Ancient South American Cosmology: Four Thousand Years of the Myth of the Fox

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Mesoamerica and South America share common features in cosmology such as origin accounts. Further, the geographical breadth of these shared myths suggests considerable time depth. In South America, a mythical fox is linked to the moon, the sky, crops, marine foods, and irrigation. Review of ethnohistory and ethnography show that this mythical fox is restricted to Andean and tropical lowland South America, a range that still suggests considerable antiquity for the myth. Archaeological investigation offers a way of testing proposed antiquity. Four representations of foxes in the site of Buena Vista, Chillón Valley, Perú, date to between 2000 and 2200 BC. They are associated with temples on platform mounds, which show general astronomical orientations. Several temples have a complex set of astronomical alignments. A hierarchy of priests must have directed constructions of mounds, temples, and astronomical systems by the end of the third millennium BC in South America. The archaeological data are consistent with the cosmology of the Andes as known from ethnohistoric and ethnographic sources.

KEY WORDS: consciousness, phenomenology, first-person experience, objectivity, hard problem, darwinism, evolution,

1. INTRODUCTION

Fox representations have great antiquity in the world, but their accompanying verbal explanations have not often survived. The oldest fox representations from archaeology are those at Góbekle Tepe in Turkey, but any accompanying verbal explanations of these stone sculptures did not survive as myths or stories into post3 Neolithic Mesopotamian cultures (Peter and Schmidt 2004, p. 210). The Sumerian myth of Gilgamesh may date from the second millennium BC (North 2008), but surviving versions of the Indo-European myths are that are still are known in only few limited small and isolated regions (Gimbutas 2008). On the other hand, the Andean fox myth is still widespread in South America. This paper describes that mythical fox from South America and relates its mythology to recent archaeological finds in Peru that fix its origins at more than 4,000 years ago. It introduces the cosmology of Mesoamerica and South America, especially the origin accounts and the myth of the Andean fox.

To contextualize the paper for the general scientific reader unfamiliar with Mesoamerican or South American cosmology, we begin with an orientation to Andean belief systems. Iwaniszewski (2009) has said that worldview may be a more productive concept than cosmology in investigating non-Western societies. It should be especially useful when studying prehistoric systems of thought, since astronomical orientations and alignments found by archaeology imply a prehistoric world-view. For the purposes of this report, we will use the terms "cosmolgy", "world-view", and "belief system" interchangeably and with the understanding that all refer to the place of humans in the cosmos.

To place the Andean fox in its larger cosmological context, we begin with a broadbrush treatment of Inca cosmology, following Steele and Allan (2004). There are still many correspondences of Inca astronomy with ethnographically known astronomical practices of indigenous peoples today. For the Inca, duality was a critical conceptualization of the cosmos, with a primary duality being the division of the world into upper and lower parts. Ordinary human life was situated between the two. In the upper world were deities like the sun, the moon, the Milky Way, and the stars. This lower world of water and earth was strongly associated with the feminine principle, the earth mother. Inca cosmology may have been patterned on another duality, human physique, with right (masculine) and left (feminine) (Classen 1993).

Another metaphor that could be used for Inca cosmology is that of hydrology, which speaks of the importance of irrigation through myths of emergence of the first humans from Lake Titicaca or the ocean, the duality being the earth and water (Mazadiego et al. 2009). Naturally there is some question as to the influence of the chroniclers' cosmology on their understanding of the answers to their questions about the existence and number of levels of the world because the three levels of the universe sometimes reported would be comparable to the three of Christian cosmology. Native writers would have had an incentive to make their old religion correspond more closely with the new. On the other hand, it is clear that many elements in the Incan creation stories are autochthonous, even some which are partly shared in the Christian creation story such as that of a flood.

A second feature of contemporary Andean thought, one that is mirrored by Mesoamerican beliefs, is that of reciprocity. In the Andes, the concept is most usually expressed in a kin-based system, which regulates labor exchanges. The Inca directed large-scale exchanges, which contrasted with household- and village-level systems. They ruled with a well-developed hierarchy in their organization of political, military, and religious activities. The reason this is a significant distinction is that foragers and even early sedentary villagers show no traces of this kind of social organization in the Late Preceramic Period (2500-1700 BC) of western South America (Benfer 2008), and it has been suggested that there is little hierarchy in the subsequent Initial Period (1600-1100 BC) (Burger and Salazar-Burger 1986). Therefore, for archaeologists, when hierarchies began appears to mark a major time when a society achieved a means of managing greater complexity. The evidence associated with the fox representations argues that the beginnings of hierarchy in Andean South America occurred with the rise of a priestly cult who maintained a complex knowledge of astronomy.

2. THE INCA

For the Inca, celestial bodies were created when a second race of humans came into being. As with the Maya, the Inca believed that there were a series of unsuccessful creations before that of modern people. Christian
Belief holds that only one creation occurred, although the later destruction of everyone but Noah and his family led to essentially a second population. For the Inca, the stars were formed first, and then fixed in their positions. The moon and sun were created next. Only then were humans made. There was a beginning point in time for the Maya but not for the Inca. Mayans, ancient and modern, have a sense of time dominated by formal, complex interlocking cycles, of which two—a 360-plus-5-day cycle and a 280-day cycle are the best known, but they also calculated time linearly through their long count dates that marked time from a creation start-date to present. The common discourse device place events in time by counting back and then forward from the event point, using an anterior-date indicator ("since X") and a posterior-date indicator ("up until X") within the larger formal measures of sequence. There are echoes of cyclic and linear means of time measurement today. Some specialists in Maya societies still count the days using elements of the old interlocking cycle and lineal calendars (Tedlock 1982, p. 47).

Some modern Mayan languages show descendent forms of "since" and "up until" discourse markers (Furbee 2007). Thus the ancient Maya developed formal systems to count both cyclically and linearly, an accomplishment perhaps impelled by their invention of a concept of zero. Ancestors of Quechuas and Aymaras do not seem to have developed the linear concept of time in prehistory, but like Mayans today, both descendent peoples incorporate a system borrowed from Western Europeans. The complex agricultural systems tie work to the seasonal cycles of events in the sky. The progression of constellations and lunar phases predict the inception of agricultural phases on the earth for both Mayan and Andean peoples.

When two of us (Benfer and Furbee) studied the health and agricultural indigenous knowledge of Andean herders and farmers, we worked in several Quechua-speaking and Aymara-speaking communities of the southern Peruvian Andes. These stays were short—4 to 6 weeks at a time. They confirmed the often-observed importance of cyclical time in ordering activities and concepts among both herders and farmers.

However, these Andeans also lived with a linear, calendric system. Non-agricultural Western-thinking peoples may live predominantly by a linear tracking of time, but they also share a cyclical-seasonal conception of these such as spring housecleaning, or December solstice holidays. Andeans have functioned with both the cyclical and the linear schedules of measuring future and past (numbers of days or weeks, civil events, religious ceremonies, or meeting dates, and so on), but unquestionably the primacy for them was the seasonal. The principle of linear time appears to be an introduced overlay in a strongly cyclical system for the Andeans. Mayan farmers of course live by the cycle of seasons, even as they also account for linear time. Many Mayans even use the metaphor of the growth of vegetation to express the cycles of birth, death, reproduction, death, and rebirth and the persistence through cycles of replacement of generations (Wilson 1999).

Both Andeans and Mayans live among animated mountains, which are called apus in South America. The apus watch over Andean villages, castigating them with lightening, hail, or sleet when they do not make proper offerings to Pachamama, the mother earth. While working in the nearby Andean villages of Conima, we visited an archaeological site on the west side of Lake Titicaca where such offerings were still made. As a storm gathered, our guide warned that instead of making the required payments four times a year, public offerings were now made just once a year. We asked what might be the consequences of this change, and he said that Illapa, the God of lightning, might strike someone from the village. A thunderhead grew to the north of the small house where we had been staying. We hurried back. Then there was a huge clap of thunder. The next day we learned that a lightening bolt had killed a young man from the village, not far from our residence. The well-founded fear of lightening may be what is represented at the site of Buena Vista where unusual niches have a form that suggests lightening bolts. These are located in structures related to temples that have fox figures (Benfer et al. 2010). These temples, which date to 2000 to 2200 BC, have yielded much information about the mythical fox that appears in there sculptures, bas relief, and incised versions. Ethnographic and ethnographic sources supported the interpretations and the ideas of Bauer and Dearborn (1995, p.136-137) who argue that animals projected into the Inca constellations are ancient. During the 2004 excavations at archaeological site of Buena Vista, a fox visited us (Fig. 1) for the first time in what was the fourth season of excavations. He observed us from a nearby hill (Benfer's field notes) on the first day that we began to excavate the temple where we later found an incised fox figure in the entryway. He made daily visits until we had finished excavations there and covered the temple. This large species of fox (Pseudalopex culapeus) is closer in size to a coyote (Jimenez et al. 1996), which does not exist in South America, than it is to other species of foxes. It also preys on larger domestic animals than do his smaller sibling species and thus is a great danger to agriculturalists.
3. NON-INCA SOURCES

Although Inca sources are the richest for South America, coastal sources may be more salient for coastal archaeology than are those from the mountains of the Inca. MacCormack noted that the Yunga people of the central coast still practiced pre-Inca worship when contacted by the Spanish, including having numerous representations of forms of fox and fish, like the ethnohistorically reported myths from the area (1993, p. 344). We will depend especially on the Huarchirí Manuscript, the best 16th century account of Andean cosmology.

Archaeologists, like astronomers, attempt to explain the distribution of phenomena in time and space. The spatial distribution of one South American cosmology, the one developed here, is wide, almost pan-South American. In principle, even Mesoamerica fox mythology could bear on the question of early sharing with South America, since the origin accounts from both regions share many identical elements. Spanish accounts in the 16th and 17th centuries provide some hints as to the nature of prehistoric cosmologies in both Mesoamerica and South America. Ethnography shows that aspects of these beliefs have survived 500 years despite vigorous attempts to destroy them. In Mesoamerica, the decipherment of the hieroglyphs revealed a rich of astronomical knowledge and concern for predicting the movements of celestial bodies. In South America, we rely on ethnohistory, much of which was written during the lifetimes of persons who had been subjects of the Inca, or in some cases, Inca royalty.

The mythology of the South American fox is associated with both the sky, into which it ascended, and more strongly, the earth below. He brought back carbohydrates from the heavens in the form of agricultural plants, and animal protein in the form of fish. His association with climate change and prediction of crop success is told in stories over much of South America. His constellation is visible to indigenous peoples in a number of South American countries. From coastal Peru to southern Ecuador, shamans still use the fox to make prophecies, and variations on the fox myths are still heard from Central to South. However, the South American fox is not related to the Aesop's fables type of myth borrowed from Europeans. The first representations of the Andean fox were found at the site of Buena Vista, Chillón Valley, Perú.

4. ARCHAEOLOGY

The fox representations at Buena Vista are the earliest three-dimensional art in the Americas (Benfer et al. 2010). These 4,000-year-old acts marked a point where stories about the fox first became expressed visually in sculptures, murals, paintings, and architecture. The archaeological representations of the fox at Buena Vista are associated with temples where one could observe sky-events and make offerings to the earth.

These associations of the fox with the earth and the sky persisted from the Late Preceramic until the time of the Incas and are still known today among Andean peoples, both Quechua-speakers and Aymara-speakers. Our argument for this assertion is as follows: (1) 450 years ago, and today, there were common elements of Mesoamerican and South American origin myths; (2) the fox portrayed in South American myths is fundamentally different from the Mesoamerican and North American fox; (3) but he shares some elements with his Mesoamerican counterpart, such as association with the moon and night, as befits a nocturnal animal, as well as occasional elements of the trickster fox more prevalent to the north (presumably by Europe colonists); (4) the South American fox is still widely known to indigenous peoples across the continent and is associated with cultivated food, fishing, seasonal changes in climate, and irrigation on the one hand, and with the sky, which visits it on the other. An Andean constellation of his personage is widely known throughout much of South America. The fox monitors offerings to the earth, which are reviewed for adequacy by animated mountains. The fox of contemporary indigenous peoples' cosmology appears to be the same fox that by 2000 BC was first represented in art associated with monumental architecture at Buena Vista.

Finds from coastal Peruvian sites represent the earliest monumental architecture in the Americas, a fact that gives them considerable importance for theories that purport to explain the rise of civilization. These finds date to before 3500 BC in coastal valleys of northern Perú (Haas and Creamer 2006). In contrast, monumental architecture in Mesoamerica did not appear for another several thousand years (e.g. Cyphers and di Castro 2006, p. 31) and in a form both simpler and smaller. Both regions are pristine centers for the origin of complex societies. Complexity in prehistoric societies is typically most visibly expressed in the erection of mound complexes. We take the presence of complex societies to be indicated by purposefully constructed mounds rather than by mounds created by accumulations of refuse (Benfer n.d.).

The first monuments were erected and the first public art was designed by priests who had extensive knowledge of the movement of celestial bodies, a knowledge far greater than that a farmer would demonstrate by recognizing a sun's southernmost point of rising as a solstice. If this view is correct, any explanation for the rise of civilization in Peru must take into account more than predecessor sedentary villages, and more than the economics of food production in rainless middle and lower valleys and in fishing in coastal waters. The most influential arguments found in the literature on the issue of rise of Andean civilization have centered on such explanations (for example, Haas and Creamer 2006, Isbell and Silverman 2000, Patterson 1999, Shady et al. 2008, Makowski 2008, Pozorski and Pozorski 1987, Vega-Centeno 2005). One must also account for the cosmologies of these peoples.

Control of cosmological knowledge was probably the earliest form of hierarchical power, specifically that of priests who had astronomical knowledge. Such power was presumably gained by the priest's ability to predict celestial events, such as drought or inundations, and to ameliorate terrestrial threats by warnings and by presiding over offerings to the earth. That this power included prophecies, especially of planting and of opportune times for fishing and other activities. In short, the astronomical alignments and orientation of both pyramids...
times for fishing, but also of eclipses, is shown in the astronomical alignments and orientations of both pyramids and structures on the tops of pyramids. The hypothesis that priests with astronomical knowledge directed the construction of the first large platform mounds and the temples on them has not been previously advanced with supporting evidence such as we present.

Archaeology, like astronomy, depends to some extent on the order of discoveries, because order can affect subsequent research. Therefore, there follows here a sketch of the archaeological finds that stimulated this paper, finds that show an early period in the development of the fox myth. The narrative art of Andeans today describes the fox as a personage who links the earth and the sky (van Kessel 1993, p.241). At the archaeological site of Buena Vista, we find the first evidence for this cosmology in plastic art, astronomical alignments, and offering chamber at 2200 BC.

5. THE FOX, USHNU, AND APU

One of the temples at Buena Vista has an incised fox in the western exit (Fig. 2), which was later narrowed (Fig. 3). This temple sits on the top of a stepped platform mound where a final feast occurred in an offering chamber (Duncan et al. 2009), before the temple was ritually interred. One of the uses of most such temples was as a place to make offerings to Pachamama, but we found that they also may have astronomical functions. When offerings are combined with the reckoning of sky events at a platform mound, the place is identified as an ushnu (Zuidema 1990, Pino M. 2005, Staller 2008, Meddens et al. 2008). Quecha speakers today who live in the region to the north of Buena Vista define ushnu as smooth river stones used to filter liquid offerings (Pino M. 2005, p. 146). Meddens and others (2008, p. 351) reviewed ethnohistorical sources and found that for the Inca an ushnu had, among other functions, served as a place for libations. Ushnus in the form of stepped platforms are still erected today in some remote areas (Pino M. 2009).

![Fig. 2 Fox incised into left exit of Temple of the Fox. A llama painted in white contains the figure (see also Fig. 7, upper right). Note white paint preserved on right side of exit, suggesting that, in keeping with the Late Preceramic pattern of extreme symmetry, a fox and llama may have been depicted on both sides to be seen by priests exiting the temple.](image1)
Fig. 3 West entry to Temple of the Fox. Incised fox depiction is on the east side of stairs on west wall. Note that the entryway was modified to make it narrower, although its effect as a viewing point to a stone on the ridge 264 m to the east would have been little changed; the view would have been narrowed, possibly to just contain the Fox constellation (see discussion in text).

The practice may be a cultural revival since ushnu began to be erected in one region after the work of an archaeologist there between 1963 and 1966 (Matos 1994, p. 214). In 4,000-year-old Buena Vista and in similarly dated sites in the Andes, ushnu are sometimes found with layers of smooth river stones and some angular stones in offering chambers, presumably to purify ritual offerings of liquids. Fig. 4 shows these stones being removed from the remains of the feast at the offering chamber of the Temple of the Fox at Buena Vista.

Fig. 4 Offering chamber of the Temple of the Fox during excavation. Note smooth river rocks that constituted a cover for much of the remains of a final feast held in the offering chamber before the entire temple was ritually interred, having been covered with net bags full of stones.

Fig. 5 Map of Temple of the Fox. Note that view through entryway and “sighting device at back of offering chamber differs by several degrees from the orientation of the principal walls, suggesting that either it was purposefully calibrated for an alignment that differed from that of the general orientation of the walls, or it was a necessary adjustment to the lack of precision possible in constructing 1 m thick rubble filled stone walls.
Figure 5 shows that a line run through the center of the entryway (Figs. 2-3), through a "sighting device" (Fig. 5) and across a rock placed on a ridge to the east, has an alignment of 114°36'. This azimuth would have directed the eye to a rock on the ridge. Rock B, over which the Andean Fox constellation began to rise shortly before sunrise on December 21, 2200 BC (Benfer et al. 2010). The azimuth also marks two other significant dates (see Adkins and Benfer in this issue) not discussed in detail here. The Fox constellation was fully risen after sunset on March 21, 2200 BC. These dates mark the beginning and end of flood stage of the Chillón River (SENAMHI 1963, data summarized in Benfer et al. 2010). Another view from the entryway to the Temple of the Fox looks to the east over a rock modified into the form of a human head over which the December solstice sun rises. It also looks to a different rock placed on the ridge that marks twin pillars of stone behind it. This alignment identifies the equinoctial sunrise (Benfer and Adkins 2010). Thus this mound and temple are an ushnu; they have all the diagnostic features—platform mound, offering chamber with layer of river pebbles, and astronomical alignments. In an adjacent valley is another important ushnu a principal temple to Pachamama. This is the site of Pueblo de Mama in the Rímac Valley. Pueblo de Mama lies at about the same elevation as Buena Vista (Villa Córdova 1935). The elevation is an important aspect of both Buena Vista and Pueblo de Mama because it was the lowest ecological setting where coca leaves could be grown for offerings and other rituals (Davila Brizeño 1881 [1586], p. 163). Coca leaves are common in offerings excavated at Buena Vista, suggesting it functioned as a pilgrimage center (see McKim 2010). In another revival of an old tradition, archaeologists in Perú now make a "pago", a payment of coca leaves with tobacco and alcohol before beginning a field season. We can see from a death of the Andean by lightening when "pagos" were not being made properly why appeals to the apus continue to be made in the Andes. Archaeologists and Andeans tell examples of similar coincidences of a tragedy occurring when a pago was not adequate.

The mythical Andean fox is often associated with the husband of Pachamama, Pachacamac, god of earthquakes, who appeared after the earlier god Kon (Rostworowski 1998). Pachacamac is the name of a site overlooking the Pacific Ocean where for many centuries an oracle dispensed advice (Eeckhout 2004). Pachacamac's linkage with the mythical fox is demonstrated at his temple. These temples have orientations to the Fox constellation (Piñasco C. 2007), although the walls were constructed in times more recent than the Buena Vista ushnu. The Spanish found many Fox offerings and idols at the principal temples of Pachacamac. From this background, we can surmise the fox myth has had currency for at least the last 450 years in Perú and extends into recent prehistory with wall orientations to the Fox constellation. The question arises: Does the 4,200-year-old fox ushnu at Buena Vista direct that mythology? Or, to state the question historically, was this ushnu the first known reflection of the fox myth?

6. SHARED ORIGIN ACCOUNTS AND OTHER STORIES

When two distant peoples share aspects of their basic myths, one can argue for connections between them. The connections may have been a distant common origin, or there could have been contact. That fact that the peoples of Central and South America share important similarities in origin accounts suggests great antiquity for that myth.

The two principal ethnohistorical sources for origin accounts of Andeans and Mayans are the Huarochirí Manuscript (Urioste 1983, Salomon and Urioste 1991) for western Andeans, and the Popul Vuh (Tedlock 1985) for the Maya. The Maya case documents a process by which such old ideas survive. Centuries elapsed between the erection of the last monumental architecture and the recording of the Popul Vuh account, yet these myths fit into the stories told by partly deciphered ancient Maya hieroglyphs in texts. Many of these texts are embedded in monuments that have astronomical reflections of the ideas in the texts, and painted on codices and pottery. In most instances the glyph texts are accompanied by representations that illustrate the stories iconographically as paintings, sculptures, and carvings. Modern priests continue to manage some of this knowledge (Tedlock 1985). Stories from the Popul Vuh origin account are widespread among different Mayan groups today (e.g. Ruz 1981, Brody 1987). In Perú, an informant dictated the Huarochirí Manuscript at a time when there were still a few people alive who had lived as subjects of the Inca Empire (Solomon 1991, p. 3). Some stories are recorded in other early accounts and in modern ethnographic observations. In historic times, coastal peoples gathered at Huarochirí, which is just a two-day walk from Buena Vista, for rituals, although it is perhaps uncertain whether pilgrims would have had access to lower valleys before their incorporation into the Inca Empires (Spaulding 1984, p. 15). McKim (2010) argues that the Inca ushnus were pilgrimage centers, which we believe is likely for the ushnu of Buena Vista, but for which we have no evidence at present. Since Huarochirí is so close to Buena Vista, the ethnohistory taken from there provides the closest ethnohistoric sources for cosmology, which we contrast with that of the Popul Vuh for the Maya. Ancient stories illustrate the cosmology.

Revolt of the Objects. The Popul Vuh and Huarochirí Manuscript describe an origin account nearly identical in its early stages. They also contain other myths in common, such as the “revolt of the objects.” This is an interesting story of rebellion of useful implements. It is known from ethnohistory in both the Andes and Central America (Allen 1998), and from archaeology in Peruvian painted pottery (Quilter 1990). The stories share a notable astronomical feature. In the Popul Vuh myth, the revolt occurred during an eclipse (Brotherston 1989, p.143). In the Huarochirí Manuscript, the rebellion occurs when the sun died (Urioste 1983).

Flood Myth. Another myth in common is that of a great flood in Mesoamerica (Margery Peña 1988) and Perú (Steele and Allian 2004). Perhaps these stories diffused with the conquest, although that the Peruvian llamas has to drink the ocean to keep floods from occurring is obviously indigenous. The Tojolabal Maya people tell of the destruction of a lazy first creation first by volcanic eruptions, from which some escaped into caves, avoiding a subsequent flood, and from which they emerged not as humans but as animals, ones that retained somewhat human-like hands. In this Maya tradition, a man was initially created with just animals for companions, but he
this fox in Mesoamerica, although the fox was a critical member of a three animals in the Popul Vuh that made widely associated with the sun but more emphatically with the moon in Peru in antiquity. There is no parallel to too, the Maya constellations and the Milky Way marked solstices (Freidel et al. 1993, pp. 85-86). Our simulation for that latitude and date with the Starry Night planetarium program shows the constellation higher in the sky with the Fox clearly visible just before sunrise at 7:32 AM with an altitude of approximately 40°, not 4°.

**Origin Account.** In the origin account of both the Popul Vuh and the Huarochari Manuscript, a principal figure arises from the insemination of a maiden by a deity. For the Maya, the paternal deity takes the form of a squash lodged in a tree and derived from the severed head of one of the first set of Hero Twins in the account, One Hunahpu. The skull was it was placed there after One Hunahpu's death at the hands of the Lords of the Underworld. He and his twin, Seven Hunahpu, appear to be joint fathers to the child of Blood Moon (or Blood Woman). The insemination occurs when the head splits saliva (Tedlock 1985, p. 114) into the hand of Blood Moon, Blood Moon who symbolizes the rising moon (Price 2007, p. 110) in all of its stages (Price 2007, p. 72). Blood Woman gives birth to the second set of Hero Twins, Hunahpu and Xbalanque (Tedlock 1985, p. 119). The Hero Twins go on to defeat the forces of the lower world that killed their father Hero Twins, and many of their vanquished foes become familiar stars and constellations. They themselves are interpreted as the Sun and the Moon.

The Andean story is very similar (summarized in Solomon 1991, pp. 8-9): A deity, Cuni Raya, tricks a maiden, Cauí Liaca, by putting his semen into a lucuma fruit that he drops from a tree for her. (Recall that the Maya figure was also fruit, a squash.) The maiden becomes pregnant although remaining a virgin and gives birth to Atatay, both of whom flee to the ocean where Cauí Liaca filled the ocean with fish. In both myths, there is an attempt to find the father, who appears as a ragged old man who is not recognized.

Hero twins are discussed today from Mesoamerica to the Amazon to Tierra del Fuego. In the origin account of one Amazonian tribe origin myth featured the younger brother a thunder god that was associated with a constellation (Métraux 1946, p. 117). In a myth of the Apapocuva-Guarani, the elder brother appeared to be the sun, the younger, the moon, while for the Jivaroan peoples, the brothers became stars (Métraux 1946, p. 117). As mentioned, the Mesoamerican Hero Twins also have astronomical connections. According to the Popul Vuh, the hero twins Hunahpu and Xbalanque arose into the sky, where Hunahpu was transformed into the sun, his brother, Xbalanque, the full moon. Hunahpu was born at the winter solstice (Girad 1979). He returns from the south after the winter solstice, as does the sun. There is a duality associated with Hunahpu, both by having an eponymous father and through his becoming the sun and his twin brother, the moon. Of course, the second set of twins succeeded the first set, who also fought the lords of the underworld, and are also named Hunahpu—One Hunahpu and Seven Hunahpu.

Hunahpu shares some properties with Kon, the ancestral deity of coastal gods in Peru, and with apus. Kon is identified with the sun (Rostworowski de Diez Canseco 1989, p. 168), but he was also the sun and the moon, following the duality suffused through Andean cosmology (Cavallano 1997). Kon-Kon is an important toponym, the ancient name for the middle Chillón Valley where Buena Vista lies. The name persisted and was given to a hacienda, Concon and an Initial Period monumental site, Kon (Vilquelle Córdova 1953, also called Huacoy (Ludeña 1974). The ethnohistorian Rostworowski de Diez Canseco (1989, p. 168) suggests he is an ancient god, perhaps extending to the Initial Period. We are suggesting that he was born in the preceding Late Preceramic Period.

To return to the Maya, the second part of the name of the Hero Twin, "ahpu" at least superficially resembles the Quechua apu, but there is no way determine if it might be a loan word from a common ancestral language or just an arresting coincidence. Ahpu and its cognates mean "lord" in many Maya languages. Apus as lords of the sky are still widely venerated in the Andes today, lords that inhabit mountains (Sánchez Garrafa 2008, p. 209). Stone statues are created of the condor, the master of the apus, in the highlands today (Sánchez Garrafa 2008, "Kuntur de Kukaruna", in Galería Fotográfica). A stone statue associated with the Temple of the Fox through an equinoctial alignment was found at Buena Vista (Benfer and Adkins 2010). Today, apus may be called upon for help in health or in lost or acquired goods. After the lights are extinguished in the home or cave, the apu appears to the celebrants as a condor or a falcon (Millones 1983, p. 66). An Aymara story tells of competition between a fox and a condor, in which the fox loses and is eaten by the condor (Tshopik 1948, p. 111). Many such stories link the fox and condor. In the Andes of Peru today, the fox performs the important task of evaluating offerings for the apu (Sánchez Garrafa 2008), and in coastal valleys, foxes were sometimes called the "dogs" of the apus (Eeckhout 1998, 123). Parenthetically, we mention that the apu to the east of Buena Vista is the end point of an astronomical alignment (Table 2), suggesting his importance to the builders of the temples.

The highland Maya also mark sacred mountains, and as in the Andes, pilgrimages are made to them (see McKim 2010). People in the coastal Chillón Valley of Peru still maintain and use some of the ancient pilgrimage trails to a quartz mine above Buena Vista at 11°44'4.15" S, 76°57'43.85" W.

The rising of the Andean Fox constellation in the Milky Way marked seasonally important dates such as solstices (Benfer et al. 2010) and lunar standstills (Adkins and Benfer 2009) between 2200 and 2000 BC. So, too, the Maya constellations and the Milky Way marked solstices (Freidel et al. 1993, pp. 85-87). The fox is widely associated with the sun but more emphatically with the moon in Peru in antiquity. There is no parallel to...
this fox in Mesoamerica, although the fox was a critical member of a three animals in the Popul Vuh that made
an important petition (Tedlock 2003, p. 283). The origin accounts from Mesoamerica and South America, in
contrast, show many common themes, as we have presented above. While it is common for deities to arise
from unusual methods of insemination or birth (e.g. Swanson 1960), the origin story described above, shared in
many details by Mesoamericans and South American groups, is unique.

Ludeña (2006) points out that mythic history of the Inca empire, as dictated by the Inca (e.g. Zuidema 1990),
extends into the preceramic, when cultivated crops were first planted, because food crops were introduced by
the fox in mythic times (Urrioste 1983). Chronicler’s accounts were influenced by European religious belief
systems (e.g. Adorno 2000, Barnes 1992). However, the introduction of quinoa with marine and other foods by
a fox, as described in the Huarochirí Manuscript does not correspond well with a European or Christian origin
account. It is also unusual for a mythical animal to have responsibility for fertility of both fields and the ocean
(Irier 1997, p. 313). This responsibility can be explained by the importance of marine resources along with
irrigation agriculture to the rise of coastal valley Andean civilization (Moseley 1991). The persistence of the fox
myth reflects that importance.

Many important cultivated plants were not developed in coastal Perú but were imported from elsewhere. Central
and South America are usually treated as independent centers of domestication, each with their own unique
crops (Pearsall 2008). For example, maize was first cultivated in Mexico 7,000-9,000 years ago but did not
enter central, coastal Perú until the Initial Period, about 3,600 years ago. Potatoes, cotton, and peanuts went in
the other direction. Most crops exchanged were ones that would have been carried by people, not natural
agencies. Traders may have also carried cosmology.

7. HISTORY OF SHARED ORIGIN MYTHS

Trade. Pizarro and his crew were the first Europeans to see balsa rafts being used by indigenous peoples for
trade between Central and South America. Since preceramic coastal peoples were buried in sleeping mats of
interlaced straw at least as early as 4,500 BC (e.g., Benfer 2008), larger rafts made of such mats could have
been in use in early times. Nonetheless, there are few indications of early trade in the form of preserved
artifacts. Although Spondylus shells are often mentioned, in exceptional years, they have been found in the
ocean at the latitude of the Port of Callao, Lima (e.g. Pillsbury 1996, p. 317), which may explain their trace
presence in preceramic sites on the central coast.

Evidence from ethnohistory could suggest that population replacement occurred on the coast of Perú
(Rostworowski 1989), but it is not possible to suggest a date. At 3,000 BC, there was a dramatic change in
mortuary practice at the central coastal site of Paloma, which could indicate such a population replacement. A
new burial pattern pertained to changes in orientations of the dead interred under the floor of domestic
architecture (Benfer 2008). The pattern before 3,000 BC was to place burials around the edges of dwellings
with no attention to sex or age of the interred. The new pattern was such that a line of infant burials lay across
the center of the circular house parallel to the opening of the entryway which faced the December solstice
sunrise. The adult males were buried on the entry-side of the infants and the adult females toward the side of
the house behind the line of infant burials. This line divided adult males in front from females to the rear. Such
a strong shift in cosmology as evident in beliefs about interment could be taken to document Rostworowski’s
population replacement. Nonetheless, although suggestive, the evidence does not compel that a movement of
entire populations was a factor in cultural change in the Late Preceramic of Perú, since it could have been the
case of diffusion of a new pattern.

Diffusion on a grander scale, from South American to Mesoamerican could be also argued. Alone of all the
Mesoamerican peoples, the Tarascans of Mexico possessed metallurgy, the earliest record of which comes
from South America. They also had other items that suggest diffusion. Among them are stirrup-spouted vessels,
interlocking stoneware in the Inca style, and a cosmology focused on the Southern Cross, scarcely a bright
constellation at 19º north latitude of their Mexican home (Malmström 1995). Northern polar stars, such as
Polaris that has an absolute magnitude of about 2.0, would have been seen as high as 40º above the horizon.

Within Perú, the direction of on early cultural change was from north to south. Preceramic monumental
architecture in the form of large platforms, mounds, and plazas, spread south from early north coastal valley
Peruvian sites (Alva 1986; Haas and Creamer 2006), around 3,000 BC so that time is a candidate marker for
possible diffusion of cosmology. Any hypothetical migration could, in fact be just the greater fertility of
agriculturists from a first wave of much earlier immigrants (Sutter 2005, p. 190) whose greater numbers
permitted constructions of large platforms and mounds. In fact, a relatively small labor force can be calculated
to have been sufficient for the relatively rapid construction of moderate-sized mounds (Benfer n.d.). Plants show
an ancient connection between the two continents, as described above; corn moved from Mesoamerican to
South America and in South America from the north to the central coast. Cosmology may have traveled on rafts
with merchants carrying these foods along the coast. Should one doubt that trade could propagate a belief
system, one need only consider the spread of Christianity, which was associated with foreign trade in collapse
of the last Chinese dynasty. Another source of information that could help establish connections between
mythologies would be shared elements of language suggesting movements of entire communities of speakers
or loans of selected terms.

Language. Diffusion of mythology might accompany or be the source of shared word and other elements
between languages. The nature of language diffusion from Central to South America is contested, (e.g.
Campbell, 1997). Most experts agree that the accepted methods of historical linguistics analysis do not reach
back far enough in time to be of use for such deep comparisons. Since the earliest monumental sites in
back far enough in time to be of use for such deep comparisons. Since the earliest monumental sites in
northern Perú date millennia before similar developments in Mesoamerica, hypothetical diffusion of loan words
and mythology from south to north might appear the more probable direction. Arguing against this speculation is
the fact that the Andean Fox did not reach Mesoamerica.

8. ETHNOHISTORY AND ETHNOGRAPHY OF THE FOX

The Andean fox of modern mythology was projected into the painting of dark cloud Andean constellations on a
wall of the Coricancha, the principal temple of the Incas (see Bauer and Dearborn 1994, p. 118-121). The
chroniclers took note of these dark cloud constellations (e.g. Vega 2006), which were later rediscovered in the
associated with rain, water, seasonal climate change, and agriculture among modern peoples from the high
Andes (Urton 1981, Eckhout 1993, Sullivan 1996), to its eastern flanks (Eckhout 1998) to Argentina (Lausent
1984), and to the tropical lowlands of Brazil (Fabien 2001). Hernández Lefranc argues that because the fox is a
predator, he must be represented as a trickster (2005, p. 288).

However the South American fox myth presents him as more than just a trickster; further, the story is more than
a legend, and it is a very ancient myth (van Kessel 1993, p. 49). The ethnohistory and ethnography of the
Andean fox tells a story of a fox that is quite different from the possibly introduced trickster fox. Although the
Andean fox figure has some trickster characteristics, he is generally a loser rather than winner of those tricks.

Itier (1977) emphasized the importance of the trip to the heavens of the fox from where he brought back foods,
including cultigens. In central, coastal Perú, the fox reported on the adequacy of offerings to the earth, to
Pachamama and to the apus, the lords of the sky (Sánchez Garrafa 2008). On earth, the fox created irrigation
canals, as told in the Huarochirí Manuscript (Urioste 1983, Solomon and Urioste 1991). This fox brought
cultivated crops as well as marine and other terrestrial foods. The story of how he obtained them by climbing a
rope to the clouds and eating them, then falling down to earth and splitting open to reveal the bounty, is told
with countless variations throughout the Andes among both Quechua and Aymara peoples (e.g., Sánchez
Garrafa 2008, Van Kessel 1993, p. 240). He is known throughout highland and lowland South America as an
1991). In Argentina, a myth describes two foxes, a smart one associated with the sun and dumb one, with the
earth (Lausent 1984). More commonly the fox represents the basic antagonism of the sun with the moon. In
historic times, there was conflict between the middle valley ethnic group and the upper valley one, one that was
described as between the people of the sun and fire in the highlands and the people of the moon and night in
the coastal valley where Buena Vista is situated (Eckhout, 1988, p. 129). In mountainous South America, the
moon was more worshiped than the sun by Inca women, while the men primarily worshiped the sun (Silverblatt
1987). In coastal Perú, the moon has great salience for both sexes but still has a feminine character (see Itier
1997). The fox can also be linked to illnesses. For example, as a lunar animal, he is associated with Chagas
Disease (Leishmaniases), which is spread by a nocturnal insect (Camino and Anderson 1992, p. 34).

In sum, then, relations between the highlands and the coast can also be seen in this myth (Eckhout 1998, p.
123-4) perhaps deriving from highland pastoralists seasonally descending to the valleys to work in fields (Itier
1997) or to invade the coastal valleys. In central Perú, the only empires were highland in origin (e.g., Paulson
1976).

9. ARCHAEOLOGY OF THE FOX

Inca cosmology is represented in astronomical alignments embedded in the architecture of archaeological sites
from Chile (Boccas 2004), to Perú (Pino M. 2005, Zuidema 2008, Dearborn et al. 1987), to Ecuador (Ziólowski
and Sadowski 1989). Space does not permit discussion of features of the astronomical structures of the Inca,
but extensive recent reviews are available (Bauer and Dearborn 1995, Pino Matos 2005). Here we focus on the
coastal valley Late Preceramic site of Buena Vista, which has three temples that have fox imagery. One has an
incised fox in the exit to the temple (Fig. 2).
Fig. 6 Left: Andean Dark Cloud Constellations: A is Fox, B is Baby llama, and C is Mother Llama. Upper Right: Tracing of Fox Figure as seen in the photograph in Fig. 2; Lower Right: Speculative projection of mural from entryway to Temple of the Fox over Rocks A and B on the ridge to the east at 112º and 114º azimuths. To facilitate the projection, the tail was aligned with the obvious dark projection in A, the left image above, near the edge of the photograph, which caused κ Sco and ι Sco to snap into the eye (images courtesy of Larry R. Adkins). The arrow marked B has an azimuth of 114º36’ from the entryway across the “sighting device” in the Temple of the Fox, to Rock B.

Figure 7 Some of the astronomical alignments from the entries to two of the three excavated preceramic temples at Buena Vista to reference points on the ridge. Modified from original map of Bernardino Ojeda. Presumably only exiting priests would pass through and down the stairway of the mound from this exit. If one views from the entrance in the other direction, towards a special sighting device, one would have seen the rising of the Andean Fox constellation before sunrise on December 21, 2200 BC (Fig. 6) and a fully risen Fox after sunset on March 21 (Tables 1 and 2 and Fig. 7); the same rising would have been seen over a quartz mine also aligned with the Temple of the Fox (Benfer et al. 2010). The quartz mine also permits accurate determination of a solstice event and is discussed elsewhere in this issue. The alignment from the Fox to the marker on the ridge permitted a warning of an eclipse cycle during a lunar standstill season (Adkins and Benfer, elsewhere in this issue). Another view would have directed attention towards a stone in front of twin pillars, one of which was retouched into a condor, over which the equinoctial sun would rise (Benfer and Adkins 2010). These alignments (Fig. 7) permitted accurate prediction of important events in the annual calendar such as the rise and fall of the Chillón River. Fig. 7 depicts graphically this and other alignments from two temples at Buena Vista (alignments from a third are elsewhere in Benfer, n.d.).

Table 1: Sky Events in the Present and at 2,000 BC

<table>
<thead>
<tr>
<th>Sky Event</th>
<th>2009 AD</th>
<th>2000 BC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austral Summer solstice sunrise</td>
<td>114º19’</td>
<td>114º35’</td>
</tr>
<tr>
<td>Austral Summer solstice sunset</td>
<td>245º15’</td>
<td>245º25’</td>
</tr>
<tr>
<td>Austral Winter solstice sunrise</td>
<td>69º37’</td>
<td>69º45’</td>
</tr>
<tr>
<td>Austral Winter solstice sunset</td>
<td>293º47’</td>
<td>294º17’</td>
</tr>
</tbody>
</table>

How do these foxes fit into Peruvian prehistory? Before Buena Vista, the fox figure was known to have a history of at least 2,000 years as a lunar animal (Bruhns 1967), since it is represented in such contexts as murals and painted pottery from Moche sites (e.g. Franco et al. 2003). The Fox constellation is at least 4,000 years old judging by its astronomical alignments at Buena Vista.

Table 2: A Selection of some Solstice and Equinoctial Alignments, Buena Vista, Chillón Valley, Perú

<table>
<thead>
<tr>
<th>Reference Point</th>
<th>Viewing Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back A (112º)</td>
<td>Incised fox carving to north of mound, 2200 BC</td>
</tr>
<tr>
<td>Center of Rock B (114º)</td>
<td>Center of Rock B (114º)</td>
</tr>
<tr>
<td>Center of Rock C (112º)</td>
<td>Center of Rock C (112º)</td>
</tr>
<tr>
<td>Western Platform (294º) Disk facing setting sun with lunar eyepiece, June 21, 2200 BC</td>
<td>Platform facing stone, quartz mine (116º)</td>
</tr>
<tr>
<td>Low-relief fox on rear wall of chamber with blank disk</td>
<td>Wall points to center of Rock A (109º)</td>
</tr>
<tr>
<td>Solstice chamber</td>
<td>Center of Rock C (112º) Solstice stone over rock, Dec. 21, 2200 BC</td>
</tr>
<tr>
<td>Quartz mine</td>
<td>Platform facing stone, quartz mine (114º)</td>
</tr>
<tr>
<td>Dec. 21, 2200 BC</td>
<td>Dec. 21, 2200 BC</td>
</tr>
</tbody>
</table>
At Buena Vista, the Temple of the Fox has a fox image at the entry to an offering chamber with a layer of river rocks; it is situated on a platform mound, all of which identifies the place as an *ushnu*. Although it has been cogently argued that *ushnus* must have existed in the distant past (e.g. Staller 2008), it is only at Buena Vista in the Temple of the Fox (Duncan et al. 2009) and in El Paraíso in the same valley (Benfer and Adkins 2009) that we have archaeological evidence of a preceramic association of offering chamber with a site for observing multiple astronomical events (Fig. 4). It can be seen in Fig. 3 that the entryway, which is the viewing point over a “sighting device” (Fig. 5), has been remodeled by adding an additional 10 cm to the door jamb, effectively narrowing the entryway by one-fourth. The original opening would have required the priest to just step up to the entryway in 2200 BC to see the Fox constellation rise on the December solstice or September equinox, if one defines the constellation as extending from Girtab Scorpius to Omichron Ophiuchi. After the narrowing, a priest would have had to step to almost the center of the entryway to see the Fox constellation framed by the end of the entryway and rising over Rock B, 264 m distant. The incised fox mural wraps around to be partially visible from within the entryway. Speculatively, we can imagine the priest wanting to be in the temple rather than just beginning to enter it when he made his observation.

Fig. 8 Sculpture of the Menacing Disk; top view facing 294°, bottom view, 114°; note crescent eyes on western face and single round eye on eastern face. Also note larger head on lift figure, presumably male. Mark in tail on left fox matches the one on the incised fox in Fig. 2 above. Traced figures and profile drawn by Bernardino Ojeda.

The second mound from Buena Vista also contains fox images. This is the Temple of the Menacing Disk described in more detail elsewhere (Adkins and Benfer this issue). It contains a mud plaster painted disk sculpture with two flanking mythical figures, foxes staring out a narrow entryway (Fig. 8). The foxes’ heads are averted from the disk but they have crescent, lunar-fox (Fig. 1) eyes, which look to the June solstice sunset. The foxes are likely a male and a female, since the male on the left has a much larger head than the female on the right, an identification that corresponds to the general Andean pattern. Pairs of similar foxes are known from Moche depictions (Bruhns 1976, Franco et al. 2003). The Moche drawing in Fig. 9 (Franco et al. 2003) shows the dark mark on the tail of the larger figure on the left. Fig. 10 presents the sculpture of the Menacing Disk at Buena Vista with a dark mark on the tail of the larger fox on the left. Stories of how this mark came to be are still narrated among the people of the central Andes (Golte, 2003, p. 185; van Kessel 1993, p. 2363). In Fig. 8, the smaller, female fox sculpture from Buena Vista, the one lacking the marked tail, is the greeter of the solstice sunrise with her round, solar eye. This statue was constructed at 2030 BC (Benfer et al. 2010), and makes clear that sun/moon dualism was already an essential component of Andean thinking as expressed in architecture. Male/female dualism associated with a solstice orientation was evident by 3000 BC at Paloma (Benfer 2008).

Fig. 9 Paired foxes, drawn from the original Moche murals at El Brujo presented by Franco and others (2003). Some surrounding symbols were omitted, but stars are retained. Note line in tail of left fox with larger head but not present in right fox.

Dual mounds at Real Alto in Ecuador match the worldview in central Brazilian societies (Zeidler 1998). In Moche murals at the Cae Viejo mound at El Brujo (Franco et al. 2003), dualities express their role of organizing
a dynamic world of sun/moon and coast/mountain. At Buena Vista temples, duality is likely expressed as that of the sun/moon, male/female, and day/night (Ludeña 2006). Of these, the moon and its rival, the sun (Eeckhout 1998, p. 129), were likely most important on the coast. Both temples at Buena Vista monitor solar and lunar rises, by alignments to special features created on a ridge. The next equinox after a standstill season would be a time of eclipses (Adkins and Benfer 2009, and elsewhere in this issue). The Andean Fox constellation, which is fully risen after the equinoctial sunset, is one marker of the equinox at Buena Vista. Other equinoctial alignments and orientations in Late Preceramic sites have been identified (Benfer and Adkins 2009). Markers on the ridge, spherical rocks and platforms carved into living stones, indicate the solstice sunrise from temples with fox representations (Table 2), which are discussed in detail elsewhere (Benfer et al. 2010, elsewhere in this issue). One other likely fox image (Fig.10 and Fig. 11) is probably depicted in low relief in the chamber of the Menacing Disk at the end of a low wall that points directly to Rock B. Due to deterioration; the image cannot be definitively identified as a fox. However, it is found just above the low wall that is linked to the rise of the Fox constellation centered over Rock B before sunrise on December 21 and after sunset on March 21, 2000 BC as seen from the somewhat earlier Temple of the Fox. The small wall is asymmetric to other walls in the temple and is a link to the Andean Fox constellation. The Menacing Disk, flanked by lunar foxes (Fig. 8 and 10), found in the same mound, might represent the sun (Benfer et al. 2010). The sculpture resembles a mask in the shape of a disk, glaring at the June solstice sunset and the gathering darkness, with crescent eyes. A review of the ethnohistoric literature shows that sun and the moon would do battle during the night (Ludeña 2006).

Fig. 10 Sculpture of the Menacing Disk with flanking fox figures. Low relief of a possible fox is visible in the upper right (see Fig. 11).
The heads of the flanking animals are averted as if to avoid a painfully bright light. While its fierce countenance could be that of Pachacamac, the principal temple of this deity lies several valleys to the south. We identify the personified disk not as him or the sun, but as more likely Kon, who represents both the sun and the moon. The disk and foxes were covered up in 2000 BC, suggesting his demise. Perhaps the disk was not Kon because it seems unlikely for a deity to be discarded in the same valley where its name is still known 4,000 years later. If, however, a fealty to Kon was replace by a suite of Andean deities, the hypothesis might explain why the Kon sculpture is located in a section of the valley that was still named Kon-Kon in the 16th and 17th centuries since he could be considered an isolated relic. The Kon site rose in the valley below Buena Vista after Buena Vista was abandoned and reoccupied by the Chavín cult (Benfer et al. 2010).

11. CONCLUSIONS

The origin accounts of Mesoamerican and South America involve the sun, the moon, and eclipses and share a number of the details. Major figures such as Hunahpu and Kon in each continent share a solar/lunar duality; in the case of Kon, the moon is the stronger face. At the Temple of the Fox at Buena Vista 4,000 years ago, priests who observed the moon rise across a rock placed on a ridge, Rock B, could anticipate the beginning or the end of a lunar standstill season, to be followed by eclipses near the equinox (Adkins and Benfer 2009). The same pattern would have been observed over Rock C from the Temple of the Menacing Disk, which we tentatively suggest is the deity Kon. Not discussed here, a third and somewhat later temple (1850-1750 BC), the Temple of Paraíso del Valle, continued this warning system (Benfer n.d.). Viewers in entryways of the both the Temple of the Fox and the disk Temple of the Menacing Disk would have seen the Andean Fox constellation begin to rise as the Chillón river began to flood at the December, austral summer solstice. The Fox constellation would be fully risen by the March equinox when the river would begin to fall. A hierarchy of priests with astronomical knowledge may have directed the construction of the mounds, whose stairways have astronomical alignments (Benfer n.d.). Those temples also have multiple alignments. The fox sculptures and the incised fox mural link the two temples to the fox.

When Kon completed his reign as a coastal deity, he left toponyms in the Chillón Valley and stories recorded in the 16th and 17th century Spanish records. In contrast, myths about his consorts, the foxes, remain widespread, and are still told today from the coast through the Andes to the tropical lowlands of South America. Kon and his fox consorts made their first appearance at the site of Buena Vista by 2000 BC, where they signaled the beginning of a religious/astronomical hierarchy, one that present data suggests is the first of all hierarchies in the Americas (Benfer et al. 2010). It may not be coincidental that the earliest three-dimensional art in the Americas also first appears at Buena Vista, since public sculpture may be another early indicator of hierarchy. That cosmology might underlay hierarchy in the Late Preceramic in the Americas has not previously been supported by these kinds of data. The cosmology persists today. It is as old or older than any in the world today, which is surprising given that the origin and maintenance was with a non-literate society.

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The ancient Maya believed in recurring cycles of creation and destruction and thought in terms of eras lasting about 5,200 modern years. The current cycle is believed by the Maya to have begun in either 3114 B.C. or 3113 B.C. of our calendar, and is expected to end in either A.D. 2011 or 2012. Maya cosmology is not easy to reconstruct from our current knowledge of their civilization. It seems apparent, however, that the Maya believed Earth to be flat and four-cornered. Each corner was located at a cardinal point and had a colour value: red for east, white for north, black for west, and yellow. Perhaps the best example of this is the orientations of later prehistoric tombs and temples in western Europe, no fewer than three thousand of which have been measured and analyzed by the British historian of astronomy Michael Hoskin. There are a multitude of local groupsâ€”distinctive types of stone monument built in different localities during some two millennia of prehistoryâ€”and in nearly every case the orientations are bunched, clearly intentionally, into a restricted range of directions forming a characteristic orientation signature.Â Cardinal Directions; Cosmology; Methodology; Solstitial Alignments; Statistical Analysis. Church Orientations; Iron Age Roundhouses; Navajo Hogan; Pawnee Cosmology; Prehistoric Tombs and Temples in Europe. References and further reading. Many Native American creation myths tell of the earth being covered by a massive sea. A sea creatureâ€”usually a large turtleâ€”dove to the bottom of the sea and returned with a lump of mud which, in time, became the Earth. Other creation stories involve a deity who descends from the sky. A number of myths also involve a person known as a â€œtrickster.â€Â By the time Americans and Europeans began recording Native American myths, much of their culture had been thrown into chaos and many stories had already been lost. Although beliefs varied between tribes, most Native Americans believed that all living thingsâ€”humans, animals, and plantsâ€”were all bound together and all equally important. To the above message to Britain, from the first, but, I hope, not the last of the British conquistadores who conquered South America by brains and courage, not by rape and blood and banditry, the author ventures to add that he has tried as best he may to fill up the lacunae, which fate ordained that this soldier and explorer of the Legion of Frontiersmen, forever pushing forward into the un-known, should leave with a great question mark across them. It seems unlikely to hope, now, for Colonel Fawcett's return from the lost world of Brazil's jungles, nearly twenty years after he a Incorporating the ELA and Literac Aztec Mythology - Myth Encyclopedia - god, story, legend, names, ancient, animal, snake, war, world, creation. Amun - Myth Encyclopedia, Anansi - Myth Encyclopedia, Anat - Myth Encyclopedia, Androcles - Myth Encyclopedia, Andromach - Myth Encyclopedia, Andromeda - Myth Encyclopedia, Angels - Myth Encyclopedia, Animals in Mythology - Myth Encyclopedia, Antaeus - Myth Encyclopedia, Anthony of Padua, St - Myth Encyclopedia, etcâ€”Â Free download pictures of ancient aztec weapons Files at Software Informer - MB Free Aztec Astrology Software determines your Aztec Day Sign from your date The weapons the Aztecs used were not only advanced, but extremely effective in their battles.