from limestone (CaCO_3) and like corals in the ocean and subject to deterioration from acid rain. The acid rain can turn the limestone or lime stucco into gypsum, which flakes and crumbles off. In some cases, it produces a “black scab”. Removing the scabs also tends to remove the underlying paint and stucco. In other areas that are rarely visited, sites may be more protected by the forest from acid rain. While the sculptures at the Parthenon were removed to an indoor location (and replaced by replicas outside), the giant Maya temple monuments cannot be sheltered so easily.

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1.11: The Moche



Figure 1.11.1: “Moche Ceramic Portrait Vessel, Peru” by Gary Todd is licensed under public domain.

The waters off the west coast of Peru are some of the world’s richest fishing areas. The shore, however, is one of the world’s driest deserts as the cold air off the sea water inhibits rainfall on the shore. The rain doesn’t fall until it reaches the Andes, forming rivers flowing from the Andes through desert. The entire coastline is marked by rivers. Much like the **Hohokam** of Arizona, without **canal irrigation**, **agriculture** would be impossible here. The **Moche Culture** (ca. AD 150–AD 700) consisted of several political centers located along these Peruvians waterways. Like the Mississippians, Southwest cultures and the Maya, the Moche were reliant on **maize**, coupled with other native domesticates like potatoes, peanuts, peppers. **They** also hunted marine mammals. The Moche are most known, however, for **their** fantastic artwork, elaborate **elite** burials, and ritual theater.

Monumental Architecture

The **site** of Cerro Blanco, also called the Moché site, is located along the Peruvian coast in the Moche River Valley. The Moche Valley where the site is located is thought by some to have controlled other centers along the coast of Peru. The site of Cerro Blanco is dominated by two major “pyramids”—the **Huaca del Sol** (130 ft) and the **Huaca** de la Luna (100 ft). A **huaca** (wak’a) is a revered monument or object in the native language of Quechua. Between the two pyramids is a large plaza. Huaca del Sol was a solid adobe, built of more than 130 million bricks. Laborers might have been conscripted to build these pyramids from neighboring valleys. Archaeologist Michael Mosley has found more than 100 different impressed into the adobe bricks and has made a case that these symbols represent the maker’s of differ workshops, much like marks on the bottoms on modern-day **pottery**. Different sections of pyramids were made of bricks with different symbols, suggesting different groups of laborers worked these different sections.



Figure 1.11.2: “Mud Bricks with Makers’ Marks at Huacca del Sol/Huacca de la Luna, Peru” by Tyler Bell is licensed under [CC-BY 2.0](#)

The Spanish destroyed the **western** portion of Huaca del Sol when **they** diverted the Moche river to hydraulically mine Huaca del Sol for its rich tombs. Today, less than half the monument remains. Huaca Sol was likely used as both the chief’s residence and mausoleum for important leaders. Across the plaza, Huaca de la Luna is a complex of three platforms surrounded by high adobe walls. Painted murals have been discovered on the Huaca de la Luna depicting warfare and decapitation.



Figure 1.11.3: [Scene](#)

The place where an incident in real life or fiction occurs or occurred.

Term details

" href="https://mytext.cnm.edu/glossary/scene/" class="glossaryLink cmtt_English 1101 Glossary">Scene from Huaca de la Luna. “Las Huacas de la Luna” by Walrren Talbot is licensed under [CC BY 2.0](#)



Figure 1.11.4: Huaca del Sol at the Cerro Blanco [site](#)

[spatial clusters of material culture](#) (see Chapter 2)

Term details

" href="https://mytext.cnm.edu/glossary/site/" class="glossaryLink cmtt_Archaeology Glossary">Site. “Huaca del Sol” by Gutavo M. is licensed under [CC-BY 2.0](#).

Pottery

Moché pottery, like Mimbres pottery, is world famous for its craftsmanship and naturalistic depictions. Unfortunately, just like Mimbres pottery, it has been the target of looters which continues to this day. Moché pots from Peru, in **contrast** to those of the Southwest, were made using pottery molds. A master artisan would create the **mold matrix**, the original sculpture. Clay would be added to the exterior to create the mold, which once dry was fired. Clay was then added to the interior of the two-halves of the mold made replicas of the original mold matrix. In this way, exact copies of the original work could be made. Not surprisingly, pottery was produced in workshops by craft specialists.

One common pottery form is the stirrup-spout vessel, which was likely used for pouring liquids. Moché portrait vessels are often stirrup-spout vessels that depict actual people—almost certainly Moche warriors. Archaeologist Christopher Donnan has done an extensive study of Moche portrait vessels and found that individual men can be identified through distinguishing marks like scars and headdresses. These men are depicted throughout their lives, from childhood to adulthood. You can see how the mold matrix would be a useful technology for depicting individuals throughout their lifetime. The matrix could be used over and over again with slight adjustments made for aging.

One some of the vessels, there are references to coca. Coca is a native plant containing the alkaloid cocaine. It is traditionally chewed or used in a tea as a stimulant or pain reliever. On some Moche pots, vessels for coca are depicted or leaves being chewed in the mouth. It is thought coca was important in warfare in order to maintain alertness and vitality. Some of the vessels show warriors on the losing end of the battle—naked and bound awaiting sacrifice.

Moche pottery and meaning

Moche pottery was not just of portraits. They also made the so-called Moché “sex pots”. These were functional vessels of a variety of forms. There are at least 500 known vessels or sculptures of this type. Unfortunately, many of these pots come from unknown contexts, being the spoils or collectors and looters (like Mimbres pots of the Southwest), and the Moché had no written records. A variety of sex acts are depicting including masturbation, fellatio, and anal penetration are depicted. The most common of these is male-female anal sex, while depiction of vaginal penetration is rare. In some cases, the woman is breast-feeding an infant at the same time. Historical Spanish records (much later than the Moche) indicate that both homosexual and heterosexual anal sex were common along the Peruvian coast, though the Spanish attempted to eradicate the behavior.



Figure 1.11.5: Moche sex pot. “[Moche Pottery](#)” by Gary Todd is licensed under public domain.

Myth or Reality?

Elaborate battles are frequently depicted on Moche pottery. In one famous example, called the Luhrsen Vessel, the battle ensues between pairs of elaborately dressed warriors. Naked men with ropes around their necks are depicted as well. Other Moche vessels depict characters in a sacrifice ritual, including a Warrior Priest, an Owl Priest and a Priestess. The Warrior Priests drinks from a goblet while captives have their throats slit by people holding small cups. It was originally thought that these images represented purely mythological events as there was little material evidence to indicate this type of ritualized warfare. Later discoveries at Sipán, San Jose de Morro, and Cerro Blanco, indicate that these images were in fact depicting, real people and actual events. The Lord of Sipan, as he is called, represents the Warrior Priest. A total of 451 gold, silver, copper, textile and feather objects were buried with him. Groups of sacrificial victims, horribly mutilated and encased in clayey mud, have been found in the plaza area between the two principle huacas at the site of Moche (Cerro Blanco). Statuettes representing captives, with ropes around their necks and penises, have also been discovered in association with these skeletons. These finds indicate that the images on Moche pots and murals represent real practices and not purely mythological events.

It is thought that Moche nobility engaged in ritualized warfare—with the losers stripped of their clothes and sacrificed. Blood from the victims was consumed by priests and the victims are subsequently dismembered. Today, ritual warfare occurs between villages in the Andes, but while violent this stops short of death.

The warrior culture of the Moché is not so unusual, and can be seen again and again throughout history. Certainly, Teotihuacan in Mexico glorified the warrior, particularly in the Temple of the Feathered Serpent. Late Bronze Age Europe (1300–800 B.C.) also

had a distinct warrior **theme**, where men gained status through their exploits. Huge numbers of weapons, especially battle axes, were in circulation and depictions of warriors in their regalia abound. The macho-ness of the Bronze-age warrior is captured in Homer's Illiad.

Social Hierarchy

Moche society was hierarchical with apparent inheritance of wealth and power. Marked disparities in burials and residences occur, that is, burial and **residential hierarchy**. Burials near the huacas are more lavish, and some residences are more solidly built than others. These more elaborate residences also contained valuable objects such as copper implements and stirrup-spout vessels, thought to be used for drinking chicha, or corn beer.

Shift in Settlement

Around AD 600, the beginning of the Moche collapse, an extreme El Niño (mega-El Niño) event occurred on the coast. Flood waters damaged Moche constructions during this time. The rains also explain the sacrificial victims encased in mud at the site of Cerro Blanco. Ice cores and sediments indicate that a severe drought followed the mega-El Niño event on the coast. This climatic oscillation from wet to dry could have greatly weakened the Moche culture. Not only would people have suffered from environmental devastation, but they might have lost faith in the elite **ideology**. In the 600s, the large ceremonial centers are abandoned. The Moche began building fortified sites on defensive locations on high ground. Piles of sling stones indicate warfare—likely among the Moche themselves.

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1.12: Gift of the Nile



Figure 1.12.1: “Golden Mask of King Tut (Cairo)” by Lucas is licensed under [CC BY 2.0](#)

I gave bread to the hungry, beer to the thirsty, clothes to the naked, and a boat to him who was boatless.”— Liturgy from the “Book of the Dead”

Lay of the Land

Egypt is a land of very little rainfall, averaging only 10 millimeters annually, not so different from the Moché environment. The Nile River, so critical to Egyptian culture, flows south to north through this vast desert. The Nile flows from mountains in the south to the Mediterranean in the north. Perhaps a little counter-intuitively, the northern delta is called Lower Egypt because of its downstream position, the southern part is called Upper Egypt or the Delta because of its upstream position. Prevailing winds blew from the north and so Egyptians used sails for going south and paddles for heading north. In hieroglyphics, going south is indicated by ships with sails and going north by those without.ⁱ To the south lay Nubia, below the first cataract of the Nile, where the river flows through granite and is marked by boulders and rapids.

The Nile has deposited fertile silty soils along its banks, providing the desert a richness along the valley floor. Egyptians called the Nile floodplain “Kemet” (meaning black land) for its fertile soil and the Nile itself Iteru. In ancient Egypt, the Nile flooded annually about 7 or 8 meters, bringing water and fertile silt from the African interior while at the same time removing salts. When the waters receded, a narrow strip of land along the Nile became agriculturally productive. Because the surrounding land was arid desert, this narrow strip along the Nile became densely populated. Flooding also facilitated movement of building stones and statuary directly from quarries along the Nile cliffs onto barges. In the 1960s, the construction of the Aswan Dam stopped the annual flooding that for so long directed the lives of the Egyptians.



Figure 1.12.2: “White and Blue Nile” by Hel-hama licensed under CC BY-SA 3.0.

Dynastic Egypt

Dynastic Egypt spans a huge time frame between ca. 3100 BC to 30 BC. King lists have been found from several sites, helping archaeologists and historians sort out chronologies. Some kingships were held concurrently, however, making chronology building more difficult.

Chronology

- Archaic Egypt, or Early Dynastic Egypt (c. 3100 to 2575 BC)
- Old Kingdom (c. 2575 to 2134 BC)
- Middle Kingdom (c. 2040 to 1650 BC)
- New Kingdom (1530 to 1075 BC)
- Late Period (1070 to 30 BC)

The Early Dynastic or Archaic Period consisted of the 1st, 2nd and 3rd dynasties. Memphis (near modern Cairo) was founded as an administrative and economic center of the state. Egypt was politically centralized at this time, meaning that power and authority was consolidated. A bureaucracy, or administrative organization, was formed in order to rule over different areas. The country was divided into precincts called nomes, each governed by a nomarch. During this time, pharaohs (overall rulers) assumed the role of divine kings, and writing, royal tombs, large-scale projects and the Egyptian ideology emerged.



Figure 1.12.3: “The Narmer Palette” by unknown licensed under public domain.

The first pharaoh, or ruler, Narmer (aka Menes), is given credit for consolidating Upper and Lower Egypt c. 3100 BC from the previous independent competing kingdoms of Predynastic Egypt. The Narmer Palette depicts Narmer defeating his enemies. On one side (left), Narmer wears the white crown of Upper Egypt and postures over an enemy. On the other side (right), wearing the red crown of Lower Egypt he marches to view decapitated prisoners. The entwined creatures likely symbolize harmony. The white crown of Upper Egypt (left), the red crown of Lower Egypt (center) and the double crown of unified Egypt (right). It is interesting that elaborate headdresses worn by important leaders along with staffs symbolizing power appear are a recurring theme in prehistory—think of the Maya, Moche, and Mississippian. Also, note that Narmer is grabbing the hair of his vanquished foe, not so different from the much later ritualized combat of the Moché. The veracity of Narmer as the first pharaoh, conquering by force remains debated in archaeological and historical circles, however. There is little evidence for a violent overthrow and the textual evidence is also scant. As with the Maya, rulers could use images for political propaganda.

The Old Kingdom

The Old Kingdom, which comprised the 4th to 8th dynasties, was in many ways a continuation of the Archaic Period, and was characterized by prosperity and stability. The pharaoh had secular (non-religious) and sacred powers, and was the earthly manifestation of Horus (hawk god) or alternatively the son of Ra (the sun god). Ra’s identity was often fused with others in an attempt to unite different areas. The pharaoh’s duty was to mediate with the gods and assure the annual flood cycle.

The Old Kingdom was centered at Memphis and was characterized by massive public works, typically the construction of royal tombs and temples. The layout of early Memphis is unclear, but it appears the central area was dominated by the palace surrounded by a fortress of white walls. The necropolises (cemeteries for an ancient city) for Memphis were Saqqara and Giza. The Pharaoh Djoser had the Step Pyramid at Saqqara built northwest of Memphis, with a vast necropolis or mortuary complex. The stepped sides were oriented to the cardinal directions. The pyramid inaugurated the practice of pyramids as royal tombs. The king’s body was buried in a chamber beneath the pyramid. The Step Pyramid at Saqqara was designed by Imhotep and was surrounded by a stone wall. The king made public appearances here.



Figure 1.12.4: Saqqara pyramid of Djoser

The pyramids of Giza—the Great Pyramid (Pyramid of Khufu, c. 2560–2540 BC), the Pyramid of Khafre, and the Pyramid of Menkaure—were built during the Old Kingdom period. After death, the pharaoh was buried in a chamber in the pyramid and joined the sun god, the pyramids being symbolic ladders to heaven. More than 2 million limestone blocks went into the construction of the Great Pyramid (compare to Huaca del Sol in the Moché river valley).



Figure 1.12.5: “Great Pyramid of Giza from a 19th-century stereopticon card photo” by unknown licensed under public domain.

The Great Pyramid was part of a larger complex with an enclosure wall, a memorial or mortuary temple, causeways, queen pyramids and pits. Causeways or sacred roads are another recurring theme. Remember the Great Hopewell Road, the Chacon roadways, and the Maya sacbes? Excavation in one of these pits at the Great Pyramid complex revealed the remains of an Egyptian boat, the Khufu ship, made of cedar planks. This ship is sometimes called the solar barge and might have been the vessel to carry the King to the heavens with the sun god Ra. This barge is analogous to the vessel possibly portrayed on the Nebra Sky disk. It is also possible that the vessel was used by the king for actual voyages along the Nile. The Great Sphinx of Giza—a recumbent lion with a human head—appears to be associated with the funerary complex of the Great Pyramid. The combination of human and feline goes back to the Upper Paleolithic with the Lion Man of Hohlenstein Stadel, Germany dating to ca. 38,000 years ago. And we saw humans wearing leopard and jaguar skins at Catalhoyuk, Turkey and among the Classic Maya at Bonampak.



Figure 1.12.6: Sphinx & Great Pyramid at Giza, Egypt by Tom Beazley is licensed under CC BY 2.0

A complex system of taxation involving agricultural products, raw materials and labor was in place in the Old Kingdom. The increasing number of mortuary and ritual centers during the Old Kingdom required support for their maintenance. Through time, these became increasingly poorly built and smaller. The Old Kingdom became increasingly decentralized as nomarchs gained in power and fought with each other, resulting in political instability. One text, the Lamentations of Ipuwar, relates “The land is full of gangs and a man goes to plow with his shield...All is in ruin, a man smites his brother, plague is throughout the land, blood is everywhere...The land is diminished, its rulers are multiplied.”ⁱ The pharaoh granted estates to priestly specialists, which eventually diminished the pharaoh’s resources. Prolonged drought also weakened the state, and the Old Kingdom came to an end. This period of strife is known as the First Intermediate Period.

Middle Kingdom

The Middle Kingdom (11th to 14th dynasties) was centered on Thebes in Upper Egypt, but moved back to Memphis in the 12th dynasty. Thebes became a religious center for the god Amun-Re. Pharaohs of the Middle Kingdom were less despotic than the Old

Kingdom and the status of the pharaoh was diminished. A few smaller pyramids were built during this period, but the practice virtually died out by the end of the Middle Kingdom.



Figure 1.12.7: Above: Relief of Amenemhat I from his mortuary complex at El-Lisht licensed under CC BY SA.

Trade increased during the Middle Kingdom, particularly with Nubia (Sudan) to the south and Palestine to the northeast. The Hyksos “ruler of foreign countries” from western Asia took control of northern Egypt. Ambitious mining and construction projects weakened political control, leading to the Second Intermediate Period, a time of decline.



Figure 1.12.8: Above: Depiction of Asiatic people, possibly Hyksos, entering Egypt, c. 1900 BC licensed under CC BY SA.

The New Kingdom

The pharaoh Ahmose of Thebes drove the Hyksos out of northern Egypt, ushering in the New Kingdom. The New Kingdom was a time of centralization of power and is one of the best known periods. The 18th Dynasty of the New Kingdom is known as Egypt’s Golden Age. Kings were military, religious, and judicial leaders, and the New Kingdom extended rule farther north than ever before. Armies and priesthoods became increasingly powerful. The political capital returned to Memphis and Thebes became an important religious center. Many ambitious construction projects occurred during this time. Ramesses II (Ramesses the Great) built more temples, statues and obelisks than any other pharaoh. An obelisk is a large column built from a single piece of stone with a pyramidal shape at the top. There is very little mention of slaves in Egyptian writing, and there are texts referring to conscripted labor called *corvée* labor. It is therefore thought that people were required to work for the state at least for part of the year. Evading state work resulted in serious penalties.

Unlike the pyramid tombs of the Old Kingdom, the Valley of the Kings, on the west bank of the Nile opposite Thebes, was the burial place for pharaohs and nobility during the New Kingdom. Most of these tombs were carved into limestone rock, and most of these were robbed in antiquity. Care and expense was devoted to mummification in the New Kingdom. King Tutankhamun was pharaoh during the New Kingdom. His tomb was discovered in the Valley of the Kings by Howard Carter. Many obelisks—carved out of a single piece of granite—were constructed during the New Kingdom under the reign of Hatshepsut, a woman pharaoh. A woman as pharaoh went against the Egyptians’ idea of the correct order of the world or *ma’at*. Most Egyptian obelisks, eight of them, are now in Rome. The Washington Monument in Washington D.C. was inspired by Egyptian obelisks, though it is not built from a single piece of stone. The monument was a way to connect the relatively new country to the mystery and power of ancient Egypt.



Figure 1.12.9: Valley of the Kings licensed under CC BY SA 2.0



Figure 1.12.10: “The Flaminio Obelisk (An Egyptian obelisk of Ramesses II brought to Rome from Heliopolis) Piazza del Popolo.” by Charles Ng is licensed under [CC BY 2.0](https://creativecommons.org/licenses/by/2.0/).



Figure 1.12.11: “Small sphinx of Hatshepsut” by Keith Schengili-Roberts is licensed under [CC BY 2.5](#)

New Kingdom pharaohs promoted the god Amun-Re, whose cult was based at Karnak. Ahmenhotep IV promoted another god, Aten, and established a new capital at Amarna (also called Akhenaten), escaping the influence of the powerful priesthood. Akenaten banned the worship of other gods and had their names expunged from monuments. The art of the period changes dramatically. Bodies become androgynous (sexually ambiguous) and heavily drooping, heads are egg-shaped. This period is known as the Amarna Period. After his reign, Egyptians returned to the previous religion.



Figure 1.12.12: “The Wilbour Plaque, ca. 1352-1336 B.C.E” by Brooklyn Museum is licensed under public domain.

As Egyptians neighbors increased in power, pharaohs turned to diplomacy. The Amarna Letters from Tell El Amarna are a collection of 350 clay tablets that served as diplomatic letters between Egypt (Ahmenhotep III) and its neighbors, mainly concerning mutual defensive pacts and exchange of gold, lapis lazuli, ebony, horses, ivory, and ebony. Gifts and wives were exchanged between Egypt and other kingdoms, ushering in an era of diplomacy rather than warfare. Pharaohs married daughters of western Asian kings, but Egyptian daughters never married foreign rulers (p. 43). Thutmose III brought the sons of conquered foreign towns to be educated in Egypt and indoctrinated in Egyptian ideology.

The Ramesides came to power in the 19 and 20th Dynasties as the Assyrians were coming to power in the Near East. The biblical account of Exodus is placed by some scholars during this time period. Hebrew names are known from Egypt during the New

Kingdom and Hebrews are known to have worked on state projects. No mass exodus, however, was recorded. Huge mortuary temples were built at Thebes, putting a strain on resources. Worked for the royal tomb went on strike when the government was unable to pay. Rameses II had his memorial temple built at Thebes, now called the Ramesseum, where the colossus head “the Younger Memnon” was discovered, (and taken to the British Museum in 1818). The finds inspired Percy Bythe Shelley’s sonnet *Ozymandias*. Nile inundations have taken their toll on the monument along with neglect. At Abu Simbel, Ramesses II had two massive temples carved into the rock face along the Nile built for him and his wife in Nubia (southern Egypt). The monuments were built between 1264 and 1244 B.C. The temples cut into blocks and moved to higher ground in 1968 when threatened by the construction of the Aswan Dam. Today, these are listed on UNESCO’s World Heritage site list.



Figure 1.12.13: “The Great Temple of Ramses II, Abu Simbel, AG, EGY” by Warren LeMay is licensed under public domain.



Figure 1.12.14: “The statue of Ramses the Great at the Great Temple of Abu Simbel is reassembled after having been moved in 1967 to save it from being flooded” by Per Olow licensed under public domain.

Growing unrest, corruption and unsuccessful military campaigns led to the Third Intermediate Period a time of political decentralization. The Assyrians attacked Thebes carrying booty and obelisks back to Assyria. The Late Period saw an artistic renaissance that looked back on Egypt’s greatness. Nubian, Egyptian and Persian kings ruled at different times in the Late Period. Occupation of Egypt by Alexander the Great removed the Persians and brought the Late Period to a close, after which Egypt was ruled by Macedonian and Ptolemaic dynasties. Egypt became a Roman colony in 30 BC.

Belief

The Egyptian sense of order was called *maat* or *ma’at*, and transgressions against righteous behavior could result in chaos. Everyone from the lowliest peasant to the pharaoh was responsible for maintain *maat*. The Book of the Dead , Spell 25 indicates rightful behavior: “I have not slain people. I have not been sullen...I have not have intercourse with a married woman...I have not disputed the king.” The pharaoh was instrumental in ensuring the maintenance of harmony through offering to the gods in temples. The pharaoh was the incarnation of the god Horus (who avenged the death of his father Osiris). Egyptians revered and valued life,

but prepared for death. Upon reaching adulthood, one began making arrangements for his or tomb. The Egyptians believed that the soul separated into different parts upon death. The ka took the physical form of the person, and required all the things that the living needed. Unlike other civilizations that we've studied, the Egyptians believed that the mere representation of things, like servers, acted as the real thing in the afterlife. Human sacrifices were therefore not performed after the first dynasty. The soul also took the form of ba with the head of the person and the body of a bird. The ba stayed with the sarcophagus at night in the tomb. During the day, the ba flew away to be in the sunshine. Finally, the akh was the spirit of the dead that mingled with the gods. Mummification was necessary for the ka and ba. The sarcophagus was often in the shape of the deceased in order for the ba to recognize the correct person, and sometimes facial features were modelled using plaster. The process of mummification changed over time, with the earliest being naturally desiccated corpses in pits. With the use of sarcophagi, other means were necessary to preserve the body, including removal of the internal organs (the heart was often left in the body), packing the body with natron (a natural salt), and wrapping the body in linens. Canopic jars were used to house the organs. The soul of the deceased was judged in the afterlife. The dead would recite the liturgy from the "Book of the Dead": I gave bread to the hungry, beer to the thirsty, clothes to the naked, and a boat to him who was boatless."

Writing and Scribes

Like the Maya, Egyptians had a true writing system in addition to scribes. Also like the Maya, not everyone was literate and it is estimate that only one percent of the Egyptian population could actually read and write (p. 77). Unlike the Maya, the Egyptian had vast archives to keep track of herd sizes, grain, production of goods, wages, booty, fallen enemies, as well as letters, wills, titles, inventories, journals, regulations, conscription lists, and so on. Close accounting made taxation and conscription possible. Scribes wrote on ceramic or limestone scraps, while formal documents were written on papyrus made from overlapping reeds. Scribal instructors were strict. On one papyrus text, it warns, "Scribe do not be idle...Do not give your heart to pleasures, or you shall be a failure...Preserve in action every day, that you may gain mastery. Spend no day in idleness or you shall be beaten—a boy has a back, and he listens to a beating."

The Rosetta Stone was discovered in 1799 by Napoleon's invading forces. The granitic tablet contains texts in ancient Greek, Egyptian hieroglyphs and demotic, a cursive form of the hieroglyphic script. The multiple scripts allowed epigraphers to decipher the hieroglyphs, once thought to be completely pictographic. Thomas Young proposed that the cartouches, ovals enclosing groups of hieroglyphs, on the Rosetta Stone contained royal or religious names, leading to a breakthrough in decipherment. Jean François Champollion announced the complete decipherment of Egyptian hieroglyphs in 1823. Egyptian hieroglyphs are logophonic, meaning they use logograms and symbols that stand for one or more sounds. Hieroglyphs also contained determinatives, which are added at the end of a word to indicate the category to which the word belonged.

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M

Moche

[1.11: The Moche](#)

Glossary

- 1862 Homestead Act
Important to U.S. westward migration, the Homestead Act provided adult heads of families with 160 acres of surveyed government land for a minimal fee, and 5 years tenancy on that land.
- A.D.
a dating system meaning "in the year of our lord" (anno domini); equivalent to C.E. or Common/Current era; usually placed before the date, as in AD 1200 (see Chapter 2)
- Abecedarian
A poem in which the first letter of each line follows the alphabet down the page. There are no restrictions on meter or rhyme.
- Abraham Lincoln
Lincoln served as the 16th U.S. President. Lincoln presided over the Union during the Civil War, advocated for the end of slavery, and was assassinated by a confederate sympathizer John Wilkes Booth.
- Abraham Rencher
Rencher was appointed as Governor of New Mexico Territory in 1857 by President Buchanan. Rencher was a social progressive who passed legislation for mandatory education for all children, and paid teachers per student.
- absolute dating
estimate of an actual calendar date; also called chronometric dating (see Chapter 2)
- Abstract
An abstract is a brief summary of a research article that is used to help the reader quickly ascertain the paper's purpose.
- Abstract
Idea words such as "dream," "love," or "curiosity" that one cannot touch physically and experience directly through the five senses.
- Abu Hureyra
Neolithic tell site in Syria with pre-Neolithic and Neolithic components
- Academia
The environment or community concerned with the pursuit of research, education, and scholarship.
- Academic writing
Refers to a particular style of expression that researchers use to define the intellectual boundaries of their disciplines and their areas of expertise.
- Accommodation
When existing schemas change on the basis of new information.
- accommodation
A term developed by psychologist Jean Piaget to describe what occurs when new information or experiences cause you to modify your existing schemas
- accommodation
when we restructure or modify what we already know so that new information can fit in better
- acequias
An irrigation system used in Spain and its colonies for agriculture, composed of communal waterways to direct snowmelt and rivers over long distances. New Mexico's acequias date back to the pre-contact period.
- Achieved Status
Status gained from accomplishments
- achieved status
prestige that is gained through one's accomplishments; contrast with hereditary status/office
- achievement tests
used to measure what a child has already learned
- Acoma Pueblo
Located on top of a mesa, its height protected inhabitants from enemies below and gave the pueblo the nickname "Sky City."
- active coping
seeking information, working to solve problems; tends to produce more positive outcomes than passive coping
- active euthanasia
a type of voluntary euthanasia that is active, such as administering a lethal dose of medication to someone who wishes to die
- active life expectancy
the number of years a person can expect to live without disability
- activity theory
suggests that people are barred from meaningful experiences as they age and that physical and social activities are important
- Actor-observer difference
To make more personal attributions for the behavior of others than we do for ourselves and to make more situational attributions for our own behavior than for the behavior of others.
- Adams-Onís Treaty
Also known as the Transcontinental Treaty, in 1819 the United States and Spain completed a treaty that transferred Florida to the United States and settled their border dispute.
- Adaptation
How an organism copes with their environment
- adelantados
Literally "go-ahead men" in Spanish. These were nobles who explored and conquered the New World in return for funding for further operations and new titles of nobility.
- Adelina "Nina" Otero-Warren
Born near Los Lunas, New Mexico, Otero was an early New Mexican suffragette and educator. Educated in the East, Ms. Otero returned to New

Mexico and was active in politics, education and women's voting rights.

- adolescent egocentrism
a characteristic of adolescent thinking that leads young people (ages 10-13) to focus on themselves to the exclusion of others (according to David Elkind)
- adolescent growth spurt
rapid increase in the individual's height and weight during puberty resulting from simultaneous release of growth hormones, thyroid hormones, and androgens. Males experience their growth spurt about two years later, on average, than females
- adoption study
A behavior genetic research method that involves the comparison of adopted children to their adoptive and biological parents
- adrenarche
an increase in the production of androgens by the adrenal cortex that usually occurs during the eighth or ninth year of life and typically peaks at around 10 to 14 years of age and is eventually involved in the development of pubic hair, body odor, skin oiliness, and acne
- adverse childhood experiences
abuse, neglect, and violent experiences that contribute to childhood trauma
- Advisory Committee on Uranium
Advisory Committee on Uranium was known officially as the S-1 Uranium Committee. It was a subcommittee of the National Defense Research Committee that had succeeded the Briggs Advisory Committee in Uranium. The committee later evolved into the Manhattan Project.
- ageism
discrimination based on age
- Aggression
Behavior that is intended to harm another individual who does not wish

to be harmed.

- agonal breathing
gasping, labored breaths caused by an abnormal pattern of brainstem reflex
- aggressive-rejected
children who are ostracized because they are aggressive, loud, and confrontational
- agriculture
the reliance on domesticated plants for food
- Agustín de Iturbide
Mexican army general and politician Agustín de Iturbide took control of Mexico City on September 27, 1821. His act that established the first and only Mexican Empire effectively secured the new republic's independence from Spain.
- Ainsworth's strange situation
a sequence of staged episodes that illustrate the type of attachment between a child and (typically) their mother
- Alamogordo Bombing Range
Alamogordo Bombing Range was the former name of White Sands Missile Range (WSMR), located near Alamogordo, NM. The Trinity Site where the first atomic bomb was tested is part of WSMR.
- Albert B. Fall
Albert B. Fall served as Senator of New Mexico, associate judge of the New Mexico Supreme Court, member of the Territorial Council, Attorney General, captain of an infantry company during the Spanish-American War, and delegate for New Mexico's constitutional convention. In 1908, Fall(...)
- Albert Einstein
German-born theoretical physicist who developed the general theory of relativity. He decided to stay in the U.S. after Adolf Hitler rose to power in 1933. He endorsed a letter to President Roosevelt about nuclear

weapons which led to the creation of the Manhattan Project.

- Albert J. Beveridge
American Historian and U.S. Senator from Indiana. Beveridge was a supporter of Theodore Roosevelt's "Progressive" national agenda.
- Albert P. Morrow
Cavalry Major, who led the 9th U.S. Cavalry regiment, was made up of enlisted African Americans, known as the Buffalo Soldiers
- Albino Pérez
Following Santa Anna's centralization of the Mexican government through the Constitution of 1836, Pérez was appointed Governor of New Mexico. Despite his proven leadership ability, he failed to understand the realities of the northern frontier. He was brutally killed in August 1837 not long(...)
- Alexander A. McSweeney
A contemporary and comrade of John Tunstall in the Lincoln County War, Tunstall and McSweeney hired local outlaws, such as Billy the Kid, to protect their land from the corrupt Murphy-Dolan Faction.
- Alexander Sachs
Sachs was a Jewish American economist who delivered a letter to President Roosevelt from Einstein and Szilard. The letter informed the President of the growing German nuclear research and encouraged the President to build nuclear research capabilities. This letter spurred the start of the(...)
- All Indian Pueblo Council
All Indian Pueblo Council (AIPC) is comprised of nineteen Sovereign Pueblos. These Pueblos are from New Mexico, with one from Texas: Pueblos of Acoma, Cochiti, Isleta, Jemez, Laguna, Nambe, Ohkay Owingeh, Picuris, Pojoaque, San Felipe, San Ildefonso, Sandia, Santa Ana, Santa Clara, Santo(...)
- Allele

- A variant of a gene.
- allele
 - A specific version of a gene
- Alliteration
 - In a line of poetry, a series of sounds consonants make at the beginning of or in the middle of words.
- Alloparenting
 - Someone other than the mother provides help in caring for infants
- Allusion
 - An indirect reference made to something else.
- Alonso de Benavides
 - Benavides was a Portuguese Franciscan missionary who was active in New Mexico during the 16th and 17th centuries. He wrote several ethnographic works and coined the term "Navajo."
- Alta California
 - Alta California, or Upper California, was a province created by the Viceroyalty of New Spain in 1804 called Alta California. Franciscan Friar Junípero Sera and Gaspar de Portolá established its first mission-and-presidio complex at San Diego in 1769.
- Altamira
 - Upper Paleolithic cave art site in Spain known for its rendering of Pleistocene bison; discovered by Maria de Sautuloa (ca. 18,000-14,000 B.P.)
- altar screens
 - Panels of religious paintings displayed directly above and behind an altar.
- Altruism
 - Refers to any behavior that is designed to increase another person's welfare, and particularly those actions that do not seem to provide a direct reward to the person who performs them.
- Alvar Nuñez Cabeza de Vaca
 - A Spanish explorer of the New World, one of the four survivors of the Narváez Expedition shipwreck that claimed more than 300 lives. Traveled through the American Southwest for eight years.
- Alvaro Obregón
 - Obregon's presidency of Mexico (1920-1924) was the first stable government since the start of the Mexican Revolution. Under his presidency he brought about education, socio economic and workers rights reforms into the country.
- Alzheimer's disease
 - an irreversible, progressive brain disorder that slowly destroys memory and thinking skills, and eventually the ability to carry out the simplest tasks
- Amado Chaves
 - Chaves was a lifelong Republican and an active political figure in New Mexico during the late nineteenth and early twentieth centuries. In 1891, Governor L. Bradford Prince appointed him as the first Territorial Superintendent of Schools. During his tenure, he defended bilingual education in(...)
- American Expeditionary Force
 - During World War I, the American Expeditionary Force (AEF) was sent to Europe to aid the allies in 1917. Not until further preparations, however, did the AEF join French and British forces in the late spring of 1918. Ultimately, the support of the AEF helped the allied forces emerge victorious(...)
- AMH
 - stands for "anatomically modern human"; usually refers to skeletal remains that are essentially the same as modern humans (see Chapter 3)
- amniotic sac
 - A fluid-filled sac that protects and contains the fetus in the uterus
- Amygdala
 - A brain region responsible for regulating our perceptions of, and reactions to, aggression and fear.
- amygdala
 - part of the limbic system in the brain, which is involved with emotions and emotional responses and is particularly active during puberty
- anal stage
 - The stage of development when children are learning to control impulses; coincides with toddlerhood and toileting
- anal stage
 - the second stage in Freud's theory of psychosexual development, lasting from age 18 months to three years, during which time the anus is the primary erogenous zone and pleasure is derived from controlling bladder and bowel movements
- Analysis
 - Separating complex ideas, materials, texts and studying their different parts in order to discover how the parts relate to one another
- analytic thought
 - thought that results from analysis, such as a systematic ranking of pros and cons, risks and consequences, possibilities and facts. Analytic thought depends on logic and rationality
- Analytical report
 - Presents information with a comprehensive analysis to solve problems, demonstrate relationships, or make recommendations.
- Anapest
 - ˘ ˘ ˘ Two light stresses followed by a heavy stress.
- ancestor veneration
 - belief system in which the deceased have a continued existence and are able to influence the fortunes of the living; plastered skulls at Neolithic sites in the Near east may represent ancestor veneration

- Ancestral Puebloan

Formerly known as the Anasazi, the Ancestral Puebloan people inhabited the present-day Four Corners region between about 550 and 1200 CE. They constructed housing sites such as those at Chaco Canyon and Mesa Verde, and, as their name suggests, they were the forbears of the Pueblo peoples.

- Anchoring and adjustment

A cognitive bias for an individual to rely too heavily on an initial piece of information offered (known as the "anchor") when making decisions.

- Andalusia

The southernmost province of Spain. Its name is derived from Al-Andalus, a former Islamic stronghold on the Iberian Peninsula.

- Andrés Juárez

A Spanish friar who hailed from Cordoba who directed the construction of the Pecos mission until its completion in 1625.

- andropause

age-related hormone changes in men due to lower testosterone levels

- Anglo

Although the term "Anglo" broadly refers to anyone of British or Anglo-Saxon linguistic descent, in New Mexico history the term refers to people from the Eastern United States who first migrated to the area in the 1820s. Following the U.S.-Mexico War, more and more Anglo Americans arrived in(...)

- animal fat lamps

stone lamps filled with animal fat used in the interior of caves of the Upper Paleolithic (see Chapter 3)

- Animatism

Generalized spirit that is like luck, charm, spirit, or charisma that can be transferred between objects or people.

- Animism

The idea that the natural world is endowed with spirits, consciousness, and agency. Animals, plants, rocks, objects, weather, words, numbers can have animistic qualities.

- animism

the belief that inanimate objects are capable of actions and have lifelike qualities

- annealing

refers to heating metal in order to strengthen it. Often combined with forging.

- anorexia nervosa

an eating disorder characterized by self-starvation. Affected individuals voluntarily undereat and often overexercise, depriving their vital organs of nutrition. Anorexia can be fatal

- Anthropocene

Proposed epoch based on the idea that humans have had a geological impact on planetary systems of climate and environment.

- Anthropocentrism

Perspective that humans are naturally superior to other life forms

- Anthropomorphizing

Attributing human qualities to something

- anticlerical

Anticlerical policies were those that opposed the political, economic, and social power of the Catholic Church. Nineteenth-century liberal leaders in Mexico, such as Benito Juárez, sought to curb the political power that the Catholic Church traditionally held by breaking up Church landholding(...)

- antiquarianism

interest in artifacts as aesthetic objects only without concern for context or the information it can provide (see Chapter 1)

- Antiquities Act

Edgar Lee Hewett played a central role in the passage of this legislation

that gave the President of the United States the authority to designate certain places as National Monuments. The United States Congress passed the Antiquities Act in 1906.

- Antonio de Espejo

The leader of a Spanish expedition into the Rio Grande Valley and New Mexico in 1582.

- Antonio José Ortíz

A wealthy Spanish trader who established a system of patronage for the production of religious art. His donations led to the restoration of several famous churches in New Mexico.

- [Antonio José Otero](#)

A circuit court judge in the mid 1880s who became the only person of Spanish and Mexican heritage to sit on the New Mexico Supreme Bench.

- Antonio Joseph

Born in Taos in 1846, Joseph built a career as a territorial politician during his adult life. Between 1878 and 1880 he served as a judge in Taos County. He then moved to Ojo Caliente and was elected to the Territorial House of Representatives in 1882. For a full decade between 1885 and 1895(...)

- Antonio López de Santa Anna

Santa Anna was President of the first Mexican Republic. He authorized and enacted the Siete Leyes.

- Antonio Valverde

Valverde served as governor of New Mexico in 1716 and from 1718 to 1721. His politics largely involved stopping French encroachment into the Great Plains region.

- Apache Summit

Under the leadership of Wendell Chino, the Mescalero Apaches created a ski resort, initially named Apache Summit. Today it is the Inn of the Mountain Gods.

- Aphorism

A short phrase that contains a general truth.

- Applied Anthropology

Field of anthropology that uses concepts and techniques to help solve modern-day problems, e.g., forensic anthropology

- aptitude tests

used to measure a student's ability to learn or to determine if a person has potential in a particular program

- Arbitrariness

No connection between words and the things they represent.

- Arbitration

A type of third-party intervention that avoids negotiation as well as the necessity of any meetings between the parties in conflict.

- archaeological science

an approach to archaeology that applies scientific techniques to archaeological questions (see Chapter 1)

- Archaeology

Field of anthropology interested in the human past through the study of material remains

- archaeometallurgy

the study of metals in archaeology, how they were procured, modified, and used

- Archaic

Marked by the characteristics of an earlier period; antiquated.

- Archaic

term for the Mesolithic tradition in North America characteristic by broad-spectrum foraging and use of groundstone

- Argument

The effort to use rhetorical appeals to influence an audience and achieve a certain set of purposes and outcomes; argumentative writing must take a stance.

- Armijo

Armijo was a prominent Navajo headman at the time of the Long Walk. Upon undertaking the journey he reportedly stated, "Is it American justice that we must give up everything and receive nothing?" Along with headmen Manuelito and Barboncito, Armijo and several others signed the Treaty of 1868(...)

- Army of the West

The Army of the West was the U.S. military unit that occupied New Mexico during the U.S.-Mexico War. Brigadier General Stephen Watts Kearny headed the Army of the West's 1,700 men. Following the successful occupation of Santa Fe, Kearny divided his forces and continued with 200 men toward(...)

- Arranged Marriages

Marriages organized by people other than the bride and groom.

- arthritis

inflammation of one or more of the joints, characterized by joint pain and stiffness, which typically worsen with age

- Arthur Zimmermann

Zimmerman was State Secretary for Foreign Affairs (1916-1917) of the German Second Reich. During his lifetime Herr Zimmermann was closely associated with various groups intent on political revolution and rebellion in Ireland, India, and Russia.

- Article IX (Treaty of Guadalupe Hidalgo)

Article IX of the Treaty of Guadalupe Hidalgo states that Mexicans living in the ceded territories would become U.S. citizens, their liberty and property would be protected, and they would be free to exercise their Catholic religion.

- Article VIII (Treaty of Guadalupe Hidalgo)

In the Treaty of Guadalupe Hidalgo, Article VIII states that the property of Mexicans living in the ceded

territories would be protected under U.S. administration. This article also granted these people the period of one year to declare their intentions to become U.S. citizens or to remain(...)

- [Article X \(Treaty of Guadalupe Hidalgo\)](#)

Article X of the Treaty of Guadalupe Hidalgo directly and unequivocally guaranteed the provisions of land grants issued by the Spanish and Mexican governments. The U.S. Congress struck the article from the final version of the treaty.

- articulated

connected or put together; usually used in conjunction with skeletons; skeletons intentionally buried are often articulated while those exposed to the elements are not

- artifact

portable object made or modified by humans (see Chapter 2)

- artificial insemination

the deliberate introduction of sperm into a female's cervix in order to become pregnant by means other than sexual intercourse

- artificialism

the belief that environmental characteristics can be attributed to human actions or interventions

- Ascribed

Status inherited or assigned

- assemblage

group of related or spatially associated artifacts (see Chapter 2)

- Assertion

Statement that presents a point of view.

- Assimilation

A process in which our existing knowledge influences new conflicting information to better fit with our existing knowledge, thus reducing the likelihood of schema change.

- assimilation

A cognitive process that manages how we take in new information and incorporate that new information into our existing knowledge

- assimilation

when we modify or change new information to fit into our schemas (what we already know)

- Associated Press

Founded in New York in 1846, the Associated Press (AP) is a consortium of journalists dedicated to breaking important news stories at the national and international levels. Initially, the AP relied on couriers on horseback sponsored by five New York City newspapers to relay news of the(...)

- Association learning

Occurs when an object or event comes to be associated with a natural response, such as an automatic behavior or a positive or negative emotion.

- Athabaskan

A large family of indigenous languages in North America with two separate groups concentrated in the northwestern region of the continent and the U.S. Southwest. Since 2012 there has been a move toward referring to the Athabaskan linguistic group as Dene, the name for the language family used(...)

- athletic coach style of parenting

the rules for behavior are consistent and objective and presented in that way. The parent's role is to provide guidance while the child learns firsthand how to handle these situations

- Atlanta University

In 1865 the American Missionary Association founded Atlanta University with support from the Freedmen's Bureau to provide education to newly freed African Americans in Georgia. By the 1870s, the university issued its first bachelor's degrees. Most of its graduates became teachers and(...)

- atlatl

A prehistoric tool used for launching projectiles (usually spears) at higher velocities than they would otherwise travel when thrown by hand.

- atlatl

early dart-throwing device that enabled more forceful throws; sometimes called a spear thrower (see Chapters 1 and 3)

- attached specialists

craftsman associated with elite residences or structures

- attachment

the positive emotional bond that develops between a child and a particular individual

- Attachment style

Individual differences in how people relate to others in close relationships.

- attention deficit hyperactivity disorder

a neurological and behavioral disorder in which a person has difficulty staying on task, screening out distractions, and inhibiting behavioral outbursts

- Attitude

In a rhetorical situation, the orientation of the voice toward the message it wants to convey.

- Attributional style

The type of attributions that we tend to make for the events that occur to us.

- Attrition

Reduction in the number of research participants as some drop out over time

- Aubade

A poem about the morning or dawn.

- Audience

The individual or group whom the writer intends to address. The audience is the intended readers or listeners of a text

- Aurelio Espinosa

In 1880, Espinosa was born in the area of present-day southern Colorado considered to be part of the nuevomexicano homeland. He received a Ph.D. in Folklore at the University of Chicago, and he taught at Stanford University. During his career, he catalogued and traced the origins of(...)

- Aurora Lucero

An early advocate and educator defending the use of Spanish in the public school system in New Mexico during the 1860's.

- Author

The originator or creator of a work, especially of a literary composition.

- authoritarian parenting

the traditional model of parenting in which parents make the rules and children are expected to be obedient

- authoritarian parenting

parenting style that is high in demandingness and low in support

- Authoritarianism

Is a personality dimension that characterizes people who prefer things to be simple rather than complex and who tend to hold traditional and conventional values.

- authoritative parenting

appropriately strict, reasonable, and affectionate. They are willing to negotiate when appropriate

- authoritative parenting

parenting that is both demanding and supportive of the child

- autism

a developmental disorder affecting communication and behavior

- autism spectrum disorder

a developmental disorder that affects communication and behavior

- auto-sacrifice

offering of one's own blood

- Automatic cognition

Thinking that occurs out of our awareness, quickly, and without taking much effort.

- autonomy vs. shame and doubt

Erikson's second crisis of psychosocial development, during which toddlers strive to gain a sense of self-rule over their actions and their bodies

- Availability heuristic

The tendency to make judgments of the frequency of an event, or the likelihood that an event will occur, on the basis of the ease with which the event can be retrieved from memory.

- average

children who receive an average number of positive and negative nominations from their peers

- avocational archaeologists

non-professional person interested in archaeology (see Chapter 2)

- axons

Fibers that extend from the neurons and transmit electrochemical impulses from that neuron to the dendrites of other neurons

- Ayumu

A chimpanzee who outcompetes humans in a working memory test

- ayuntamientos

Ayuntamientos, or cabildos, were municipal governments during the Spanish colonial era in New Mexico.

- Aztlán

Aztlán is the legendary home of the Aztec people. During the Chicano movement of the 1960s and 1970s, the notion of Aztlán provided legitimacy to the notion that the U.S. Southwest was the historical homeland of the Indo-hispano, or Chicano, people.

- B.C.

before Christ, equivalent to B.C.E. or Before Common/Current Era; typically placed after the date as in 200 B.C. (see Chapter 2)

- B.C.E.

Before Common/Current Era; equivalent to B.C. (see Chapter 2)

- B.P.

before present (see Chapter 2)

- babbling

an infant's repetition of certain syllables, such as ba-ba-ba, that begins when babies are between 6 and 9 months old

- Ballad

A poem written in quatrains and A B C B rhyme. The first and third lines contain eight syllables, while the second and fourth lines contain six. According to Robin Skelton, the most common rhyme scheme is iambic tetrameter alternating with iambic trimeter.

- ballcourt

arena for Mesoamerican ritualized game associated with fertility, sacrifice and militarism; also found in the Hohokam region of the American Southwest

- Bandelier National Monument

Ancestral Puebloans occupied Bandelier from 1150 to 1550 CE. Their homes were carved out of volcanic tuff and their fields were placed strategically on mesa tops.

- Barboncito

Navajo chief, known as "Peace Chief" who successfully negotiated the return of the Navajo people to their lands with General Sherman

- barrios

neighborhoods of foreign enclaves found at the city of Teotihuacán in Mexico

- Bartolomé de Ojeda

Ojeda was the Zia informant for Diego de Vargas during his expedition into Santa Fe.

- Bascom Affair

In February 1861, Lieutenant George N. Bascom of the 7th U.S. Infantry

traveled to Apache Pass, Arizona, with orders to locate a boy taken captive by Apaches a few months earlier. Curious about the presence of the soldiers, Cochise approached Bascom's camp and was invited into his tent for(...)

- Base rates

The likelihood that events occur across a large population.

- Battle of Agua Prieta

On November 1, 1915, carrancista forces under General Plutarco Elías Calles routed Pancho Villa's army at Agua Prieta, adjacent to Douglas, Arizona, on the U.S.-Mexico Border. The battle devastated Villa's forces and continued to erode his former reputation for invincibility. Additionally,(...)

- Battle of Ciudad Juárez

Over a period of a few weeks in April and May of 1911, maderista forces under Pascual Orozco and Pancho Villa defeated the Mexican Federal army at Ciudad Juárez. The battle illustrated the strength of the Mexican Revolution and forced the aging dictator Porfirio Díaz into exile in Europe.

- BCE

A naming abbreviation used in the calendar era, it stands for Before Common Era, which corresponds to BC (Before Christ) in the Anno Domini designation.

- bed-sharing

When two or more people sleep in the same bed

- Bedonkohe

Translates to "In front of the end people" or "standing in front of the enemy." This Northeastern Chiricahua band lived in the Mogollon Mountains and Tularosa Mountains.

- behavioral decision-making theory

proposes that adolescents and adults both weigh the potential rewards and consequences of an action. However,

research has shown that adolescents seem to give more weight to rewards, particularly social rewards, than do adults

- behavioral genetics

One of the fastest-growing areas within the field of lifespan development and studies the effects of heredity on behavior

- behavioral genetics

The empirical science of how genes and environments combine to generate behavior

- Behavioral measures

Measures designed to directly assess what people do.

- behavioral perspective

The approach that suggests that the keys to understanding development are observable behavior and outside stimuli in the environment

- Behaviorism

An approach to studying behavior that stresses learning through a system of rewards and punishments.

- Benito Juárez

Juárez was a liberal Mexican reformer during the Mexican American War. At one time he denied Santa Ana refuge, later fled to New Orleans, only to return to Mexico in 1855 and became Mexican President two years later.

- Benjamin Harrison

The 23rd President of the U.S., Harrison championed the creation of the National Forests. As President, he supported anti-trust laws, civil rights, and increased the capacity of the U.S Navy.

- Berber Muslims

An ethnic group indigenous to North Africa.

- bereavement

the period of mourning following the death of someone

- Bernardo Abeyta

Founder of the New Mexico Penitente Brotherhood in the late 19th Century. He was also credited with the construction of the Santuario de Chimayó.

- Bernardo de Gálvez

A Spanish military leader who was the governor of Louisiana and later Viceroy of New Spain. He also initiated a number of peace establishments with the Apache to lessen Spanish-Apache violence.

- bias

inclination towards a particular perspective, a prejudice (see Chapter 1)

- Biased

Having preconceived ideas about someone or something

- biface

a stone tool that has been worked (pieces removed) from both faces; a projectile point is a kind of biface

- Bigotes

Bigotes is the leader of a delegation from Pecos Pueblo who visited Coronado after his conquest of Hawikuh. The Spaniards called him Bigotes because he had a mustache, which was unusual for a Native American. Bigotes later guided Coronado's men on a journey to the Great Plains.

- Billy the Kid

A western frontier outlaw, and participant in the Lincoln County Wars.

- binge-eating disorder

an eating disorder characterized by recurrent episodes of eating large quantities of food (often very quickly and to the point of discomfort); a feeling of a loss of control during the binge; experiencing shame, distress or guilt afterwards; and not regularly using unhealthy compensatory(...)

- bioecological model

The perspective suggesting that multiple levels of the environment interact with biological potential to influence development

- Biological Anthropology

Field of anthropology interested in human biology and how it intersects with human culture.

- bioturbation

disturbance of archaeological remains as a result of plant and animal activity (see Chapter 2)

- Black Legend

A type of historical writing that demonizes Spanish colonizers, depicting them as cruel and inhumane, sometimes butchering natives and feeding them to dogs.

- Black sheep effect

The strong devaluation of ingroup members who threaten the positive image and identity of the ingroup.

- Blaming the victim

Interpreting the negative outcomes that occur to others internally so that it seems that they deserved them.

- Blank verse

A form that lends itself well to a meditative voice, blank verse is written in iambic pentameter lines that do not rhyme.

- Blombos Cave

cave in South Africa with evidence for early use of red ochre about 100,000 years ago; Sites like Blombos suggest the Cognitive Revolution occurred much earlier than 40,000 years ago, where there is a great deal of evidence for modernity appears in the archaeological record in Europe (see Chapter 3)

- bloom

a spongy mass of solid metallic iron created by heating iron in a reducing atmosphere with charcoal: $\text{FeO} + \text{CO} = \text{Fe} + \text{CO}_2$

- blue zones

regions of the world where Dan Buettner claims people live much longer than average

- Boarding Schools

Established in the U.S. during the late 19th and early 20th centuries, these schools were intended to culturally assimilate native american youths and children into European American standards

- Bodily Self-Recognition

Ability to recognize one's own body, usually tested using the mark test.

- body dissatisfaction

negative subjective evaluation of the weight and shape of one's own body, which may predict the onset, severity, and treatment outcomes of eating disorders

- body image

a person's idea of how his or her body looks

- Bonampak

Classic Maya site in Chiapas known for its murals of war captives and elite bloodletting

- bone chemistry

using isotopes preserved in bone collagen to gain an understanding of human diets

- Booster Literature

During New Mexico's territorial period, land speculators and other people hoping to create new, prosperous towns published broadsides, pamphlets, and newspaper articles to attract outsiders to relocate to their new settlements. At times, family members sent letters to their relatives in other(...)

- Bosque Redondo

A former indian reservation, near Fort Sumner, New Mexico, in which several Native American tribes, Apache and Navajo, were forced to live in by the U.S. Government. The Navajo journey to Bosque Redondo is referred to as the "Long Walk."

- Boucher de Perthes

Boucher de Perthes realized, based on excavations at Sommes, France, that archaeological remains were older than previously thought, beyond early Biblical estimates (see Chapter 1)

- Bourbon Reforms

Economic and political legislation introduced by Spanish Kings under the House of Bourbon with the intention of introducing the latest manufacturing technology and European Enlightenment thought to modernize a declining Spain.

- bow and arrow

evidence for the bow and arrow becomes prevalent in the Mesolithic; Bow and arrows come into use in the Americas around AD 800

- brain dead

when all brain function ceases to occur

- Brainstorm

A spontaneous group discussion to produce ideas and ways of solving problems.

- Brideservice

When the groom must serve the wife's family.

- Bridewealth

Gift or money from the groom's family or descent group to the bride's family.

- broadside

A large sheet of paper printed only on one side. Generally used for posters, announcements, advertisementsit was a common form of printed material between the sixteenth and nineteenth centuries.

- Buffalo Soldiers

African American army soldiers who after the Civil War, were posted to the American West to fight the indian wars and protect settlers. Indians referred to them as Buffalo because of their dark skin, curly hair and courage on the battlefield.

- bulimia nervosa

an eating disorder characterized by binge eating and subsequent purging, usually by induced vomiting and/or use of laxatives

- bultos

Works of art, statues, figures, etc.

- Butterfield Overland Mail Company

Longest stagecoach line in world history at approximately 2,812 miles. Major factor in settlement and development of Arkansas and American west.

- C.E.

Current/Common Era; equivalent to AD (see Chapter 2)

- Cabildo

A Spanish form of municipal or town council government during the colonial and postcolonial periods.

- Cahokia

large urban Mississippian center located in Illinois, not far from present-day St. Louis Missouri

- Calendar Round

combination of the Haab and Tzolk'in which repeated every 52 years

- Call Systems

Vocal communication in animals.

- Camino Real de Tierra Adentro

"The Royal Road," a trade route set by the Spanish that connected Mexico City to outposts and settlements further northward in Arizona, Texas, and New Mexico.

- canal irrigation

human-made waterway system to support agricultural fields

- Cannon Air Force Base

Originally established in 1942 as Army Air Base, Clovis, the facility was initially used to train bomber units for service in the South Pacific during World War II. Although Cannon Air Force Base was slated for closure in 2005, Senator Pete

Dominici and Governor Bill Richardson pressured(...)	bottom were slaves of African descent.	The traits of warm and cold.
<ul style="list-style-type: none"> • Canyon de Chelly <p>Canyon de Chelly was the home of the Navajo tribe until the New Mexico governor Lt. Antonio Narbona invaded by force in 1805. In 1863 Kit Carson sent some of his troops to put an end to the canyon and defeat the Navajo tribe, by doing so they led them to surrender and move to Bosque Redondo, NM.</p>	<ul style="list-style-type: none"> • casting metal <p>means melting the metal and shaping it in a mold</p>	<ul style="list-style-type: none"> • Centralists <p>In the years following Mexico's Independence, Centralists were those who favored a strong central government in Mexico City with little power for regional or local jurisdictions. They generally supported a return to the colonial social, religious, and political status quo. Federalists, on the(...)</p>
<ul style="list-style-type: none"> • Caption <p>Text that describes an image. It appears outside the image, usually below it.</p>	<ul style="list-style-type: none"> • Catalectic <p>An incomplete line of metrical poetry in which the last syllable or foot is dropped.</p>	<ul style="list-style-type: none"> • centration <p>the act of focusing all attention on one characteristic or dimension of a situation, while disregarding all others</p>
<ul style="list-style-type: none"> • caravels <p>A small, highly maneuverable ship designed and used by the Portuguese in their exploration of West Africa and the Atlantic during the 15th Century.</p>	<ul style="list-style-type: none"> • Çatalhöyük <p>early Neolithic village site on the Konya Plain of south-central Turkey; contains the earliest known interior house in the world, paintings and Ian Hodder heads up excavations at the site</p>	<ul style="list-style-type: none"> • cephalocaudal <p>Refers to growth and development that occurs from the head down</p>
<ul style="list-style-type: none"> • Carl Gorman <p>Carl Gorman was a Navajo Code Talker during World War II to keep the Japanese from cracking their code for the Marines while at Guadalcanal. Gorman passed away in 1998 at the age of 90 and is remembered for "fighting for the right to speak."</p>	<ul style="list-style-type: none"> • Catharsis <p>The idea that engaging in less harmful aggressive actions will reduce the tendency to aggress later in a more harmful way.</p>	<ul style="list-style-type: none"> • cesarean section <p>Is the use of surgery to deliver babies through the mother's abdomen and uterus</p>
<ul style="list-style-type: none"> • Case study <p>Exploring a single case or situation in great detail. Information may be gathered with the use of observation, interviews, testing, or other methods to uncover as much as possible about a person or situation</p>	<ul style="list-style-type: none"> • Catlectic <p>An incomplete line of metrical poetry in which the last syllable or foot is dropped.</p>	<ul style="list-style-type: none"> • Chaco Canyon <p>a World Heritage Ancestral Pueblo site located in the San Juan Basin of New Mexico; is known for its large Great Houses like Pueblo Bonito</p>
<ul style="list-style-type: none"> • Casmiro Barela <p>Born in New Mexico, Barela became a territorial legislator and helped craft the State of Colorado Constitution.</p>	<ul style="list-style-type: none"> • Causal attribution <p>The process of trying to determine the causes of people's behavior</p>	<ul style="list-style-type: none"> • Chaco cylinder vessels <p>cylinder-shaped vessels found at Chacoan great houses which contain evidence of liquid chocolate, a Mesoamerican product</p>
<ul style="list-style-type: none"> • caste system <p>A system of racial categorization used in the Spanish colonies in which those who claimed pure Spanish blood (limpieza de sangre) stood at the top, followed by people of mixed-race heritage that served as peasant laborers or house servants. At the</p>	<ul style="list-style-type: none"> • CE <p>A naming abbreviation used in the calendar era, it stands for Common Era, which corresponds to AD in the Anno Domini designation.</p>	<ul style="list-style-type: none"> • Chamuscado-Rodríguez Expedition <p>An expedition in 1581 led by Francisco Sanchez, called "El Chamuscado," and Friar Augustin Rodriguez that visited the Pueblo Indians of New Mexico for the first time since Coronado's expedition. This small encounter would revive Spanish interest in the region.</p>
	<ul style="list-style-type: none"> • centenarians <p>people aged 100 or older</p>	<ul style="list-style-type: none"> • Characters <p>The people who inhabit the story and move it forward.</p>
	<ul style="list-style-type: none"> • Central Acropolis at Tik'al <p>area at Tikal, Guatemala where lords lived and conducted their activities; located south of the great plaza, spreads over four acres and contains 42 multistory buildings</p>	<ul style="list-style-type: none"> • Charles Beaubien <p>Beaubien was a Canadian fur-trapper who had migrated to New Mexico in 1823. Four years later, he married</p>
	<ul style="list-style-type: none"> • Central Kalahari Game Reserve <p>Refuge created for wildlife that resulted in the eviction of Kalahari foragers</p>	
	<ul style="list-style-type: none"> • Central traits 	

Taos native María Paula Lobato and opened a mercantile business. In an effort to evade taxes imposed by the Mexican national government in 1840, he allied with Guadalupe Miranda (secretary(...))

- Charles Drew

First Lieutenant Charles Drew was appointed as U.S. Indian Agent to the Chiricahua Apaches at Fort McRae in 1869. Historians have characterized him as one of the best agents assigned to the tribe. The Chiricahua people, including Victorio and Loco, trusted Drew due to his efforts to attend to(...)

- Charles I. McNary

McNary was the Oregon Senate Minority Leader who claimed that a full quorum was not present in an effort to protest Senator Dennis Chávez's recitation of the Oath of Office.

- Charles Siringo

Siringo was a Pinkerton Detective Agent most noted for providing information that led to the killing of Butch Cassidy and Sundance Kid. In 1916, Siringo was a New Mexico Ranger and a writer.

- chattel slavery

Chattel slavery is the type of slavery that was common in the American South prior to the Civil War. Unlike other forms of bondage or captivity, chattel slaves were considered as no more than property to be bought and sold at the whims of their owners.

- Cherry Picking

Selecting the evidence that confirms your hypothesis while ignoring results that do not.

- Chester Nez

Last original Navajo Code Talker to serve in World War II. In 2001, Mr. Nez received the Congressional Medal of Honor from President George H. Bush.

- Chester Nimitz

High ranking and respected Admiral during WWII in the Pacific Theater. Along with MacArthur, Nimitz helped seal the U.S. victories in the Pacific.

- Ch'i-Yen-Shih

In this Chinese pattern, each line contains seven monosyllabic words with a caesura after each fourth word. The rhyme scheme is comprised of the pattern A B C B.

- chiaroscuro

use of contrast between dark and light to create an artistic effect

- Chichimeca Wars

A military conflict between the Spanish and Chichimeca natives that lasted from 1550 to 1590. It was the longest and costliest war in the history of New Spain.

- Chichimecas

Spanish for "lineage of the dog," the term referred to nomadic natives of Mexico and the American Southwest, used in a derogatory manner by the Spaniards since they often attacked trade convoys.

- Chihenne

Apache tribe, translates to "Red Painted People."

- Child Betrothal

A system in which children are promised in marriage.

- Chimayó Rebellion

Alternatively called the Chimayó Rebellion, the Revolt of 1837, or the guerra de los chimayos, the 1837 conflict was an outgrowth of the Centralist-Federalist political divides that precipitated Texans to declare independence from Mexico. In New Mexico, grievances were much more localized(...)

- chinampa

A Mesoamerican agricultural method using small, rectangular areas of fertile land to grow crops in the shallow lake beds of the Valley of Mexico.

- chlamydia

a sexually transmitted infection caused by the bacterium chlamydia trachomatis

- Christopher "Kit" Carson

A legend during his own lifetime, Kit Carson was known as a heroic western guide, trapper, and soldier. Although he was deeply conflicted about the order to force the Navajo people on the Long Walk to the Bosque Redondo in 1863, Carson carried out a brutal scorched-earth campaign that forced(...)

- chromosome

A DNA molecule with part or all of the genetic material of an organism

- chronic inflammation

when the body's immune system is working to fight off infections and toxins for prolonged periods of time, having a negative impact on tissues and organs

- Chronological order

Presenting an idea or story in the order in which the events happened, from first to last event.

- chronosystem

The environmental events and transitions that occur throughout a child's life, including any socio-historical events

- chunky stone

a game played by throwing a spear at a rolling stone in an attempt to land the spear where the stone falls over; evidence for the game of chunky exists at the Mississippian site of Cahokia

- Cicuye

Cicuye Pueblo (also called Pecos Pueblo by the Spanish) is located about 25 miles east of Santa Fe, New Mexico. Francisco Vasquez de Coronado brought his army to Cicuye after in the late 1500's and early 1600's the Spanish started building missions here.

- Cinquain
A five-line stanza with the syllable count 2 4 6 8 2.
- circumcision
The surgical removal of the foreskin of the penis
- cisgender
an umbrella term used to describe people whose sense of personal identity and gender corresponds with their birth sex
- Citation
The information that documents the source from which an author took content. Citations that are in a print book's footnotes and end notes are stored in Remarks.
- Ciudad Chihuahua
A present-day Mexican municipality that was a prosperous mining town along the Camino Real during the 1700s. Its development attracted settlers and trade that would reinvigorate the New Mexico colony.
- Claims
The details, facts, and explanations that help clarify the main point of an essay
- clans
are lineages commonly tied to a distant ancestor, frequently an animal; examples include Scottish clans and Pueblo clans
- Classic Maya
Mesoamerican culture known for its writing system, calendars, competing polities, a masonry temples (AD 200-900)
- classical conditioning
A type of learning in which an organism responds in a particular way to a neutral stimulus that normally does not bring about that type of response
- classification
the arrangement of information into categories or classes
- Cleofas Jaramillo
A late 19th and early 20th century New Mexican historian. She was actively involved in preservation of the traditions and cultures of New Mexico.
- Clever Hans Effect
Picking up on subtle cues to elicit the appropriate response.
- Cliché
A phrase that is so overused that its use results in unoriginal and unimaginative expression.
- [Cliff Fragua](#)
Jemez Pueblo sculptor commissioned by the state of New Mexico to create a statue of Po'pay. The statue is the second work representing New Mexico and 100th of the collection for the Statuary Hall of the U.S. Capitol.
- climacteric
term used to describe the menopausal period and hormonal changes associated with the gradual change in ovarian production
- clinical death
when the individual is brain dead
- Clinton Greaves
For his actions as a Buffalo Soldier in the United States Army, Clinton Greaves received the Medal of Honor after the American Indian Wars.
- Clinton P. Anderson
Clinton Presba Anderson was a well-known Democratic politician in New Mexico. He served as U.S. Representative from 1941 to 1945, as the Secretary of Agriculture from 1945 to 1948, and as a U.S. Senator of New Mexico from 1949 to 1973.
- clique
used to describe a group of persons who interact with each other more regularly and intensely than others in the same setting. Cliques are distinguished from "crowds" in that their members interact with one another
- Close relationships
Relationships between people that are characterized by loving, caring, commitment, and intimacy.
- Closing paragraph
The final paragraph in an essay, which should not introduce new claims, but should instead wrap up the paper, explain how the paper proves the thesis, or explain the paper opens up additional thinking about your subject.
- Clyde Tingley
Tingley served as the 11th Governor of New Mexico and was a proponent of Roosevelt's New Deal policies. As Mayor of Albuquerque, he is well know from bringing Siberian Elms to the state, frequently called "Tingley Elms."
- co-sleeping
A custom in which parents and their children (usually infants) sleep together in the same room
- Coahuila y Texas
While under Mexican rule between 1821 and 1836, Texas was not recognized as an independent state or province within the republic. Instead, it was part of a dual-jurisdiction connected to the province of Coahuila. The capital city was at Saltillo, something that Texan leaders, both Anglo and(...)
- Cochise
Chokonon (the central Chiricahua band) headman Cochise narrowly escaped death at the hands of Lieutenant Bascom in early 1861. With his father-in-law Mangas Coloradas, he waged war against the U.S. military throughout the early 1860s. In the early 1870s he negotiated the settlement of his(...)
- cochlear implant
electronic device that consists of a microphone, a speech processor, and an electrode array to directly stimulate

the auditory nerve to transmit information to the brain

- codices

Maya bark paper books

- Cognitive accessibility

The extent to which a schema is activated in memory and thus likely to be used in information processing.

- Cognitive dissonance

The discomfort that occurs when we behave in ways that we see as inappropriate, such as when we fail to live up to our own expectations.

- Cognitive heuristics

Information-processing rules of thumb that enable us to think in ways that are quick and easy but that may sometimes lead to error.

- cognitive neuroscience

The scientific field that is concerned with the study of the biological processes and aspects that underlie cognition, with a specific focus on the neural connections in the brain which are involved in mental processes

- cognitive perspective

an approach that focuses on the process that allows people to know, understand, and think about the world

- Cognitive Revolution

the shift to modern human behavior including art, ritual, complex tools, music, and symbolic thought. The Cognitive Revolution has roots going back 100,000 years ago as evidenced by the use of red ochre in South Africa (Chapter 3)

- cohabitation

an arrangement where two people who have not married live together

- Cohort

A group of people who are born at roughly the same period in a particular society. Cohorts share histories and contexts for living

- Collective action

The attempts on the part of one group to change the social status hierarchy by improving the status of their own group relative to others.

- Collective Efflorescence

Intense feeling of togetherness and ecstatic excitement that accompanies ritual.

- Collectivism

The idea that people should be more fundamentally connected with others and thus more oriented toward interdependence.

- colostrum

The first secretion from the mammary glands after giving birth, rich in antibodies

- Columbian Exchange

The intercontinental exchange of goods, disease, language, and technology between the Americas, Africa, and Eurasia after Christopher Columbus's initial voyage to the New World in 1492.

- Coming of Age Ceremonies

Rituals that mark the transition from childhood to adulthood.

- Commitment

The feelings and actions that keep partners working together to maintain the relationship.

- Common-causal variables

Variables that are not part of the research hypothesis but that cause both the predictor and the outcome variable and thus produce the observed correlation between them.

- Common ingroup identity

The attempt to reduce prejudice by creating a superordinate categorization.

- Communal relationships

Close relationships in which partners suspend their need for equity and exchange, giving support to the partner in order to meet his or her needs, and without consideration of the costs to themselves.

- Communicators

Senders and receivers of messages in a communicative interaction. Because we are continuously sending and receiving verbal and/or nonverbal messages, we are simultaneously both a sender and receiver in interactions. For example, in a face-to-face interaction, the other communicator may be(...)

- compadrazgo

Compadrazgo was (and is) a system of spiritual kinship that is very similar to godparentage. In New Mexico, the practice dated back to the arrival of Spanish conquistadores and it continues even today. During the nineteenth century, compadrazgo involved more than choosing godparents for a(...)

- Companionate love

Love that is based on friendship, mutual attraction, common interests, mutual respect, and concern for each other's welfare.

- Comparison

Discusses elements that are similar

- compartmentalize

The organization and division of Pueblo culture to preserve individual identity at the face of Spanish and Christian encroachment.

- complicated grief

when feelings of grief are persistent and incapacitating

- Comprehension

Discusses elements that are similar

- Comprehensive Orders for the New Discoveries

This body of legislation gave Catholic missionaries the primary role in the colonization process. The regulations expressly prohibited the use of the word "conquest," in favor of the more diplomatic term "pacification." Royal officials forbade unsanctioned colonization expeditions in hopes of(...)

- **Concept**
In advertising, the theme of a brand, which is relayed through the message, the product, the color choices, the layout design, and the graphic elements
- **Conceptual variables**
The characteristics that we are trying to measure.
- **Concision**
The art of using the fewest words possible to convey an idea
- **Conclusion**
The final paragraph in an essay, which should not introduce new claims, but should instead wrap up the paper, explain how the paper proves the thesis, or explain the paper opens up additional thinking about your subject.
- **concrete operational stage**
The stage in which children can think logically about real (concrete) events, have a firm grasp on the use of numbers and start to employ memory strategies, lasts from about 7 to 11 years old
- **concrete operational stage of cognitive development**
Piaget's stage of development during middle childhood that emphasizes the use of logical thought, especially as applied to concrete, or physical objects
- **Concrete**
Words that refer to something with physical properties that can be experienced with the five senses such as "chair," "water," or "cat."
- **Conditioned Response**
When a response becomes associated with a stimulus.
- **conductive hearing loss**
failure in the vibration of the eardrum and/or movement of the ossicles
- **Confirmation bias**
The tendency for people to favor information that confirms their expectations, regardless of whether the information is true.
- **Conflict**
The primary problem or obstacle that unfolds in the plot that the protagonist must solve or overcome by the end of the narrative
- **Conformity**
The change in beliefs, opinions, and behaviors as a result of our perceptions about what other people believe or do.
- **congruence**
An instance or point of agreement or correspondence between the ideal self and the real self in Rogers' humanistic personality theory
- **conservation**
The idea that even if you change the appearance of something, it is still equal in size as long as nothing has been removed or added, usually develops during the concrete operational stage
- **Conservation Refugees**
People evicted from ancestral lands in the name of animal conservation
- **Consonance**
Edward Hirsch defines this as "the audible repetition of consonant sounds in words encountered near each other whose vowel sounds are different"—flower-fades-fruit: fow-fay-frew.
- **conspicuous consumption**
extravagant public displays of wealth and power
- **Constitution of 1812**
This Spanish constitution established the principles of universal male suffrage, the constitutional monarchy, freedom of the press, and supported many liberal policies for the country.
- **Constitution of 1824**
Established the rights and responsibilities of the United Mexican States.
- **Constitution of 1836**
Enacted under President Santa Anna in 1833, the Siete Leyes (seven laws) were constitutional changes provided for a stronger federal government oversight and administration for the first Mexican Republic.
- **Constitutional Amendments**
Changes to the U.S. Constitution made through Congress. Important constitutional amendments can make monumental changes in the laws of the U.S. such as the 13th Amendment which abolished slavery.
- **constructivist perspective**
based on the work of Piaget, a quantitative, stage-theory approach. This view hypothesizes that adolescents' cognitive improvement is relatively sudden and drastic, as adolescents learn by acting on their environment and they actively construct knowledge
- **consul**
An official representative of one nation to another. Many U.S. cities contain consulates from other nations. For example, there is a Mexican Consulate in Albuquerque. During the dispute over repatriation in the late 1840s, Mexican officials appointed Manuel Armendáriz as consul to New Mexico.
- **Contact hypothesis**
The idea that intergroup contact will reduce prejudice,
- **Content**
Refers to all the written substance in a document.
- **content analysis**
Involves looking at media such as old texts, pictures, commercials, lyrics or other materials to explore patterns or themes in culture
- **Context**
The circumstances that form the setting for an event, statement, or idea, and in terms of which it can be fully understood and assessed.
- **context**

location of an artifact and the surrounding matrix (see Chapter 1)

- Context-Specific

The idea that human language is reliant on cultural context for interpretation.

- contextual perspective

A theory that considers the relationship between individuals and their physical, cognitive, and social worlds

- continuity theory

suggests that as people age, they continue to view the self in much of the same way as they did when they were younger

- continuous development

the idea that development is a progressive and cumulative process, gradually improving on existing skills

- Contrast

Discusses elements that are different.

- Contributions dilemma

When the short-term costs of a behavior lead individuals to avoid performing it, and this may prevent the long-term benefits that would have occurred if the behaviors had been performed.

- control beliefs

the belief that an individual can influence life outcomes, encompassing estimations of relevant external constraints and our own capabilities

- control group

A comparison group that is equivalent to the experimental group, but is not given the independent variable

- Controlled cognition

When we deliberately size up and think about something—for instance another person.

- Controlling idea

The main idea upon which a writer builds their thesis statement.

- controversial

children who are either strongly liked or strongly disliked by quite a few peers

- conventional moral development

stages 3 and 4 of moral development where morality is internalized, and the concern is on society norms

- Conversión de San Pedro

In the 1620s, Franciscan leaders dubbed the New Mexico mission field the "Conversión de San Pedro," harkening to the Conversion of St. Peter that was celebrated in Colonial Spanish territories on January 25.

- Cooperation

When we trust the people or groups with whom we are interacting and are willing to communicate and share with others.

- correlation

The relationship between two or more variables; when two variables are correlated, one variable changes as the other does

- correlation coefficient

Number from -1 to +1, indicating the strength and direction of the relationship between variables, and usually represented by r

- Correlational research

To search for and test hypotheses about the relationships between two or more variables.

- correlational research

Research design with the goal of identifying patterns of relationships, but not cause and effect

- cortés

Word meaning 'polite' in English.

- cortex

The outer layers of the brain in humans and other mammals. Most thinking, feeling, and sensing involves the cortex

- Counterargument

An argument that is opposed to another argument.

- Counterfactual thinking

The tendency to think about events according to what might have been.

- County Home Demonstration Agents

Beginning in the 1910s, County Home Demonstration Agents traveled throughout rural New Mexico to teach rural nuevomexicanas "modern" methods of preserving food (canning rather than drying), practicing hygiene, and rearing children. New Deal Agencies like the WPA provided new funds for County(...)

- Couplet

A stanza comprised of two lines.

- Cover story

A false statement of what the research was really about.

- Craft Specialization

When people produce goods in exchange for food.

- craft specialization

when a portion of society is devoted full-time to making goods

- Craig Vincent

Craig Vincent was a civil rights activist in Taos, best known for his marriage to the beloved New Mexico folk singer Jenny Vincent. The couple supported Chicano rights and the efforts of Taos Pueblo to secure their claim to Blue Lake. Jenny sang for striking miners in southern New Mexico, and(...)

- criados

Captive children from the "rescate" practice.

- criollo

A person of Spanish heritage born and raised in the colonies.

- CRISPR

a gene-editing tool

- Cristóbal de Oñate

Father of Juan de Oñate and a high ranking official in the New Spanish colonies, largely credited for the

<p>founding of the city of Guadalajara in 1531.</p> <ul style="list-style-type: none"> • Critical Thinking The act of being openly engaged with a text while considering its multiple possibilities. • cross-sectional research Used to examine behavior in participants of different ages who are tested at the same point in time; may confound age and cohort differences • crowds large groups of adolescents defined by their shared image and reputation • crucible is a ceramic or metal container in which metals are melted • crystallized intelligence knowledge, skills, and experience acquired over a lifetime, accessible via memory and expressible in word/number form • Cuauhtémoc An Aztec Emperor who ascended the throne in 1520 at the height of Spanish conquest. He was captured and tortured several times and later made a puppet figure under Spanish rule. • Cuerno Verde "Green Horn" in English and Tabivo Naritgant in his native language, he was a leader of the Comanche during the late 18th Century who fought against and was eventually killed by the Spanish. • Culiacán The northwestern Mexican city where Cabeza de Vaca ended his expedition and Coronado began his search of the Cities of Gold. • Cultural Anthropology Field of anthropology interested in human culture • Cultural Relativism Suspending judgment of a culture in order to understand why people do 	<p>what they do</p> <ul style="list-style-type: none"> • cultural resource management (CRM) professional field that is aimed at conserving and managing archaeological and historical sites (see Chapter 2) • Cultural Transmission Behavior that is learned. Humans learn the language of their environment. • Cultural Universals Features that are common to all human societies • Culture Traditions, beliefs, and values transmitted through learning • Culture A group of people, normally living within a given geographical region, who share a common set of social norms, including religious and family values and moral beliefs. • Culture Blueprint or guideline shared by a group of people that specifies how to live; passed down from generation to generation; learned from parents and others • Culture Shock Anxiety as a result of being immersed in a foreign culture • curation storage and conservation of archaeological remains and field notes (see Chapter 1) • cutting date refers to the year a beam was cut • Dactyl ˈ ˌ ˌ A heavy stress followed by two light stresses. • Daina This Latvian form consists of a quatrain of trochaic octometer lines with feminine endings. Although there are no end rhymes, alliteration and internal rhymes are common. 	<ul style="list-style-type: none"> • Daniel Boone An American explorer who carved out the first trails that allowed settlement of lands west of the Appalachians. • Daniel Webster Best known as a constitutional scholar and attorney, Webster was a prominent figure supporting preservation of the Union during the years preceding the Civil War. • Data Pieces of information. • Database A collection of (usually) organized information in a regular structure, usually but not necessarily in a machine-readable format accessible by a computer. • David Cargo Cargo served as New Mexico Governor between 1967 and 1971. He was away from the state during the Alianza courthouse raid in June of 1967, so Lieutenant Governor E. Lee Francis coordinated efforts to force Tijerina's surrender. As governor, Cargo's most prominent legacy was his creation of the(...) • debt peonage A person's pledge of their labor or services as payment for a debt. It can be transferred to future generations if the debt is unpaid. • Deductive Reasoning Beginning an argument with a general principle, which is referred to as a major premise, then a related premise is applied to the major premise and a conclusion is formed. • deductive reasoning reasoning from a general statement, premise, or principle, through logical steps to figure out (deduce) specifics. Also called top-down processing • Deena J. González An accomplished historian and New Mexico native who has done extensive work exposing the historical
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contributions of women and people of color to the state of New Mexico.

- Deep History

an approach to studying the past that rejects the idea that writing systems are a useful way to divide up time. Deep History considers all of the past to be just history. It also examines past behaviors in order to shed light on the current human condition (see Chapter 1)

- defense mechanisms

Psychological strategies that are unconsciously used to protect a person from anxiety arising from unacceptable thoughts or feelings

- Deities

Supreme supernatural beings.

- delayed gratification

the ability to hold out for a larger reward by forgoing a smaller immediate reward

- Delgadito

Delgadito was the headman of the Canoncito band among the Navajo people. In 1863, his band was the first to surrender to Kit Carson at Fort Wingate and then make the Long Walk to Bosque Redondo.

- delirium

an abrupt change in the brain that causes mental confusion and emotional disruption. It makes it difficult to think, remember, sleep, pay attention, and more

- demandingness

the degree to which a parent controls their child's behavior

- dementia

a cause of neurocognitive disorder, characterized by progressive and gradual cognitive deficits due to severe cerebral atrophy

- Democrats, Northern

During the presidential election of 1846, the Democratic Party was split into three factions. The Northern Democrats supported the Lincoln

Administration. Northern Democrats resisted slavery, while Southern Democrats supported slavery.

- Democrats, Southern

In the latter half of the nineteenth century, Southern Democrats in Congress tended to support policies that promised to maintain segregation and "slavery under another name" in their home jurisdictions.

- dendrites

Fibers that extend from neurons and receive electrochemical impulses transmitted from other neurons via their axons

- dendrochronology

The science of dating tree rings to determine historical weather and geological patterns in the area surrounding the tree's habitat at a given time.

- dendrochronology

tree-ring dating; dating of archaeological specimens based on the annual growth of tree rings (see Chapter 2)

- Dennis Chávez

Democrat Dennis Chávez served as one of New Mexico's Senators between 1934 and his death in 1964. He worked tirelessly to bring federal funds to the state, particularly in the form of the Hispanic New Deal during the Depression era.

- dental caries

cavities

- deoxyribonucleic acid (DNA)

A helix-shaped molecule made up of nucleotide base pairs

- Dependent variable

The variable that is measured after the manipulations have occurred.

- dependent variable

The outcome or variable that is supposedly affected by the independent variable

- descriptive studies

Research focused on describing an occurrence

- Desensitization

The tendency to become used to, and thus less influenced by, a stimulus.

- deviant peer contagion

process by which peers reinforce problem behavior by laughing or showing other signs of approval that then increase the likelihood of future problem behavior

- dialectical thought

the ability to reason from multiple perspectives and synthesize various viewpoints in order to come up with new ideas

- Diction

Word choice.

- Diego de Archuleta

Diego de Archuleta was a politician and military officer during the Mexican period in New Mexico history. During the U.S.-Mexico War, he served as Governor Armijo's second-in-command and he favored armed resistance to the American occupation. His opposition to the U.S. presence in New Mexico(...)

- Diego de Vargas

Vargas served as the governor of New Mexico from 1688 to 1697. He successfully reconquered the territory after the 1680 Pueblo Revolt.

- Diego Dionisio de Peñalosa

Peñalosa served as the 19th Spanish governor of New Mexico. His comparatively positive treatment of the natives earned him hostility from the evangelizing missionaries. After being declared a heretic and later forced into exile, he resisted Spanish colonizing efforts in the New World by siding(...)

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the evangelizing missionaries. After being declared a heretic and later forced into exile, he resisted Spanish colonizing efforts in the New World by siding(...)

- diffusion

refers to the process of cultural traits spreading from one region to another

- Dimeter

A two-foot line

- Diné

The Navajo name for their nation and people, Diné literally means "the people."

- Dinétah

The traditional homeland of the Navajo tribe which includes northwestern New Mexico, southwestern Colorado, southeastern Utah, and northeastern Arizona.

- direct historical approach

making inferences about the past based on a connection between modern and past people

- discontinuous development

idea that development takes place in unique stages and occurs at specific times or ages

- Discrimination

Unjustified negative behaviors toward members of outgroups based on their group membership.

- disenfranchised grief

grief that is not acknowledged by others

- disengagement theory

suggests that during late adulthood, the individual and society mutually withdraw

- disorganized attachment (type D)

a type of attachment that is marked by an infant's inconsistent reactions to the caregiver's departure and return

- Displaced aggression

Occurs when negative emotions caused by one person trigger

aggression toward a different person.

- Displacement

Ability to communicate ideas that are not in the immediate environment or that exist only in the imagination.

- Distributive fairness

Our judgments about whether or not a party is receiving a fair share of the available rewards.

- divided attention

the ability to pay attention to two or more stimuli at the same time; this ability improves during adolescence

- dizygotic

Derived from two separate ova

- Dodoitsu

This Japanese form is composed of four lines with the syllable count 7 7 7 5. There is no rhyme or set meter.

- Dolní Věstonice

An archaeological site in the Czech Republic with evidence for early ritual.

- Dolni Vestonice

Upper Paleolithic open-air site in the Czech Republic; known for shaman's hut, Venus of Vestonice, and triple burial

- Dolores Huerta

Labor leader and activist, who along with César Chávez founded the National Farmworkers Association, later known as the United Farm Workers union.

- domestic context

a household

- domestication

altering or interfering with the reproduction of another species to produce favorable changes for humans

- Dominant response

The action that we are most likely to emit in any given situation.

- Domingo Jironza Pétriz de Cruzate

A titular Spanish governor of New Mexico from 1683-1686 and 1689-1691. He failed to reconquer the territory from the Pueblo Natives.

- don/doña

Don is an honorific title used in Spanish language to show deference to people considered to be most powerful in a local society. The use of the title could also simply show that a person held a title of nobility at whatever level. Don was the form used to address men; doña used to address(...)

- dopamine

a neurotransmitter in the brain that plays a role in pleasure and the reward system; increases in the limbic system and later in the prefrontal cortex during adolescence

- Dorothy McKibbin

Administrative Assistant in the Los Alamos Labs during the Manhattan Project. McKibbin was in charge of providing those working at Los Alamos with credentials and coordinated shipping and logistical issues.

- double-blind

A research design in which neither the participants nor the researchers know whether an individual is assigned to the experimental group or the control group

- Douglas MacArthur

A five star army general who lead the Pacific Theatre battles during U.S. World War II. After Japanese surrender, McArthur was named the Supreme Commander for the Allied Powers and helped the Japanese rebuild their nation: economically and politically.

- Dowry

Good and wealth given by the bride's family to the groom's family.

- Dowry Death

When the groom's family tries get more dowry by abusing the wife. The

- practice can result in death or suicide.
- dual process model/dual processing

the notion that two networks exist within the human brain, one for emotional processing of stimuli and one for analytic reasoning
- dualism

absolute, black and white, right and wrong type of thinking
- Dwight D. Eisenhower

During World War II, Eisenhower led D-Day, the massive invasion of Nazi-occupied Europe. After the war, he ran for president and served two terms, during which time he managed Cold War tensions with the Soviet Union, ended the Korean War, created an Interstate Highway System, and strengthened(...)
- dyslexia

a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities
- E. Lee Francis

Born of mixed Laguna Pueblo, Scottish, and Lebanese heritage, Francis served as New Mexico's Lieutenant Governor between 1967 and 1971 during the administration of Governor David Cargo. Due to a constitutional stipulation that requires the Lieutenant Governor to take charge of affairs when the(...)
- earspools

plugs worn in the ears; very common in the Americas; Hopewell ear spools were made from native copper
- earthworks

term used to refer to mounds constructed from sediment; can take the form of embankments (linear mounds), enclosures, effigy mounds (in the shape of animals), conical (cone-like) mounds, and platform mounds. Hopewell and Mississippian Traditions constructed earthworks
- ecofacts

organic and environmental remains resulting from human activity such as charcoal, pollen and animal bones (see Chapter 2)
- ecological systems model

Brofenbrenner's theory that we all belong to many communities and are influenced in the context of multiple environments, also known as ecological systems; organized into five levels of external influence: microsystem, mesosystem, exosystem, macrosystem and chronosystem
- ecological systems theory

Urie Bronfenbrenner's theory stressing the importance of studying a child in the context of multiple environments, organized into five levels of external influence: microsystem, mesosystem, exosystem, macrosystem, and chronosystem
- Ecuera Capa

"Leather Cape" in English, a Comanche leader who was instrumental in negotiating an alliance with the Spanish in the late 18th Century.
- ED-XRF

stands for energy-dispersive x-ray fluorescence and is used to identify what an object is made of. X-rays are fired at an object's surface, affecting the inner shells atoms of the sample. Energy is emitted specific to each element.
- Edgar Lee Hewett

American archaeologist and anthropologist, whose area of expertise was Native American Southwest peoples and art. Hewett is given credit for the formation of and preservation of ancient native cultures in Bandelier National Monument and Chaco Canyon
- Editing

A step in the revision process that includes fixing typos and grammatical errors.
- Edmund G. Ross

Ross served one time as governor of the New Mexico Territory. He voted against convicting President Andrew Johnson of "high crimes and misdemeanors" which allowed Johnson to stay in office, but he was subsequently impeached.
- Edward R. Murrow

Prominent American broadcast journalist. During broadcasts in World War II, Murrow brought the war to American homes via the radio while on location at many combat sites. "Good Night, and Good Luck" was his signature sign off.
- Edward Richard Sprigg Canby

When the Civil War began in 1861, Canby was promoted to the rank of Colonel of the 19th U.S. Infantry and given the post of commander over the Department of New Mexico. Despite a defeat at the Battle of Valverde, Canby's Union forces repelled the Confederate advance into New Mexico under(...)
- Edward Teller

Known as "the father of the hydrogen bomb," Teller was an early member of the Manhattan Project team tasked to create the atomic bomb.
- Edwin Johnson

A Governor of Colorado who was highly critical of Franklin Roosevelt's New Deal policies
- Edwin Vose Sumner

Sumner was a United States Army General who served in the U.S.-Mexican War. Fort Sumner, named after the general, was built to protect the settlers in the Pecos Valley from Native Americans.
- effigy mounds

earthen mounds in the form of animals; the Hopewell Tradition created effigy mounds
- Egalitarian

When people have roughly equal wealth and power

- ego
The part of the self that helps balance the id and superego by satisfying the id's desires in a rational way
- egocentrism
The child is not able to take the perspective of others, typically observed during the preoperational stage
- egocentrism
the tendency of young children to think that everyone sees things in the same way as the child
- eight stages of psychosocial development
Erikson's stages of trust vs. mistrust, autonomy vs. shame/doubt, initiative vs. guilt, industry vs. inferiority, identity vs. role confusion, intimacy vs. isolation, generativity vs. stagnation, and integrity vs. despair
- El Paso del Norte
Today known as La Ciudad Juárez, or simply Juárez, it is a bi-national city on the US-Mexican border. Spanish colonizers took refuge here during the 1680 Pueblo Revolt.
- El Teatro Norteño
Roberto Archuleta founded El Teatro Norteño, where members of El Partido de la Raza Unida could act in plays related to issues in New Mexico produced by Luis Valdez.
- El Turco
The Turk, a prisoner of a Plains Indian tribe who told Coronado about the legend of Quivira, a city of infinite wealth.
- Election of 1844
During the U.S. Presidential Election of 1844, westward expansion was the major campaign issue for Democrat James K. Polk and Whig Henry Clay. Polk championed expansion on all fronts, making his rallying cry "54° 40' or fight!" Polk considered his electoral victory to be a mandate in support(...)
- Electroencephalography
A technique that records the electrical activity produced by the brain's neurons through the use of electrodes that are placed around the research participant's head.
- Elegy
An elegy is a lament for the dead and contains the character of sadness and loss. It is considered a public poem that when done best, according to Mark Strand and Evan Boland, sets the customs of death in a particular culture against the decorum and private feelings of the speaker.
- Eleuterio Baca
Baca spoke and published poetry in the Spanish language. In the 1890s he was the associate editor of *La Voz del Pueblo* in Las Vegas, New Mexico.
- Elfego Baca
Born in Socorro, NM on 1865 Elfego Baca was best known as a lawyer, politician and a gunman. At age 19 he became a sheriff peace officer.
- Eliot Porter
Porter was a nature photographer and contemporary of Georgia O'Keeffe and Alfred Stieglitz.
- Elisha Long
Chief Justice of the Supreme Court, New Mexico Territory 1885-1890.
- elite
people with a disproportionate amount of wealth and power compared to the general populace
- Ella Boyer
Wife of Francis Boyer, and an educator.
- embryo
A multi-celled organism between two and eight weeks after fertilization
- emerging adulthood
life stage extending from approximately ages 18 to 25, during which the foundation of an adult life is gradually constructed in love and work. Primary features include identity explorations, instability, focus on self-development, feeling incompletely adult, and a broad sense of possibilities
- Emil Fritz
A German immigrant to the United States, Fritz served as a Captain with the California Column commanded by General Carleton in 1862. Following his efforts to secure New Mexico for the Union during the Civil War, he purchased land near Fort Stanton and went into business with Lawrence G. (...)
- Emotional aggression
Aggression that occurs with only a small amount of forethought or intent and that is determined primarily by impulsive emotions.
- emotional regulation
the ability to respond to the ongoing demands of experience with the range of emotions in a manner that is socially tolerable and sufficiently flexible to permit spontaneous reactions, as well as the ability to delay spontaneous reactions as needed
- Emotional truth
A visceral, heartfelt connection that arises between reader and character or characters through the unfolding (and possibly the resolution) of an invented, narrated conflict, a connection so powerful that the reader perceives reality and truth in what is known to be pretend, known to be fiction.
- Empathy
An affective response in which a person understands, and even feels, another person's distress and experiences events the way the other person does.
- Empirical
Based on the collection and systematic analysis of observable data.
- empresarios

Meaning "entrepreneur" in English, empresarios were granted the right to settle on Mexican land in exchange for taking care of new settlers.

- Enabling Act

A type of legislation which grants authorization of legitimacy to an entity; such as the establishment of government agencies to carry out specific policies.

- encomenderos

The Spanish caretakers in the encomienda system, protecting native laborers under their care while giving them language and religious education in return for tributes in gold or other products.

- encomienda

A grant by the Spanish Crown that gave a colonist in the Americas the right to demand tribute and used the Indian inhabitants of the area as forced labor.

- Enculturation

The process of learning one's culture

- End-rhyme

When two or more words that end lines rhyme.

- End-stopped

A line of poetry that ends in punctuation.

- endometriosis

a condition in which the layer of tissue that normally covers the inside of the uterus, grows outside of it

- Enjambed

The running over of a sentence across multiple lines of poetry.

- Enrico Fermi

Italian physicist who worked on the first nuclear reactor (Chicago Pile-1) and contributed to the development of quantum theory, nuclear and particle physics, and statistical mechanics. Fermi is also one of the men considered as the "father of the atomic bomb." He excelled in both theoretical(...)

- Enrique H. Salazar

Salazar was the founding editor of La Voz del Pueblo in Santa Fe in 1889. He subsequently edited El Independiente in Las Vegas. Throughout his publishing career he remained a vocal supporter of nuevomexicano rights within the United States.

- Envoi

Also known as "tornada": this is the final tercet of a sestina.

- epigenetics

The study of heritable phenotype changes that do not involve alterations in the DNA sequence; the prefix epi-means above

- Estevan de Perea

Called "the father of the New Mexican Church," Perea served as a high-ranking missionary between 1610 and 1638, clashing with several governors and military officials, specifically filing reports of Governor Ceballos' child slave trading.

- Esteban

Esteban was the first known African to have arrived on the continental United States. He was one of the four survivors of Narváez Expedition shipwreck that claimed more than 300 lives.

- estrogen

primary female sex hormone that is responsible for the development and regulation of the female reproductive system and secondary sex characteristics

- et al.

"et al." is short for "et alia," which means "and other people" in Latin. In your paper, if you write Pauling et al. reported X findings, you are saying, Pauling and others reported X findings.

- Ethnocentrism

Assuming your culture is superior or judging another culture based on your own worldview

- Ethnography

Anthropological description of a culture.

- ethology

The study of behavior through a biological lens

- Ethos

Appeals to the credibility, reputation, and trustworthiness of the speaker or writer (most closely associated with the voice).

- European Enlightenment

A cultural and intellectual movement in 17th Century Europe that highlighted reason and individualism over tradition and religion.

- Eusebio Chacón

Chacón was an influential rico editor and political figure that lived in Las Vegas in the late nineteenth century. He used his position to advocate for the adoption of Spanish American Ethnic Identity among nuevomexicanos.

- euthanasia

helping a person fulfill their wish to die

- Evaluation

An assessment or judgment based on specific criteria

- evaluation research

Research designed to assess the effectiveness of policies or programs

- Evidence

It is factual information that helps the reader reach a conclusion and form an opinion about something. Evidence is given in research work or is quoted in essays and thesis statements but is paraphrased by the writer. If it is given as it is, then it is quoted properly within quotation marks.

- Evolutionary adaptation

The assumption that human nature, including much of our social behavior, is determined largely by our evolutionary past.

- evolutionary psychology
A field of study that seeks to identify behavior that is a result of our genetic inheritance from our ancestors
- evolutionary psychology
A field of psychology that focuses on how universal patterns of behavior and cognitive processes have evolved over time
- Exchange relationships
Relationships in which each of the partners keeps track of his or her contributions to the partnership.
- Exclusive submissions
A term used to refer to poems in the submission process that are under consideration by only one publisher exclusively.
- exosystem
The larger contexts of the community, including the values, history, and economy
- experimental archaeology
use of modern experimentation to gain insight into the past
- Experimental confederate
A person who is actually part of the experimental team but who pretends to be another participant in the study.
- experimental group
The group of participants in an experiment who receive the independent variable
- experimental research
Research that involves randomly assigning people to different conditions and using hypothesis testing to make inferences about how these conditions affect behavior; the only method that measures cause and effect between variables
- Experimental research designs
Research designs that include the manipulation of a given situation or experience for two or more groups of individuals who are initially created to be equivalent, followed by a measurement of the effect of that experience.
- experiments
Designed to test hypotheses in a controlled setting in efforts to explain how certain factors or events produce outcomes; the only research method that measures cause and effect relationships between variables
- Explanations
Statements that reveal how the examples support and/or complicate a writer's statements.
- explanatory studies
Research that tries to answer the question "why"
- Expository Writing
Derived from the word "expose," expository writing seeks to expose, explain, describe, define, or inform.
- Exquisite Corpse
This form, invented by the Surrealists, is fun to write in a group. Each person writes two lines, then folds the paper so the next person writing can see only the second line; the next person writes two more lines and folds the paper so that only the second line is visible; and so on.
- Extended-contact hypothesis
The idea that prejudice can be reduced for people who have friends who are friends with members of the outgroup.
- Extensive
Using a large area of land and relatively little labor
- External validity
The extent to which relationships can be expected to hold up when they are tested again in different ways and for different people.
- Fabiola Cabeza de Baca-Gilbert
Born to a family that traces its heritage back Álgvar Nuñez Cabeza de Vaca, Fabiola Cabeza de Baca-Gilbert grew up on a ranch on the Llano Estacado not far from Las Vegas. As a young woman, she taught in a rural school in Guadalupe County. Her teaching position made her realize how little(...)
- Factorial research designs
Experimental designs that have two or more independent variables.
- Facts
Evidence that cannot be disputed.
- Facundo Melgares
Spanish military officer who served as the last Spanish Governor of New Mexico and the first Mexican Governor. During the Lewis and Clark expedition Melgares was tasked with keeping the Americans out of the the region in order to keep the territory under Mexican Governorship.
- fading affect bias
idea that negative events, such as the death of a loved one, tend to lose their emotional intensity at a faster rate than pleasant events
- failure to thrive
Decelerated or arrested physical growth (height and weight measurements fall below the third or fifth percentile or a downward change in growth across two major growth percentiles) and is associated with abnormal growth and development
- Fajada Butte
natural formation at Chaco Canyon atop which lies the Sun Dagger
- Fallacies
Errors in reasoning
- False consciousness
The acceptance of one's own low status as part of the proper and normal functioning of society.
- False consensus bias
The tendency to overestimate the extent to which other people are similar to us.
- false self-training
holding a child to adult standards while denying the child's developmental needs

- Falsifiable

Being falsifiable means that the outcome of the research can demonstrate empirically either that there is support for the hypothesis (i.e., the relationship between the variables was correctly specified) or that there is actually no relationship between the variables or that the actual(...)

- fast-mapping

a word-learning process in which new words are rapidly learned by making connections between new words and concepts already known

- fast-mapping

a word learning process in which children are able to learn words quickly because they associate new words to words that they already know

- faunal

refers to animal bone, as in "the faunal assemblage" consisted entirely of mammoth bone

- features

non-portable objects modified or made by humans, such as hearths (fireplaces), pits, and ovens (see Chapter 2)

- federalism

Federalism is a system of government in which sovereignty is constitutionally divided between a central governing authority, or representative head, and constituent political units, such as states or provinces. The power to govern is shared between national and state governments based on(...)

- federalists

Supporters of the Constitution who were committed to a loose, decentralized system of government.

- Felipe Chávez

Son of a prominent nuevomexicano family, Chávez made a fortune on the Santa Fe Trade in the 1820s and 1830s. He established a mercantile in

Belen and managed his families trade interests from there. Known widely as Don Felipe, he continued to profit from trade along the Santa Fe Trail well(...)

- Felipe II

The king of Spain during the height of his imperial power his empire had colonies on every continent known to Europeans at the time.

- Felix S. Cohen

A graduate of Columbia Law School, Cohen was a prominent lawyer who drafted the legislation that became known as the Indian New Deal. The Indian Reorganization Act was the key law that provided for self-determination for Native Americans by ending the period of assimilation policy. After the(...)

- Female Circumcision

Also called female genital mutilation (FGM); part of a rite of passage in which part of female genitalia are removed or modified.

- Feminine End

A line of poetry that ends with an unstressed beat.

- Fernanda Martínez

Martínez was one of the Tierra Amarilla land grant heirs whose family had been advocating for the return of their communal resource rights on the tract long before the arrival of Reies López Tijerina. Along with Gregorita Aguilar, Martínez apprised Tijerina to the deep history of the land grant.

- Fernando de Argüello

Between 1644 and 1647 he served as the thirteenth Spanish Governor of New Mexico. During his tenure, he ordered the public hanging of twenty-nine Jemez warriors in order to preempt a rumored rebellion against Spanish authority in preparation for which the Jemez people had reportedly enlisted(...)

- Fernando VII

Fernando VII ruled a King of Spain twice, first in 1808 and again a second time from 1814-1833. He was cowardly, corrupt, and unfit to rule. Spain plunged into civil war after his reign.

- Fertile Crescent

area of early domestication in the Near East

- fetal alcohol spectrum disorders

A group of abnormalities in babies born to mothers who consume alcohol during pregnancy

- fetus

An unborn human baby from nine weeks after conception until birth

- Field experiments

Experiments conducted in everyday settings.

- Figurative language

Words or phrases in which the meaning is not literal.

- filibuster

A parliamentary procedure to delay or prevent a vote by extending a debate.

- filles du roi

Also known as the King's Daughters, a contingent of 800 French women who were sent to New France between 1663 and 1673 to encourage men to populate and settle in those territories.

- filter theory of mate selection

the pool of eligible partners becomes narrower as it passes through filters used to eliminate members of the pool

- fine motor skills

Physical abilities involving small body movements, especially of the hands and fingers, such as drawing and picking up a coin. The word "fine" in this context means "small"

- fine motor skills

precise movements of the wrists, hands, fingers, feet, or toes, such as the ability to reach and grasp an object

- First Mesa

First Mesa, or Wàlpi, is a census-designated place in Navajo County, Arizona, on the Hopi Reservation where 1,100 people live (based on the 2000 Census).

- First Peoples

The first Americans, hunter-gatherers who journeyed to the Americas from Asia via the Bering Strait Land Bridge (Beringia) some 12,000 years ago. Also referred to as Paleoindians

- First person

A writing perspective that uses “I.”

- Fitness

The extent to which having a given characteristic helps the individual organism to survive and to reproduce at a higher rate than do other members of the species who do not have the characteristic.

- Fixed-sum outcomes

A gain for one side necessarily means a loss for the other side or sides.

- Flash(ing) back

Used in a narrative to introduce a prior, related event in the story.

- flintknapping

the process of making stone tools

- fluid intelligence

the ability to recognize patterns and solve problems, irrespective of any past experience of the context in which these patterns or problems arise

- folk Catholicism

Catholicism practiced by conquered peoples that has influence from native cultures.

- food insecurity

limited or uncertain availability of safe, nutritious food

- Foot

In metrical verse, lines can be divided into length and rhythm which we refer to as feet. Each foot is comprised of stressed and unstressed syllables.

- foraging

Hunting and gathering; reliance on wild foods

- foreclosure

term for premature identity formation, which occurs when an adolescent adopts his or her parents’ or society’s role and values without questioning or analysis, according to Marcia’s theory

- Forensic Anthropology

Field that use anthropological techniques and concepts to help solve modern-day crime

- Forest Guardians

Today called the WildEarth Guardians, the Forest Guardians were an environmental group that was founded in 1989. At its founding, the group’s principal goal was to preserve the forest on Elk Mountain in New Mexico. Its members, however, did not understand the deep connections between(...)

- forging

the shaping by hammering

- formal operational stage

The fourth, and last, stage in Piaget’s theory and lasts from about age 11 to adulthood. Children in the formal operational stage can deal with abstract ideas and hypothetical situations

- formal operational thought

the fourth and final stage of Piaget’s theory of cognitive development, characterized by more systematic logical thinking and by the ability to understand and systematically manipulate abstract concepts

- formation processes

the processes by which an archaeological site was formed; can also include the natural processes which act on a site after it is abandoned

- Fort Sill

Located in Oklahoma, the fort was part of the frontier fort system to protect Texas from raids. In 1894,

Geronimo and other Chiricahua Apache prisoners of war were taken to Fort Sill.

- Fort Sumner

Near Bosque Redondo, Fort Sumner was used from 1863-1868 for Navajo and Mescalero Apache internment.

- FOXP2

A gene known to influence human language.

- Francis Boyer

Founder of Blackdom, New Mexico which is now a ghost town. Boyer established the town to provide African Americans a self-sustaining community free from the discrimination and violence of the Old South.

- Franciscan order

Regular Catholic order whose members follow the teachings of Saint Francis of Assisi. They accompanied Hernán Cortés to central Mexico and later expanded their influence and power as the leading order in New Spain, including the Far North (today’s New Mexico and U.S. Southwest).

- Francisco Antonio Manzanares

Along with María Varela, Manzanares co-founded the Ganados del Valle Cooperative in the early 1980s to provide nuevomexicano sheep ranchers with the means of marketing their animals and wool products.

- Francisco de Ayeta

A Spanish friar who warned the New Spanish government of possible Pueblo uprisings in the late 17th Century, although he was too late.

- Francisco de la Mora y Ceballos

The military governor of New Mexico between 1632 and 1635 who issued permits authorizing colonizers to trade goods for native children.

- Francisco Farfán

A Spanish friar who led a caravan of sixty-seven caravans from the

Mexican mining town of Parral to settle in New Mexico following Diego de Vargas's successful reconquest.

- Francisco I. Madero

In 1910, Madero challenged Mexican President Porfirio Díaz in that year's election. When it became apparent that Madero had garnered extensive support, Díaz ordered his imprisonment and manipulated the election. Once the falsified election was over, Madero fled to San Antonio, Texas, where he(...)

- Francisco "Pancho" Villa

In March of 1916, General Villa, a prominent general and revolutionary in the Mexican Civil War (1910-1920), led a raid with nearly 100 Mexican revolutionaries into the United States at Columbus, New Mexico.

- Francisco Vásquez de Coronado

A Spanish nobleman who led a large expedition into the American Southwest in search for the Cities of Gold, razing several Native American settlements along the way. His efforts eventually took him as far inland as Kansas, but yielded nothing.

- Frank Applegate

One of the Anglos who joined the artist colonies in New Mexico in the early twentieth century, Frank Applegate gained notoriety for his paintings, such as "The Santuario de Chimayó."

- Frank Springer

Attorney Frank Springer arrived in the New Mexico Territory in 1870 as the representative of the Dutch East India Company that had purchased sections of the Maxwell Land Grant from Thomas Catron. Once in New Mexico, Springer worked to oppose the power of the Santa Fe Ring over political and(...)

- Franklin D. Roosevelt

Elected three times, Roosevelt was the 32nd U.S. President. Progressive leadership during the Great

Depression through the "New Deal" brought about positive social change and economic security. He died in office and was succeeded by Harry S. Truman.

- Franklin J. Tolby

Reverend Franklin Tolby was an open critic of the Santa Fe Ring in Cimarron, New Mexico. His murder in 1875 sparked the Colfax County War.

- Franz Boas

Sometimes called the father of American anthropology, rejected unilineal evolution and the false distinction between "primitive" and "civilized" people.

- Fraternal Polyandry

When brothers share a wife.

- Fred Harvey

Known for the Harvey Girls, Harvey was a railroad restaurateur who operated fine dining establishments along the Santa Fe Topeka railroad lines.

- Fred Peso

In his opposition to Wendell Chino's proposed nuclear waste program on Mescalero lands in the early 1990s, former vice president of the tribal council Fred Peso also employed the language of tribal self-determination. He argued that for the Mescalero people to remain free of mandates from the(...)

- free radical theory of aging (FRTA)

theory that organisms age because cells accumulate free radical damage over time

- Freewriting

Writing that comes out as a stream of thoughts unencumbered by grammar, spelling or a few of where it is heading.

- French and Indian War

The North American extension of the Seven Year's War fought between France and Britain's colonial armies

along with their respective Native American allies. A British victory redrew the map of North America and Europe heavily in Britain's favor.

- fresco

mural painting created by applying paint to wet plaster

- frontal lobes

the parts of the brain involved in impulse control, planning, and higher order thinking; still developing in adolescence

- fueros

During the Spanish Colonial and Mexican periods, fueros were special rights and privileges granted to members of the clergy and the military. Such rights included exemption from civil taxation and from trial in civil courts.

- function

how something was used (see Chapter 2)

- Functional magnetic resonance imaging

A neuroimaging technique that uses a magnetic field to create images of brain structure and function.

- Fundamental attribution error

To overestimate the role of person factors and overlook the impact of situations.

- gamete

A male or female reproductive cell

- gamete intrafallopian tube transfer

involves implanting both sperm and ova into the fallopian tube which allows fertilization to occur naturally

- Ganado Mucho

One of the Navajo Chiefs who signed the U.S. Treaty with the Navajos in 1868 allowing the tribe to leave the Bosque Redondo.

- Ganados del Valle

Ganados del Valle is an agricultural economic development nonprofit that utilized traditional cultural practices to

develop small businesses that established marketing programs for local farmers, artists and craftspeople.

- Gaspar Castaño de Sosa

Castaño de Sosa was a Spanish explorer and slaver who attempted to establish a settlement in New Mexico.

- gender

a term that refers to social or cultural distinctions of behaviors that are considered male or female

- gender

a term that refers to social or cultural distinctions of behaviors that are considered male or female

- gender dysphoria

a condition listed in the DSM-5 in which people whose gender at birth is contrary to the one they identify with. This condition replaces “gender identity disorder”

- gender expression

how one demonstrates gender (based on traditional gender role norms related to clothing, behavior, and interactions); can be feminine, masculine, androgynous, or somewhere along a spectrum

- gender identity

the way that one thinks about gender and self-identifies; can be female, male, or genderqueer

- gender identity

the way that one thinks about gender and self-identifies, can be woman, man, or genderqueer

- gene-culture co-evolution

When a cultural practice affects human biology.

- General George C. Marshall

A U.S. General during World War II, who was the architect of the Marshall Plan, which provided the Post WW II European nations with a plan for economic recovery.

- generalized slowing hypothesis

the theory that processing in all parts of the nervous system, including the brain, is less efficient

- generativity

the ability to look beyond self-interest and motivate oneself to care for, and contribute to, the welfare of the next generation

- Genes

Sequence of nucleotide bases that codes for a protein or molecule that performs a function in the body.

- genes

Sequences of DNA that control or partially control a number of characteristics

- genital stage

The final stage of psychosexual development when individuals develop sexual interests; begins in adolescence and lasts throughout adulthood

- Genoa

A northern Italian coastal city that was one of the centers of the Renaissance, attracting many artists and traders. The city's prosperity led to its establishment of some of the oldest banking institutions in the world.

- Genome

Set of genetic instructions for a species.

- Genotype

The genetic makeup of an individual.

- genotype

The genetic makeup of an individual

- Genre

Categories used to describe types of writing such as fiction, non-fiction, poetry, and drama.

- gente decente

Literally "decent people," gente decente were those who were considered the core of Spanish Colonial society in New Mexico. They typically used this title to distinguish themselves as civilized, as

opposed to nomadic peoples in the surrounding areas

- George B. Kistiakowsky

Kistiakowsky was one of the scientists involved in the Manhattan Project. Under his supervision the explosion lens for nuclear weaponry was created to compress plutonium necessary to achieve critical mass on implosion.

- George Curry

Originally from Louisiana, George Curry served with Theodore Roosevelt and the Rough Riders during the Spanish-Cuban-American War. Due to that association, Roosevelt appointed Curry as governor in 1907 after Governor Hagerman was mired in scandals.

- George Long

A native of Alabama, Long met Albuquerque's Ernie Pyle during their World War II service in Okinawa. Pyle convinced Long to enroll in the University of New Mexico following the war. Although he originally planned to pursue a degree in Education, his activism to desegregate Albuquerque(...)

- George McCall

Highly decorated union brigadier general during the Civil War, McCall also served under Zachary Taylor during the Mexican American War.

- George McGovern

An American liberal Senator from South Dakota, and a staunch anti Vietnam war advocate, Senator McGovern lost the bid for the Presidency in 1972 to Richard Nixon. McGovern spent significant time serving for international humanitarian causes during and after his tenure as U.S. Senator(...)

- George McJunkin

Discoverer of the Folsom site in New Mexico

- George Meade

Meade was a Civil War general known for his decisive Union victory at the

Battle of Gettysburg which was a pivotal point in the Union defeat of the Confederacy.

- George N. Bascom

Following his graduation from West Point in 1858, Bascom was stationed at Camp Floyd in Utah and then at Fort Buchanan in southern Arizona. His unsuccessful and treacherous attempt to ambush Cochise in 1861 is remembered as the Bascom Affair. When the Civil War began, he was promoted to(...)

- George W. Kendall

As a member of the Texas Santa Fe expedition, in 1841, Kendall and the unit were captured by the Mexican Army. He published many of his experiences in the New Orleans Picayune and documented the expedition in a 900 page book.

- George Washington Armijo

During the Spanish-Cuban-American War, Armijo served with Theodore Roosevelt's Rough Riders. Following the conflict and with Roosevelt's support, Armijo served in several different positions in the territorial government. In 1911, Armijo initiated an annual De Vargas Pageant to coincide with(...)

- Geronimo

Bedonkohe Apache leader of the Chiricahua Apache who led his people to defend their land against the United States military. After his family was killed by Mexican soldiers, Geronimo participated in raids in the Southwest, Sonora, and Chihuahua, until his final surrender in 1886. He then spent(...)

- gerontocracy

a type of social structure wherein the power is held by a society's oldest members

- Gerontocratic

Society in which older males hold all the power.

- Gerrymander

The act of manipulating the boundaries of an electoral constituency to favor a specific party.

- Ghazal

Typically dealing with subjects of love and separation, the ghazal is a form with Arabic roots consisting of rhyming couplets of the same syllabic length and a refrain.

- Ghost Marriage

System where a dead spouse is considered the biological parent of a child.

- Gilded Age

A term coined by Mark Twain, the last few decades of the nineteenth century have come to be known as the Gilded Age because of the thin veneer of prosperity that masked a politically and economically corrupt society. The Gilded Age was a time of corporate excesses and income inequality in the(...)

- glacial

a period marked by cold temperatures and glacial advances (see Chapter 3)

- Glossary term

An alphabetical list of terms or words found in or relating to a specific subject, text, or dialect, with explanations; a brief dictionary.

- glume

seat coat

- Glycymeris

clam shells derived from the Gulf of California used to make Hohokam and Mogollon "armlets"

- gonad

a sex organ that produces gametes; specifically, a testicle or ovary

- gonadarche

refers to the earliest gonadal changes of puberty. In response to pituitary gonadotropins, the ovaries in girls and the testes in boys begin to grow and increase the production of the sex steroids, especially estradiol and testosterone

- gonorrhea

a sexually transmitted infection (STI) caused by the bacterium neisseria gonorrhoeae

- goodness-of-fit

the notion that development is dependent on the degree of match between children's temperament and the nature and demands of the environment in which they are being raised

- gorget

a decorative bar-like ornament worn at the throat; found in Hopewell and Mississippian contexts; often made from shell

- Grammar

Structural rules of language.

- Grant Chapel AME Church

Grant Chapel African Methodist Episcopal Church was the first black church in New Mexico.

- Grass-In-Ear Behavior

Chimpanzee practice of placing a blade of grass in the ear, suggested to be a learned or cultural tradition

- Grave Goods

Items intentionally placed in a burial.

- grave goods

items associated with a burial

- Great Hopewell Road

a road marked by two earthen berms between two major Hopewell centers, Newark and Cillecothe in Ohio; remnants of the road were discovered using early aerial photographs and LiDar

- great house

large structures associated with Chaco Canyon

- Great Moundbuilder Debate

debate over whether the Moundbuilders of North America were a "lost race" that disappeared or whether they were the ancestors of modern-day Native Americans; early excavations linked the Moundbuilders

with modern tribes through examination of material culture

- Great Northern Revolt

Due to the uprisings in New Mexico, the rebellious fervor also spread to the New Spanish northern frontier, igniting a series of raids by the nomadic people of northern Mexico.

- Green Barry Patterson

Patterson was the Democratic delegate to the 1910 New Mexico Constitutional Convention from Chaves County. During the deliberations, he was offended by a comment made by Albert Fall and he subsequently stormed out of the convention. When the final version of the Constitution was completed,(...)

- Gregorita Aguilar

Longtime member of "La Corporación de Abiquiú," Gregorita Aguilar apprised Reis López Tijerina of the historical roots of the struggle over the Tierra Amarilla Land Grant.

- grief

the psychological, physical, and emotional experience and reaction to loss

- Grito de Dolores

Translated as "the cry of Dolores," the Grito marked the beginning of Father Hidalgo's independence movement in 1810. His parishioners, most of whom were of indigenous background, rallied behind banners of la Virgen de Guadalupe and called for an end to bad government and "death to the gachupines!"

- gross motor skills

Physical abilities involving large body movements, such as walking and jumping. The word "gross" in this context means "big"

- gross motor skills

voluntary movements including the use of large muscle groups such as the arms and legs

- Group polarization

Is said to occur when, after discussion, the attitudes held by the individual group members become more extreme than they were before the group began discussing the topic.

- Group process

The events that occur while the group is working together on the task.

- Groupthink

Occurs when a group that is made up of members who may actually be very competent and thus quite capable of making excellent decisions nevertheless ends up making a poor one as a result of a flawed group process and strong conformity pressures.

- Guadalcanal

A principal island in the Solomon Islands which was used as the first major offensive by Allied forces against Japan during World War II. Guadalcanal, Florida, and Tulagi were taken by Allied forces and Japan retaliated with three major land battles, seven large naval battles, and daily aerial(...)

- Guadalupe Miranda

As a proponent of Land Grant rights for Mexicans in Texas and New Mexico, Miranda fought for Hispanic Mexicans living in the U.S. Territory who wanted to remain Mexican citizens.

- Guanahaní

An island in the Bahamas that was the first the first New World land sighted and visited by Christopher Columbus in 1492. He called it San Salvador.

- Haab

Maya civil calendar of 365 days

- habitation site

a site where people lived, in contrast to a kill site or ritual center

- Haiku

This well-known Japanese form is three lines long and comprised of unrhymed, unmetred lines with a 5 7

5 syllable count. Traditionally, the haiku's subject matter relates to nature or seasons.

- Hanging Indent

A formatting style for citations in both MLA and APA reference pages in which every line except the first is a half-inch away from the left margin.

- Hans Bethe

German and American physicist whose research on critical mass of nuclear weapons and theories of implosion which led to the development of the Trinity test bomb and the "Fat Boy" atomic bomb dropped on Nagasaki Japan in 1945.

- Harm-based morality

That harming others, either physically or by violating their rights, is wrong

- Harold Ickes

U.S. Secretary of the Interior under Franklin Roosevelt, Ickes is credited with implementing many of the initiatives of Roosevelt's "New Deal."

- harquebus

The "hook gun," an early muzzle-loaded firearm used by Spanish conquistadores in the New World. It was the predecessor of the musket and other modern rifles.

- Harry S. Truman

Truman served as the 33rd U.S. President and is largely remembered for bringing an end to World War II with Japan's surrender. He ended the war by dropping the atomic bomb on two Japanese cities. He is also known for his "the buck stops here" leadership attitude.

- Harvesting dilemma

A case in which a social dilemma leads people to overuse an existing public good.

- Harvey Girls

Female wait staff for Fred Harvey Restaurants, known for impeccable dress, manner and morals.

- Hawikuh

One of the largest Zuni pueblos during the time of Spanish colonization. It was also the first pueblo to be conquered by the Spanish during Coronado's expedition.

- Hawthorne effect

Individuals tend to change their behavior when they know they are being watched

- Hayflick limit

the number of times a normal human cell population will divide before cell division stops

- Heinrich von Eckhardt

Received the Zimmerman Telegram in 1917 during his time as Resident Minister for the German Empire in Mexico.

- Henry Connelly

Much like other Anglo Americans of his day, not long after he moved to Mexico in 1828 he married a woman from Chihuahua and started a family there. Those types of connections helped him to understand the region and its people. In the early 1840s he relocated his family to Peralta, less that(...)

- Henry Hopkins Sibley

Sibley was a Brigadier General for the Confederacy. Sibley lead the Confederate States Army in the New Mexico territory and lost the Battle of Glorieta to General Scurry.

- Henry Lane Wilson

Appointed by President Taft as U.S. Ambassador to Mexico during the Mexican Revolution, Wilson was allegedly involved in a coup d'etat of the Mexican government in 1913.

- Henry the Navigator

The father of Portuguese exploration, Henry was largely responsible for expanding Portuguese knowledge of the Atlantic and Africa through systematic exploration.

- Herbert Eugene Bolton

Bolton is considered as the father of the field of Borderlands History. His work in the 1920s and 1930s drew attention to the history of Spanish colonialism in the U.S. Southwest. Although his perspective was generally limited to a celebratory look at the efforts of Spanish explorers, priests,(...)

- Herbert J. Hagerman

17th Governor of the New Mexico Territory (1906-07) and Commissioner to the Navajos under the Department of Interior.

- Herbert Wright

Wright is a former Civil Rights Activist and active NAACP member, noted for his 1960 debate with Malcolm X at Yale Law School.

- Hernán Cortés

A Spanish conquistador widely known for his exploits in Mexico, toppling the Aztec Empire and bringing much of the region under Spanish rule.

- heterogamy

marriage between people who do not share social characteristics

- heterozygous

A combination of alleles for a given gene

- Heuristics

Discovery procedures that help a writer explore their ideas; for example, the Pentad.

- Hexameter

A six-foot line. Also called Alexandrine when purely iambic.

- hidalgo

A member of the Spanish nobility. They were typically exempt from paying taxes but owned little property. The term is used to describe a member of the non-hereditary elite because it comes from the phrase "hijo de algo," which means "son of something."

- hidden curriculum

cultural values, concepts, behaviors and roles that are part of the school

experience but are not part of the formal curriculum

- Hindsight bias

The tendency to think that we could have predicted something that we probably would not have been able to predict.

- Hispaniola

Caribbean Island that contains modern day Dominican Republic and Haiti, also the site of Columbus's first invasion of the New World.

- hogan

Traditional Navajo dwelling usually constructed out of natural material, circular in shape, and with an always eastward facing door towards the rising sun.

- Hohokam

The Hohokam migrated north out of Mexico into the Southwest, where they became the most skillful irrigation farmers of the region.

- Holistic

An approach in anthropology that considers many different aspects of humanity instead of focusing on a single feature

- holistic

emphasizing the importance of the whole. Anthropologists are interested in all aspects of humanity, and thus take a holistic approach to the study of people (see Chapter 1)

- Holocene

The Earth's current geological epoch that began roughly 11,000 years ago, marked by the spread of human activity across the planet.

- Holocene

A period of time called an epoch that began after the end of the Pleistocene about 11,700 years ago

- holophrase

a single word that is used to express a complete, meaningful thought

- home state

- occurs when parents or siblings visit the school. Children in this state may enjoy special privileges such as going home early or being exempt from certain school rules in the mother's presence, or it can be difficult if the parent is there to discuss trouble at school with a staff member
- **homogamy**
marriage between people who share social characteristics
- **homophily**
a tendency of individuals to form links disproportionately with others like themselves
- **homozygous**
Having two copies of the same allele for a given gene
- **Hoover Dam**
Constructed during the U.S. Depression of the 1930's, Hoover Dam, on the Colorado River in Nevada/Arizona, was designed to withhold flood, provide irrigation and produce hydroelectric power for the desert southwest.
- **Hopewell Tradition**
refers to a large network of trade an exchange with a similar belief system; located in what is now the eastern United States; (ca. 100 BC-AD 500)
- **Hopi House**
A sandstone structure located on the South Rim of the Grand Canyon designed by architect Mary Coulter. The building was home for Hopi artisans and craftspeople to market their ware.
- **Horticulture**
Gardening using mostly human power and simple tools
- **hospice**
a type of care involving palliation without curative intent. Usually, it is used for people with no further options for curing their disease or people who have decided not to pursue further options that are arduous, likely to cause more symptoms, and not likely to succeed
- **huaca**
in Quechua, a native language of South America, a revered monument or object; can be natural or cultural
- **Huaca del Sol**
adobe brick monument at the Cerro Blanco Moche site, Peru
- **Hubert Howe Bancroft**
Hubert Howe Bancroft was an American historian and ethnologist who wrote works concerning the western United States, Texas, California, Alaska, Mexico, Central America, and British Columbia.
- **Hugh McLeod**
McLeod was a soldier and member of legislature in the Republic of Texas. He also commanded the military during the Texas Santa Fe Expedition in 1841.
- **Human Genome Project**
An international projects that mapped out the human genome.
- **Human Genome Project**
International project that mapped out the human genome, the full set of nucleotide base pairs. The project was completed in 2000.
- **human remains**
human bones, teeth and other tissues (see Chapter 2)
- **human sacrifice**
Ritual practices conducted in pre-Columbian Mesoamerican civilizations. The Aztecs often sacrificed prisoners of war from neighboring tribes as offerings to the gods.
- **humanism**
A psychological theory that emphasizes an individual's inherent drive towards self-actualization and contends that people have a natural capacity to make decisions about their lives and control their own behavior
- **Humanities**
Disciplines interested in explanations about particular human societies often through description and critique
- **Humphries Wildlife Management Area**
Established by the New Mexico Game Commission, and managed by the Department of Game and Fish. The area is a consolidation of five tracts of land in north central New Mexico around Tierra Amarilla and provides wildlife habitat for elk, deer, black bears, and other wildlife.
- **hunter-gatherers**
people that live off wild, non-domesticated food; also called foragers (see Chapter 3)
- **Hunting and Gathering**
Foraging; reliance on wild foods
- **Hunting Magic**
Attempting to increase animal numbers or aid in the hunt using magic.
- **hunting magic**
idea that representations of animals can magically increase animal populations or assist in hunting them
- **hyper-diffusionism**
relying on diffusionist ideas (spreading out from a single locus) on a grand scale
- **Hyperbole**
An exaggerated statement.
- **hypertension**
high blood pressure that can lead to severe complications and increases the risk of heart disease, stroke, and death
- **hypotheses**
Specific statements or predictions about the relationship between variables
- **hypothesis**
A testable prediction
- **hypothetical thought**

reasoning that includes propositions and possibilities that may not reflect reality

- Iamb

~ ' A light stress followed by a heavy stress.

- Ian Hodder

known for his post-processualist approach, is the lead archaeologist at the site of Çatalhöyük in Turkey

- Iberian Peninsula

Europe's third largest peninsula located in the continent's southwest, dominated by Spain and Portugal, and previously occupied by the Romans, Goths, and Islamic Empire.

- Iceman

Europe's earliest natural mummy; found in the Tyrolean Alps of Italy (see Chapter 2)

- id

The part of the self that is biologically-driven, includes our instincts and drives, and wants immediate gratification

- identity

the understanding that objects have an identity or qualities that do not change even if the object is altered in some way

- identity achievement

Erikson's term for the attainment of identity, or the point at which a person understands who he or she is as a unique individual, in accord with past experiences and future plans; already questioned and made commitment according to Marcia's theory

- identity vs. role confusion

Erikson's term for the fifth stage of development, in which the person tries to figure out "Who am I?" but is confused as to which of many possible roles to adopt

- Ideology

Ideas about how people should think and behave.

- ideology

belief system or world view

- Ignacio Orrantía

Orrantía was a U.S. Deputy Marshal for Doña Ana County in the 1860s. Following the electoral violence in Mesilla in 1871, with Fabián Gonzales he led a group of ninety-six families to settle La Ascensión, Chihuahua.

- Image

A mental picture, what we see with the mind's eye.

- Imagery

A description that appeals to one of the five senses.

- imaginary audience

the other people who, in an adolescent's egocentric belief, are watching and taking note of his or her appearance, ideas, and behavior. This belief makes many adolescents very self-conscious

- Imagism

A 20th century movement in poetry advocating free verse and the expression of ideas and emotions through clear precise images

- immunization

A process that stimulates the body's immune system by causing the production of antibodies to defend against attack by a specific contagious disease

- imprinting

In psychology and ethology, imprinting is any kind of phase-sensitive learning (learning occurring at a particular age or a particular life stage) that is rapid and apparently independent of the consequences of behavior

- Impure line

A line in a poem that breaks from an established pattern altogether.

- in situ

means in place (see Chapter 2)

- in vitro fertilization

this procedure involves removing eggs from the female, fertilizing the eggs outside the woman's body, and then reinserting into the woman's uterus

- Indeh

The Apache word for their own people.

- independent invention

when technological innovations happen independently in different regions; contrast with diffusion, where traits spread from one region to another

- Independent variable

The situation that is created by the experimenter through the experimental manipulations.

- independent variable

Something that is manipulated or introduced by the researcher to the experimental group; treatment or intervention

- Indian Reorganization Act

The Wheeler-Howard Act, or Indian Reorganization Act, of 1934 was the key legislation that created the Indian New Deal. Most significantly, the act reversed federal policies of assimilation and allowed for tribal self-determination.

- indios bárbaros

The Spanish labeled tribes like the Apaches, Utes, and Navajos as "Barbaric Indians" due to their nomadic/semi-nomadic lifestyle, non-Christian beliefs, and often hostility towards the Spanish.

- indios de rescate

"Rescued" Native Americans subjected to fifteen or twenty years of service to their "liberators." The Spanish justified this claiming they were doing the natives a favor by "freeing" them from captivity and educating them in "civilized" culture and Christian teachings.

- Individualism

Cultural norms, common in Western societies, that focus primarily on self-enhancement and independence.

- Inductive Reasoning

The consideration of a number of results and forming a generalization based on those results.

- Industrialized Food Production

Reliance on huge farms, single crops, chemical inputs (fertilizer/pesticides), large scale production of meat

- infantile marasmus

Starvation due to a lack of calories and protein

- infantile or childhood amnesia

the idea that people forget everything that happened to them before the age of 3

- information-processing approach

An alternative to Piagetian approaches, a model that seeks to identify the ways individual take in, use, and store information

- information-processing perspective

derives from the study of artificial intelligence and explains cognitive development in terms of the growth of specific components of the overall process of thinking

- Informational conformity

The change in opinions or behavior that occurs when we conform to people whom we believe have accurate information.

- Informational report

Informs or instructs and presents details of events, activities, individuals, or conditions without analysis.

- informed consent

A process of informing a research participant what to expect during a study, any risks involved, and the implications of the research, and then obtaining the person's agreement to participate

- Ingroup

Those whom we view as being similar and important to us and with whom we share close social connections.

- Ingroup favoritism

The tendency to respond more positively to people from our ingroups than we do to people from outgroups.

- Government Initiative

A procedure used in the government in which voters propose a new measure of legislation.

- Inn of the Mountain Gods

A premier mountain resort in the mountains of Mescalero, New Mexico, outside of Ruidoso.

- insecure-avoidant attachment (type A)

a pattern of attachment in which an infant avoids connection with the caregiver, as when the infant seems not to care about the caregiver's presence, departure, or even return

- insecure-resistant/ambivalent attachment (type C)

a pattern of attachment in which an infant's anxiety and uncertainty are evident, as when the infant becomes very upset at separation from the caregiver and both resists and seeks contact on reunion

- Institutional Review Boards (IRBs)

A panel of experts who review research proposals for any research to be conducted in association with the institution (for example, a university)

- Instrumental aggression

Aggression that is intentional and planned.

- Insufficient justification

When the social situation actually causes our behavior, but we do not realize that the social situation was the cause.

- Insulting The Meat

Kalahari forager tradition of calling the meat worthless to keep the hunter humble

- Integrative outcomes

A solution can be found that benefits all the parties.

- integrity

Erikson refers to this as reflecting on one's life and experiencing a sense of satisfaction and accomplishment

- Intensive

Using a small area of land with increased labor or technology inputs

- Intensive Agriculture

Farming with the use of animal labor, plow, fertilizers, irrigation or terracing

- inter-glacial

warming trend between glacial periods during the Pleistocene (see Chapter 3)

- Interdependent

People relying to a great degree on each other to meet their goals.

- Internal rhyme

Lines of poetry in which words in the middle of a line rhyme with words at the end of other lines.

- Internal validity

The confidence with which we can draw conclusions about the causal relationship between the variables.

- Interpersonal attraction

The strength of our liking or loving for another person.

- intramural

inside of a structure/building

- Introduction

Frames a writer's paper by introducing the issue at hand, establishes the writer's position, and identifies the writer's scope of coverage.

- introjection

a process Freud described where children incorporate values from others into their value set

- intuitive thought

thoughts that arise from an emotion or a hunch, beyond rational explanation,

and are influenced by past experiences and cultural assumptions

- invincibility fable

an adolescent's egocentric conviction that he or she cannot be overcome or even harmed by anything that might defeat a normal mortal, such as unprotected sex, drug abuse, or high-speed driving

- irreversibility

when a person is unable to mentally reverse a sequence of events

- Isaac Lynde

At the first Battle of Mesilla, during the U.S. Civil War, Lynde was the recipient of information from a Confederate deserter about a surprise attack from the Confederates.

- Issue dialogue

Creation dialogue about a topic during the early analysis stage that focuses on the most extreme positions then moving towards more reasonable compromises.

- Italian quatrain

A poem consisting of four lines written in iambic pentameter and rhyme A B B A.

- Italian Renaissance

A period of cultural and scientific revival in Italy starting in the 14th Century, led to the eventual European Renaissance.

- J. Edgar Hoover

Director of the Federal Bureau of Investigations (FBI). Under his directorship, the FBI became an autonomous federal agency that willingly participated in illegal investigation methods.

- J. Robert Oppenheimer

One of the team of physicists who were tasked by President Franklin Roosevelt to being the nuclear program in the U.S. during W.W. II. The team worked on the Manhattan Project, in Los Alamos, New Mexico which eventually developed the first

nuclear bomb. The bomb was initially tested at the(...)

- Jacob C. Morgan

Morgan gained prominence among the Navajo people for his efforts to resist John Collier's livestock reduction program during the Indian New Deal. To undermine Collier's efforts, Morgan enlisted the help of Senator Dennis Chávez.

- James Buchanan

Buchanan served as the 15th U.S. President. Historians suggest that Buchanan was responsible for American Civil War by not addressing the southern state succession from the Union.

- James Gadsden

Despite the decision of the binational Boundary Commission, in 1853 Mexican officials forced Americans off of their lands in the disputed Mesilla Valley. As a result, New Mexico governor William Lane declared the area to be part of the United States; Mexican President Santa Anna responded by(...)

- James H. Carleton

General James H. Carleton arrived in New Mexico in 1861 at the head of the California Column. He succeeded Colonel Canby as commander of the Department of New Mexico. In that capacity, he targeted the Mescalero Apache and Navajo people for forced relocation to the ill-planned Bosque Redondo.

- James J. Dolan

Union Army veteran James J. Dolan built a commercial enterprise, L. G. Murphy & Co., with Emil Fritz and Lawrence G. Murphy.

- James K. Polk

Polk served as U.S. President during the U.S.-Mexican War. By the end of his four year presidency, he had added 1.2 million acres of land to the United States.

- James Magoffin

Magoffin was a successful American merchant in Coahuila and Chihuahua in the 1830s. He had married into a prominent northern Mexican family, providing him with important connections to powerful people in the region. In the early 1840s he relocated his business to Missouri and continued to(...)

- James Peter Davis

James Peter Davis served as Archbishop of Santa Fe from 1964-1974 after being appointed by Pope Paul VI.

- Jean Baptiste Lamy

As the first bishop and archbishop of the Diocese of Santa Fe, Lamy's tenure was filled with conflict with the local parish priests and parishioners specifically Taos priest Father Antonio José Martínez. The initial conflict resulted when Lamy reinstated tithing for parishioners, something(...)

- Jean L'Archevêque

French trader, soldier, and explorer who was one of the two survivors of the ill-fated French colony of Fort Saint Louis in Texas.

- Jesse Jackson

Jackson was an American Civil Rights leader, and one time associate of Dr. Martin Luther King Jr. Reverend Jackson organized grassroots movements, such as Operation PUSH and the Rainbow Coalition.

- Jesuasa Alfau

Alfau was a cartoonist from Madrid who created patriotic pieces in support of U.S. involvement in World War I. Her work played a role in rehabilitating the image of Spain among Americans.

- Jesús María Hilario Alarid

Alarid (1834-1917) was a well-known bardo, or people's poet, and teacher who lived in the village of Galisteo. As a notable bardo, he published regularly in New Mexico's Spanish-

language press during the territorial period.

- Jesús Tafoya

Tafoya issued a declaration throughout Rio Arriba that called nuevomexicanos to arms against the U.S. occupation under Colonel Sterling Price in January of 1847. Price learned of the insurrection and led 353 men northward to combat Tafoya's forces at the Battle of La Cañada. Tafoya was killed(...)

- Jesusita Perrault

Jesusita Perrault was born in Chihuahua in 1888. When she was young, her family moved to Silver City, New Mexico. After attending the Silver City Normal School and becoming a teacher, she also became involved in Grant County politics. Between 1921 and 1923 she served as county assessor. In(...)

- Jigsaw classroom

An approach to learning in which students from different racial or ethnic groups work together, in an interdependent way, to master material.

- Jim Crow Discrimination

A system of segregation and discrimination, which lasted until the mid 20th Century, which barred African Americans from the same civil rights and freedoms as white Americans.

- jizya

A tax levied on the Islamic Empire's non-Islamic subjects, particularly adult men of military age. The purpose was for the subjects to show their acceptance of their Islamic rulers. In return, they were allowed to practice their faiths and retain communal autonomy.

- Joaquín Terrazas

Joaquín Terrazas was a well-known Apache fighter in Chihuahua in the mid-to-late nineteenth century. His cousin, Governor Luis Terrazas, called him out of retirement to lead the effort

to subdue Victorio's band in 1879 and 1880.

- Joe S. Sando

Sando is an accomplished Pueblo historian and author and former director of Institute for Pueblo Indian Studies in Albuquerque, New Mexico.

- John and William Slaughter

The Slaughter Brothers were Texas cattlemen who ranched the West from Utah, to New Mexico, and Texas.

- John C. Frémont

As an explorer with the U.S. Topographical Engineers, Frémont traveled west on a mapping expedition to the border of Mexico and California in 1846. He discovered many californios who wanted California, or the Bear Flag Republic, to join the United States. Frémont declared himself a commander(...)

- John Collier

John Collier was one of the "romantic reformers" drawn to New Mexico in the 1920s by the perception that its people practiced pre-modern lifeways. He was enthralled with the people of Taos Pueblo, and their economic and political situation inspired him to advocate for Native American(...)

- John Frere

Frere realized, based on excavations at Suffolk, England, that archaeological remains were older than previously thought, beyond early Biblical estimates (see Chapter 1)

- John H. Tunstall

British born rancher and merchant, Tunstall lived in Lincoln County, New Mexico. His murder ignited the Lincoln County War, a war to win the dry goods trade in the county. Billy the Kid also participated in this New Mexico range war.

- John J. "Black Jack" Pershing

General Pershing led the Punitive Expedition into Chihuahua in 1916 and 1917 in search of Pancho Villa following his raid on Columbus.

Although the expedition failed to capture Villa, the experience offered a means for the U.S. Military to prepare for its subsequent involvement in World War I(...)

- John M. Chivington

Chivington led Colorado Volunteers to support Union forces at the Battle of Glorieta Pass in late March of 1862. With Lieutenant Major Manuel Chávez as his guide, Chivington's forces captured the Confederate supply train and forced the Confederate soldiers into retreat. On November 29, 1864,(...)

- [John M. Washington](#)

In 1848 as Military Governor of New Mexico, Washington was tasked with settling the war between the Navajo people and the United States.

- John Munroe

Military Governor of New Mexico Territory 1849- 1851. Historians define his tenure as unprincipled and out of touch with the realities of the western frontier.

- John Nance Garner

A vice president serving under Franklin Roosevelt, Garner was politically opposed to Roosevelt's New Deal efforts and resigned the position in 1941.

- John P. Slough

Slough was a Union Colonel who led the Union in the Battle of Glorieta Pass in which the Union soldiers defeated the Confederacy. Slough later became an Army Brigadier General who served as a chief justice in the Territory of New Mexico. He was assassinated by a member of the territorial(...)

- John Russell Bartlett

After the Treaty of Guadalupe, in which Mexico ceded to Texas, Arizona, and California to the U.S., Bartlett was appointed U.S Boundary Commissioner in charge of documenting the boundaries. As it happened, Bartlett incorrectly marked

the boundaries of New Mexico and Texas, which resulted in(...)

- John Slidell

Slidell was a United States agent to Mexico, before the U.S.-Mexican War, who was tasked to negotiate and establish the Rio Grande River as the boundary between Mexico and the Territory of New Mexico. Failed negotiations partially led to the U.S.-Mexican War.

- John Talberth

Talberth was the leader of the Forest Guardians, an environmental group located in Santa Fe. The mission of the group was to protect the Northern New Mexico forests from over-logging and destruction.

- John Tyler

Tyler served as the tenth U.S. President and signed legislation to annex Texas into the union.

- Jointure

The designation of property, held by one spouse (historically the husband) and jointly used by both spouses, to be provided to the other spouse (historically the wife) in the event of the death of the spouse holding the property.

- Jornada del Muerto

Dead Man's Journey: a 90-mile passage across an arid desert east of the Rio Grande between present-day Rincon and San Marcial. Travelers going to Santa Fe from Mexico used it as a shortcut, but it lacked water or grazing pasture.

- José Antonio Navarro

Leading Mexican politician to favor Texas Independence and Texas Statehood. He served as a Texas State legislator to represent the rights of the Tejanos after Texas Independence.

- José Aragón

One of the most prolific and influential santeros during the time of New Mexico's religious revival during the 18th and 19th centuries.

- José D. Sena

Clerk of the Supreme Court and State Delegate during New Mexico's bid for Statehood.

- José de Gálvez

A lawyer and Spanish colonial official who was one of the leading proponents behind the Bourbon Reforms. Was also an inspection officer for the frontier defenses in northern New Spain.

- José Francisco Chaves

The election contest between Republican José Francisco Chaves and Democrat José Manuel Gallegos sparked the 1871 riot in Mesilla that left nine people dead. Gallegos ultimately won the election to become the New Mexico Delegate to Congress, and many of the Republican supporters of Chaves(...)

- José Inez Salazar

Mexican Revolutionary General José Inez Salazar was imprisoned in Albuquerque for a violation of U.S. neutrality laws when he crossed the border to escape a villista assault during the Battle of Ojinaga in 1914. Elfego Baca served as he lawyer and was implicated for aiding Salazar's escape(...)

- José Jesús Baca

José de Jesús Cabeza de Baca is known as a schism in the New Mexican Catholic Church. In 1819 he was baptized into the Church and in 1853 Baca had signed some sacramental entries in the books at San Albino. By 1854 Baca had taken over the ministry at San Albino Catholic Church.

- José Joaquín de Herrera

Elected as president of the Republic of Mexico after Santa Ana was exiled to Cuba. Herrera was a more moderate political voice than the militarists. At the onset of the Mexican American War Herrera attempted to negotiate with the U.S. Perceived as weak, he was ousted in a military coup.

- José Manuel Gallegos

New Mexico Territory delegate to the U.S. Congress.

- José María Maytorena

Governor of Sonora during the Mexican Revolution, his allegiances to national revolutionary leaders constantly shifted.

- José María Morelos

Catholic priest who joined Miguel Hidalgo's 1810 insurrection. Morelos later became the leader of the Mexican Independence Movement and declared Mexico as independent in 1815.

- Josefa Jaramillo

One of prominent Taos resident Francisco Esteban Jaramillo, at the age of 14 Josefa married Kit Carson. In order to gain her father's trust, Carson converted to Catholicism. Together, the couple had eight children. She died of complications after giving birth to her eighth child in late April(...)

- Joseph Geronimo

A grandson of the legendary Chiricahua headman Geronimo, Joseph Geronimo led the opposition to Wendell Chino's proposal to bring nuclear waste to Mescalero lands in the early 1990s.

- Joseph Rodman West

West was a U.S. Senator from Louisiana, a Civil War general, and he commanded the army which killed Apache Chief Mangas Coloradas at Fort McLane in southwest New Mexico.

- Joseph Stalin

Stalin was a Russian dictator who transformed the USSR, through violence and terror, from an agrarian/peasant society to a military and industrial powerhouse.

- Josiah Gregg

Gregg was a nineteenth century merchant and explorer who was involved with the Santa Fe Trade. HIs

book, "Commerce of the Prairies," is an important primary source that tells the story of the social, political, and economic impacts of the trade. As with so many other primary sources, Gregg's(...)

- Juan Andrés Archuleta

Archuleta built a military career in New Mexico between 1820 and 1850 by leading campaigns against Ute and Navajo people, as well as by organizing militias to defend outlying settlements like Abiquiú. He also played an instrumental role in the capture of the members of the Texan-Santa Fe(...)

- Juan Bautista de Anza

The governor of New Mexico between 1778 and 1788, tasked with building an alliance with the Comanche Indians. In 1779, he succeeded in establishing peace with the Comanches; in 1786 the peace arrangement was also extended to Navajo and Ute tribes.

- Juan Bautista Vigil

Vigil was the last Mexican Governor of the New Mexico after the defeat of the Mexican Army to the United States. In 1846, possession of New Mexico was turned over to the United States.

- Juan Cuna

A Hopi Indian found in possession of a Kachina doll and accused of idol worshipping, punished by heavy beatings.

- Juan de Eulate

A Spanish soldier who served with distinction and eventually became the 4th governor of New Mexico. During his time in office, he led military campaigns against the Apache tribes and took many members into slavery.

- Juan de Oñate

A Spanish explorer who led multiple expeditions into the Colorado Valley and Great Plains, also ruled as governor of the Santa Fe de Nuevo

México Province. He put down the Acoma Revolt in 1598.

- Juan de Ulibarrí

Ulibarrí was one of Albuquerque's founders who later claimed the territory of Colorado for the Spanish crown.

- Juan de Zaldívar

Zaldívar was Juan de Oñate's nephew. After his death at Acoma Pueblo, his killing escalated to the Acoma Massacre.

- Juan de Zumárraga

The first bishop of Mexico who championed for the welfare of the natives.

- Juan José Herrera

Late 19th century union organizer for the Knights of Labor near San Miguel County, New Mexico and one of the founders of Las Gorras Blancas "The White Caps". Herrera supported indigenous groups, by being a voice for the poor and underrepresented Spanish speaking New Mexicans.

- Juan José Peña

One of the most prolific and influential santeros during the time of New Mexico's religious revival during the 18th and 19th centuries.

- Juan Pio

Pio was a priest of Tesuque Pueblo in the 17th century. His murder by the people of Tesuque sparked the Pueblo Revolt.

- Judgments

Conclusions drawn from the given facts; they are more credible than options

- Juh

Juh (pronounced "whoa") was the leader of the Janeros local group of the Nednhi, and he collaborated with Mangas Coloradas and Cochise in many wars against the U.S. Army. Following the execution of Mangas Coloradas, he led his band to their

traditional home in the Blue Mountains of Chihuahua's(...)

- Julius C. Burrows

A U.S. Senator from Michigan, who is cited as being the person responsible for New Mexico's long path to statehood.

- just wars

The theory where wars can be morally justified if they meet certain criteria, such as preventing atrocities that would otherwise happen in the absence of war. For the Spanish, moral justification came from the Catholic Church.

- kachina

Spirit beings in western Pueblo religious beliefs that represent natural and social phenomena like rain, harvest, and medicine. Also spelled katsinas or catsinas.

- Kanzi

A bonobo chimpanzee taught to communicate using lexigrams.

- Katauta

A three-line poem with the syllable count 5 7 7, the first line posing a question that the next two lines attempt to answer in an intuitive, immediate way.

- katsina

Puebloan ancestor spirit

- Kaytenna

Kaytenna was a Chiricahua Apache who joined with Victorio's band during campaign to remain free of reservation life in 1879 and 1880. One of those who escaped the battle at Tres Castillos, Kaytenna later married Gouyen, known among the Chiricahua for her wisdom. In the early 1880s Kaytenna(...)

- Kearny Code

The laws of the Territory of New Mexico, set forth by Brigadier General Stephen Kearny, outlining the principle of freedom and liberty for the citizens of the territory.

- Kenneth Bainbridge

Kenneth Bainbridge was an American physicist at Harvard University. He was the director of the Manhattan Project's Trinity nuclear test in 1945. After the test he dedicated his career to ending the testing of nuclear weapons and to efforts to maintain civilian control of future developments(...)

- Kennewick Man

skeleton radiocarbon dated to 9,600 B.P. in Washington state; is the center of a long-standing NAGPRA controversy

- Keresan

A group of languages spoken by the Keres pueblo people of New Mexico containing a wide variety of dialects that are often discerned as different languages.

- Keyword

A word which occurs in a text more often than we would expect to occur by chance alone.

- Kim Agnew

Daughter of Vice President Spiro Agnew, Kim rode horses in the Sangre de Cristo Mountains with a group of Pueblo people to promote the return of Blue Lake to the people of Taos Pueblo.

- Kin selection

Strategies that favor the reproductive success of one's relatives, sometimes even at a cost to the individual's own survival.

- kinkeeping

"emotion work", often undertaken by women, to foster and maintain family relationships

- Kiowa

A nomadic Native American tribe of the Plains.

- Kirtland Air Force Base

Located in Albuquerque, New Mexico, Kirtland Base played a role in training pilots and bombardiers during

World War II. Kirtland also served as the airbase to provide Manhattan Project personnel with needed supplies and materials to build the atomic bomb.

- kiva

semi-subterranean (partially underground) ceremonial structure of the American Southwest

- Klaus Fuchs

German physicist Klaus Fuchs joined the Communist Party of Germany but fled to England when Nazis took control on Germany in 1933. Professor Max Born of Edinburgh University helped get Fuchs out of an internment camp in Quebec. In 1943, Fuchs was sent to the U.S. to collaborate on the(...)

- Knights of Labor

Established as a secret union in 1869, the Knights accepted members for the union regardless of occupation, sex, or ethnic background. During the Haymarket Riots in Chicago, the Knights participated in the strikes, much to the dismay of their organizer Terence V. Powderl.

- Koko

A western lowland gorilla that was taught to use some signs in American Sign Language.

- Kuaua

Kuaua is a historic site open to the public to view. Currently with the name of Coronado, this was one of many large settlements established during the period of the 1325 to 1600 CE.

- kwashiorkor

Also known as the "disease of the displaced child," results in a loss of appetite and swelling of the abdomen as the body begins to break down the vital organs as a source of protein

- kya

shorthand for thousands of years ago (see Chapter 2)

- L. Bradford Prince

Appointed as a Governor of the New Mexico territory, Prince was also a leading member of the Santa Fe Ring.

- La Cooperativa Agrícola de Tierra Amarilla

Formed in 1969, the cooperative addressed and worked to improve the economic, medical, educational and agricultural conditions of the Tierra Amarilla citizens in northern New Mexico.

- La Corporación de Abiquíu

In the 1930s, heirs to the Tierra Amarilla Land Grant organized La Corporación de Abiquíu in order to raise funds and fight for the return of grant lands in the New Mexico courts. Through La Corporación, the heirs attempted to work through the legal system to achieve the ends that Las Gorras(...)

- La Ferrassie

site in France with evidence of Neanderthal burial; skeletons are oriented east-west and are articulated

- La Mano Negra

Known as "The Black Hand", this underground group was alleged to have killed and repressed members of the anarchy groups organized in rural Spain. In New Mexico history, groups of the Tierra Amarilla land grant activists used this moniker when fighting private ranchers and businesses for land(...)

- La Raza Unida Party

Established in 1970, the "United Race Party" worked for better socio-economic, educational, and working conditions for Mexican Americans.

- lactose tolerance

The ability to digest lactose into adulthood as a result of natural selection.

- Laguna

New Mexico's largest Keresan speaking pueblo, today its population is more than 7,000.

- Laguna Santero

While the identity of the Santero is unknown, the surviving altar screen, retablo mayor is located on the Pueblo of Laguna. Many retablo mayor throughout New Mexico have been attributed to this artist.

- Land Tenure

Typical in common law systems, land tenure provides a ruler the right to own the land, while the private owner is the renter or sub renter. In native tribe, the notion of land tenure did not exist. However, in negotiating indigenous treaties, Europeans used the term aboriginal tenure to grant(...)

- language acquisition device (LAD)

Chomsky's term for the hypothesized mental structure that enables humans to learn the language, including the basic aspects of grammar, vocabulary, and intonation

- Larynx

Also called the voice-box; where the vocal cords are housed.

- Lascaux Cave

A Pleistocene cave in France with numerous ice animal paintings.

- Lascaux Cave

an Upper Paleolithic cave site in France known for its paintings, ca. 15-17,000 B.P.

- latency stage

The fourth stage of psychosexual development, spanning middle childhood, during which sexual development and sexual impulses are dormant

- latillas

secondary wood support beams in a structure; vigas and latillas

- law of effect

Behavior that is followed by consequences satisfying to the organism will be repeated and behaviors that are followed by unpleasant consequences will be discouraged

- Lawrence G. Murphy

Old West businessman and gunslinger, Murphy was prominent in the Lincoln County War and documented as the instigator of fights between corrupt businessmen and local ranchers during that period.

- Laws of Burgos

Drafted in Burgos, Spain, this set of laws forbade the maltreatment of indigenous peoples of the New World and encouraged their conversion to Catholicism.

- Laws of the Indies

A set of laws issued by the Spanish Empire concerning settler-native relations in the Americas and Philippines.

- leader generativity

mentoring and passing on of skills and experience that older adults can provide at work to feel motivated

- Leads

In an academic essay, an opening, usually located in the introduction, that hooks the reader into wanting to read further.

- Learned helplessness

People who have extremely negative attributional styles, in which they continually make external, stable, and global attributions for their behavior.

- Learning

The relatively permanent change in knowledge that is acquired through experience.

- Legal Personhood

An entity that has legal rights and obligations

- lens

lenticular (biconvex) shaped deposits; lenses were found inside Monks Mound representing basketloads of earth

- Leó Szilárd

Szilárd was a Hungarian-American physicist who garnered President

Roosevelt's support for atomic bomb research and development, which became the Manhattan Project .

- Leslie Groves

Lieutenant General Leslie Richard Groves, Jr. oversaw the construction of the Pentagon and directed the Manhattan Project. After nuclear weapon responsibility shifted to the United States Atomic Energy Commission in 1947, Groves headed the Armed Forces Special Weapons Project.

- Levirate

System where a brother steps in and marries his brother's widow.

- Lewis Binford

an influential American archaeologist who created the New Archaeology of the 1960s which sought to make archaeology more scientific

- Lexigrams

Symbols representing ideas and objects used by Kanzi , a bonobo chimpanzee.

- life expectancy

a statistical measure of the average time an organism is expected to live, based on the year of its birth, its current age and other demographic factors including gender

- lifespan perspective

an approach to studying development which emphasizes that development is lifelong, multidimensional, multidirectional, plastic, contextual, and multidisciplinary

- Lifespan perspective

An approach to studying development which emphasizes that development is lifelong, multidimensional, multidirectional, plastic, contextual, and multidisciplinary

- limbic system

structures in the brain (including the amygdala) that involve processing emotional experience and social information and determining rewards

and punishments; develops years before the prefrontal cortex

- limpieza de sangre

"Purity of blood" claimed by many Spaniards, especially nobleman, indicating that they came from a strictly Christian lineage without Jewish or Muslim ancestry.

- Linguistic Anthropology

Field of anthropology interested in human language

- lintel

a horizontal block found over a doorway, window or fireplace. Wood lintels above doorways were dated using dendrochronology at Chaco Canyon sites

- Little Texas

Section of the Llano Estacado in east-central and southeastern New Mexico that shares cultural ties with west Texas. Texan cattlemen moved into the region in the late 1800s, and Texan oil companies dominated the region's economy during the first half of the twentieth century.

- Lloyd Tireman

In Mexico during the 1920s, Tireman closely observed the post-revolutionary government's attempt to establish cultural missions in rural areas to provide education and other training to indigenous people. With the support of Mary Austin, Tireman established the San José Experimental School in(...)

- Loaded terms

Words infused with negative associations.

- Loco

Chief of the Warm Springs Apache tribe, who travelled to Washington D.C. to talk of negotiation. During the travel back, he was captured and held at Ft. Leavenworth and eventually sent to Florida as a prisoner of war.

- Logos

Appeals to reason, logic, and facts in an argument. In a rhetorical situation, it is the appeal most closely associated with the message.

- Long Count

Maya system of tracking long periods of time from a base date; similar to the A.D. system

- long-term memory

the third component of the memory system where information is stored for long periods of time

- long-term memory

the storage of information over an extended period

- longitudinal research

Studying a group of people who may be of the same age and background (cohort), and measuring them repeatedly over a long period of time; may confound age and time of measurement effects

- looking-glass self

the process by which our sense of self develops as we interact with others through various social relationships and incorporate the way those other people view us into our own sense of self

- Lord of Sipán

refers to the highly decorated burial remains of the Moche culture. The tomb included the regalia of an elite male with objects of gold, silver, and copper. He is thought to represent a figure engaged in a human sacrifice ritual depicted on Moche pottery.

- Lord Pacal

Maya king burial in the Temple of Inscriptions at Palenque

- los niños heroes

Translated as "the heroic cadets" or "boy heros", during the Mexican American War six teenage Mexican cadets died defending the Chapultepec Castle in Mexico City against the U.S. Army in the Mexican American War.

- Louis XIV

The King of France who ruled from 1643 until his death in 1715. His 72-year reign makes him the longest-serving monarch in Europe. Under his rule, France undertook massive colonization endeavors, claiming lands in the Americas and Africa.

- Louisiana Purchase

In 1803, the U.S. purchased 828,000,000 acres of land from France. The Louisiana Purchase effectively increased the geography of the United States two-fold. The purchase was delineated by the Mississippi River to the east, the Rocky Mountains to the west, Canadian border to the north, and(...)

- Lucien Maxwell

During the mid 1880s Maxwell was one of the largest private landholders in the United States. Additionally, Billy the Kid was killed by Pat Garrett at Maxwell's Fort Sumner home

- Luis de Rosas

Rosas served as the ninth governor of New Mexico. His disagreements with the local populace led to his assassination in 1641.

- Luis de Tupatú

Tupatú was a Pueblo leader who negotiated a peace settlement with Diego de Vargas between the Natives and Spaniards in New Mexico. He was subsequently appointed governor of all thirteen pueblos.

- Luis Echeverría

President of Mexico (1970-1976) who nationalized the mining and electrical industries, imposed limits on foreign investment, and doubled the population covered by social security. Unfortunately, such measures were meant in part to cover up the Dirty War that his administration waged on the(...)

- Luís Terrazas

Terrazas was a wealthy Mexican businessman, landowner, politician and entrepreneur who was Governor

of Chihuahua on various occasions between 1858 and 1903.

- Mabel Dodge Luhan

Influential and wealthy patron of early 20th century writers and artists, Luhan hosted the artists and literary giants of the day at her home in Taos. The group became the Taos Art Colony.

- machine learning

a form of artificial intelligence where a computer learns from data and improves its responses over time.

- macrosystem

Cultural elements such as global economic conditions, war, technological trends, values, philosophies, and a society's responses to the global community which impact a community

- Magic

System of causation or transformation that does not adhere to naturalistic causes.

- maize

A large grain plant first domesticated by prehistoric native Americans. Today it is one of the world's most vital crops, also known as corn.

- major depression

feelings of hopelessness, lethargy, and worthlessness that last two weeks or more

- Majority influence

Occurs when the beliefs held by the larger number of individuals in the current social group prevail.

- Male Parental Investment

When men provide care and protection for their children.

- Malinche

Aside from referring to Cortés' Aztec lover (see Malintzin), the term is also often used in Mexican Spanish to call someone a traitor.

- Malintzin

Also known as Malinche, an Aztec woman who was an interpreter,

advisor, and lover for Hernán Cortés. She later gave birth to Cortés' first son, Martin, considered today to be one of the first Mestizos.

- malnutrition

A condition that results from eating a diet in which one or more nutrients are deficient

- Mana

A kind of force that can inhabit people and things common in the South Pacific.

- Mandate

Used frequently in politics, mandate referred to the granting of representation of a group to another group based on a majority vote or majority voice.

- Mangas Coloradas

An Apache headman who was instrumental in uniting the various Chiricahua Apache bands prior to the U.S.-Mexican War.

- Manifest Destiny

An Anglo-centric ideal that freedom and democracy should be spread across a country or continent even if it meant displacing natives from their territory. This ideal, in the U.S., started the large population of settlers moving to the west in the 1880s and was a prelude to the U.S.-Mexican War.

- mano

A grinding stone used to process corn usually used in combination with a larger stone called the "metate."

- Manuel Archuleta

Archuleta was a co-founder of the Raza Unida Party (RUP) in New Mexico along with José Peña in 1971. As an undergraduate at New Mexico Highlands University, Archuleta studied the political ideas of Daniel de Leon, founder of the Socialist Labor Party. He applied his political research to his(...)

- Manuel Armijo

Manuel Armijo was born in 1793 to a prominent Albuquerque family. He served as alcalde (mayor) of Albuquerque on several occasions in the 1820s. During his tenure as alcalde, he led an expedition against Apaches. In 1827 he began his first term as governor of New Mexico. He also maintained a(...)

- Manuel C. de Baca

A leading member of one of the most politically and economically powerful nuevomexicano families, Baca served as probate judge in San Miguel County during the time frame in which Las Gorras Blancas were most active. He denounced their movement and supported the forces of modernization. In 1892(...)

- Manuel Chávez

Lieutenant Major Chávez served as guide for Major Chivington of the Colorado Volunteers during the Battle of Glorieta Pass. Chávez and Chivington happened upon and captured the Confederate supply chain. Deprived of supplies, the Confederate Army was forced to retreat to El Paso.

- Manuel Cortez

One of the insurgent leaders during the Taos Revolt 1847.

- [Manuel de la Peña y Peña](#)

Peña y Peña was President of Mexico during the period in which the Treaty of Guadalupe Hidalgo was ratified. He supported the treaty because he believed that to reject it would place Mexico at risk for renewed war with the United States. His central concern, however, was to protect the(...)

- Manuelito

Navajo headman Manuelito strongly resisted the encroachments of the U.S. Army on Diné lands. He led efforts to resist the campaign to force his people to the Bosque Redondo, and he was one of the last to submit himself and his band to the Long Walk.

- Marcos de Niza
Marcos de Niza was a Franciscan friar who journeyed through the Americas, claiming to have seen one of the Seven Cities of Cibola. His testimony sparked the Coronado Expedition.
- Marguerite Baca
Baca was active in the women's suffrage movement and politics in New Mexico. She was one of the first women to hold a state-level position of political prominence, serving as Secretary of State from 1930 to 1934.
- María Gertrudís Váldez de Veramendi
A native of San Antonio, María Gertrudís Váldez de Veremendi was a widow when she met James Magoffin in Saltillo in 1834. The couple married in 1834; her social prominence helped Magoffin to make vital business connections throughout northern Mexico.
- María Varela
María was born and raised in Chicago to a Mexican immigrant father and an Irish-American mother. Following her graduation with a degree in Secondary Education from Alverno College in 1961, she traveled to Alabama to participate in the actions of the Student Nonviolent Coordinating Committee in(...)
- Mariano Salas
Salas was the Mexican General of the Alamo who also served as 16th President of Mexico for a few months, subsequently turning the position over to Santa Anna. Prior to becoming the President, Salas was exiled due to his support of Santa Anna.
- Mark Smith
Marcus "Mark" A. Smith served for eight consecutive terms as the Territorial Delegate to Congress from the Arizona Territory. In the first decade of the twentieth century, he became a vocal opponent of the jointure proposal.
- Mark Test
A test for visual self-recognition using a mirror and a mark on the body
- Marqués de Rubí
Spanish nobleman and military official tasked by Carlos III to inspect the northern frontier defenses of the Spanish colonies in the Americas.
- martilocal
A societal custom where a married couple lives with or near the wife's parents.
- Martin Van Buren
Van Buren served as the eighth U.S. President. In an attempt to resolve the hostilities between the U.S. and Mexico, Van Buren denied Texas' request to join the United States.
- martyr parent
parent who will do anything for the child, even tasks that the child should do independently, may later use what they have done for the child to invoke guilt and compliance
- Mary Austin
Born in 1868, Mary Austin was one of the most prominent women writers of the Southwest. Her most famous works include "The Land of Little Rain" and Taos Pueblo," both of which included photographs by Ansel Adams in editions published in 1950. Through her novels, poetry, and short stories,(...)
- Mary Colter
Mary Colter was a renowned architect, most famous for her work on Hopi House at the Grand Canyon.
- Mary Tibbles McPherson
McPherson was the mother of Ada Morley. Although she lived in Iowa, she kept track of the political situation in Colfax County through her daughter and son-in-law. Ada's attempt to intercept her letter that denounced the actions of members of the Santa Fe Ring sparked violence in the county.(...)
- Maslow's hierarchy of needs
A motivational theory in psychology comprising a five-tier model of human needs, often depicted as hierarchical levels within a pyramid. Needs lower down in the hierarchy must be satisfied before individuals are motivated to attend to needs higher up
- masturbation
sexual self-stimulation, usually achieved by touching, stroking, or massaging the male or female genitals until this triggers an orgasm
- matching hypothesis
we tend to be attracted to those who are similar to us in age, social class, race, education, physical attractiveness, values, and attitudes
- material culture
physical traces of the past (see Chapter 1)
- matrilineal
A system where descent is based on the mother's family line.
- matrilocal
A societal custom where a married couple lives with or near the wife's parents.
- Matthew S. Quay
Quay was a Senator from Pennsylvania who promoted greater protection for the African-American civil rights movement.
- Mauricio Corredor
Corredor was a Tarahumara man who served with Joaquín Terrazas' forces during the assault on Tres Castillos in 1880. When the dust settled following the battle that fall, Corredor received credit for killing Chiricahua headman Victorio.
- Maximiliano Luna
The most distinguished Hispanic Rough Rider during the Spanish American War
- Maxwell Land Grant
Governor Armijo made a land grant for two entrepreneurs, Miranda and Beaubien. The local Taos pueblos

leaders considered the grant illegal due to historically native grazing and farming land. This land passed back and forth between locals and foreigners causing mistrust of government and(...)

- mayordomo

An overseer who directs communal water allocation with the acequias

- Mediation

Helping to create compromise by using third-party negotiation.

- megafauna

Derived from the Greek word "megas" meaning large and the Latin word "fauna" meaning animal, the term refers to overly large animals.

- megafauna

large animals that characterized the Pleistocene (see Chapter 3)

- melatonin

sleep hormone whose levels rise later at night and decrease later in the morning for teens, compared to children and adults

- Melchor Ocampo

Ocampo was a contemporary of Benito Juarez. During Ocampo's appointment as the Minister of the Interior, he drafted Reform Laws which resulted in the separation of church and state in Mexico.

- Member characteristics

Are the relevant traits, skills, or abilities of the individual group members.

- menarche

a girl's first menstrual period, signaling that she has begun ovulation. Pregnancy is biologically possible, but ovulation and menstruation are often irregular for years after menarche

- Menaul School

Formerly know as the Pueblo Training School run by the Presbyterian church under a contract with the U.S. Government. After the school contract

was ended by the Commission on Indian Affairs, the Presbyters then purchased the land surrounding the current location, started a boarding school and(...)

- Ménière's disease

results in a degeneration of inner ear structures that can lead to hearing loss, tinnitus, vertigo, and an increase in pressure within the inner ear

- menopause

period of transition in which a woman's ovaries stop releasing eggs and the level of estrogen and progesterone production decreases

- mercantilism

The economic theory used in Europe between the 16th and 18th Centuries that suggested limited availability of wealth in the world. It was a large contributing factor in military expansion, augmentation of state power, and overseas expansion for European powers.

- mercedarios

Mercedario is the Spanish term for land grant heir.

- Mere exposure

The tendency to prefer stimuli (including, but not limited to, people) that we have seen frequently.

- Mesa Verde

This massive cliff dwelling was home to the Ancestral Puebloan subsistence farmers from 600 to 1300 CE.

- Mesoamerica

A region extending from Mexico to Central America that was the home of several pre-columbian cultures, most notably Aztec and Maya.

- Mesoamerica

area from central Mexico through Central America, the Classic Maya and Olmec were located in Mesoamerica, maize was domesticated in Mesoamerica

- Mesoamerican ballgame

ritualized Mesoamerican game that used a rubber ball; associated with fertility, sacrifice and militarism

- Mesolithic

Middle Stone Age; cultural tradition that followed the Pleistocene marked by broad spectrum foraging, groundstone tools, and strong evidence for dog domestication

- mesosystem

Larger organizational structures such as school, the family, or religion

- Message

In a rhetorical situation, a message is the text being conveyed by the speaker.

- mestizo

Meaning "mixed-race," a person who claimed both Spanish and Native American ancestry. They resided in the middle rungs of Spanish society, below pure Spaniards and above Africans slaves.

- Meta-analysis

A statistical procedure in which the results of existing studies are combined to determine what conclusions can be drawn on the basis of all the studies considered together.

- metacognition

refers to "thinking about thinking" and it is relevant in social cognition and results in increased introspection, self-consciousness, and intellectualization during adolescence

- Metaphor

A direct comparison between two things, as in Hope is the thing with feathers (Emily Dickinson, "Hope").

- metate

A large stone on which corn is ground by a smaller stone called the "mano."

- Metonymy

When one thing is represented by another thing associated with it, as in The pen is mightier than the sword (where pen stands in for writing, and

sword stands in for warfare or violence)

- Mexica

The term rulers of the Aztec Empire used to refer to themselves.

- Mexican Revolution

The Mexican Revolution was a 10-year-long armed conflict that began as a movement to oust the aging dictator, Porfirio Díaz, in 1910. Political turmoil following his resignation and continued infighting among various revolutionary factions ushered in a period of brutal civil war. Violence(...)

- mica

a naturally occurring mineral silicate that separates into thin sheets

- Michael Steck

Steck was a superintendent of Indian Affairs for the Territory of New Mexico under President Abraham Lincoln. Steck brought "Lincoln Canes" (walking sticks) to the New Mexico Pueblos as a peaceful intent gesture.

- microlith

small pieces of sharp stone made from sections of longer blades and flakes and make more efficient use of stone; these were inserted into handles to economize toolstone

- microsystem

Immediate surrounds including those who have direct, significant contact with the person, such as parents or siblings

- Middens

Trash mounds.

- middle school

a school for children in the grades between elementary school and high school. Middle school usually begins with grade 6 and ends with grade 8

- Miguel A. Otero, Jr

Otero Jr. was the 16th Territorial Governor of New Mexico and the son of Miguel Otero Sr. Enamored with outlaws and law enforcement "stars of

the west", Otero penned an autobiography about his interactions with legends such as Kit Carson, Billy The Kid, Jesse James and Bat Masterson

- Miguel A. Otero, Sr.

Otero Sr. was an influential politician, businessman and entrepreneur. He was the longest serving Hispanic delegate to the New Mexico Legislature in the 19th century.

- Miguel de Hidalgo y Costilla

Hidalgo was a Catholic priest and leader of the Mexican independence against Spanish rule.

- [Milhiser v. Padilla](#)

This 1887 lawsuit challenged the Padilla brothers' right to erect fences on the Las Vegas Land Grant commons near a site called La Monilla, thirteen miles east of Las Vegas. Judge Elisha V. Long ruled in favor of the nuevomexicanos in this case, although the decision did not set a precedent(...)

- milk anemia

An iron deficiency in infants who have been maintained on a milk diet for too long

- Mimbres Black-on-white

ceramic type of the Mimbres Mogollon region known for its artistry and spectacular iconography

- Minority influence

Occurs when the beliefs held by the smaller number of individuals in the current social group prevail.

- Mirabeau B. Lamar

Lamar was the President of the Republic of Texas who organized the ill-fated Texan-Santa Fe Expedition.

- Misinterpretation

to interpret, explain, or understand incorrectly

- Mississippian Tradition

Moundbuilder culture of the eastern U.S. marked by platform mounds, social hierarchy, and shared religious

ideologies (ca. AD 800-AD 1500); Cahokia in Illinois is an example

- mitosis

The process of cell division

- mnemonic devices

mental strategies to help learn and remember information more efficiently; improves during adolescence

- Moche

archaeological tradition of northern Peru; known for its portrait pots, adobe brick monuments, and ritual combat

- Moche "sex pots"

sexually explicit pots typically representing non-reproductive acts found among the Moche of northern Peru

- Mogollon

Mogollon is one of four major cultures from the Southwest from 1400 to 1450 CE. The Mogollon lived in the northern Mexico and in the south central United States.

- moiety

The way Pueblo communities are divided into two halves.

- mold matrix

the original model from which a ceramic mold is made; used by the Moche to produce portrait vessels

- Moluccas

Refers to an Indonesian archipelago called the Maluku Islands, known as the "Spice Islands" to the Spanish.

- Monk's Mound

the largest prehistoric structure north of Mexico, about 100 ft. high and covering 14 acres at its base; located at the Mississippian site of Cahokia in Illinois

- Monogamy

Having a single mate for life.

- Monometer

A one-foot line.

- Monotheism
Religion with typically one major deity.
- monozygotic
Derived from a single ovum
- Montgomery Ward
In competition with Sears, Montgomery Ward was founded in Chicago, Illinois immediately after the Civil War as a mail order merchandiser. Thriving in sales during World War I, the Great Depression, and World War II, Wards eventually went out of business after nearly 130 years.
- Mood
The emotional weight or atmosphere of a story, created through details, description and other craft features.
- Morality beliefs
The set of social norms that describe the principles and ideals, as well as the duties and obligations, that we view as appropriate and that we use to judge the actions of others and to guide our own behavior.
- moratorium
an adolescent's choice of a socially acceptable way to postpone making identity-achievement decisions. Going to college is a common example. Engaged in questioning, but not yet making a commitment, according to Marcia's theory
- Morehouse College
Founded shortly after the Civil War, Morehouse College is a private, all male, historically African American college in Atlanta Georgia. Martin Luther King Jr. was a Morehouse Alumni.
- morpheme
the smallest unit of language that conveys some type of meaning
- Morphology
The study of the forms of things, in particular.
- morphology
- form (see Chapter 2)
- mortar
cup-like vessel made of stone used for processing plants like acorns
- mortuary mounds
earthen mounds containing skeletons; Hopewell and Mississippian tradition used mortuary mounds for burying their dead
- Moses Austin
Moses Austin born in 1821 is a co-founder to the American Lead Industry. He was one of the first men to gain permission to bring Anglo's to Texas.
- motor skills
The word "motor" refers to the movement of the muscles. Motor skills refer to our ability to move our bodies and manipulate objects
- Multi-cropping
Practice of planting several crops in one plot in order to increase productivity
- multiplicity
recognizing that some problems are solvable and some answers are not yet known
- mural
wall painting
- muscle dysmorphia
sometimes called "reverse anorexia" this is an obsession with being small and underdeveloped; extreme concern with becoming more muscular
- Mutation
A change to the sequence of bases in DNA.
- mutation
A sudden permanent change in a gene
- mya
shorthand for millions of years ago (see Chapter 2)
- myelin
- A coating of fatty tissues around the axon of the neuron
- myelination
an aspect of brain maturation in which more myelin is formed around the axons of neurons, thereby increasing neural transmission
- myelination
insulation of neurons' axons with fatty substance (myelin sheath) that helps speed up the processing of information; myelination starts to increase in the prefrontal cortex during adolescence
- NAGPRA
legislation that stipulates human remains and other culturally important items found on federal lands should be repatriated or returned to tribes that can demonstrate cultural affiliation
- NAGPRA
Native American Graves Protection and Repatriation Act of 1990
- Nahua
The language of the Aztec Empire that dominated Mesoamerican culture.
- naming explosion
a sudden increase in an infant's vocabulary, especially in the number of nouns, that begins at about 18 months of age
- Nana
Apache warrior and chief who fought along with Mangas Coloradas and Victorio during the Apache Wars between 1849 and 1886. Nana is the Mexican-Spanish derivative of his Apache name, Kastziden.
- Narbona
Navajo Chief who sought a peaceful resolution and negotiated with the U.S. Government during the American-Indian Wars.
- Nathan Clifford
The U.S. Ambassador to Mexico in 1848, Democrat Nathan Clifford issued the Querétaro Protocol--a document that explained the reasoning

for the alterations to the Treaty of Guadalupe Hidalgo made by the U.S. Congress prior to its ratification.

- National Historic Preservation Act of 1966 (NHPA)

legislation aimed at preserving archaeological and historical sites in the United States (see Chapter 2)

- National Register of Historic Places

a list of archaeological and historical sites deemed worthy of preservation; established by the National Historic Preservation Act of 1966 (see Chapter 2)

- native copper

refers to naturally occurring copper in a chemically uncombined state

- nature

The influences of biology and genetics on behavior

- Navajo Progressive League

Jacob C. Morgan organized the Navajo Progressive League as a representative body to counter the influence of the tribal council that had been handpicked by John Collier and BIA agents in the 1930s. At the heart of the conflict between the two groups was the issue of livestock reduction. The(...)

- Nednhi

Translates to "the enemy people" or "the people who make trouble." Often called Bronco Apaches, Sierra Madre Apaches, and Southern Chiricahua.

- negative correlation

Two variables change in different directions, with one becoming larger as the other becomes smaller; a negative correlation is not the same thing as no correlation

- negative punishment

a desirable stimulus is removed to decrease a behavior; for example, losing the privilege of playing a desired game or using a desired item

- negative reinforcement

an undesirable stimulus is removed to increase a behavior; for example, the car beeping goes away when we click into the seatbelt

- neglected

children who tend to go unnoticed but are not especially liked or disliked by their peers

- Negotiation

The process by which two or more parties formally work together to attempt to resolve a perceived divergence of interest in order to avoid or resolve social conflict.

- Neolithic

tool tradition marked by groundstone tools and pottery; associated with agriculture

- Neolocal Residence

When the wedded couple established a new residence.

- Neologism

A newly coined word or expression.

- neurons

Nerve cells in the central nervous system, especially in the brain

- neurosis

A tendency to experience negative emotions

- neurotransmitters

Brain chemicals that carry information from the axon of a sending neuron to the dendrites of a receiving neuron

- [New Mexico Cultural Properties Act of 1978](#)

Among other things, this state legislation stipulates that it is unlawful to intentionally excavate a marked or unmarked burial on private land in New Mexico. A permit is required to use mechanical earth-moving equipment on an archaeological site on private land in New Mexico. (see Chapter(...))

- Newton Baker

Newton D. Baker was an American politician that belonged to the

Democratic Party. He was the 37th mayor of Cleveland, Ohio from 1912 to 1915 and as U.S. Secretary of War from 1916 to 1921.

- [Nezahualcoyotl](#)

Ruler of Tenochtitlan's neighboring city-state of Texcoco. His people were not Aztec, but Acolhua, settling on the eastern side of Lake Texcoco.

- Niels Bohr

A Danish physicist. Bohr's model of the atom and his work in quantum physics helped Manhattan Project scientists understand and create the atom bomb

- Nim Chimpsky

A chimp taught to use ASL; his signs were analyzed quantitatively by psychologist Herb Terrace.

- Nineteenth Amendment

This amendment to the U.S. Constitution prohibits denying the right to vote based on gender. Initially introduced in 1878, the amendment was not passed until 1920.

- Noble Savage

Idea that traditional people are naturally good or noble not having been corrupted by civilization

- Non-normative influences

Unpredictable influences not tied to a certain developmental time, personally or historical period

- Nonphysical aggression

Aggression that does not involve physical harm.

- Normative age-graded influences

Biological and environmental factors that have a strong correlation with chronological age

- Normative conformity

When we express opinions or behave in ways that help us to be accepted or that keep us from being isolated or rejected by others.

- Normative history-graded influences

Influences associated with a specific time period that define the broader bio-cultural context in which an individual develops

- North Acropolis at Tik'al

a huge platform that appears to have been a burial place for Tikal nobles

- Northwest Ordinance of 1787

Adopted by the Confederation Congress in 1787, this ordinance established a form of government and steps to statehood for regions in the northwest territory.

- Nucleotide Bases

Steps of the DNA ladder that pair together, A with T and G with C.

- Nueces Strip

The Nueces Strip was the territory between the Nueces River and the Rio Grande that was disputed claimed by both the Texas Republic and the nation of Mexico in the lead-up to the U.S. Mexico War. Texans pushed their claim to include all land to the Rio Grande's headwaters—an assertion that(...)

- Nuer woman-woman marriage

Practice where women marriage each other in order to produce and heir or escape domestic violence.

- nuevomexicano

Descendants of Spanish and Mexican colonists who settled in the New Mexico region. Many claimed purity of blood to climb atop the social hierarchy, when in fact they are of mixed-race heritage.

- Numunu

"The people" in Comanche; what the Comanches called themselves

- Nurture

Environmental, social, and cultural influences of behavior

- object permanence

The understanding that even if something is out of sight it still exists, develops between 5 and 8 months old

- object permanence

the realization that objects (including people) still exist even if they can no longer be seen, touched, or heard

- Objectivity

The ability to perceive a subject without being influenced by personal biases or emotions.

- Observational research

Research that involves making observations of behavior and recording those observations in an objective manner.

- observational studies

Also called naturalistic observation, involves watching and recording the actions of participants

- occupation

episode of human use

- Octameter

An eight-foot line.

- Octave

A stanza containing eight lines.

- Octaviano Larrazolo

Fourth Governor of New Mexico and a U.S. Senator. Larrazolo was the first Hispanic United States Senator and of Mexican-American heritage. During his tenure, he was an advocate of bilingual education, civil rights for Mexican immigrants and supported women's suffrage.

- Ojos Colorados

An Apache headsman whose raids terrorized the New Spanish northern frontier for almost two years.

- Old Copper Complex

refers to a copper industry around the Great Lakes region dating to around 4000 BCE. The old copper culture represents one of the few hunter-gatherer "cultures" that used metals.

- old wood problem

refers to inaccuracy of dating a structure using dendrochronology because wood beams from older

structures were re-used when building new structures

- Omnivorous

Ability to consume both animal and plant foods

- open-air site

sites located in open space and often exposed to erosion from wind and water; contrasts with cave and rock shelter sites (see Chapter 3)

- operant conditioning

A form of learning in which a voluntary response is strengthened or weakened by its association with positive or negative consequences

- Operational definition

The particular method that we use to measure a variable of interest.

- operationalized

Concepts transformed into variables that can be measured in research

- operations

the term used by Piaget to mean the logical rules that children develop with time

- oral stage

The first stage of psychosexual development when infants needs are met primarily through oral gratification

- [Oregon Fever](#)

As migration in the U.S. headed westward, many pioneers, traders, trappers and immigrant headed for the Oregon Territory. There were so many people moving that they called the migration "Oregon Fever."

- Oregon Trail

The westward migration route from Missouri to western United States beginning in 1843 with the largest group of migrants making the five month journey.

- origin myths

Stories and oral histories from various cultures to describe the origins of

certain phenomenons in nature and society.

- osteologist
expert in bone analysis (see Chapter 2)
- osteoporosis
the decline and loss of bone density and the increasing fragile and brittle condition of bones from a loss of tissue
- osteoporosis
a condition in which the bones become brittle, fragile, and thin, often brought about by a lack of calcium in the diet
- osteosarcopenia
when someone has both sarcopenia and osteoporosis, or both muscle and bone tissue loss
- Ota Benga
Mbuti man who became part of a zoo exhibit in New York in 1906.
- Other-concern
The motivation to affiliate with, accept, and be accepted by others.
- Outgroup homogeneity
The tendency to view members of outgroups as more similar to each other than we see members of ingroups.
- Outline
A detailed summary of the important points in a text.
- Overjustification
Occurs when we view our behavior as caused by the situation, leading us to discount the extent to which our behavior was actually caused by our own interest in it.
- overregulation
a process in learning a language in which children overgeneralize rules to words where the rule is not applicable
- Oxytocin
A hormone that is important in female reproduction and that also influences

social behaviors, including the development of long-term romantic attachments.

- P. G. T. Beauregard
Beauregard marched with General Scott's army from Veracruz to Mexico City in 1847 as part of the final offensives of the U.S.-Mexico War. He gained notoriety during the U.S. Civil War as an effective Confederate general.
- Pablo and Nicanor Herrera
One of the three Herrera brothers to organize the Las Gorras Blancas, a group formed to fight the Anglo land grabbers, in northern New Mexico.
- Pablo Montoya
Montoya was a vecino of Taos Pueblo who supported the Chimayó Rebellion in 1837 and who later played an instrumental role in the 1847 Taos Revolt that directly challenged the U.S. occupation. His contemporaries claim that he styled himself as the "Santa Anna of the North." Along with Tomasito,(...)
- Padilla Brothers
The three Padilla brothers (José, Francisco, and Pablo Padilla) build fences on the Las Vegas Land Grant commons in the mid 1880s in order to protect nuevomexicano access to land and resources. Their actions were the basis of the Milhiser v. Padilla suit.
- padrinos
The godparent of a child who sponsors his/her baptism is a padrino. In nonreligious terms, it is an individual chosen by the child's parents to participate in the raising and caring of the child.
- pal parent
wants to be the child's friend and focuses on being entertaining and fun
- Palace of the Governors
Construction of the original adobe structure on the north side of the Santa Fe Plaza began in 1610 not long after the arrival of Governor Pedro de

Peralta and the relocation of the colonial capital to the villa de Santa Fe. The Palace of the Governors was the site of governmental(...)

- Paleoanthropology
Study human human fossil ancestors
- palimpsest
something that is continuously reused or written or painted over like a manuscript or Upper Paleolithic cave artwork
- palimpsest
something that has been written or drawn on multiple times
- palliative care
an interdisciplinary approach to specialized medical and nursing care for people with life-limiting illnesses. It focuses on providing relief from the symptoms, pain, physical stress, and mental stress at any stage of illness, with a goal of improving the quality of life for both the person(...)
- Pantoum
Originating in Malaysia, the pantoum was adapted by French poets. It consists of an unlimited number of quatrains in which the second and fourth lines of each are repeated in the first and third lines of the next. The first and third lines of the first stanza become the final stanza's second(...)
- parasuicide
any potentially lethal action against the self that does not result in death. (also called attempted suicide or failed suicide)
- parietal art
cave art (see Chapter 3)
- Parkinson's Disease
long-term degenerative disorder of the central nervous system which mainly affects the motor system, first characterized by shaking, rigidity, slowness of movement, and difficulty with walking, but thinking and behavioral problems may also occur
- Parral

A town in northern Mexico that largely developed due to its silver mining industry during the 16th and 17th centuries.

- Partible Paternity

The idea that the fetus is formed from the semen of more than one man.

- Participant Observation

Becoming actively embedded in a culture while making observations. Used by cultural anthropologists.

- Partido System

The partido system was a formalized patron-client relationship that dated back to the Spanish colonial period. Most nuevomexicanos lacked the resources or capital to secure their own sheep or implements. Under the system, a rico patron furnished an agreed upon number of sheep to a partidario(...)

- Passive

A sentence construction where the subject is not clear or the subject is not performing the action in the sentence.

- passive coping

characterized by avoidance and distraction; outcomes tend to not be as positive as with active coping

- passive euthanasia

a type of voluntary euthanasia that is passive, such as no longer feeding someone or giving them food

- Passive voice

A sentence construction where the subject is not clear or the subject is not performing the action in the sentence.

- pastoral

A semi-nomadic lifestyle based on herding sheep and changing locations depending on changes in water and grazing availability.

- Pastoralism

Herding

- Pat Garrett

Originally from Alabama, Pat Garrett was appointed to serve as Lincoln County's Sheriff in 1880. Prior to his service as sheriff, he had worked as a cowboy in Texas. He also had prior dealings with Billy the Kid. As sheriff, however, his main task was to bring Billy the Kid to justice for his(...)

- Pathos

Appeals to the emotions and cultural beliefs of the listeners or readers. In a rhetorical situation, it is the appeal most closely associated with the audience.

- Patrilocal Residence

When the bride moves into the house of the groom's family.

- patriots

Patriots were settlers of the 13 British colonies in North America who fought against the Crown for independence.

- patronato real

A system of royal patronage in Spain where the crown played an involved role in the administration and support of the church, creating a church-state with backing from the Pope that was formative to the Spanish Empire's rise to power.

- Paulita Maxwell

Alleged as Billy the Kid's sweetheart, Paulita Jaramillo need Maxwell, of Mexican and Spanish heritage denied being anything other than Billy's good friend.

- Payupki

A Hopi village that was a place of refuge for people of the Sandia Pueblo during the Pueblo Revolt and subsequent Spanish reconquest.

- Peace Pipe Ceremony

historic ceremony used by Native American nations during which violence was suspended; Hopewell pipes may have served a similar function

- Pedro de Ampudia

Pedro Nolasco Martín José María de la Candelaria Francisco Javier Ampudia y Grimarest (Pedro de Ampudia) was born in Havana, Cuba, in 1805. He became an Army officer at a young age and later became Governor of Tabasco, Yucatán and Nuevo León. Before war broke out with the United States in(...)

- Pedro de Villasur

Villasur was a Spanish lieutenant who led an expedition to check on the growing French presence in the Great Plains region. He was killed in combat when the expedition was attacked and overwhelmed by Pawnee and Otoe Indians.

- Pedro García Conde

Under Mexican President President José Joaquín Herrera, Garcia was the Secretary of War during the time Santa Ana attempted to reclaim power. Garcia is also noted in history as a cartographer in mapping Chihuahua state in Mexico, southern New Mexico and parts of California.

- Pedro Ignacio Gallego

Gallego was a militia leader from Abiquiú who welcomed William Becknell's party into New Mexico in 1821, effectively opening the Santa Fe Trade.

- Pedro Reneros de Posada

Posada was the titular governor of New Mexico between 1686 and 1689. He led an unsuccessful expedition in 1687 to reclaim New Mexico for the Crown.

- Pedro Rodríguez

Rodríguez headed the Chicano Studies department at New Mexico Highlands University in the 1960s and 1970s, and he supported the organization of La Raza Unida Party in San Miguel County.

- peer pressure

encouragement to conform to one's friends or contemporaries in behavior, dress, and attitude; usually considered a negative force, as when adolescent

peers encourage one another to defy adult authority

- Pekka Hämäläinen

Finnish historian who argued that Comanche dominance was largely due to its implementation of its own economically-driven imperialism.

- pelvic inflammatory disease

an infection of the upper part of the female reproductive system, namely the uterus, fallopian tubes, and ovaries, and inside of the pelvis

- peninsulares

Colonial settlers in Latin America that had been previously born in Spain.

- Penitente Brotherhood

A lay Catholic fraternity, the Penitente Brotherhood, was created in the tradition of other such organizations that dated back to reconquest Iberia. They abided by their own set of by-laws and initiation ceremonies, but their main purpose was to serve their local communities and to purify(...)

- Pentad

A learning tool (developed by social philosopher Kenneth Burke) that helps break apart information into five interrelated components that determine its overall shape and direction (Act, Agent, Agency, Scene, Purpose)

- Pentameter

A five-foot line.

- Penultimate

Second to last.

- percentile

A point on a ranking scale of 0 to 100. The 50th percentile is the midpoint; half of the infants in the population being studied rank higher and half rank lower

- perception

The process of interpreting what is sensed

- peripheral slowing process

the theory that overall processing speed declines with age in the peripheral nervous system

- permissive parenting

involves being a friend to a child rather than an authority figure. Children are allowed to make their own rules and determine their own activities

- permissive parenting

parenting that is low in demandingness and high in support

- Person perception

The process of learning about other people.

- Persona

Comes from the Latin word for mask; it's the version of the writer that they want to illustrate for the reader in a memoir.

- Personal attribution

When we decide that the behavior was caused primarily by the person.

- Personal distress

The negative emotions that we may experience when we view another person's suffering.

- personal fable

an aspect of adolescent egocentrism characterized by an adolescent's belief that his or her thoughts, feelings, and experiences are unique, more wonderful, or more awful than anyone else's

- Personal narrative

A personal narrative tells the true story of something that happened to the writer.

- Personal observation

Similar to testimony, but consists of one's own testimony; it reflects what you know to be true because you have experiences and have formed either opinions or judgements.

- Personification

Human characteristics being applied to non-human things, as in irises, all

/funnel & hood, papery tongues whispering little / rumors in their mouths (Laura Kasischke, "Hostess").

- Perspective

In analysis, your personal insight into a text; what a text means to you and why you think it's significant.

- Persuasive writing

Writing created to convince, motivate, or move readers toward a certain point of view or opinion.

- pestle

stone pounding tool, usually roughly cylindrical. Used with a mortar.

- Petrarchan sonnet

This sonnet contains two stanzas: one octet that rhymes as A B B A–A B B A, and a remaining sextet with varying rhyme schemes. The volta occurs between the stanzas.

- petroglyph

an image pecked or scratched into rock; contrast with a pictograph which is painted with pigment

- phallic stage

The third stage of psychosexual development, spanning the ages of 3 to 6 years, when the young child's libido (desire) centers upon their genitalia as the erogenous zone

- phallic stage

the third stage in Freud's theory of psychosexual development, lasting from age three to six years, during which the libido (desire) centers upon the genitalia and children become aware of bodies

- phenomenal field

Our subjective reality, all that we are aware of, including objects and people as well as our behaviors, thoughts, images, and ideas

- Phenotype

The expression of a gene.

- phenotype

The individual's inherited physical characteristics

- phoneme
a basic sound unit of a given language
- physical abuse
the use of intentional physical force to cause harm
- Physical aggression
Aggression that involves harming others physically.
- Physical attractiveness stereotype
The tendency to perceive attractive people as having positive characteristics, such as sociability and competence.
- physician-assisted suicide
occurs when a physician prescribes the means by which a person can end his or her own life. This differs from euthanasia, in that it is mandated by a set of laws and is backed by legal authority. Physician-assisted suicide is legal in the District of Columbia and several states, including(...)
- physiological death
when vital organs no longer function
- phytolith
small particles of silica derived from the cells of plants, they preserve even after the plant has decayed, used to determine the location of farmland at Catalhoyuk
- Piaget's theory of cognitive development
A description of cognitive development as four distinct stages in children: sensorimotor, preoperational, concrete, and formal
- Pierre and Paul Mallet
Brothers and French Canadian explorers who were the first Europeans to cross the Great Plains. They journeyed from Illinois to Santa Fe, New Mexico.
- Pierre Vial
Early 19th century French wayfinder, Pierre Vial, helped establish routes and pathways which eventually became the Santa Fe Trail, the commercial highway between Missouri and Santa Fe. He is commonly called "Pedro" in Spanish records.
- Pike's Peak
A mountain in the front range of the Rocky Mountains, originally called "El Capitán" by the Spanish.
- pincer grasp
A developmental milestone that typically occurs at 9 to 12 months of age; the coordination of the index finger and thumb to hold smaller objects; represents a further development of fine motor skills
- Pionsenay
Pionsenay and his brother Skinya rose to prominence among the Central Chiricahuas in the Arizona Territory following Cochise's death in 1874.
- pithouse
semi-subterranean structures (partially dug into the ground) structures; used by Hohokam (shallow) and Mogollon (deep) of the American Southwest
- placenta
An organ that develops in the uterus during pregnancy to provide oxygen and nutrients to the fetus
- placenta
A structure connected to the uterus that provides nourishment and oxygen from the mother to the developing embryo via the umbilical cord
- Plan de San Luís Potosí
A 1910 political statement penned by Francisco Madero and his supporters in San Antonio, the Plan de San Luis Potosí called for the uprising and overthrow of the Mexican authoritarian government and movement toward democracy. The plan initiated the Mexican Revolution.
- Plan de Tomé
The Plan de Tomé was the title given to the counter-revolt led by Manuel Armijo to suppress the government of José Gonzales that had been established through the Chimayó Rebellion.
- plaster hypothesis
the belief that personality is set like plaster by around the age of thirty
- platform mounds
flat-topped earthen mounds; found in Mississippian Tradition sites and the Hohokam
- platform pipes
pipes associated with the Hopewell tradition that are associated with leaders in mortuary contexts; may have served similar purpose to historic Peace Pipe Ceremony
- Pleistocene
A geological epoch from 2.5 million to 11,700 years ago that's characterized by increased glacial activity and megafauna.
- Pleistocene
The epoch of the ice ages roughly 2 mya to 12 kya.
- Pleistocene
time period from 2 mya to about 10 kya marked by ice ages (cold trends) and warming period (interglacials); climate during the Pleistocene was highly variable
- Plot
The events as they unfold in sequence.
- police officer/drill sergeant parent
focuses primarily on making sure that the child is obedient and that the parent has full control of the child
- Polygamy
The practice or custom of having more than one wife or husband at the same time.
- Polygyny
Males have more than one female spouse.
- Polytheism
Religion with many deities.
- Ponciano Arriaga

Ponciano Arriaga was born in 1811. During his adult life, he made a career as a lawyer and a legislative representative in San Luis Potosí, Mexico. Along with other liberal politicians in 1848, he called for the continuation of hostilities against the United States after Mexican conservatives(...)

- Po'pay

Po'pay, also spelled "Popé," was a Tewa religious leader of Ohkay Owingeh who led the Pueblo Revolt against the Spanish colonizers. It was the first successful uprising that kept the Spanish out of Pueblo lands for more than a decade. His influence in the revolt is still under scholarly debate.

- popular-antisocial

children who gain popularity by acting tough or spreading rumors about others

- popular-prosocial

children who are popular because they are nice and have good social skills

- positive correlation

Two variables change in the same direction, both becoming either larger or smaller

- positive punishment

an undesirable stimulus is added to decrease a behavior; for example, spanking or receiving a speeding ticket

- positive reinforcement

a desirable stimulus is added to increase a behavior; for example, stickers on a behavior chart or words of encouragement

- post-conventional moral development

stages 5 and 6 of moral development where morality comes from personal understanding of rights and justice, regardless of whether that understanding matches societal norms

- post-cranial

means "below the neck" or cranium (see Chapter 3)

- post-processualism

an approach to archaeology that stressed multiple ways of knowing the past; rejected processual archaeology as too reductionist; championed by British archaeologist Ian Hodder

- Postdecisional dissonance

The feeling of regret that may occur after we make an important decision.

- postformal thought

a more individualistic and realistic type of thinking that occurs after Piaget's last stage of formal operations

- Potsdam Conference

A meeting between Russia, the United States, and England to negotiate the terms for the end of World War II.

- pottery

fired ceramic vessels; contrast to the word "ceramic" which does not imply a vessel

- pre-conventional moral development

first 2 stages of moral development where morality comes from outside the person, and the concern is on physical consequences of actions

- Precise diction

Words that are clear and specific.

- preform

template of a finished tool

- Prefrontal cortex

The part of the brain that lies in front of the motor areas of the cortex and that helps us remember the characteristics and actions of other people, plan complex social behaviors, and coordinate our behaviors with those of others.

- prefrontal cortex

The area of the cortex at the very front of the brain that specializes in anticipation, planning, and impulse control

- prefrontal cortex

the area of the cortex at the very front of the brain that specializes in anticipation, planning, and impulse control

- prefrontal cortex

part of the frontal lobes, involved with decision making, cognitive control, and other higher order functions; prefrontal cortex develops further during adolescence

- pregnancy-related death

The death of a woman while pregnant or within 1 year of the end of a pregnancy from any cause related to or aggravated by the pregnancy

- Pregunta

This Spanish form was practiced by poets of the court in pairs during the fourteenth and fifteenth centuries. One poet asks a question or series of questions in one form and the second poet, matching the form, answers. The topics usually related to love, philosophy, or morality.

- prehistory

period of human history without written records (see Chapter 1)

- Prejudice

An unjustifiable negative attitude toward an outgroup or toward the members of that outgroup.

- prenatal diagnosis

An aspect of prenatal care focused on pursuing additional detailed information once a particular problem has been found

- prenatal screening

An aspect of prenatal care focused on finding problems among a large population with affordable and noninvasive methods

- preoperational stage

The stage in which children can use symbols to represent words, images, and ideas, which is why children in this stage engage in pretend play, lasts approximately 2 to 7 years old

- preoperational stage

the second stage in Piaget's theory of cognitive development; describes the development in children ages 2-7

- presbycusis
hearing loss as a result of aging
- presbycusis
age-related sensorineural hearing loss resulting from degeneration of the cochlea or associated structures of the inner ear or auditory nerves
- presbyopia
farsightedness caused by loss of flexibility of the lens of the eye as a result of aging
- Present tense
A tense expressing an action that is currently going on or habitually performed, or a state that currently or generally exists.
- prestige goods
items restricted to elite members of a population
- Prewriting
The first stage of the writing process, which may consist of a combination of outlining, diagramming, storyboarding, and clustering.
- Primacy effect
Information that we learn first is weighted more heavily than is information that comes later.
- primary aging
aging that is irreversible and is due to genetic predisposition
- primary circular reactions
the first two stages of Piaget's sensorimotor intelligence which involve the infant's responses to its own body
- primary sex characteristics
the parts of the body that are directly involved in reproduction, including the vagina, uterus, ovaries, testicles, and penis
- Primary sources
Firsthand sources of information.

- Primary support
The major points a writer chooses to expand on in their thesis. It is the most important information a writer uses to argue their point of view.
- Primatology
Study of primates, i.e., monkeys, apes, prosimians, etc.
- Priming
A technique in which information is temporarily brought into memory through exposure to situational events.
- Principle of Association
when remains of the past are in close proximity to each other, they likely date to the same time period (see Chapter 1)
- Principle of Superposition
in a sequence of undisturbed strata, the overlying layer is younger than the one below it (see Chapter 1)
- Principle of Uniformitarianism
an approach used to make inferences from the archaeological record that states that processes occurring in the present were also occurring in the past (see Chapter 1)
- Principles of Citing
In MLA format, the hierarchical rules for creating works cited entries.
- Prisoner's dilemma game
A laboratory simulation that models a social dilemma in which the goals of the individual compete with the goals of another individual (or sometimes with a group of other individuals).
- Private acceptance
Real change in opinions on the part of the individual.
- private speech
speech that a child says aloud, but which is not meant to be part of communication with anyone else
- probanza de mérito
A "proof of merit" written by prospective Spanish explorers to convince the crown of the importance

and possible rewards of their proposed expeditions.

- Procedural fairness
Beliefs about the fairness (or unfairness) of the procedures used to distribute available rewards among parties.
- Process gain
When groups work better than we would expect, given the individuals who form them.
- Process loss
Is an outcome in situations in which groups perform more poorly than we would expect, given the characteristics of the members of the group.
- Processing fluency
The ease with which we can process information in our environments.
- processual archaeology
archaeology focused on scientific understanding of the past; it stressed adaptation and change over time (process), also called the New Archaeology, championed by American archaeologist Lewis Binford
- Proclamation of 1763
A British law that forbade colonial settlements west of the Appalachians.
- productive potential
the amount of biomass in an area that can be used for human consumption
- Productivity
New words or sentences that others can understand can be generated.
- prognathism
Jutting forward of the lower face.
- Progressive Era
A period in U.S. history between 1890 and 1920 in which social activism and political reform were the motivating factors. Progressive activists tended to be middle-class reformers and politicians who sought rational and scientific solutions for prominent social issues. Ending political(...)

<ul style="list-style-type: none"> projectile point generic word for the tip of a weapon such as an arrowhead, stone atlatl point, or spear head Proofreading Reviewing a paper for general consistency and clarity. Prose poem The prose poem, which can be any length, isn't broken into verse, but contains many of the elements of poetry: figures of speech, musical language, internal rhyme, repetition, condensed syntax, and imagery. Prosody The musical patterns of language. provenience the physical coordinates of an archaeological specimen (see Chapter 2) proximity a term for physical nearness which been found to be a significant factor in the development of relationships proximodistal Development that occurs from the center or core of the body in an outward direction pruning the process by which unused connections in the brain atrophy and die psychodynamic perspective The perspective that behavior is motivated by inner forces, memories, and conflicts that are generally beyond people's awareness and control psychological abuse aggressive behavior that is intended to control someone else psychological death when a dying person begins to accept death and to withdraw from others and regress into the self Psychological reactance 	<p>A strong motivational state that prevents conformity.</p> <ul style="list-style-type: none"> psychosexual stages Freud's oral, anal, phallic, latency, and genital stages psychosocial theory The theory that emphasizes the social relationships that are important at each stage of personality development puberty the period of rapid growth and sexual development that begins in adolescence Public conformity Is a superficial change in behavior (including the public expression of opinions) that is not accompanied by an actual change in one's private opinion. Public goods Benefits that are shared by a community at large and that everyone in the group has access to, regardless of whether or not they have personally contributed to the creation of the goods. Pueblo Bonito In northern New Mexico, within Chaco Canyon, Pueblo Bonito is the region's largest great house occupied by Ancestral Puebloans from 828 to 1126 CE. Pueblo Bonito D-shaped Great House at Chaco Canyon, New Mexico Pueblo Revolt Also known as Po'pay's rebellion, it was a combined uprising of the Pueblos of New Mexico against the Spanish in 1680. It was the only successful Native American rebellion against a European power. Pure line A line of poetry that adheres to a pattern the poem has undertaken. Purpose 	<p>The reason the writer composes the writing.</p> <ul style="list-style-type: none"> push factor Used as a term to describe migration of humans, push factors are things that compel people to migrate to another location or geography. They can be unfavorable living factors. Puyé Cliff Dwellings These abandoned ruins are located in Santa Clara Canyon near Española, New Mexico. Pueblo Indians lived in the area where they hunted game and cultivated food between 900 to 1580 CE. Qualitative An approach that typically involves close description e.g., interviews about genocide qualitative refers to observations that are not measurable, descriptive in nature qualitative research Theoretical ideas are "grounded" in the experiences of the participants, who answer open-ended questions Qualitative visuals Present images that appear to the audience's emotions Qualities pitch, duration, and volume. quality of life the general well-being of individuals and societies, including life satisfaction, physical health, family, education, employment, wealth, safety, security, freedom, religious beliefs, and the environment Quantitative An approach that involves measurement of some kind quantitative refers to observations that are measurable quantitative genetics
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Scientific and mathematical methods for inferring genetic and environmental processes based on the degree of genetic and environmental similarity among organisms

- quantitative research
Involves numerical data that are quantified using statistics to understand and report what has been studied
- Quantitative visuals
Present data graphically to logically appeal to the audience.
- Quatrain
A stanza comprised of four lines.
- Querétaro Protocol
The Querétaro Protocol was the final document signed that concluded the U.S.-Mexican War with the United States appropriating nearly half of the Mexican territory.
- quid
chewed up plant fibers (see Chapter 2)
- quipu
An Inca administrative tool using a system of knots of different colors to detail various records like trade, agricultural productivity, war, and general history.
- Quotation
A group of words, usually three or more, that are borrowed from another writer or speaker. The use of quotation marks signals, to the reader, that this text is not the writer's original thought.
- rachis
holds the seed onto the plant
- radiocarbon dating
a technique used to date archaeological remains based on the decay of the radioactive isotope of carbon called carbon-14 (see Chapter 2 and videos)
- Ralph D. Abernathy
Ralph D. Abernathy was born in 1926 and made a career as a Baptist

minister. Alongside Martin Luther King Jr., he organized the historic Montgomery bus boycotts in 1955.

- rancherías
A Spanish term meaning a small rural community. In the United States, *ranchería* is used to define native villages and/or ranchers' workmens quarters.
- Random assignment to conditions
Determining separately for each participant which condition he or she will experience through a random process.
- rapatriate
The process of returning a person to their native land of origin or citizenship.
- Realistic group conflict
When groups are in competition for objectively scarce resources.
- Recall
A procedure in which voters can remove and elected politician before the end of the electoral term.
- Reception
The manner in which the audience receives the message conveyed.
- Reciprocal altruism
The idea that, if we help other people now, they will return the favor should we need their help in the future.
- reciprocal determinism
The interplay between our personality and the way we interpret events and how they influence us
- Reciprocal self-disclosure
The tendency to communicate frequently, without fear of reprisal, and in an accepting and empathetic manner.
- Reciprocity
The mutual exchange of favors or goods.
- reciprocity

the understanding that changing one quality of an object can be compensated for by changes in another quality of that object

- reciprocity
we are more likely to like someone if they feel the same way toward us
- Reciprocity norm
Is a social norm reminding us that we should follow the principles of reciprocal altruism.
- red ochre
a red mineral pigment; also called red ochre (see Chapter 3)
- Referendum
Legislative process by which measures proposed or passed by a legislative body can be sent to the vote of the electorate for approval or rejection.
- Reflection
The sense and interpretation that a writer makes of the events that transpire in a memoir.
- reflexes
the inborn, behavioral patterns that develop during uterine life and are fully present at birth. These are involuntary movements (not learned) or actions that are essential for a newborn's survival immediately after birth and include: sucking, swallowing, blinking, urinating, hiccuping, and(...)
- Reglamento de 1772
The Reglamento de 1772 was a set of legislation based on Enlightenment reasoning to solve the problems Spain faced in its northern frontier. It concluded that native hostility and the settling population's combat unpreparedness needed addressing, leading to increased military spending in the region.
- Reies López Tijerina
A spokesman for Mexican Americans and Hispanics, in the 1960s 1970s Tijerina lead the movement to restore

New Mexico land grants to the ancestors of the original owners.

- Reiterate

Say something again or a number of times, typically for emphasis or clarity.

- relative dating

dates that refer to the age of something relative to something else. That is, a relative date tells you whether something happened before or after something else (see Chapter 2)

- relativism

understanding the importance of the specific context of knowledge—it's all relative to other factors

- relativistic thinking

thinking that understands the relative or situational nature of circumstances

- reliability

When something yields consistent results

- Religion

An institution that is widely shared, involves belief in a supernatural or cosmic order, and is supported by symbols and symbolic behavior.

- René Robert Cavelier, Sieur de La Salle

Cavalier was a Frenchman who explored the Great Lakes, the Mississippi River, and the Gulf of Mexico, laying claims to Louisiana for the French crown, which effectively separated New Mexico and Spanish Florida.

- repartimiento

Spanish colonial labor system that forced natives to perform low-paying or unpaid harsh, manual labor. While it's not slavery since the native workers aren't owned or purchased, they were subject to similar cruel conditions and long hours.

- repatriate

The process of returning a person to their native land of origin or citizenship.

- repatriation

return of archaeological material to an affiliated tribal nation under NAGPRA

- Replication

The repeating of research.

- Report

A document that records and conveys information to readers in a clear, concise, and visually appealing manner

- representational art

art that resembles something in the physical world

- representational art

art that looks like something recognizable in the world by other people; much of the art of the Upper Paleolithic is representational; horses at Lascaux Cave are examples of representational art (see Chapter 3)

- Representativeness heuristic

Occurs when we base our judgments on information that seems to represent, or match, what we expect will happen while ignoring more informative base-rate information.

- requerimiento

A requirement, or demand, was a practice carried out by Spanish conquistadors that involved reading a declaration of war to the natives before attacking them. These documents commanded the natives to submit to the King, Pope, and Christian God.

- rescate

The Spanish word for "rescue" that also refers to Native Americans being "rescued" from their communities to work as house servants.

- Research

Diligent inquiry or examination to seek or revise facts, principles, theories, applications, et cetera; laborious or continued search after truth.

- research design

The strategy or blueprint for deciding how to collect and analyze information; dictates which methods are used and how

- Research hypothesis

A statement about the relationship between the variables of interest and about the specific direction of that relationship.

- Research Paper

A substantial piece of academic writing, usually done as a requirement for a class, in which the author independently researches a topic and writes a description of the research findings.

- residential hierarchy

refers to differences in the location and elaboration of houses

- response inhibition

the ability to recognize a potential behavior and stop the initiation of an undesired behavior

- retablos

Devotional paintings common in Latin America that derive their symbols from Roman Catholicism.

- retainer

servant or attendant

- Reverse outline

An outline that is created after the initial prewriting process.

- reversibility

Objects can be changed and then returned back to their original form or condition, typically observed during the concrete operational stage

- reversibility

the understanding that some things that have been changed can be returned to their original state

- Rhetorical fallacies

Fallacies are reasoning errors, which abuse the power of logical, emotional, or ethical appeals.

- Rhetorical mode

Rhetorical modes (also known as modes of discourse) describe the variety, conventions, and purposes of the major kinds of language-based communication, particularly writing and speaking. Four of the most common rhetorical modes and their purpose are narration, description, exposition, and(...)

- Rhetorical questions

A rhetorical question is a question that you ask without expecting an answer. The question might be one that does not have an answer. It might also be one that has an obvious answer but you have asked the question to make a point, to persuade or for literary effect.

- Rhetorical situation

Circumstances under which you communicate, which includes your purpose, audience, tone, genre, and medium of communication (online, face-to-face, text message, formal paper, etc.)

- Rhetorical vectors

Diagonal lines throughout an image that create action

- Rhyme Scheme

Clear end-rhyming patterns in a poem.

- Richard Feynman

Feynman, theoretical physicist, joined Hans Bethe's team in Los Alamos for the Manhattan Project. He and Bethe developed the Bethe-Feynman formula for calculating the yield of a fission bomb.

- rico nuevomexicano

Spanish for "rich New Mexicans."

- Rio Arriba

During the Spanish era, the New Mexico colony was divided into two general regions: Rio Arriba (the upper river) and Rio Abajo (the lower river). Rio Arriba included all of the New Mexico territory north of Santa Fe along the Rio Grande.

- Rio Bravo del Norte

Also known as the Rio Grande River.

- Rite of Passage

Rituals that ensure a transformation from one life stage to another life stage have a special name.

- Roanoke

Situated in present-day North Carolina, Roanoke was an English attempt in the late 16th Century to establish a permanent settlement in the Americas. However, its colonists disappeared after the Anglo-Spanish War for no reason, earning it the nickname "Lost Colony."

- Robert E. Lee

Commander of the Confederate Armies, Lee was a skillful leader, who in spite of some miraculous wins on the battlefield, eventually surrendered to the Union thereby ending the U.S. Civil War.

- Roberto Archuleta

Roberto Archuleta was the founder of El Teatro Norteño. El Teatro Norteño presented famous acts and actors, one of the most known was Luis Valdez which associated matters relevant to New Mexico.

- rock shelter

a rocky overhang (see Chapter 3)

- Rodolfo "Corky" González

Rodolfo "Corky" González was a Mexican American civil rights activist. He is considered a founder of the Chicano Movement. His poem Yo Soy Joaquín shared his view of what is was to be Chicano: a cosmic combination of conflicting American, European, and Mexican identities. Chicanos could not(...)

- Rogerian argument

Named for its creator, Carl Rogers, a type of argument that aims for true compromise between two positions.

- role confusion

a situation in which an adolescent does not seem to know or care what his or her identity is. (Sometimes

called identity diffusion or role diffusion)

- Ron Aguirre

In 1959, Ron Aguirre became one of the first customizers to use the hydraulic pump in cars to change ride height by the push of a button.

- Rough Riders

Founded by Theodore Roosevelt, Rough Riders fought in the Spanish American War. Many New Mexicans volunteered in the Rough Riders or the Cowboy Cavalry.

- Rough Riders reunions

After the war, the first reunion was held in 1899. Rough Riders met every year, until 1967, at the Hotel Castañeda in Las Vegas, New Mexico. Annual reunions ended when the only member left attended alone.

- Roundel

The roundel is an English form consisting of eleven lines in three stanzas with no set meter. The first part of line one repeats at the end of the first stanza and again as the last line of poem. The half line also forms the rhyme pattern and is indicated here as R for "refrain": A B A R-B A(...)

- Rufina Marie Laws

In the early 1990s, Laws adamantly opposed Wendell Chino's proposal to bring nuclear waste to Mescalero tribal lands. At one point, she gave a rousing speech that warned against the possibility of radioactivity in the local rivers and forests. For her efforts, she was harassed and her life(...)

- Salient

People who are salient attract our attention when we see something or someone with them.

- Salvador de Guerra

One of the many Spanish missionaries in New Mexico enforcing punishments upon the natives for idol worshipping and other non-Christian religious beliefs.

- **Salvage Anthropology**
Attempt at documenting ways of life disappearing the face of colonialism and development.
- **Sam Hitt**
Leader of the Forest Guardians, an environmental group which protested logging on federal land in New Mexico.
- **Samuel Axtell**
Samuel Axtell was appointed Governor of the New Mexico Territory in 1875. His tenure as Governor was plagued with corruption, fraud and mismanagement. No charges were filed against him and he was later appointed Chief Justice of the New Mexico Territorial Supreme Court in 1882.
- **San Antonio de Béxar**
San Antonio de Béxar was a Spanish fort built in modern-day San Antonio, Texas. Its purpose was to keep French and English aggression out of the surrounding region. It quickly became a political and economic center in Spanish Texas.
- **San José Experimental School**
Established by Lloyd Tireman in the South Valley of Albuquerque in 1930, the school was modeled after the Mexican government's rural cultural mission program.
- **San Juan de los Caballeros**
The Spanish name for the Ohkay Owingeh Pueblo.
- **San Juan de Ulúa**
San Juan de Ulúa is a complex, near Veracruz, Mexico, of prisons, fortresses, and at one time a palace. In 1519, Cortés met with Aztec representative from the empire of Moctezuma I.
- **sanctity state**
a time in which the child is contemplative, quiet, or prayerful. It is often only a very brief part of the day
- **sandwich generation**
a cohort of people charged with the dual responsibility of looking after elderly parents while raising their own children
- **Santa Cruz de la Cañada**
Santa Cruz de la Cañada is a village lying in the Galisteo Basin at more than 5,000 feet above sea level. At first it was a Pueblo community, but then was established as a Hispanic community after Diego de Vargas's reconquest.
- **Santa Fe Ring**
The Santa Fe Ring was a late 19th and early 20th century influential group of attorneys and land speculators who, through unethical and corrupt business practices, amassed large holdings of land and money. The "ring" applied to most Republican state politicians in Santa Fe, New Mexico who held(...)
- **Santa Fe Trail**
The Santa Fe Trail was a business and transportation route between Franklin, Missouri and Santa Fe, New Mexico. It opened up commerce, travel, and economic development through central United States.
- **santero**
A santero is an artisan who makes saint figures, usually out of wood or ivory.
- **Santiago Abreú**
Santiago Abreú was deputy to the Congress in Mexico City 1825-1826 and served as governor of New Mexico from 1832 to 1833.
- **Sapawe**
The Sapawe Pueblo occupied a 20-acre area perched over El Rito River from 1350 to 1550 CE. Upon contact with the Spanish, about 2,000 people were living at this Tewa ancestral site.
- **Sapir-Whorf Hypothesis**
The idea that the structure of a language influences thought.
- **sarcopenia**
the technical term for the loss of muscle tissue and function as we age
- **sarcophagus**
box-like stone receptacle for the dead
- **scaffolding**
A process in which adults or capable peers model or demonstrate how to solve a problem, and then step back, offering support as needed
- **scale of analysis**
in archaeology, refers to the idea that material culture can be studied using both fine-grained (what was in this pot?) and coarse-grained approaches (what was the nature of interaction between the pre-Hispanic Southwest and Mesoamerica?)
- **Scansion**
The process of scanning lines of poetry to mark stressed and unstressed beats and determine the poem's pattern of meter and length.
- **scatterplot**
A plot or mathematical diagram consisting of data points that represent two variables
- **Scene**
The place where an incident in real life or fiction occurs or occurred.
- **schema**
a set of linked mental representations of the world, which we use both to understand and to respond to situations
- **schemas**
An existing framework for an object or concept
- **Sears, Roebuck, & Co.**
This early mail order merchandise company benefited from the U.S. expansion to the west. The first catalog was published in 1894 and shipped, via the U.S. Postal Service, everything from A to Z to all parts of the United States.
- **secondary aging**

refers to changes that are caused by illness or disease

- secondary circular reactions
stages 3 and 4 of Piaget's sensorimotor intelligence which involves the infant's responses to objects and people
- secondary content analysis
Archival research, involves analyzing information that has already been collected or examining documents or media to uncover attitudes, practices or preferences
- secondary education
the period after primary education (elementary or grade school) and before tertiary education (college). It usually occurs from about ages 12 to 18, although there is some variation by school and by nation
- secondary sex characteristics
physical traits that are not directly involved in reproduction but that indicate sexual maturity, such as a man's beard or a woman's breasts
- Secondary sources
Discuss, interpret, analyze, consolidate, or otherwise rework information from primary sources.
- Secular Rituals
Activities that often symbolic, involve special words, objects, and clothing, are transformative, but don't involve the supernatural.
- secure attachment (type B)
a relationship in which an infant obtains both comfort and confidence from the presence of their caregiver
- secure base
a parental presence that gives children a sense of safety as they explore their surroundings
- Sedentism
Living in one location for an extended period of time.
- sedentism

refers to living in permanent settlements

- selection, optimization, compensation (SOC) theory
theory which argues that the declines experienced at this time are not simple or absolute losses. Or, rather, they need not be. Baltes argues that life is a series of adaptations and that the selection of fewer goals, optimizing our personal and social resources to attain them, and then(...)
- selective attention
the process by which one focuses on one stimulus while tuning out another; this ability improves during adolescence
- selective attrition
Certain groups of individuals may tend to drop out more frequently resulting in the remaining participants longer being representative of the whole population
- Selective Optimization with Compensation (SOC)
a strategy for improving health and well being in older adults and a model for successful aging
- self-actualization
According to humanistic theory, the realizing of one's full potential can include creative expression, a quest for spiritual enlightenment, the pursuit of knowledge, or the desire to contribute to society. For Maslow, it is a state of self-fulfillment in which people achieve their highest(...)
- self-awareness
a person's realization that they are a distinct individual whose body, mind, and actions are separate from those of other people
- self-concept
the idea of who we are, what we are capable of doing, and how we think and feel
- self-concept

our individual perceptions of our behavior, abilities, and unique characteristics. It is essentially a mental picture of who you are as a person. For example, beliefs such as "I am a good friend" or "I am a kind person" are part of an overall self-concept

- Self-concern
The motivation to protect and enhance the self and the people who are psychologically close to us.
- self-esteem
considered an important component of emotional health, self-esteem encompasses both self-confidence and self-acceptance. It is the way individuals perceive themselves and their self-value
- self-flagellation
The act of whipping oneself and causing oneself extreme pain as a religious ritual.
- Self-fulfilling prophecy
Is a process that occurs when our expectations about others lead us to behave toward those others in ways that make those expectations come true.
- self-fulfilling prophecy
the tendency to act in a way that makes what you predict will happen come true
- Self-handicapping
When we make statements or engage in behaviors that help us create a convenient external attribution for potential failure.
- Self-perception
occurs when we use our own behavior as a guide to help us determine our own thoughts and feelings.
- Self-report measures
Measures in which individuals are asked to respond to questions posed by an interviewer or on a questionnaire.
- Self-serving attributions

<p>Attributions that help us meet our desires to see ourselves positively.</p> <ul style="list-style-type: none"> • Semiotics <p>The study of signs and symbols and their use or interpretation.</p> • senescence <p>biological aging and the gradual deterioration of functional abilities</p> • sensation <p>the interaction of information with the sensory receptors</p> • sensorimotor intelligence <p>Piaget's term for the way infants think (by using their senses and motor skills) during the first stage of cognitive development</p> • sensorimotor stage <p>The stage in which children learn about the world through their senses and motor behavior, lasts from birth to about 2 years old</p> • sensorineural hearing loss <p>failure to transmit neural signals from the cochlea to the brain</p> • sensory memory <p>the first component of the memory system where information comes in through the 5 senses and is processed if the mind believes that the information is important</p> • Sentence variety <p>The creation of sentences of various lengths and types.</p> • Sentinelese <p>An isolated forager people living on North Sentinel Island in the Andaman Islands</p> • separation anxiety <p>fear or distress caused by the departure of familiar significant others; most obvious between 9-14 months</p> • Sephardic Jews <p>An ethnic division of Jews that trace their ancestry back to Israelite immigrants who settled in the Iberian</p> 	<p>Peninsula at the turn of the first millennium.</p> <ul style="list-style-type: none"> • Septameter <p>A seven-foot line.</p> • Septet <p>A stanza containing seven lines.</p> • sequential research design <p>Combines aspects of cross-sectional and longitudinal designs, but also adding new cohorts at different times of measurement; allows for analyses to consider effects of age, cohort, time of measurement, and socio-historical change</p> • Serial Monogamy <p>Having one legal spouse at a time.</p> • Serotonin <p>A neurotransmitter that influences mood, appetite, and sleep and that reduces aggression.</p> • serotonin <p>“calming chemical,” a neurotransmitter in the brain involved with the regulation of mood and behavior; serotonin levels increase in the limbic system during adolescence</p> • Sestina <p>The sestina consists of five sestets culminating in a final tercet called an envoi, also called a tornada. The six words that end each of the lines in the first stanza repeat throughout the poem in the following pattern: 1. A B C D E F 2. F A E B D C 3. C F D A B E 4. E C B F A D 5. D E A(...)</p> • Setting <p>Where a story takes place.</p> • settlement pattern <p>refers the place, duration, and type of locales where people live</p> • Seven Cities of Cíbola <p>The search for the rumored Seven Cities of Gold, located in the deserts of the American Southwest, spawned several failed Spanish expeditions and increased hostilities with Pueblo peoples.</p> 	<ul style="list-style-type: none"> • Severino Martínez <p>As Governor of the Taos Pueblo, in the 1950s, Martínez began the 62 year effort to return the Blue Lake territory to the Taos Pueblo.</p> • sex <p>a term that denotes the presence of physical or physiological differences between males and females</p> • Sestet <p>A stanza containing six lines.</p> • sexual abuse <p>the act of forcing someone to participate in a sex act against his or her will</p> • Sexual Division of Labor <p>When tasks are divided by sex or gender</p> • sexual orientation <p>a term that refers to whether a person is sexually and romantically attracted to others of the same sex, the opposite sex, or both sexes</p> • sexually transmitted infections (STIs) <p>diseases that are spread by sexual contact, including syphilis, gonorrhea, genital herpes, chlamydia, and HIV/AIDS</p> • Shakespearian sonnet <p>Comprised of an octet and a sestet, this sonnet is composed in iambic pentameter and rhymes A B A B–C D C D–E F E F–G G. The volta appears either between lines eight and nine or between lines twelve and thirteen.</p> • Shaman <p>Part-time religious practitioners that interact with the spirit world. They often act as healers and cause or prevent transformations.</p> • Shifting Agriculture <p>Practice by horticulturalists of periodically moving farm plots to allow them to rejuvenate</p> • Signal phrase <p>An introduction that introduces material that summarizes someone</p>
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else's work or reports someone else's findings.

- Significance

Statements that reveal the importance of the analysis to the writer's personal and/or cultural concerns.

- silver-fox experiments

experiments on wild Russian foxes that showed that selecting for docility produces changes in morphology; suggests that selection for docility in wolves could have produced the domesticated dog

- Simile

A comparison that uses like or as, as in something inside me / rising explosive as my parakeet bursting / from its cage (Bruce Snider, "Chemistry").

- Simultaneous submissions

A term used to refer to poems in the submission process that are under consideration by multiple publishers at one time.

- Sir Francis Drake

Drake was an English sea captain who completed the second circumnavigation of the world. The Spanish regarded him as a threat and King Felipe II offered a reward of 20,000 ducats (USD \$6.5mil in today's money) for his capture. He also led the English fleet against the Spanish Armada in 1588.

- site

spatial clusters of material culture (see Chapter 2)

- Situational attribution

To determine that the behavior was caused primarily by the situation.

- Slash and Burn

Practice of cutting and burning vegetation to increase soil productivity.

- slave revolution

A slave uprising in the French colony of Saint Domingue in 1791 led by Toussaint L'Overture resulted in the

independence of the island of Hispaniola, creating the Dominican Republic and Haiti as two separate countries.

- Snaketown

largest and best known Hohokam site; located in the Phoenix Basin

- SNP

A change in a single DNA nucleotide base, single nucleotide polymorphism.

- Social categorization

The natural cognitive process by which we place individuals into social groups.

- Social cognition

The mental activity that relates to social activities and helps us meet the goal of understanding and predicting the behavior of ourselves and others.

- social-cognitive learning theory

Learning by observing the behavior of another person, called a model

- Social conventional morality

Norms that are seen as appropriate within a culture but that do not involve behaviors that relate to doing good or doing harm toward others.

- Social creativity

The use of strategies that allow members of low-status groups to perceive their group as better than other groups.

- social death

when others begin to withdraw from someone who is terminally ill or has been diagnosed with a terminal illness

- Social dilemma

A situation in which the goals of the individual conflict with the goals of the group.

- Social dominance orientation (SDO)

Is a personality variable that refers to the tendency to see and to accept inequality among different groups.

- social exchange theory

people try to maximize rewards and minimize costs in social relationships

- Social facilitation

The tendency to perform tasks better or faster in the presence of others.

- Social fairness norms

Beliefs about how people should be treated fairly.

- Social Hierarchy

Group members are ranked

- social hierarchy

difference in wealth and power within a society

- Social identity

The positive self-esteem that we get from our group memberships.

- Social impact

The increase in the amount of conformity that is produced by adding new members to the majority group.

- Social influence

The process through which other people change our thoughts, feelings, and behaviors and through which we change theirs.

- Social inhibition

The tendency to perform tasks more poorly or slower in the presence of others.

- Social neuroscience

The study of how our social behavior both influences and is influenced by the activities of our brain.

- Social norms

The ways of thinking, feeling, or behaving that are shared by group members and perceived by them as appropriate.

- Social power

The ability of a person to create conformity even when the people being influenced may attempt to resist those changes.

- Social psychology

The scientific study of how we feel, think, and behave toward the people around us and how our feelings, thoughts, and behaviors are influenced by those people.

- Social responsibility norm

The social responsibility norm tells us that we should try to help others who need assistance, even without any expectation of future paybacks.

- Social Science

Disciplines interested in general explanations about human societies often through observation and systematic analysis

- Social situation

The people with whom we interact every day.

- social smile

a smile evoked by a human face, normally first evident in infants about 6 weeks after birth

- Social support

Refers to the comfort that we receive from the people around us—for instance, our family, friends, classmates, and coworkers.

- Social support

The approval, assistance, advice, and comfort that we receive from those with whom we have developed stable positive relationships.

- sociocultural theory

Vygotsky's theory that emphasizes how cognitive development proceeds as a result of social interactions between members of a culture

- socioemotional selectivity theory

theory associated with the developmentalist Laura Carestensen which posits a shift at this time in the life course, caused by a shift in time horizons. Time left in our lives is now shorter than time previously spent. Consciously, or sub-consciously, this influences a greater unwillingness to(...)

- socioemotional selectivity theory

theory that as time horizons shrink, people become increasingly selective, investing greater resources in emotionally meaningful goals, activities, and relationships

- Soledad Chávez de Chacón

Chávez de Chacon served as Secretary of State from 1922 to 1927, the first woman to hold statewide elected office in New Mexico. In 1924, she was one of the first women to act as a state governor due to a stipulation in the New Mexico Constitution that requires either the Lieutenant Governor(...)

- Sonnet

Although there are several versions of the sonnet, each has fourteen lines and contains a volta, or a turn in thought, which can sometimes be indicated with the words “but” or “yet.” In contemporary poetry it has become common for poets to compose sonnets with differing rhyme or meter, or with(...)

- Sororate

System where a man marries his dead wife's sister.

- Source

The person, place or thing from which something (information, goods, etc.) comes or is acquired

- Southeastern Ceremonial Complex

shared religious iconography of the Mississippian Tradition

- Spanish Civil War

The Spanish Civil War was between Spanish Republican groups loyal to the democratic Spanish Republic versus the Nationalists, a fascist group led by General Francisco Franco. The Nationalists won the war, which led the nation into a social revolution.

- Spanish-Cuban-American War

The Spanish-Cuban-American War was a conflict in 1898 between Spain and the United States over U.S. aide and assistance to Cuba during their

war for independence against Spanish rule.

- Special Engineer Detachment

U.S. Army soldiers, with technical and scientific skills, were assigned to serve in the Manhattan Project labs to assist the nuclear scientists solve problems in the development of the atomic bomb.

- Spenserian sonnet

This sonnet modifies the Petrarchan to contain a rhyme scheme of A B A B—B C B C—C D C D—E E.

- spermarche

a boy's first ejaculation of sperm. Erections can occur as early as infancy, but ejaculation signals sperm production. Spermarche may occur during sleep (nocturnal emission or “wet dream”) or via direct stimulation

- Spiro Agnew

Spiro Theodore Agnew served as the 39th Vice President of the US under President Richard Nixon from 1969-1973.

- Split couplet

Composed of two lines, the split couplet contains a first line in iambic tetrameter and a second in iambic dimeter; the two lines should rhyme. Another variation is to write the first line in iambic pentameter.

- Spondee

-- Two equal stresses.

- Spontaneous message processing

Accepting a persuasion attempt because we focus on whatever is most obvious or enjoyable, without much attention to the message itself.

- stage-crisis view

theory associated with Levinson (and Erikson before) that each life stage is characterized by a fundamental conflict(s) which must be resolved before moving on to the next. Each stage has its challenges which are resolved, instigating a period of

transition which sets the stage for the next

- stagnation

a feeling of a disconnect from wider society experience by those 40-65 who fail to develop the attitude of care associated with generativity

- Stanza

A unit of poetry consisting of lines and bordered by blank space; similar to a paragraph in prose.

- stelae

upright stone monuments; singular stela

- Stephen B. Elkins

Elkins served as a Congressional Delegate for the Territory of New Mexico, Founder and president of the Santa Fe National Bank, President of the Maxwell Land Grant Company, West Virginia Senator, and as the 38th Secretary of War. Elkins was very influential and managed to patent Spanish and(...)

- Stephen F. Austin

Stephen F. Austin, son of Moses Austin, was the man who was held responsible for start the actions that led Texas to have their independence.

- Stephen H. Long

A railway engineer by trade, Long is most noted for his expeditions and explorations of the Missouri and Platte Rivers.

- Stephen Watts Kearny

A U.S. brigadier general who during the Mexican American war lead an army of volunteers and his unit, and in a bloodless campaign to capture Santa Fe in 1846.

- Stereotype

The positive or negative beliefs that we hold about the characteristics of social groups.

- Stereotype threat

Performance decrements that are caused by the knowledge of cultural stereotypes.

- Sterling Price

As military governor of the New Mexico, Price ended the Taos Revolt.

- Stock phrases

Sayings repeated by a person or group that then becomes associated with that group. Stock phrases can be problematic in academic writing when they are used without fully considering their implications. Also, like cliches, stock phrases can lose their significance when they are re-used often.

- Strait of Anián

The Spanish thought the Strait of Anián was a Northwest Passage, a sea route through the Arctic from Europe to Asia. They repeatedly searched for it, hoping to find a way to the Spice Trade in China and India.

- stranger wariness

fear is often associated with the presence of strangers where an infant expresses concern or a look of fear while clinging to a familiar person

- Strata

Layers of rock or soil or sediment.

- strata

layers of cultural and natural debris visible in the side of an excavation (see Chapter 1)

- street corner state

state in which the child is playful, energetic, excited, and expresses personal opinions, feelings, and beliefs

- Stress

The syllables in a line of poetry that are emphasized.

- structures

remains of houses, ceremonial chambers, and other examples of architecture (see Chapter 2)

- Student Nonviolent Coordinating Committee

SNCC, organized in 1960, was instrumental in the Civil Rights

Movement in helping dismantle segregation in the southern states.

- student state

this state is one in which the student focuses on a task or tries to stay focused on a task, is passive, compliant, and often frustrated

- Style

The way writing is created to respond to the audience, context, and purpose. A writers' style can be created by the use of their individual word choice, voice, and sentence construction.

- Subsistence

Ways of obtaining food from one's environment

- sudden infant death syndrome (SIDS)

a situation in which a seemingly healthy infant, usually between 2 and 6 months old, suddenly stops breathing and dies unexpectedly while asleep

- suicidal ideation

thinking about suicide, usually with some serious emotional and intellectual or cognitive overtones

- suicide

the act of intentionally causing one's own death

- Suma

The Suma were a native group of nomadic hunter-gatherers that lived around northeastern Mexico and the Rio Grande valley. They were wiped out to extinction by disease and eventually absorbed by neighboring tribes.

- Summary

A condensed version of the background or main ideas of a text

- Sun Dagger

an astronomical feature on Fajada Butte at Chaco Canyon consisting of sandstone slabs and spiral petroglyphs used to mark the solstices, equinoxes and perhaps other astronomical events

- Sunghir or Sungir

an Upper Paleolithic site in Russia dating to ca. 28,000 B.P.; the site is famous for three human burials with elaborate grave goods including thousands of mammoth ivory beads (see Chapter 3)

- Sunset Crater

volcano in Arizona that erupted 1060-1080s leaving a layer of ash on archaeological sites; also appears in tree-rings

- superego

The part of the self that acts as our conscience, telling us how we should behave

- Supernatural

Powers or phenomena not subject to the laws of nature.

- Supporting points

The details, facts, and explanations that develop and clarify the main point.

- survey

Asking a standard set of questions to a group of subjects

- survivor guilt

mental condition that occurs when a person perceives themselves to have done wrong by surviving a traumatic event when others did not

- Sympathetic Magic

A type of magic transforms through similarity, i.e., hunting magic.

- synapses

the intersection between the axon of one neuron to the dendrites of another neuron

- synaptic pruning

the selective elimination of non-essential synapses and the strengthening of important neural connections

- synaptic pruning

connections in the brain that are not used much are lost so that other connections can be strengthened; this

pruning happens with prefrontal cortex connections in adolescence

- syncretism

the tendency to think that if two events occur simultaneously, one caused the other

- Synecdoche

When a part of something symbolizes the whole, or the whole of something symbolizes the part, as in All hands on deck (where hands stands in for men), or The whole world loves you (where whole world represents only a small number of its human population).

- Synonym

A word with a similar meaning.

- Synonyms

A word or phrase with a meaning that is the same as, or very similar to, another word or phrase.

- Syntax

The way in which words and phrases are crafted and combined in sentences.

- Synthesis

The formation of something complex or coherent by combining simpler things.

- Taboo

A kind of negative mana that can be harmful.

- tacit knowledge

pragmatic or practical and learned through experience rather than explicitly taught

- Taghairm

Sometimes interpreted as "spiritual echo," or calling up the dead, was an ancient Scottish mode of divination.

- Taíno

Known to the Spanish as the Arawaks, the Taíno were one of the Caribbean's major indigenous groups. Their culture became extinct due to disease and violence brought upon by Spanish colonizers.

- talud-tablero

architectural style consists of a sloped face followed by a vertical face supported by stone slabs

- Tamaulipas

Tamaulipas is one of the 31 states of Mexico. In the 15th century, Moctezuma ruled over much of the area. Later it was conquered by Cortés, who established the first Spanish settlement in the area named Tampico.

- Tanka

This Japanese form, which focuses primarily on nature or strong emotions, consists of five unrhymed, non-metrical lines with the syllable count 5 7 5 7 7.

- Tanoan

A group of languages spoken by the Native Americans of New Mexico, Kansas, Oklahoma, and Texas.

- Taos Revolt

In 1847, an uprising of Pueblo people and Mexicans against the occupation of the United States earned the title of the Taos Revolt.

- Taos Society of Artists

Founded in 1915, the Taos Society of Artists' members developed forms of visual arts as a cooperative. The organization lead Taos to the forefront as an international arts center.

- Tarahumara

The Tarahumara are a Native American group from northwestern Mexico who had been in constant conflict with the Spanish since the 17th century. Their hostility led to the burning and destruction of several missions and monasteries in the region.

- teacher-counselor parent

pays a lot of attention to expert advice on parenting and believes that as long as all of the steps are followed, the parent can rear a perfect child

- tell

a mound created by centuries of human occupation; Tell Abu Hureyra in Syria is an example

- temperament

inborn differences between one person and another in emotions, activity, and self-regulation, typically measured by the person's responses to the environment

- temple mounds

earthen platform mounds atop which were built ceremonial structures; known from Mississippian sites like Cahokia

- Temple of Inscriptions

masonry Maya pyramid at Palenque in Chiapas, Mexico where Lord Pacal was interred; the longest known Maya inscription; still being deciphered

- Temple of the Feathered Serpent

masonry pyramid of Teotihuacán in Mexico containing sacrifices of warriors

- temporal theory of pitch perception

sound's frequency is coded by the activity level of a sensory neuron

- Tenochtitlán

The capital of the Aztec Empire was built on an island in the center of Lake Texcoco in the Valley of Mexico. Tenochtitlán would go on to become the largest city in New Spain and later transform in modern-day Mexico City.

- teosinte

the wild progenitor (ancestor) of maize

- Teotihuacán

huge multi-ethnic city located in the Valley of Mexico (ca. 100 BC-AD 700); sixth largest city in the world of its time

- teratogen

Any agent which can cause a birth defect

- Tercet

A stanza containing three lines.

- Terence V. Powderly

Powderly was an American labor leader and politician who led the Knights of Labor from 1879-1893.

- Termite Fishing

Chimpanzees use modified probes to extract termites from nests

- Terracing

Creating steps out of a hillside to create garden plots.

- tertiary circular reactions

consist of actions (stage 5) and ideas (stage 6) where infants become more creative in their thinking

- Testimony

Direct quotations from either an eyewitness or an expert witness.

- Testosterone

The male sex hormone.

- testosterone

the primary male sex hormone that plays a key role in the development of male reproductive tissues such as testes and prostate, as well as promoting secondary sexual characteristics such as increased muscle and bone mass, and the growth of body hair. Females also produce testosterone, but at(...)

- Tesuque Pueblo

Tewa-speaking Tesuque Pueblo is one of the Eight Northern Pueblos. Here, Fray Juan Pío's murder sparked the Pueblo Revolt.

- Tetrameter

A four-foot line.

- Texan-Santa Fe Expedition

The Texan-Santa Fe Expedition was a political, military, and commercial expedition designed to move trade from the Santa Fe Trail to Texas. Part of the expedition's purpose was to obtain jurisdiction of the Santa Fe area for Texas.

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- Than-Bauk

Also known as "Climbing Rhyme," this Burmese form consists of three four-syllable lines, with rhyme falling on the fourth syllable of the first line, the third syllable of the second line, and the second syllable of the third line.

- Theism

Belief in supreme deities.

- Theme

The ultimate message the narrative is trying to express; it can either be explicit or implicit.

- [Theodore Roosevelt](#)

Roosevelt served as the 26th U.S. President. Progressive leadership brought about the "Square Deal" for citizens. Roosevelt expanded the power of the National Parks Service and was second in command of the Rough Riders, under General Leonard Wood.

- theory

A well-developed set of ideas that propose an explanation for observed phenomena that can be used to make predictions about future observations

- theory of evolution by natural selection

The process by which organisms change over time so that those with genes and behaviors better suited for their environment will survive and reproduce, while those that are poorly suited for their environment will die off

- theory of mind

the understanding that the mind holds people's beliefs, desires, emotions, and intentions. One component of this is understanding that the mind can be tricked or that the mind is not always accurate

- theory-of-mind (TOM)

Explains how children come to understand that people have thoughts, feelings, and beliefs that are different from their own, develops during the preoperational stage

- theory of multiple intelligences

Garner's theory that there are many kinds of intelligence. The modern version of the theory recognizes 9 forms of intelligence

- Thesaurus

A publication, usually in the form of a book, that provides synonyms (and sometimes antonyms) for the words of a given language.

- Thesis

A claim or theory that must be supported with evidence to argue for or against a specific idea or position.

- Thesis Statement

The main point of a paper; the idea of hypothesis a writer is trying to prove.

- They/Their

The use of they instead of he or she was a conscious choice on the part of the instructors. For non-gender conforming people, the use of they allows for a third person pronoun usage. Some teachers may not be on board with this grammatical choice, even though grammar and language are always(...)

- Third person

A writing perspective that uses "he/she/it."

- Thomas B. Catron

Thomas Catron arrived in New Mexico following the Civil War and he established a law practice in the territory. Through his adept manipulation of land grant laws and the desperation of many heirs, he was able to gain control of much of the territory's land and resources. At one point, he was(...)

- [Thomas Hart Benton](#)

Missouri Senator Thomas Hart Benton was an ardent advocate of

U.S. westward expansion in the 1830s and 1840s. In the Senate, he used his position of seniority and power to support initiatives that would allow the United States to claim territories between the Mississippi River and the(...)

- Thomas Oliver Larkin

Larkin established a successful mercantile business in Monterey, Alta California, in the 1830s. Due to his desire to annex California to the United States, President Polk appointed him U.S. Consul. During the U.S.-Mexico War he received instructions from the State Department to encourage a(...)

- Thoughtful message processing

Occurs when we think about how the message relates to our own beliefs and goals and involves our careful consideration of whether the persuasion attempt is valid or invalid.

- Tiguex War

The Tiguex War was the first of a series of wars fought between Pueblo peoples and Francisco Vasquez de Coronado during the Spaniard's quest to find the Seven Cities of Cibola.

- Tik'al

Maya site located in the Petén Basin in Guatemala; one of the largest Maya urban centers; World Heritage Site

- Tiny Fellion

Former state trooper and Deputy U.S. Marshall Fellion acted as a paid assassin in Española, New Mexico. He also placed an explosive device in the Albuquerque headquarters of La Alianza Federal de Mercedes.

- Tit-for-tat strategy

Involves initially making a cooperative choice and then waiting to see what the other individuals do.

- Tlaxcala

Tlaxcala is one of the Aztecs' antagonistic neighboring tribes which aided Cortés with soldiers during his conquest of the Aztec Empire.

- Tolerated Theft

When the cost of defending a resource is more than the benefit of keeping it

- Tollund Man

"bog body" preserved in a peat bog in Denmark, ca. 2100-2200 B.P. (see Chapter 2)

- Tom Windes

Southwest wood specialist

- Tomás Ortiz

Along with Diego de Archuleta and Pablo Montoya, Ortiz was one of the principal leaders of the Taos Revolt in late 1846 and early 1847.

- Tomás Vélez Cachupín

The Spanish governor of New Mexico from 1749-1754, considered to be one of the best governors due to his openness and compassion towards the surrounding native tribes, encouraging free trade that led to a thriving economy in the region.

- Tomasito

Tomasito was a member of Taos Pueblo who joined Pablo Montoya and others in the Taos Revolt. In January of 1847, he and Montoya killed Governor Bent in his home in town.

- Tone

An attitude the speaker of a poem has toward the subject. It is represented in its musical qualities: pitch, duration, and volume.

- Tool

An object used to modify the shape, condition, or location of another object

- Topic sentences

A statement of the main idea of the paragraph in which it occurs.

- Tornado

Also known as "envoi," this is the final tercet of a sestina.

- Toulminian argument

Named for its creator, Stephen Toulminian, includes three

- components: a claim, stated grounds to support the claim, and stated assumptions called warrents.
- toxic stress
 - excessive stress that exceeds a child's ability to cope, especially in the absence of supportive caregiving from adults
- transductive reasoning
 - a failure in understanding cause and effect relationships which happens when a child reasons from specific to specific; drawing a relationship between two separate events that are otherwise unrelated
- transgender
 - a term used to describe people whose sense of personal identity does not correspond with their birth sex
- transient exuberance
 - the great, but temporary increase in the number of dendrites that develop in an infant's brain during the first two years of life
- Transitions
 - A word, phrase, sentence, or paragraph that clarifies how the writer's ideas are connected.
- Treaty of 1868
 - The Treaty of 1868 was signed by the U.S. Government and Navajo Nation, ceasing hostilities between the two nations. In return, the Navajo had to return to the reservation, but would be provided with housing, education, and trade by the U.S. Government.
- Treaty of Guadalupe Hidalgo
 - The Treaty of Guadalupe Hidalgo ended the U.S.- Mexican War in 1848.
- Treaty of La Mesilla
 - The Treaty of La Mesilla concluded the Gadsden Purchase.
- Treaty of Paris (1763)
 - The 1763 Treaty of Paris ended the Seven Years War, with France ceding many of its North American possessions to Britain, ushering in an era of British global dominance.
- Treaty of Paris (1783)
 - The 1783 Treaty of Paris was a collection of treaties which ended the American Revolution signed by Britain on one side and the United States, France, and Spain on another.
- Treaty of San Ildefonso
 - The Treaty of San Ildefonso returned Louisiana back to French rule.
- Treaty of Velasco
 - The Treaty of Velasco was two treaties signed after the defeat of the Mexican Army at the Battle of San Jacinto (1836). The signing ended hostilities between Mexico and the United States, as well as recognized Texas' independence from Mexico.
- Triangular model of love
 - An approach that suggests that there are different types of love and that each is made up of different combinations of cognitive and affective variables, specified in terms of passion, intimacy, and commitment
- triarchic theory of intelligence
 - Sternberg's theory that recognizes three forms of intelligence: academic, creative, and practical
- Trimeter
 - A three-foot line
- Trochee
 - ' ~ A heavy stress followed by a light stress.
- Tropes
 - Words or phrases that point toward a figurative meaning.
- trust vs. mistrust
 - Erikson's first crisis of psychosocial development, during which infants learn basic trust if the world is a secure place where their needs (food, comfort, attention) are met
- twin studies
 - A behavior genetic research method that involves a comparison of the similarity of identical (monozygotic; MZ) and fraternal (dizygotic; DZ) twins
- type 2 diabetes (T2D)
 - diabetes characterized by high blood sugar, insulin resistance, and relative lack of insulin primarily from obesity or lack of exercise
- Tzolk'in
 - Maya religious calendar of 260 days
- U.S. Consul
 - A political title for a official U.S. representative to a foreign country, usually aligned with an ambassador or an embassy. This should not be confused with an ambassador who represents the United States for the President.
- Ultimate attribution errors
 - The tendency for people to make trait attributions in ways that benefit their ingroups, just as they make trait attributions that benefit themselves.
- Ulysses S. Grant
 - Ulysses S. Grant started as a junior officer during the U.S.-Mexican War. He quickly moved through the ranks as a fearless soldier and master of logistics. He joined Zachary Taylor at Resaca de la Palma and General Winfield Scott to Mexico City. With the outbreak of the Civil War, Grant(...)
- Umayyad Dynasty
 - The Umayyad Dynasty was the second of four Islamic Caliphates established after the death of Muhammad. Ruled from 661-750, it encompassed the Iberian Peninsula, North Africa, the Arabian Peninsula, and Persia at its greatest extent.
- Unilineal Evolution
 - The erroneous idea that societies move through evolutionary stages from savagery to barbarism to civilization.
- uninvolved parenting
 - parents who are disengaged from their children, do not make demands on

- their children, and are non-responsive
- uninvolved parenting
 - parenting that is low in both support and demandingness
- Unrealistic optimism
 - The tendency to be overly positive about the likelihood that negative things will occur to us and that we will be able to effectively cope with them if they do.
- Upper Paleolithic
 - refers to a time period in Europe between about 40 kya and 10-12 kya that is marked by representational art, music, tailored clothing, organized settlements, complex tools, personal adornment, elaborate burial, and the atlatl (see Chapter 3)
- urban militia from Abiquiú
 - Pedro Ignacio Gallego led the militia group that stood as a defense against the incursions of Utes, Apaches, Navajos, and Comanches near Abiquiú in the 1820s and 1830s. Following Mexican Independence, the former peace with indigenous peoples eroded due to the lack of subsidies for trade in the(...)
- Ussen
 - Ussen is the Apaches' supreme deity and giver of life.
- V. Gordon Childe
 - early archaeologist who argued that as the Pleistocene ended people began to closely observe plants and animals for the first time around oases, which led to domestication. This idea is no longer accepted for multiple reasons.
- validity
 - When something yields accurate results
- variables
 - Factors that change in value
- Varna Necropolis
 - a site in Bulgaria along the Black Sea dating to ca. 6,000 B.P. It is known for its dense concentration of gold and copper objects in burials. The site represents very early use of gold and copper.
- vecino
 - During the late Spanish Colonial period hispano residents of New Mexico began to call themselves "vecinos" or "vecinas," a word that means "neighbor." As implied in the term itself, this label marked a person's place in their local village community.
- vegetative state
 - the cerebral cortex no longer registers electrical activity but the brain stem continues to be active
- Venus of Hohle Fels
 - female figurine from Hohle Fels, Germany; the oldest representation art known, ca. 35,000-45,000 B.P.
- Venustiano Carranza
 - In the fall of 1915 the administration of Woodrow Wilson recognized Carranza as the de facto president of Mexico despite the continuation of revolutionary violence. Wilson's decision caused Carranza's rival, Pancho Villa, to retaliate against Americans because he believed that he had been(...)
- Verse
 - Lines of poetry.
- vertigo
 - spinning sensation
- Vicente Guerrero
 - One of the early supporters of Mexico's independence movement, Guerrero supported the efforts of Father Morelos to establish a republic in which all males would have the right to participate in politics, despite their ethnic heritage. Following Iturbide's attempt to dissolve congress in 1824,(...)
- Victor Weisskopf
 - Weisskopf was a German physicist selected to work on the production of the atomic bomb under the Manhattan Project. Later, he became an advocate for the peaceful use of atomic energy.
- Victorio
 - Victorio was the Warm Spring Apache Chief during the U.S. government's attempts to establish the indian agency/reservation system for relocation of Mimbres, Central Chiricahuas, Coyoteros, Gila, and Mogollon tribes in Southern New Mexico.
- vigas
 - primary wooden support beams in a structure; vigas and latillas
- villa
 - A small town or collection of properties usually reserved for the Spanish upperclass.
- village-level specialization
 - when a village produces goods for an entire settlement system of villages
- Villanelle
 - This French form consists of five tercets and a final quatrain. The first stanza's first and third lines repeat in an alternating pattern as the last line in the subsequent stanzas. In the final quatrain, the two lines that have been repeating throughout the poem form the final two lines of(...)
- Violence
 - Aggression that has extreme physical harm, such as injury or death, as its goal.
- Virgen de Guadalupe
 - Nuestra Señora de Guadalupe, the Patroness of Mexico, was said to have appeared to a peasant, Juan Diego, in 1531. She asked for a church to be built at the Hill of Tepeyac in her honor. As the story goes, following several miracles by the Virgin, Juan Diego and his family erected the church(...)
- Visual literacy
 - The ability to read multi modal text.
- Visual rhetoric

Representations and images designed to convince people instead, or in addition to, using words; the study of what impression visuals give a viewer.

- Vocal Tract

The area that extends from the vocal cords to the lips where the sounds of language are generated.

- Voice

Refers to elements of the author's tone, phrasing, and style that are recognizable unique to her or him.

- Volta

a. A turn in thought in the sonnet form indicated sometimes by a "but" or "yet." b. The turn that takes place in a sonnet in which there is a marked change in the speaker's thought, emotion or rhetoric.

- voluntary euthanasia

helping someone fulfill their wish to die by acting in such a way to help that person's life end

- Waggle Dance

Honey bee movement that conveys information about a food source. An example of displacement.

- Waka

This Japanese form, which focuses primarily on nature or strong emotions, consists of five unrhymed, non-metrical lines with the syllable count 5 7 5 7 7. Lines one and two, as well as three and four, form complete sentences, as does the last line.

- Walking Marriages

A system where biological fathers have little responsibility toward his children. Instead the wife's brothers support her children.

- Walter H. Prescott

Prescott was a historian and researcher on the the Texas Rangers and the Western Frontier.

- War of a Thousand Deserts

Also known as the Comanche-Mexico Wars (1821-1870), the Kiowa and Comanche raided northern Mexico

territories to capture livestock to sell in the United States.

- War on Poverty

Introduced as a means to reduce poverty in the U.S. by President Lyndon Johnson. The legacy of the legislation remains today in the form of Head Start, VISTA, TRIO and Job Corp programs.

- Washoe

The first chimpanzee to use sign in American Sign Language.

- Waterfall Displays

Chimpanzee behavior at waterfalls involving erect fur, rhythmic swaying, throwing stones, Recorded at Gombe National Park in Tanzania

- WEIRD

Western, educated, industrialized, rich, and democratic

- Wendell Chino

Chino led the Mescalero tribal council between 1953 until his death in 1998. Due to his strong leadership style, some observers have referred to him as autocratic. Through his no-nonsense style, he tirelessly worked to promote Mescalero self-determination and economic self-sufficiency.(...)

- Western

Beliefs and values that have an origin in the European Renaissance and Age of Enlightenment

- Whig Henry Clay

Henry Clay of Kentucky was ran unsuccessfully for the presidency on five different occasion. He was one of the leading members of the Whig party and one of the longest serving U.S. Senators of the nineteenth century. He was called the "Great Compromiser" for his instrumental role in creating(...)

- wikiup

A traditional type of Native American lodging where a domed structure is supported by arched poles and other building material.

- Willamette Valley

Prior to the 20th Century, Willamette Valley was inhabited by Kalapura Native Americans. Subsequent to the Lewis and Clark expeditions, the valley became a hub for fur traders.

- William Becknell

In an effort to evade imprisonment for debts in Missouri, Becknell led a trade caravan along what later became known as the Santa Fe Trail in 1821. Somewhat serendipitously, his efforts opened the lucrative Santa Fe Trade.

- William "Bill" Mauldin

A New Mexican editorial cartoonist, famous for his World War II cartoons of American GI's named "Willy and Joe."

- William Brady

Sheriff of Lincoln County, NM during the Lincoln County Wars. Brady was killed in an ambush in 1878.

- William C. McDonald

The first governor of the newly formed State of New Mexico

- William Emory

Emory was a United States Army Officer and Texas boundary surveyor who produced a map in 1844 of Texas including territorial claims west of the Rio Grande. Also the author of the important work, Notes of a Military Reconnaissance from Fort Leavenworth in Missouri to San Diego in California,(...)

- William Howard Taft

Taft served as the 27th U.S. President from 1909-1913. He promoted Dollar Diplomacy, a political means to secure economic and commercial interests of the U.S. in third world countries, specifically with Mexico.

- William McCabe

McCabe was one of the original Navajo Code Talkers. Years after the fact, he demonstrated the typical humility of the group about the work they had done during the war. He commented, "We're just a walking

coding machine ...that's all. Whatever the other guy says it goes through his ears. It(...)

- William R. Morley

Along with Frank Springer, William Morley challenged the political and economic prominence of the Santa Fe Ring over affairs in Colfax County in the 1870s.

- William R. Scurry

Scurry was a Confederate General during the U.S. Civil War who lead troops, during the New Mexico Campaign, to significant victories at Glorieta Pass and Valverde.

- William T. Sherman

Sherman was a renowned Major General of the Civil War. Sherman's "March to the Sea" led to the taking of Savannah, Georgia for the Union and the beginning of the end for the Confederacy.

- Winfield Scott

Scott was a Civil War General, who lead U.S. forces in the U.S.-Mexican War overland to Mexico City. This feat won the war.

- withdrawn-rejected

children who are excluded because they are shy and withdrawn

- Women's Army Corps

Created as a women's auxiliary unit of the United States Army in 194, the WACs were directly involved in war effort for the U.S. in England, Germany, Japan, and Russia.

- Woodrow Wilson

Wilson served as the 28th U.S. President who, during World War I, negotiated the Treaty of Versailles which lead to the creation of the League of Nations--the forerunner of the United Nations--and the eventual end of World War I.

- working memory

the second component of the memory system where information that has been processed in sensory memory

goes. Working memory includes all the information that you are consciously aware of

- working memory

a cognitive system with a limited capacity that is responsible for temporarily holding information available for processing

- Working thesis statement

An indefinite statement that a writer makes about their topic early in the writing process for the purpose of planning or guiding their writing.

- World Heritage Sites

There are 759 cultural sites around the world that are considered by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) to have universal value for humanity. (see Chapter 3) <http://whc.unesco.org/en/list/>

- Worthwhile assertion

Reveals a perspective on your subject that provides possibilities for further exploration.

- yeoman farmer

An honest farmer who worked the land with his family as an embodiment of ideal Republican vision for the nation: honest, virtuous, hardworking, and independent.

- Young Hickory

James K. Polk was also known by the nickname "Young Hickory" due to his association with former President Andrew Jackson whose nickname was "Old Hickory."

- Zachary Taylor

General Zachary Taylor led an army of 3,500 men into Texas to secure the territory for the United States. He also joined General Winfield Scott with 10,000 reinforcements on a campaign to capture Mexico City. He later became President of the United States in 1848 and died in office in 1850.

- zambos

A racial term used in the Spanish colonies in the Americas to refer to people of African and Amerindian mixed-race descent.

- Zebulon Pike

Pike led a small expedition into northern New Spain in 1807 in an attempt to find out whether or not U.S. territorial claims might be extended into the region. His party became stranded in the mountains near present-day Pikes Peak in Colorado and their arrest by a New Mexican party under(...)

- Zimmermann Telegram

The Zimmermann Telegram was a diplomatic proposal, sent via telegram, from the German Empire to the Mexican Government offering military aid during World War I.

- zone of proximal development

the range of material that a child is ready to learn if proper support and guidance are given from either a peer who understands the material or by an adult

- zone of proximal development (ZPD)

The difference between what a learner can do without help, and what they can do with help

- Zoonotic Diseases

Diseases that can be transferred between humans and animals.

- Zuni Language

The language of the Zuni people, spoken by approximately 9,500 people worldwide.

- zygote

A one-cell structure that is created when a sperm and egg merge

- zygote intrafallopian tube transfer

sperm and ova are fertilized outside of the woman's body and the zygote is then implanted in the fallopian tube to allow the zygote to travel and embed in the lining of the uterus naturally

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