



3

Across the Ocean

3.1 North America

Humans have been present on the American continent for a very long time, probably around 30,000 years. According to linguistic and genetic data, the indigenous peoples of the north are connected with north east Asia. Native American cultures are not considered a part of the Neolithic era, like the stone age cultures of Europe, Asia, and Africa. Archaeologists simply refer to the North American stone age as the Paleolithic era. Let's imagine that we traveled across the ocean on a time machine, arriving at around 1000 BC. What would we see in North America? In fact, we would see mainly hunters and gatherers, while on the other side of the ocean, there were flourishing civilizations, such as the Akkadians, Hittites, Mesopotamians, and Egyptians.

So, why was there such a difference between the cultures in these two regions? Because it just happened that way? Not a very satisfying explanation, but we must consider that the first humans came from Africa on foot. They could therefore reach Europe, Asia, the near East, and the far East in this way, but they could only reach the Americas when it was possible to walk through lands not yet separated by the ocean. So, timing was the "problem." It's a simple explanation, but it does seem to have happened that way. At any rate, the native peoples who populated the lands of North America had their own culture with their own myths, legends, and art, and all this long before the European colonization.

The native peoples of North America practised different religions. As they did not have a written language, we have learned of their beliefs and culture through the many paintings found in caves, and by orally transmitted

legends. Sun worship was a common practice for most of the indigenous people in that part of the world. From Canada to the Plains, now the United States, the Sun dance was a common ritual for these tribes. Indeed, it was, and in some respects still is, the most important ritual for worshipping the Sun god. The Plains Indians held this ceremony in late spring or early summer, mainly to honor the Great Spirit through worship of the Sun. The Sun dance ritual lasted for days, including a test of endurance for anyone who accepted to endure the test. No food or water was allowed for days until the dancer finally succumbed to the harsh corporal pains or to exhaustion. It was a rather cruel and bloody ritual.

By the 1800s, the American government no longer allowed the Sun dance ceremony. However, it is still an important ritual for many native peoples, but without the endurance test (Fig. 3.1).

The Plains Indians, including the Sioux, Blackfoot, Cheyenne, Comanche, Arapaho, and Kiowa, were mostly nomads, all of them honoring their god



Fig. 3.1 In this picture I have represented a Sun dance in a simple stylized drawing of Native Americans dancing to honor their Sun god. The Sun dance was in reality a cruel and bloody ritual!

with the ritual of the Sun dance. Among the Plains Indians, the Blackfoot had a particularly interesting perception of the gods, calling them the Sky Beings, “the people of the above” or sacred spirits, created by Apistotoke, the “Creator” or the “Great Spirit” in the Blackfoot language. He had no human form, and lived in a world above the clouds.

The Blackfoot tribe were keen observers of the sky, able to recognize constellations, planets, and the Milky Way. Thanks to their interest in the sky, they personified celestial bodies into deities. This was a key part of their beliefs. Nah-too-si (or Natosi) was the Sun god, considered the most important of all, and the central figure of the Blackfoot religion. Nah-too-si married Komorkis, the Moon goddess, and they were the parents of the morning star Lipiswaaahs, the most important of all their star children. The legends about their gods seem endless, from the main divinities of “the above” to the hybrid creatures on Earth and the underground spirits.

The approach to religion between the tribes of North America differs widely from tribe to tribe and from one culture to another. In the southwest, there were the Anasazi, a prehistoric people, probably the oldest community in that part of the continent. They were the ancestors of the present-day tribes of Pueblo peoples, including the Zuni and Hopi, and the Yumans, Pima, Tohono O’odham (Papago), Navajo, and many Apache groups. The Hopi tribe, another people of the south west, believed that in the beginning there were two entities: Tawa, the Sun god, the powerful creator of “the Above” (the sky), and Spider Woman, who controlled “the Below,” who was the Earth goddess (Fig. 3.2).

The Navajo people also worshipped the Sun god, but their myths about this god are different from those of the other southwestern cultures. Tsohanoai is the Sun bearer, who carries the Sun on his back across the sky and at night puts the Sun to rest by hanging him on a peg in Tsohanoai’s house. I find the image of the Sun being carried on someone’s back slightly amusing. The Navajo, like the Hopi, worshipped two entities in particular, the Sun and mother Earth, called Spider Woman. Besides these two major gods, they worshipped many other divinities in the form of animals, rivers, and mountains. Nature has always been considered sacred and respected by all indigenous populations up to today.

The indigenous peoples of North America did not have written languages, so their history was always passed on orally. With European colonization, without regard for their way of living, traditions, and religions, they were classified as “savages.” We know now how unfair this was, and understand that what happened to these original populations of North America was a great misfortune. Nowadays, most of these people live segregated by force



Fig. 3.2 Tawa, the Navajo Sun god. Pencil drawing and acrylic colors on paper

on lands, the so-called Indian Reservations, set aside for them by the United States government (Fig. 3.3).¹

3.2 Mesoamerica

The forerunners of the Aztecs migrated to the land now known as Mexico some time in the twelfth century. Their own name for themselves was the Mexica. The population was devoted to the cult of the Sun, worshipped as the most powerful entity in the Universe. These first Aztecs were semi-nomadic hunters, and it is believed that, to honour the Sun god, the first piece of

¹ The South West Indians never accepted the English name given by the European invaders to their sacred canyon, known to us as the Grand Canyon. But now, a hundred years later, the original name has been restored. The name for the Grand Canyon National Park has been changed back to the Havasupai Gardens.



Fig. 3.3 The Grand Canyon, now known as the Havasupay Gardens, as the native peoples prefer to call it, represented here in a painted photograph by the author

meat of a hunted animal was given as an offering. This must have been an important offering for a population who lived only by hunting.

Later, when they turned to agriculture, ceremonies were organized to honour the Sun at the equinoxes. These are the two times of the year when the light of day and the darkness of night are equal in length. The vernal equinox marks the beginning of spring and the autumnal equinox marks the beginning of fall, important times for the Aztecs during the agricultural era. And thereafter, the cult of the Sun became more elaborate, maybe due to conquests and expanding territories. For the Aztecs, the Universe was a living entity, with the Sun placed at the center of the cosmos. They believed that the Sun was in continuous motion, and therefore, according to their beliefs, had to be kept constantly alive. To do this, the blood and the hearts of captured enemies had to be made as offerings. But that was not all. Other people, in general their own warriors, had also to be sacrificed. Human sacrifices were made to the Sun god Huitzilopochtli, a powerful god who was also the Aztecs' god of war. For the glory of Huitzilopochtli, monuments were built, great pyramids, dedicated to its cult. These may also have been used as astronomical observatories.

Pyramids were also built by other populations of Mesoamerica, like the Maya, in what is today Guatemala and Belize. Such pyramids were built from

about 1000 BC until the Spanish conquistadors invaded the New World in the early sixteenth century. The main purpose of these constructions was religious, and to bury kings, but they were also public sites where they performed execution rituals to honor the Sun god, most of the time through human sacrifices. Many pyramids were built in Mesoamerica, even more than by the Ancient Egyptians.

The best known and best preserved is the Pyramid of the Sun in Teotihuacan, built about 200 AD, and one of the largest structures in the Western Hemisphere. The name comes from the Aztecs who visited the site centuries after it was abandoned. It is believed that the Pyramid of the Sun was plastered and painted in bright colors. There are other pyramids in east-central Mexico, for example, in Chichen Itza in the Yucatan peninsula, but the largest is the Great Pyramid of Cholula, in the state of Puebla.

These monuments were decorated with mythic figures carved in stone. A recurrent symbol is the feathered serpent Quetzalcoatl. It is actually a double symbol of the deity: the feather representing divine nature through its ability to fly, and the serpent representing human nature by the fact that it creeps along on the ground. Such dualism was common in the deities of Mesoamerica. The symbol of a serpent that creeps along on the ground among other animals is also a common religious allegory in Christianity. There, the serpent is a symbol of evil, the one which, according to the Old Testament, caused the original sin in humans, whereupon Adam and Eve were thrown out of the sacred Garden of Eden forever. It is a constant feature of human imagination to portray the duality between good and evil in such a symbolic way!

For the Aztecs, the Sun god's duality corresponded to peace and war: it was a generous life-giver, but also a cruel and bloodthirsty god. Human sacrifice was considered necessary to please the supreme being. Our star too has a duality: it gives the gift of life to all living entities on this planet, but it will eventually become dangerous and destroy all the existing life on Earth. In our case, it's not an immediate worry. It's going to happen a billion years in the future when, very probably, humanity will already be extinct. In any case, it's not because our Sun is a cruel god, but because it simply does not care. Our Sun is a star, just like many others in the Universe, so, regarding its nature, it does what a star does. That's all!

Recent studies in astrophysics, explain that the Sun could pose a certain threat to our fragile technological life here on Earth. This is because of solar storms, which could disrupt telecommunications, interfere with satellites in orbit, and cause blackouts in cities or even entire regions. In 1989, I was personally witness to a power failure due to such a solar storm. I was at the

New York city airport when it happened. I was in line to board my flight to Rome, when all of a sudden, the lights went off and the doors were blocked. Looking through the large airport windows, the lights of New York were gradually disappearing. It was a strange sensation, especially because no one including myself had any idea what could cause such an event. We always take our technology for granted today, but even if it is only gone temporarily, it feels quite scary! Witnessing such an unexplained event can give a feeling of helplessness. But of course, in this case, everything eventually came back to normal and all the passengers were able to go to their respective planes.

Solar storms might sound frightening, but they are a natural occurrence, which have been happening for billions of years, and fortunately affect only some of our technology and not our human bodies.

But coming back to the Mayan and Aztec pyramids, they were built according to a particular process. There was a central core filled with earth and rubble, which was covered with stone to form the walls. Layers of adobe were then applied to smooth the sides. On top of the pyramid a temple was commonly built, probably for human sacrifices. Finally, the whole construction would have been painted in bright colors. One can imagine the beautiful scene with all these colored monuments in the lush tropical forest! (Fig. 3.4).



Fig. 3.4 Mayan pyramids. Pencil drawing with acrylic colors on paper

Fortunately, the pyramids were not only used for bloody human sacrifices, but also for a better use, as astronomical observatories. The Mesoamerican civilizations were interested in astronomy. The Maya, in particular, had a complex and intricate calendar system. In fact, they actually had two, one consisting of 260 days associated with rituals, and the other with 365 days, which is almost exactly the solar year. They observed the complex motions of the Sun, stars, and planets and recorded this information. In this way, they were able to develop a calendar to keep track of the motions of the celestial objects and the passage of time. Through their observations, Mayan astronomer-priests could even calculate the times of solar eclipses with amazing accuracy.

One example of astronomical observation from a Mayan pyramid is El Castillo in Chichin Itzà. Each side of this pyramid has 91 steps, and by adding the final step on top, the total becomes 365. It was built to mark the equinoxes. On these days, the Sun cast the image of a serpent descending the main staircase of the pyramid. The appearance of this phenomenon during the equinoxes is so “magical” that it still attracts thousands of people to the pyramid to witness the sight. And it is not only tourists who gather in Chichen Itzà to witness the “magical” scene of the snake’s appearance, but also archaeologists, astronomers, and solar scientists. Mayan cosmology underlies this amazing alignment. How they managed to create it we can only guess. Were they magicians or shamans? No, they were definitely among the world’s first scientists. And, amazingly enough, the Spaniards wrote them off as mere savages!

3.3 South America

It is believed that the first humans who populated South America may have arrived from Asia to North America through the Bering Land Bridge between Siberia and Alaska some 35,000 years ago or more. These first people were hunters and gatherers, and when the ice retreated, they would have gradually followed the progression of game animals southwards, taking thousands of years to reach Central and South America.

The Norte Chico people formed the oldest civilization in Peru, and indeed the oldest we know of throughout the whole of South America. It was a civilization contemporaneous with the Egyptian pyramids. Other cultures were the Atacama, Diaguita, and Araucanians, also descendants of those first migrants who crossed from Siberia to Alaska. We now know that there were many Pre-Columbian civilizations in the Andean mountains prior to the

famous Inca Empire (ca. 300–1100 AD). In relatively recent excavations, archaeologists have found artifacts proving the existence of a civilization, the Chavín culture, that was largely unknown up to now. Chavín's populations were the first and most important pre-Inca groups in the northern and central parts of what is now Peru. The first traces of human settlement there date back 20,000 years. These people had developed agriculture by 900 BC, and their civilization lasted until around 200 BC.

The Nazca civilization is famous nowadays for what are referred to as the Nazca Lines, mysterious designs whose meaning remains unknown to this day. And nor do we know who made them. The lines can only be seen by flying over at a certain height, and because of the peculiar aerial views this reveals, modern legends have been created. One such is that extraterrestrial creatures built the lines to be able to land their spaceship. But what purpose did the aliens have? Indeed, what interest would there have been in building a landing strip in the middle of a high arid plane? The legend does not explain. Setting the extraterrestrial myth aside, the Nazca civilization is perhaps better remembered for its remarkable artistic and technological skills.

The Moche civilization flourished on the north coast of Peru between 100 and 700 AD. Their heritage is known through archaeological excavations at sites where the remains of burial ceremonies have been found. A particularly interesting find is an adobe brick temple called “Huaca del Sol”. This was a sacred site for worshipping the Sun god. Here they practiced human sacrifice, including the ritual of blood drinking. The Moche were skilled artisans, making pottery decorated with figures representing daily life. As in most ancient populations, visual art was an excellent tool for representing the way our ancestors lived!

The Incas built the biggest empire in South America, but unfortunately for them, it did not last long. It began in 1438 but was wiped out in 1532, when the Spaniards arrived. The Inca Empire spread in a very short time from Ecuador to Chile, imposing its religion, culture, and language, Quechua, to all the territories they conquered. The origin of the Inca people is intimately tied up with the myths and legends which they themselves created. They believed they had been brought into existence by the Sun god Inti, and regarding themselves as “children of the Sun.” They were the chosen ones! Consequently, the Inca king was the sole representative of the god Inti on Earth.

The capital of the Inca Empire was Cusco, their religious and administrative center, with splendid temples covered with gold in honor of the Sun. There was a complex of buildings in which the most beautiful of all was the temple of Inti, the supreme god worshipped in the Inca pantheon. Other

sacred sites called “huacas” were built on mountaintops, and these actually doubled as astronomical observatories. Their purpose was to practice religious ceremonies by following the astronomical calendar, the motions of the Sun, Moon, and Milky Way (Mayu). These ceremonies were also connected with agricultural practice, especially for planting and harvesting, a common focus of ancient civilizations.

The Incas were masters in the construction of large buildings. Machu Picchu is the best known and most visited architectural site in South America. The Incas built the site around 1450, but it was soon abandoned, in fact only a century later, probably at the time of the Spanish Conquistadors. It is situated in the Peruvian Andes and the Amazon basin, surrounded by a dramatic landscape carved out by the waters of the Urubamba River. Machu Picchu is one of the most intact Inca sites ever found in South America. The Incas did not have a written language, and no European ever visited the site until the nineteenth century, so we don't know the reason why it was built. It may have been for religious purposes, but many archaeologists believe that it was built as an estate for the Inca's first emperor Pachacuti. In any case, it is a beautiful example of Inca architectural and artistic design.

Besides the famous Machu Picchu, there is another marvelous site called Choquequirao, which means “cradle of gold” in Quechua, located between the Andes and the Peruvian Amazon. This site has been hidden in the lush tropical forest for at least four centuries. According to archaeologists, it may have been built by the Inca leaders Tupac Inca Yupanqui or Huayna Capac. The site has been dated to around the fifteenth century and was built mainly for the cult of the Sun god and for astronomical observation. There is evidence to suggest an interest in and knowledge of astronomy, especially regarding the study of solstices and equinoxes (Fig. 3.5).

The arts played an important role in Inca culture. Besides the impressive buildings, there was also metalworking. Gold was the preferred metal, considered to be the sweat of the Sun. All the work made of gold, such as jewelry, figurines, and even everyday objects, was strictly for the Inca nobility. Many gold artifacts were made to honor the Sun god, and also to embellish the many temples of Cusco. It may well have been the abundant display of such goods that brought about the downfall of the Inca Empire.

For, at the sight of so much gold, the Spaniards must have thought that Peru was indeed the El Dorado they had been looking for. In 1533, after only a hundred years of massive expansion of its territories in South America, and a remarkable cultural development in the arts and sciences, the Inca Empire collapsed under the military attack of Francisco Pizarro and a very small group of Spanish soldiers.



Fig. 3.5 Machu Picchu is one of the most marvelous archaeological sites I have seen during my travels. Here I have represented the site in dark colors to bring out the feeling of mystery. I used acrylic colors only for the surrounding mountains, and the cloudy blue sky

So, who was this Spanish Conquistador? In fact, he was an illiterate man, the illegitimate son of Colonel Gonzalo Pizarro and a poor peasant woman, and he first worked as a pig-keeper. Little is known about his life prior to his arrival in the New World, but at a certain point in his life, his fortune changed for the better. Eventually, he found himself accompanying Vasco Núñez de Balboa on an expedition which reached the Pacific. Once in Peru, Pizarro landed with a relatively small group of soldiers, armed with weapons which had never been seen before by the natives. Using superior military tactics and exploiting an alliance with rebellious local tribes, he swept the Incas away.

Apart from their astonishing greed, the final *coup de grâce* inflicted by the European invaders was above all the dissemination of lethal and hitherto unknown diseases brought by the Spaniards to the New World. It is thought that up to 90% of the native peoples died of these illnesses. It was certainly the greatest human tragedy ever to assail the American continent.