

ARE ARID CLIMATES MORE LIKELY TO PRODUCE MONOTHEISTIC RELIGIONS:  
AN ARCHAEOLOGICAL AND ANTHROPOLOGICAL PERSPECTIVE

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## **Abstract**

Are arid climates more likely to produce monotheistic religions, or are these religions a product of social complexity and outside pressure? By researching the religious traditions and spiritual beliefs of cultures that have arisen in arid climates I show that the environment is not a direct factor in the development of monotheistic religions. Specifically this paper looks at the Hopi and Zuni cultural traditions of the American Southwest, and early Mesopotamian religions such as the Dumuzi cult in the Near East. I also explore the development of Judaism, Christianity, and Islam and describe early evidence for these religions in the archaeological record. The majority of spiritual beliefs in many areas before the introduction of Christianity were focused on the environment and numerous anthropomorphic spirits as well as a respect for the local environment. The major monotheisms seem to lack this characteristic, possibly showing that they were more a product of social and political pressure, rather than the result of harsh, arid living conditions. This paper shows that while arid environments, and the environment in general, does have an influence on polytheistic religions, it does not have a direct affect on monotheistic development.

## Introduction

The environment and climate in which a culture develops has an impact on the worldview and religious beliefs the people within the culture. This can be shown in the many religions that celebrated anthropomorphic spirits and harvest festivals before the spread of Christianity. Monotheistic religions such as Judaism, Christianity, and Islam are unique in an absence of environmental responsibility and a focus on an otherworldly life rather than a focus on this world responsibility. Robert Sapolsky (2005) has argued that the focus on a paradise like afterlife comes from an early history of a fatalistic worldview in response to the harsh, arid living conditions of ancient Iran, Iraq, and Israel from which these religions evolved. An arid climate is one that is especially lacking in moisture due to insufficient rainfall. The Biblical view of the environment is almost hostile as described when Adam and Eve are banished from the Garden of Eden. "Cursed is the ground because of you; though painful toil you will eat of it all the days of your life. It will produce thorns and thistles for you, and you will eat the plants of the field. By the sweat of your brow you will eat your food..."(Genesis 3:17-19). So was an arid environment a significant factor in the development of monotheism? If this were the case, I would expect to find monotheistic type religions in other harsh environments around the world or even within the same region, but early Sumerian and Babylonian religions up until Greek and Roman times remain polytheistic, as do the Aztec and the Maya in Mesoamerica. A religion is considered to be monotheistic if the doctrine or belief teaches that there is only one god.

Through the examination of archaeological remains one may be able to determine the religion of ancient peoples based on artifact assemblage or temple structure. This will help track the timing and spread of monotheistic religions, which have so much of an impact on modern life. Archaeological sites which will be examined include Dura-Europos, believed to be the earliest Christian church, located in Syria and dating between A.D. 232 to 250, the Gamla Synagogue located in Golan and dated to 70 B.C. and the oldest known mosque al-Masjid al-Haran located in Mecca and dated to A.D. 630. Additional variables to be examined include environmental conditions, type or types of deities, their relation to the environment, subsistence practices, and artistic representation of religious figures and events.

Examining early religious structures may help spread light on climate conditions, subsistence problems and also daily activities of ancient individuals through sacrificial remains

and deity representations. It may also help shed light on the mindset of early peoples to see whether they viewed their environment as hostile. One must not forget that the people who developed early monotheistic beliefs were not primarily nomadic, but rather people who lived in complex societies with rulers, armies and law codes.

This paper seeks to use historical and archaeological evidence to recreate the environment and social mindset of people in the ancient world to discover if the environment was a direct factor in the development of monotheism.

The methods section of this paper will discuss the steps taken during research and will be followed by a background section which will examine the climate, deity structure and archaeological sites used in this study. Following the background information there will be a discussion on how the environment may or may not have impacted cultural and spiritual development. In conclusion, I discuss the reasons why I believe the environment was not a significant factor in the development of monotheistic religions, specifically Judaism, Christianity and Islam.

## **Methodology**

In preparing for this study I researched literature and journal articles exploring the spiritual beliefs of cultures in arid climates. Specifically I researched the beliefs of the Hopi and Zuni in Arizona and New Mexico as well as early polytheistic religions Ancient Mesopotamia such as the worship of Dumuzi and Inanna to show similarities in deity types and their relation to the environment. To discover how these beliefs and those of monotheistic religions might be evidenced in the archaeological record I also plan on researching archaeological sites, of early holy buildings, three of which represent the earliest holy buildings of Judaism, Christianity, and Islam. These sites include Dura-Europos, located in Syria and dated between A.D. 232 to 250, the Gamla Synagogue located in Golan and dated to 70 B.C. and the oldest known mosque al-Masjid al-Haram located in Mecca and dated to A.D. 630. I worked with Dr. Mark Chavalas in researching biblical and Mesopotamian history.

In addition to studying spiritual beliefs I also researched and compiled data comparing the average temperatures and overall climates of each area to demonstrate similarities in environmental conditions. Looking at the archaeological record may help us determine patterns

and changes in religious development, including building structure, style and use. By showing differences in the use of religious structures I hope to show that while arid environments, and the environment in general, do have an influence on polytheistic religions, they do not have a direct affect on monotheistic development.

Initially I will provide a background section on the climate, subsistence and religions of Ancient Mesopotamia as well as Arizona and New Mexico. These sections will include details on specific deities and their relation to the environment to show how involved early polytheistic religions were involved with their natural surroundings. Following these general sections will be background information on each archaeological site, which was researched. Archaeological background information will include site locations, dates, architecture type as well as spiritual depictions and inscriptions found at the sites. Following the background sections there will be a discussion section in which I will discuss the factors for or against an arid environment as a factor in the development of monotheistic religions. I will also discuss other factors, which may have had an impact on the rise and spread of Judaism, Christianity and Islam. In closing I will again focus on other factors that may have lead to monotheistic development and review information that does not suggest a significant environmental influence.

## **Background**

### *Near Eastern Archaeology*

Much of the archaeology done in the area known as Mesopotamia began as a search for Biblical cities in 1837. A long list of archaeologists have worked there to the present day, including Clark Hopkins of Yale University, James Henry Breasted of the University of Chicago, and Michael I. Rostovtzeff (Hopkins 1979:2-6). Sir Charles Leonard Woolley is one of the most famous men to have worked in Mesopotamia with his twelve-year study of the ancient city of Ur. After World War I the entire region including Syria, Iraq, Iran, and Palestine were under European control, which fostered many British, French and German archaeologists into the area until the beginning of World War II. After World War II the region experienced a resurgence of exploration during the 1950s through the 1970s, though presently work has and will continue to be interrupted by wars in the region.

## *Ancient Mesopotamia*

**Table 1.** List of dates, periods and corresponding dynasties

| Years Before Present | Period               | Dominant Civilizations/Events  |
|----------------------|----------------------|--|
| 6,000                | Pre-Ubaid            |  |
| 5500                 | Samarran             |  |
| 5000-3800            | Ubaid                |  |
| 3800                 | Early Uruk           |  |
| 3400                 | Late Uruk            |  |
| 3100                 | Jamdat Nasr          | Uruk and Susa  |
| 2900                 | ED I                 | Dynasty of Agade (Sargon and Naram-Sin)                                |
| 2700                 | ED II                | Third Dynasty of Ur (Shulgi)   |
| 2600                 | ED III               |  |
| 2000                 |                      | Amorite Dynasty of Babylon (Hammurabi)                                 |
|                      |                      | Kassite Dynasty of Babylon   |
|                      |                      | Emergence of Judaism   |
| 1000                 |                      | Nebuchadnezzar I   |
|                      |                      | David and Solomon Two Kingdoms (in Israel, Judah & Syria)              |
| 800                  |                      | Fall of Damasous   |
| 700                  |                      | Manasseh   |
| 600                  |                      | Nebuchadnezzar II; Jewish Exile  |
| 500                  |                      | Achaemenid Rule  |
| 400                  | Second Temple period |  |
| 300                  |                      | Conquests of Alexander the Great                                       |
| 200                  |                      |  |
| 100                  |                      | Dead Sea Scrolls   |
| 0                    |                      | Jesus; emergence of Christianity; Synagogue at Gamla destroyed A.D. 70 |
| 100                  |                      |  |
| 200                  |                      | Dura-Europos site inhabited  |
| 300                  |                      |  |
| 400                  |                      |  |
| 500                  |                      | Muhammad; emergence of Islam   |



**Map 1.** Map of Ancient Mesopotamia and Major Cities

### *Climate and Subsistence*

The climate of Mesopotamia is highly dependant on the flow of the Tigris and Euphrates Rivers. Annual precipitation can vary in the southern region by as much as 50 percent from year to year, with a mean of 4.5 to 5.3 inches per year (Potts 1997:1). Dew is also depended on as a source of moisture for crop growing as is irrigation, mainly from the Euphrates. The main growing seasons are between January and May (Potts 1997:7). There are still arguments over the amount of change between Ancient Mesopotamian climates and those of the modern world, mainly dealing with whether temperatures are currently dryer. There have been micro-variations in temperature that have led to wetter years with colder temperatures as well as dryer years with warmer temperatures. These variations seem to change the annual harvesting season at most by eight weeks (Potts 1997:6-7).

The main crops grown in Mesopotamia included barley, wheat and einkorn. Barley seems to have been the most important of the cereal crops, producing high yields and being relatively

resistant to the heavily salinized soil of southern Mesopotamia (Potts 1997:59). The most important vegetables were onions, garlic, and leeks (Potts 1997:64). Legumes were important not only for their nutritional value, but also because of their ability to provide soil with nitrogen, making them key in crop rotation to ensure mineral rich soils and to desalinize the soil. Fruits included dates, figs, grapes, pomegranates, apples as well as pears, quince and plums. Dates were by far the most important fruit due to their high content in sugar, carbohydrates, calcium and vitamins A, B and D. They were also easy to store and could be eaten fresh or dried. Fruits were grown in leveled gardens starting with the date palm, which provided shade for everything planted beneath them (Potts 1997:69). The middle part of the garden was composed of fruit trees and the lowest levels contained plots of cereals, vegetables and legumes.

The Mesopotamians were highly advanced in methods of field preparation, ploughing and sowing. These methods are attested by cuneiform instruction manuals which explain how deep to plant seeds, how many seeds to use, when to let the field rest and methods of irrigation. Draft animals such as oxen were used in ploughing with the invention of the 'ard'. The ard was a sliding plough, which loosened the soil to a depth of 6 to 8 inches. It was made of a long, wooden beam, with a front section bound with rope to the back section (Potts 1997:75). The front section slotted into the yoke of the draft animals while the rear section was attached a V-shaped plough, which was held by the ploughman. The actual 'ardshare' or tooth of the plough was made from flaked stone. The sign for 'the plough' may depict its basic construction. According to Potts (1997:73) the use of draft animals in ploughing increases productivity by 400 percent when compared to human labor. The invention of the seeder plough, which appears during the Kassite period (2000 B.C.) required a team of two to three men to work with a plough team of oxen. This plough mechanized the planting of seeds, allowing for higher yields with less seed expenditure (Potts 1997:80).

### *Deities and Cults*

The first written records that are currently available date to the fourth millennium B.C.E. from Uruk (Jacobsen 1976:34). These records indicate a previously established religion that is tied to the environment, specifically the fertility, farming and storing of food items such as dates. Later versions of the story extend to the fertility of farmers, shepherds, fishers and fowlers



(Jacobsen 1976:43). The “Uruk Text” relates a story that involves the sacred marriage of the shepherd/farmer to the goddess traditionally associated with the storehouse (Jacobsen 1976:35). The story continues with the farmer’s death and eventual return, similar to the cycle of crop farming. In later Babylonian times the shepherd becomes the king of the city and the goddess is represented by the city’s high priestess.

Well known deities in Ancient Mesopotamia include: Nanshe, goddess of fish; Enki, god of freshwater, vegetable and marsh life; and Dumuzi-abzu, who brought the power of new life from the water. Gods and their duties often corresponded with the type of environment and economy of the city that they represented. Southern regions often had gods that were related to fishing, hunting and marsh animals. The northern regions have gods related to farming, the main business of cities in that region.

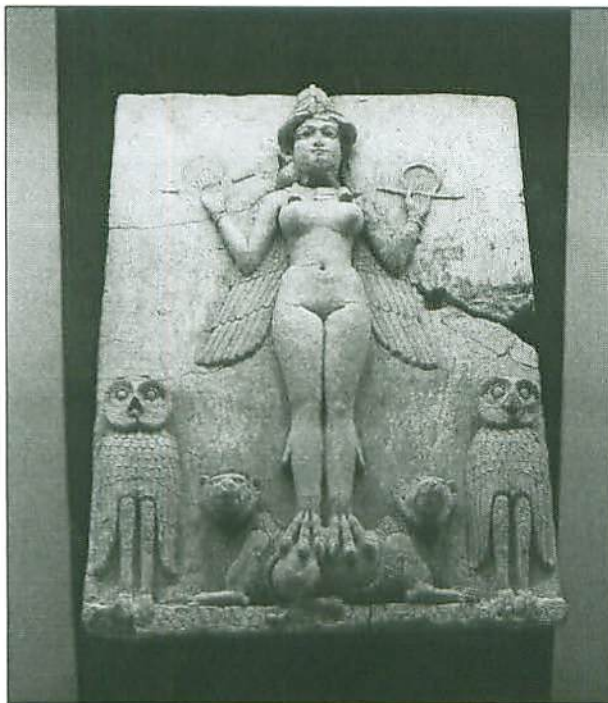
The four main Mesopotamian deities were An, Enlil, Ninhursaga, and Enki. These deities were the oldest of the Mesopotamian pantheon and in turn produced a variety of lesser gods including Nanna, the god of the moon; Ninurta, the god of warlike prowess; Utu, the god of righteousness; and Inanna the goddess of the storehouse, harlots and war. An was the most powerful of the gods and is the power of the sky. He was the father of all the gods, as well as demons and evil spirits. His wife was Ki, the earth, with whom he produced vegetation. An was frequently depicted as a bull and in his later human incarnation he is the owner of a bull

(Jacobsen 1976:95). The most famous version of the bull was the “bull of heaven” in the *Epic of Gilgamesh*. As an authoritative figure, An was responsible for creating order out of chaos. He was frequently associated with the kingship, the highest authority on earth, and was believed to personally choose who was to be king (Jacobsen 1976:97).



**Figure 1.** Early Dynastic III relief from Ur c.2500BP. Top: three worshipers following a priest who is making an offering to a deity. Bottom: three worshipers, two carrying animal offerings, while a priest pours libations in front of a temple. Photo courtesy of the British Museum.

Next to An was Enlil, who engendered force. He was the power of the weather and specifically identified with the wind (Jacobsen 1976:99). Enlil was An's administrator. He managed the weather, the construction of animal pens, human decisions, animal procreation—virtually every action on the earth (Jacobsen 1976:100). He is the creator of the hoe and sat on a throne made of a pile of grain and wool. Enlil was married to Ninlil a grain goddess. Ninlil's parents were Haia, the god of stores and Ninshebargunu, the goddess of barley. Enlil's son, Ninurta was the god of the plough and spring thunderstorms (Jacobsen 1976:99). As the spring winds Enlil made the soil moist and easy to plough. As Jacobsen notes (1976:101) not all of Enlil's actions were necessarily beneficial to humans, his nature was both good and bad like the wind. He allows the miscarriage of cows and ewes and doesn't stop the birth goddess from killing newborn children. Enlil is also responsible for carrying out the decisions made by the gods after a council, such as the decision to bring a flood to wipe out mankind (Jacobsen 1976:104).



**Figure 2.** “Queen of the Night,” straw tempered clay tablet dating between 1792 to 1750 B.C. during the reign of Hammurabi. Photo courtesy of the British Museum.

Ninhursaga was the goddess of productivity. She was the power of the stoney soil to produce plants and encourage their growth. Ninurta, who is seen as either Ninhursaga's son or nephew, gave her the foothills after their creation and filling them with trees, plants, wildlife and metal ores (Jacobsen 1976:105). This is why she is also called “Lady of the foothills.” Ninhursaga was also the form and birth giver. She shaped the embryo in the woman and was responsible for the birth of calves and ewes. As the birth giver she is also seen as a midwife and the mother of kings. She eventually loses part of her importance to Enki, who was a sympathizer to humans (Jacobsen 1976:110).

Last of the four main deities was Enki, who represented cunning. He was the fertility of the sweet water in rivers, marshes and rain and was depicted with two streams flowing out of his



shoulders (Jacobsen 1976:111). He was the power of the water to fertilize the soil and also to give form because of his ability to moisten clay making it malleable. Enki was seen as devious, because like water, it can slip through cracks and avoid obstacles eventually reaching its destination. It can slip away and be tricky to use in irrigation. In “The Eridu Genesis” myth Enki secretly alerts and instructs Ziusudra, his favorite human among mankind, to build a boat to save his family and representatives of all the animals from the coming flood (Jacobsen 1976:114).

### *Judaism*

Judaism is the oldest and root of the three main monotheisms including Christianity and Islam. It is believed to have taken shape sometime between 2000 and 1500 B.C. in southern Mesopotamia. The Jewish people believe that they are God’s chosen people on earth to serve as an example of holiness and morality to the rest of humanity. Their holy book is called the Torah which contains the Old Testament as well as the Talmud. Unlike Christians who believe that God exists of the Trinity (Father, Son and Holy Ghost), Jews believe that there is only one God and that it cannot be subdivided. It has no body or gender, is beyond time and is omnipotent and omnipresent. God rewards the good, punishes the bad and forgives people who make mistakes. The Jewish god is ethical and good. Abraham was the first to teach that there was only one God according to Jewish faith. In my opinion this description of God supports the existence of a mindset and life involved with a complex social economy in which ethics and justice was important in business dealings.

### *Gamla Synagogue*

The synagogue at Gamla is located in Golan on the northwestern shore of the Sea of Galilee. The site was constructed as a public building between 23 B.C. and A.D. 41 and was occupied until A.D. 70 when it was sacked by the Romans in response to the First Revolt (Ma’oz 1981:35; Gutman 1981:30). The synagogue was located at the eastern end of the city along the outer wall. There were three strata of building, the earliest remains were dismantled and rebuilt while the second stratum was the best preserved since they were in existence at the fall of the city (Ma’oz 1981:36).

The entrance to the building faces Jerusalem, though this was more due to the topography rather than from any religious tradition. The main sanctuary of the building was divided by four rows of columns around a central nave that was surrounded by four aisles. The sanctuary was 19.60 by 15.10 meters, while the central nave was 9.30 by 13.40 meters. The aisles were probably used for seating and measured around 4.10 to 4.50 meters wide. Benches found in the eastern aisle were made of basalt and the areas above and below the benches were paved with

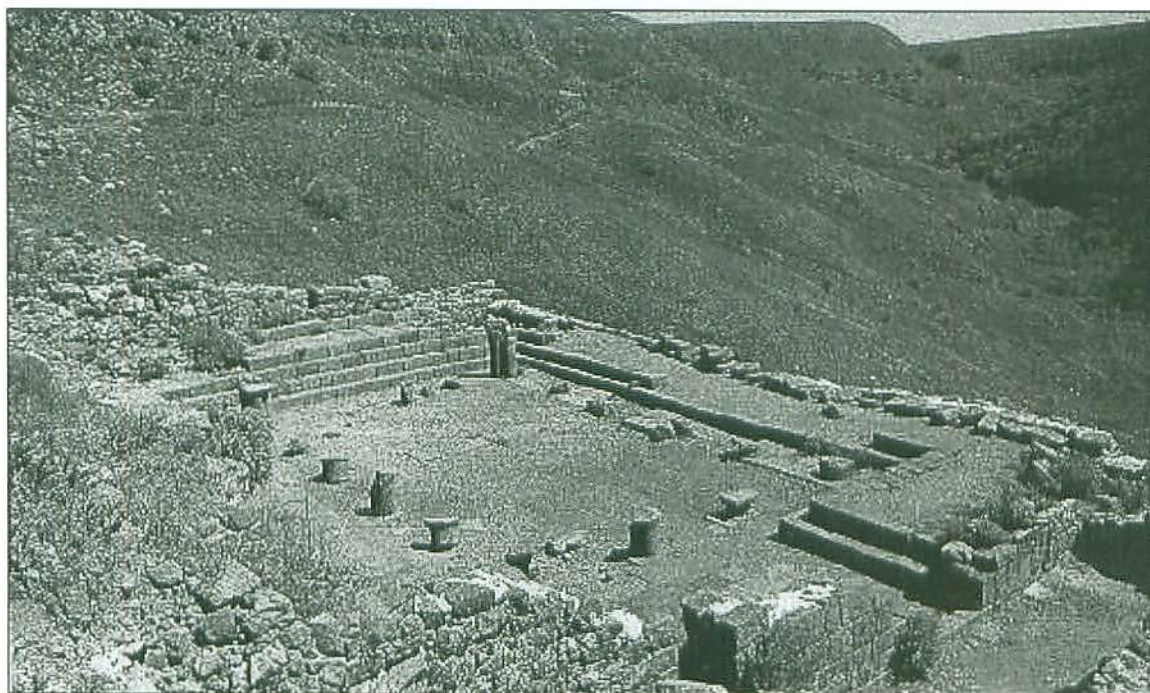


Figure 3. The remains of the synagogue at Gamla. Photo courtesy of Jewish Magazine.

stone (Ma'oz 1981:37). The synagogue contained four porticos which each contained four stepped benches. The center of the building lacked paving, which indicates that there may have been a decorative rug covering the floor as is seen in other synagogues at Masada, Jericho as well as public and private houses in Jerusalem (Ma'oz 1981:38). The central area also contains a strip of stone paving which may have been used as a podium for the reading of scriptures or as the base of columns used to support the structure's roof.

The remains of some architectural decorations include a six-petalled rosette flanked by date palms on the main entrance to the building. According to Ma'oz (1981:39) the rosette was a common motif in Jewish art during this time period. Only two architectural features are shared between the Gamla synagogue and those found at Masada and Herodium, these were a spacious

seating area and a central focal point (Ma'oz 1981:40). These aspects, of course could be common in almost any public meeting place and do not necessarily equate the existence of a synagogue. Ma'oz (1981:41) argues that the focal point of most pagan temples was at a far end where the statue of a deity stood verses the structure of the Gamla synagogue, which focused on the center of the building. The focus was to worship and listen to scriptures rather than making an offering to a statue.

Toward the end of its' existence the synagogue was used as a dwelling for refugees during the Roman siege. This is evidenced by the remains of cooking fires as well as fragments of oil lamps, arrowheads and ballista stones found within and around the building (Gutman 1981:33).

### *Christianity*

Christianity began as a sect of Judaism around the 1<sup>st</sup> century A.D. during the Roman occupation of Israel (British Broadcasting Corporation 2007a). Christians believe that there is only one god, and that god is made up of the Trinity of the Father, the Son and the Holy Spirit. This does not mean they believe in three gods, only that god began as the father, took the form of the son as Jesus on earth and now does his work on earth through the holy spiritual inspiration of individuals (BBC 2007a). They believe in the teachings of the Old Testament as well as the teachings of Jesus Christ, God's Son, in the New Testament. Jesus is thought to have come to earth as a worldly messiah and through his death to have absolved humanity of their sinfulness. If one believes in the teachings of Jesus they may have a relationship with god and be taken up to Heaven after their death.

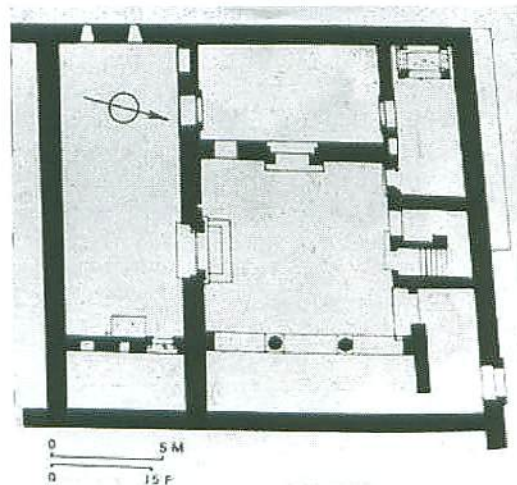
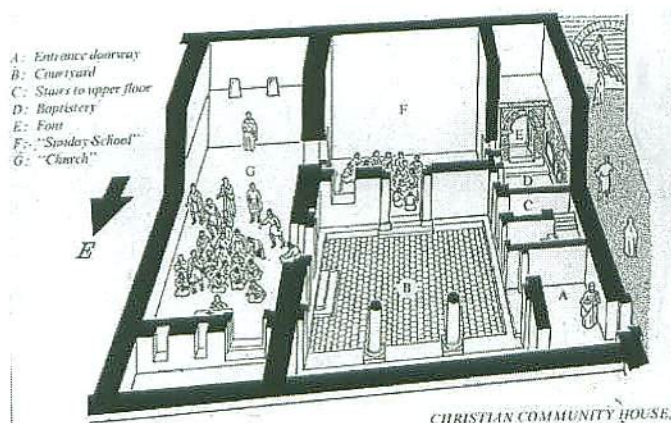
### *Dura-Europos*

The site of Dura-Europos lays along the Euphrates River in southern Syria and was first discovered in 1920 by British troops. Shortly there after, the site was studied through twelve excavations between 1920 and 1937 (Hopkins 1979:4). James Henry Breasted, a professor of Egyptology and Oriental Studies at the University of Chicago between 1905 and 1933, initially examined the site with an invitation from the French Academy. After an initial five years of



study by the French, Clark Hopkins of Yale University was invited to participate in excavations until the withdrawal of the teams for a final time in 1937.

Early dates of the site place its' construction around 300 B.C. In addition to the Christian building the site boasts an early synagogue, as well as several pagan temples and a Roman



**Figure 4.** Two layouts of the Christian Chapel at Dura-Europos. Courtesy of Frank Toker.

Praetorium. The chapel, as it is referred to by Hopkins, was discovered near the outer wall at Tower 17 during the 5<sup>th</sup> campaign (1931-32). After removing the debris that filled the house workmen discovered frescos on the walls. These paintings depicted scenes from the New Testament including Jesus walking on water to meet Peter, the healing of a paralytic man (Fig. V), Adam and Eve picking fruit in the presence of a large serpent, David and Goliath, a woman bending over a wellhead and finally the crucifixion of Jesus accompanied by the three Marys (Hopkins 1979:90-91). From these paintings and a piece of parchment found not far from Tower 18, the building was identified as a Christian Chapel. The parchment was written in Greek and was translated as: '[And the mother of the sons] of Zebedee, and Salome, and the wives of those who followed Him from Galilee, to see Him crucified. It was the day of preparations and the Sabbath grew light. While it was still twilight in the day of



**Figure 5.** The healing of the paralytic. Courtesy of The Baptistery in the Christian Church at Dura-Europos

preparation, there came a man, a councilor, a hyparch from Arimathaea; a good man and just who was a disciple of Jesus; but secretly, for fear of the Jews and he looked forward to the kingdom of God and he was not in agreement with the [Jewish] council...' (Hopkins 1979:108). Hopkins believed that the paintings were meant to be representations of the gospels of Matthew, Mark, Luke and John where the scenes are described.

Dura-Europos fell in A.D. 256 after a long siege by the Persian Sasanians. It seems that the frescos were well preserved due to the building (as well as others along the outer wall) being filled with debris in an attempt to strengthen the wall from outside invaders. The city was never rebuilt or reinhabited.

## *Islam*

Islam is believed to have started with Ibrahim (Abraham) of the Old Testament. He was seen as the first man to "surrender" to Allah. Islam actually means "surrender" in Arabic. Ibrahim and his son Ishmael are believed to have built the structure known as the Ka'bah in a charge from Allah who said: "I'd like you to build a house for me..." (Damluji 1998:36). The structure was built upon the remains of an earlier holy site dedicated to many pagan gods worshiped by Arabs between 2000 and 1500 B.C. Mohammed, who is seen as a descendent from Ibrahim, was present at the rebuilding of the Ka'bah in 604. Muslims, who are followers of Islam, subscribe to the teachings of Mohammed, who is seen as God's final prophet on earth. The Muslim holy book is called the Koran, though they also ascribe to the teachings in the Sunna.

### *Ka'bah at al-Masjid al-Haran*



**Figure 6.** Worshipers around the Ka'bah. Courtesy of Wikipedia.org

The Ka'bah is the most holy structure in Islam, again, believed to have been built by Ibrahim and his son Ishmael at the request of Allah. The building itself was originally built on top of an earlier structure, which left a mound (Damluji 1998:36). Ptolemy mentions Macouraba, on the site of Makkah, which may have referred or indicated that the Ka'bah was already standing



in the 2nd century A.D. (Damluji 1998:36). During its fifth rebuilding, the Prophet Muhammad was said to have been present. At this time the inside of the building may have contained paintings of 'the prophets, angels, trees, Ibrahim and Maryam with the infant 'Isa, Jesus Christ, on her lap.' The Ka'bah has been rebuilt at least 10 times in an effort to accommodate the growing number of pilgrims visiting the site each year (Damluji 1998:37-53). The shape of the Ka'ba during the early Islamic period is described by al Azraqi as follows: "On the exterior, the height of the House [*al bayt*] to the sky is 27 *adhru*,' and the length of the façade of the Ka'ba, from the black corner to the Shami corner, is 25 *adhru*'. The measurement at the rear of the Ka'bah from the Yamani to the western corner is 25 *adhru*'. At the Yamani side it measures 20 *adhru*' from the black corner to the Yamani corner. At the side where the stone is placed and from the Shami to the western corner, it measures 21 *adhru*'; while the circumference of the whole Ka'bah is 418 *adhru*'. '(Damluji 1998:41). The length of an *adhru*' is approximately 18.7 to 20.4 inches, the measurements being based on the length of the forearm. The mosque was damaged by fire in 648 A.D. during a siege by Al Husayn bin Numayer thus destroying any paintings that may have adorned the walls (Damluji 1998:42). After the death of Muhammad depictions of Allah, the prophet or anything other than lines from the Koran were forbidden, preventing any further artistic renderings at the holy site. From the time of its construction the site has been occupied, preventing any in depth archaeological study.

## ***New Mexico and Arizona***

### ***Climate***

The Zuñi have traditionally lived just west of the continental divide in Western New Mexico. On the banks of the Zuni River, their traditional area extends 35 miles east & northeast to the Zuñi Mountains (8000-9000 feet) and about 50 miles west and south. Summer lasts from July to September and is characterized by hot days with temperatures of up to 110°. These days are usually marked by late afternoon thundershowers, which are sudden and sometimes violent, but usually ending in only a few hours. The Zuñi River would traditionally swell in the summer by torrential rains and overflow its' banks for two to three days (Bunzel 1930:473). Winter is from December to March with very cold nights and mild, sunny days (Bunzel 1930:474). Snowfall begins in early December and alternates between rain and fog from January to March.



Spring lasts from April to June and is accompanied by high winds and vicious sandstorms (Bunzel 1930:474).

The Hopi live in Northern Arizona around the Flagstaff region in an environment similar to that of the Zuni. The environment is harsh, dry and very cool in the winter months, with some areas receiving snowfall. The landscape is characterized by brush and large sand dunes. Due to southwest prevailing winds conditions the country of the Hopi has a large runoff area provides a better environment for springs to develop after the rains. Since much of the sand that makes up this area comes from the Little Colorado River the area is quite moist, which makes it productive for crop growing (Brew 1979: 515). To prevent the soil from shifting due to high winds the Hopi traditionally created windbreaks to protect their crops.

### *Subsistence and Habitation*

The Hopi and Zuni both practiced some form of agriculture as their primary subsistence structure. The Hopi traditionally used dry farming a process that relies on winter snows and/or summer monsoons to irrigate crops. Fields are usually planted at the foot of mesas, on sand slopes, in small canyons and along alluvial plains in washes to maximize surface moisture to the crops (The Hopi Tribe 2006). Most families have several fields in different locations in order to insure that at least one of the fields produces a sufficient harvest. The growing season is between 120 to 160 days and is usually accompanied by dry winds and very hot temperatures. Average annual rainfall is between 8 and 13 inches. Hopi grow yellow, blue, red, white, speckled and black corn as well as beans and squash. The Hopi blue corn is the most famous and comes in three varieties. The “standard,” called sakwaqa’o has the best color, while the hard blue called huruskwapu is the preferred variety for storage due to its’ resistance to pests. The third variety, maasiqa’o, is preferred for grinding because it is softer than the other varieties, though its’ color isn’t as good as the other two varieties (The Hopi Tribe 2006). In addition to growing corn and beans, Hopi women often tend small terrace gardens.

In the “The Hopi Decide to Seek a New Home” the Hopi tell of how they chose blue corn as their main crop as well as their migration from the place where they came out from the underground (Nequatewa 1967:31). Corn features prominently in nearly every aspect of Hopi culture. It is used in rituals from birth through death.

The Zuñi also practice dry cultivation, growing squash, maize and beans. Maize fields were located along the south bank of the Zuñi River.

### *Deities and Cults*

The spirits of the Hopi and Zuni are mainly animals and insects found in their environment. Birds featured in Hopi myth include Cooper's hawks, eagles, crows, night hawks, mockingbirds, shrikes, and swallows. Other animals include bears, chipmunks, lizards, rabbits and coyotes. Spider-Woman is an important character that appears in many stories. She usually appears as someone who is protecting and helping the Hopi along their way during migration (Nequatewa 1967:7-23).

It has been previously discussed how important rain is to the Hopi. The Zuñi have many ceremonies that involve calling the rain. The U'wanama:i is the term for the rain-makers, or water spirits. The U'wanama:i are said to have homes in cumulus clouds though they live in all of the waters of the earth (Bunzel 1930:513). There is priesthood or cult that is associated with the U'wanama:i. Membership is hereditary through the matrilineal line. They sprinkle water on all of their altars to induce rainfall and blow smoke to produce clouds. The most important cult, unlike the Hopi, is involved with the sun. The Zuñi see the sun as the source of all life; the Zuñi word for life is t'ek'ohanan:e, which means daylight (Bunzel 1930:511). There is a cult dedicated to the worship of the sun, though all Zuñi greet the sun every morning with hands full of corn meal as offerings and prayers for long life.

The basis for the Hopi worldview and belief is the dependency on rainfall, which you would expect in an arid, desert environment. The Hopi believe in a bipartite universe where the living inhabit the world above and the dead inhabit the world below. The two worlds have a dual division of time and an inverted day and night. When it is day on the world above it is night below and vice-versa. The sun must travel across both worlds in order to rise again in the east the following morning on the world above. The two worlds must exist together, without the world below the sun's cycle would be incomplete. Death is seen as the 'birth' into a new world, the world below. The spirits of the dead take the form of clouds whose spiritual essence manifests itself as rainfall (Hieb 1979:577). Kachinas serve as messengers to the world of the dead. The two worlds work together, not being able to exist without the other. Without the living there

would be no offerings or gifts to the world of the dead and without the dead there would be no rainfall to sustain the crops on which the living depend (Hieb 1979:577).

Both Zuni and Hopi worldviews contain an aspect of color being related to a direction. Zuni and Hopi worldviews also involve a concept of world 'levels,' there exist more than one world and the others are above and below the one humans currently inhabit. Both cultures also involve six directions, east, west, north, south, up and down (Ladd 1979:482-498).

In the Zuni there are six directions, north, south, east, west, above and below. Each direction is associated with a color: the yellow north, the blue west, the red south, the white east, the multicolored zenith and the black nadir. In addition the multicolored zenith leads towards the four upper worlds: fourth story is the home of the crows, the third story is the home of the Cooper's hawks, the second story is the home of the nighthawks and the first story is the home of the eagles. The black nadir exists below the current world and also consists of four world levels all associated with trees: the first story is the Wing Room with the cottonwood of the east, the second story is the Gray or Mudroom with the aspen of the south, the third story is the Soot or Moss Room with the Douglas fir of the west and the fourth story is the Sulphur Room with the ponderosa pine. Together there are nine worlds, with our world being in the middle (Tedlock 1979:499-503).

The Zuni creation story involves two types of people that inhabit the earth: the 'raw' people and the 'cooked' people. Raw People eat food that is raw, or has been sacrificed to them by the 'daylight' or 'cooked' people. Raw people can change their forms. Their potential forms are anthropomorphic (Bunzel 1930:483). The earth itself is a raw person.

Corn and rain are featured prominently in Zuni ceremonies and prayers. Food cornmeal as well as ritual cornmeal is involved in every rite in Zuni life. The ritual cornmeal is made of ground maize mixed with ground shell. Corn meal is sprinkled on altars as well as the ground at every meal and offered to kachina masks every morning.

We can see how important those elements are in the following prayer in which they ask the sun (their father) to call the rainmakers to "send forth their misty breath; Their massed clouds filled with water will come down to sit down with us; Far from their homes, With outstretched hands of water they will embrace the corn, Stepping down to caress them with their fresh waters, With their fine rain caressing the earth, With their heavy rain caressing the earth (Bunzel

1930:484). The clouds and rain are characteristics of supernatural spirits such as the Uwanami and the katcinas. Snow and wind are considered to be characteristics of the War Gods (Bunzel 1930:487). The earth is seen as the Zuñi mother. There is no mention of a struggle between good and evil in Zuñi mythology (Bunzel 1930:486).

Both the Zuñi and Hopi have a myth and subsequent migration following the eruption of the Sunset Crater Volcano in A.D. 1064. The eruption occurred north of Flagstaff, Arizona and covered eight hundred square miles with black ash (Davis 2001:29). The story of the Twin War Gods tells of the Zuni migration from Hanhlipinkya. "The world groaned and the shells sounded warning." The people that did not leave with the Twin War Gods, "were choked by black fumes, or buried in the walls of their houses, which fell when presently the earth heaved with dire fumes, fire and thunder." (Davis 2001:29).

## Results

The impact of the environment, in general, can be seen by the types of deities or spirits found in each location. Important spirits of the Hopi and Zuni include coopers hawks, eagles and crows, all birds native to their area. Those of Mesopotamia reflect the nature of the Tigris and Euphrates Rivers, the power of thunderstorms and ability for the soil to produce life (Jacobsen 1976:95-143). Polytheistic religions of the Near East reflect deity types similar to those found in the American Southwest. The Hopi and Zuni depended on rainfall for the irrigation of their crops, unlike the Mesopotamians who, with work, were able to use the near by Euphrates River for water, spring rains being an added source of water. This may be why we see a worldview revolving around rain in the case of the Hopi (Hieb 1979:577) and the Sun for the Zuni (Bunzel 1930:511), which is absent in Mesopotamia where we see a variety of rain gods, sun gods, gods of fertility, of agriculture and harvest (Jacobsen 1976:95-143). Mesopotamia's wider array of crops as well as domesticated animal production may explain the more specialized deities of which make up their pantheon. We also see festivals in honor of the harvest or to provide a yield for the following year.

**Table 2. Annual Average Temperatures and Rainfall**

|                                | <b>Mesopotamia</b> | <b>American Southwest</b> |
|--------------------------------|--------------------|---------------------------|
| <b>Average Temperature</b>     | 50° to 91° F       | 50° to 110° F             |
| <b>Average Annual Rainfall</b> | 4.5 to 5.3 in      | 8 to 13 in                |

Temple depictions as well as floral analysis and documented agricultural resources do not necessarily paint a picture of Ancient Mesopotamia as an extremely harsh environment in which it was difficult to live (Potts 1997; 57-89). Mesopotamia was an environment of cultivation through irrigation, mainly of the Euphrates, in which many people lived in complex societies where ranked social classes existed. Major cereal crops included barley and to a lesser extent wheat and einkorn. Legumes were primarily grown in southern Mesopotamia and included the lentil, the garden pea, chickpea and broad bean (Potts 1997:62). Vegetables most attested in cuneiform records include garlic, leeks and onions. Oil plants, which were mainly used as additives in foods as well as in the manufacturing of hides and wool, included flax and sesame. A wide variety of fruits were grown including dates, figs, grapes, pomegranates, apples as well as pears, quince and plums, though these were of secondary importance (Potts 1997:69). Fruits, especially the dates were easily stored, could be eaten fresh or dried and were rich in carbohydrates, calcium and vitamins A, B and D. It is clear from the benefits of the date why the festival regarding the harvest and eventual storage of dates was so important. Dates seem to have been domesticated by the Ubaid period and have been found at Eridu, Tell Oueili, Nippur, Tell ed-Der and Nimrud.

Field preparation and ploughing techniques were highly advanced and included methods for removing salt content which built up in the soil due to irrigation from the Euphrates as well as instructions of which crops to plant and when to let the land lay fallow (Potts 1997:72). Ploughs were advanced instruments pulled by a team of two to four oxen. The seeder plough appears in the Kassite period and is believed to have increased yields dramatically (Potts 1997:78-81). Clearly this was an environment with a bustling economy, not one where people wandered in search of food in the desert. The Hopi and Zuni mainly grew corn, though there were 18 different varieties, as well as beans and squash. It seems that they may have had the harsher environmental conditions, yet, possibly because they remained a tribal society, did not develop a monotheistic belief system.

**Table 3. Types of Deities and their Associated Functions**

| <b>Mesopotamian Name &amp; Form</b>                                      | <b>Duties/Function</b>   | <b>Hopi/Zuni Name &amp; Form</b>                                     |
|--|--|--|
| An; bull   | Power in the sky, father of all gods, demons and evil spirits  | Masau'w/Awonawilona  |
| Enlil; the hoe   | Embodiment of energy/force of the wind   | Yaponcha   |
| Ninhursaga; stony foothills; midwife                                     | Power in the soil to produce plants; productivity  | Spider-woman; an old grandmother type woman                          |
| Enki; human form depicted with two streams; thunderbird                  | Life-giving waters in rivers, marshes and rain; helper of humans   | U'wanama;i; dwell in the clouds, take the form of rain; Spider-woman |
| Nanna/Suen; the moon;  | god of cowherders and orchardmen; responsible for the tides; fertility                                       |  |
| Ninurta; thunderbird with a lion's head                                  | God of thunderstorms and spring floods; god of the plough  | U'wanama:i   |
| Utu; the sun   | Guardian of justice; judge of gods and men   |  |
| Ishkur; the bull and the lion; human form as a warrior driving a chariot | Rain god of herdsmen   |  |
| Inanna; the lion; human form driving a chariot drawn by seven lions      | Fertility; goddess of the storehouse; goddess of war; patron deity to harlots; the morning and evening stars |  |

### *Worldview*

Mesopotamians believed that they were all created mortal, immortality being restricted to the gods. It was their original purpose to work in the fields, herd sheep, goats and cattle and to provide offerings for the deities. Humans, in one Mesopotamian creation story, were also originally made to do the work of the gods in the fields so the gods would no longer have to toil. The search for immortality is taken upon in the *Epic of Gilgamesh* as well as *Etana*. Both of these searches are fruitless. In biblical accounts, it was only after disobeying God did Adam and Eve have to leave their paradise and begin to toil and work to survive.

The point I am making is that in one account, the older account from a Mesopotamian perspective, the duty and nature of humanity was to work and eventually die, after which their spirit would enter the underworld to be judged. In the biblical account, which represents the first

book of monotheism in Judaism, Christianity and Islam, humans are forced to work out of punishment. These are two very different views. By the time Judaism, the originator of the three main monotheisms, arose, people were no longer living in the desert, barely able to survive, if indeed they ever did.

The Hopi and Zuni as well were not made to farm as a punishment for disobeying higher spiritual beings. Farming was simply the way that they had found to survive in their environment.

### *Archaeological Contributions*

Archaeological sources have provided us with valuable records and biological evidence of the types of plants and animals that were used in Mesopotamia as well as shed light on changes through history by evidence of damaged structures and cities. In regards to ancient synagogues, early churches and mosques, there seems to be no dominant structural form, which links them through history other than religious paintings or reliefs. Even reliefs and inscriptions, such as those at the as is seen at the Delos synagogue can be misleading as some are probably appropriated symbols from previous pagan belief systems. As Gutmann (1981:3) states: ‘...the existence of the enigmatic *proseuchai* (“houses of prayer”) in third-century B.C.E. Hellenistic Egypt does not automatically underwrite the existence of the synagogue.’ Another factor to consider is regional variability in architectural style and symbolism. What may have been an acceptable in Palestine may have been prohibited in Babylon (Neusner 1981:11).

This being said, what the buildings do tell us is that the people in these early cities were not hiding their religion or, it seems, suffering from persecution by those of different faiths. The Gamla Synagogue, as well as the Christian Chapel at Dura-Europos was both built along the city wall. The Dura-Europos building was originally a private residence, which was later converted into a building of religious function. These buildings co-existed with other pagan temples like any other cult at the time. The buildings served as meeting places, places for people to worship, as well as hear lectures by members of their community. They also served as places for a new comer to meet with people of his trade. Typical of most early synagogues was a depiction of the menorah. Later synagogues, such as the one at Dura-Europos, contained elaborate frescos and mosaics, which depicted scenes from the Torah such as Moses and the burning bush (Levine

1981:174). The artwork at Dura-Europos at the Christian Chapel and the Jewish Synagogue depict important monotheistic spiritual events as well as environmental aspects and so cannot be used to strictly determine the mindset or religious view of the people who worshipped at the site. While the layout of the buildings suggest a different form of worship, one in which the congregation focuses on a speaker rather than on offerings or prayers to an idol, the structure and artwork cannot be used to denote a specific function or religion.

### *Loss of Anthropomorphism, but not Polytheism*

As areas near the Tigris and Euphrates Rivers reached their carrying capacity in the third millennium we see the rise of military leaders, who became early kings (Jacobsen 1976:78). These kings then incorporated previous religious festivals and traditions into the responsibility of the palace in order to retain their authority. With the establishment of these early kings we see the previous anthropomorphic deity depictions take on a more humanistic form. Instead of taking the form of a bull, An is shown as a human accompanied by a bull. In the case of Ninurta the god's previous incarnation as a thunderbird eventually becomes the symbol of the enemy which he destroys. The replacement of many anthropomorphic forms is complete by the first millennium. The absence and disconnection of some gods with their environmental function, then, may have led to a complete disconnection from the physical world by a deity to one that primarily dealt with the spiritual realm. We know from the Song of Moses and Miriam: 'Who among the gods is like you,\ O Lord?\ Who is like you—\ majestic in holiness,\ awesome in glory,\ working wonders?' (Exodus 15:11) indicating a prior belief and knowledge of a pantheon of deities. While God is still involved in environmental roles in Psalms and Job, by the time of Jesus and afterwards nature takes on less of a role in a supernatural sense and is replaced by an interest in a paradise-like afterlife. This indicates to me that the early believers and founders of Judaism were more than likely residents of a city, probably one full of temples dedicated to different deities. Abraham himself was said to have come from Ur and was a wealthy man, not one who was starving in an environment he couldn't subsist in nor a man from a traveling band of Bedouins.



## Conclusion

Cultures become highly compatible with their environment, which is why we see cultures in the American Southwest, the Arctic and Australia as well as numerous others in regions that we, as non-resident natives, would think were too difficult to live. The idea that the people of Mesopotamia, indeed that any people would see their native environment as hostile is one I find hard to believe and harder to prove. While both Mesopotamian texts and Hopi and Zuni accounts talk of how difficult their environment may be in the event of a drought or other severe weather event, neither mention abandoning their surroundings for those that are more hospitable. This is probably because there were no more hospitable surroundings, which weren't already taken by neighboring groups of people. Trading sources as well as archaeological evidence show that surrounding areas in both regions were already well populated, the Hopi and Zuni were being pressured not only by each other, but also by the Spanish as well as the Navajo, and Apache while Mesopotamians faced rival city-states as well as the Hittites and Egyptians.

While the American Southwest doesn't have the same long history as Mesopotamia we do see similarities in deity type (as noted in Table 2). It is possible that the lack of time as well as the absence of immediate state level societies prevented individual Zuni and Hopi from straying from the traditional pantheon of deities into the focus of one of major importance. The Zuni and the Hopi both retained close-knit bonds of kinship and individual responsibility common in tribal societies. Ancient Mesopotamians were governed by strict law codes, military force and family responsibility.

I believe conversion to monotheism was more a product of political and social circumstances rather than difficult environmental conditions. As discussed above, at the time of the development of Judaism people were living in complex societies with rulers, an established military and widespread trade networks. The people in general, and the palace in particular, were adept at irrigation, ploughing and sowing techniques to assure a profitable harvest every year. These were not people on the brink of starvation struggling to survive impossible odds against their surroundings. They were advanced and well established in their native region.

By doing research, such as that undertaken in this paper, we can help reinterpret previous ideas of what life was like for ancient peoples as well as remind ourselves that a lack of modern conveniences such as electricity, air conditioning and plumbing do not equal an impossible living

situation. Too often our romanticized notions of what ancient life was like cloud our judgment of social interactions and developments. With all information, the ideas brought by the original researchers as well as those who recorded history in the ancient world, must be taken into account when trying to make conclusions about past societies and belief systems.

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