"What Does it Take To Be a "Civilization"? – World History For Us All — Dr. Anne Chapman

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The earliest societies that have been called "civilizations" emerged in the river valleys of Afro-Eurasia. The first did so soon after 4000 BCE along Mesopotamia's Tigris and Euphrates rivers. A few hundred years later, one existed in Egypt's Nile valley, and some 500 years or so after that in the valley of India's Indus River. China's Yellow River valley witnessed the rise of complex society around 1700 BCE.

In the Tigris-Euphrates valley between about 7000 and 4000 BCE, exploitation of the environment intensified. Villages spread into less easily farmed areas, such as river valleys. Here floods left fertile mud in their wake, but drainage was often needed. Arid plains beyond flooded areas could be made productive only by building irrigation works. Large-scale cultivation of nut and fruit trees began. Farmers learned how to use animals not only as a one-time source of stored meat and hides, but as continuing sources of milk, wool, and fertilizer. In Mesopotamia, animals began to be used to pull carts and plows. More efficient sickles of flint, then of copper and bronze, all made from imported materials, replaced earlier ones made of native baked clay.

As food resources grew faster, so did human populations. Land close enough to water for irrigation and close to settlements to make transport feasible became more valuable. Marked differences in wealth developed. Shifts in watercourses, both natural and human-caused, led to conflicts between communities. The need to predict, direct, and use the spring river floods led to the need for large-scale cooperation and to innovations in water management engineering.

Along the edges of the more intensively farmed areas, and in some pockets among settled communities, marsh or desert dwelling hunter-gatherers maintained older ways of life, intermittently trading with sedentary populations.

Human impact on the environment became increasingly varied and widespread. Landscapes were transformed from natural to man-made. Marshes were drained. Trees gave place to cereal crops. Orchards and date palms grew where only scrub had existed before. In lower Mesopotamia overirrigation turned some soils salty and barren. Native animals in some regions were deprived of their habitat. Towns and villages intruded on farm land. Problems of sanitation and crowding in fast-growing settlements put people in greater danger of disease and infection. With population ever denser after 4000 BCE, leaders built massive artificial hills as foundations for temples, citadels, and palaces.

Human relations became more intense and complex. Both people and resources became more concentrated. In early cities, rulers collected agricultural and commercial resources in centralized storage places, where they could be guarded and their gathering and distribution controlled.

In southern Mesopotamia, the area known as Sumer, the number of settlements identified grew from 21 to 123 between 4000 and 3000 BCE. The average size of settlements grew about fivefold, and the first cities arose. During the third millennium, an estimated 80 percent of the population was urban. In Egypt, there were similar increases in the numbers and sizes of settlements at about this time. Egypt, however, remained more village-based than either Mesopotamia or the Indus valley. In the Nile valley fewer cities developed and the population was spread more evenly.

The new cities were more than just enlarged villages. They were hubs in wide-flung trade networks, promoted by the new availability of ox-drawn carts and boats. In cities, artisans, laborers, and merchants

concentrated. Cities became centers of manufacturing. New technologies were used such as alloying and casting metals for tools, weapons, and luxury goods. The wheel allowed for mass production of pottery.

Surplus resources allowed the emergence of full-time specialist occupations in the cities. Some of these jobs were concerned with organization and management of people and resources: rulers, government officials, scribes, and soldiers. Others were in artisanry, manufacturing, and trade. Specialists such as priests, priestesses, and religious officials acted as intermediaries between the people and the gods and goddesses. Some city-dwellers continued to farm, walking to nearby fields. People who lived in the countryside came into the cities to trade, deliver tribute to the temple, or work on large-scale building projects.

Cities became hubs of both local and long-distance trade. Sumer is known to have imported timber, marble, metals, and semi-precious stones. References to "boats from Dilmun (modern Bahrein on the Persian gulf) bringing ivory, gold, carnelian, and lapis lazuli" appear in Sumerian royal inscriptions of the third millennium BCE. Archaeological evidence shows that sea trade connected Mesopotamia to the Harappan civilization of the Indus valley. There is also abundant evidence of thriving trade between northern Mesopotamian cities and both Anatolia (modern Turkey) and Iran.

Around 3000 BCE, Sumerian-style cylinder seals, architectural techniques, and art motifs appeared in Nile delta settlements. Soon after, Egypt was importing marble from the Red Sea coast, copper from the Sinai Peninsula, cedar and cypress wood from Lebanon and Syria, and ebony and ivory from sub-Saharan Africa. Egyptian-made stone vessels of various dates before about 2000 BCE are known from excavations in Syria, Palestine, Crete, and Greece. Both in Mesopotamia and Egypt, the ruling class financed and controlled long distance trade and also benefited most from it. But in Mesopotamia the merchants who acted as the rulers' agents are known to have traded also on their own behalf. They also made loans to government.

Hierarchy was another hallmark of emerging complex societies. After about 4000 BCE, the social structure in densely populated regions began to resemble pyramids. At the top of this pyramid were the most powerful political and religious leaders and the wealthiest landowners. They had a grip on power, rights, privileges, and prestige, all backed by religious ideas. Just below the top were the elite officials, managers, and high-ranking military officers. They saw to it that rulers' wishes and policies were carried out. Below this group was a minority population with special skills or with wealth gained in manufacturing or trade. The broad base of the pyramid included the vast majority of peasants and laborers, a class that had few possessions, rights, or life options. Slavery became widespread in Mesopotamia after about 2800 BCE. Many slaves had lost their freedom by being captured in war.

In Mesopotamia, women's inferiority to men was taken for granted, but they shared the social standing of their fathers and husbands. Up to about 2000 BCE, they benefited from some measure of equality. In both Sumer and Egypt women occasionally served as rulers or held high office. Priestesses could command exceptional wealth, prestige, and power. Women generally inherited equal shares of land with men, could own property, could sue in the courts, and worked in many jobs outside the home. Towards the end of the third millennium, however, an increasing emphasis on the importance of armies and conquest and on trade and manufacture as sources of wealth meant that women were increasingly excluded from the most valued occupations. Laws increasingly defined them as dependents and restricted to the home. In one Sumerian city-state, any woman speaking disrespectfully to a man was ordered to have her mouth crushed with a brick. The number of women in government or religious positions in Egypt, and in supervisory positions in Mesopotamia, declined.

States emerged in response to the need for central regulation that could be backed up with systematic coercion on a large scale. The ability of states' rulers to regulate and coerce was typically religiously supported, and buttressed by a nearmonopoly of force that could command labor, tribute, and taxes. Rulers of states organized and

financed public services, arranged for religious ceremonies and festivals, maintained irrigation works, controlled stores of food for famine relief, administered justice, and in some places issued written law codes.

Priests governed the earliest city-states in Mesopotamia on behalf of the city's chief god or goddess. Priestly power to coerce seems to have been based on both religious ideas and on economics because the temples controlled surplus grain and other commodities. In the third millennium, a secular leader typically replaced these religious authorities Originally called something like "big man," he was soon described as "king." His power was based on control of the military, and his position became hereditary. A city-state normally only controlled its local hinterland of towns and villages. But city-states often warred with one another over territory and resources.

The kings of some city-states claimed to have united the whole of Sumer in southern Mesopotamia at various periods down to about 2200 BCE. At that time, Sargon became ruler of the Semitic city of Akkad in central Mesopotamia. His armies conquered all the independent Sumerian city-states. One documents records that "5400 warriors ate bread daily in his presence." He established the first multi-ethnic, multi-lingual, multi-cultural empire that stretched from the Persian Gulf to Syria, Turkey, and Iran. His successors began to call themselves divine. Within a few generations his empire crumbled, but others followed in the second millennium.

Egypt's rulers were successful military leaders first, emerging from generations of conflict between rival towns and regions. From about 3100 BCE, the entire Nile valley from the great Delta upriver to the first of several cataracts (steep rapids) was united under a Pharaoh proclaimed as divine. His rule and that of his hereditary successors depended on the support of the powerful priesthoods of the various gods, enormous wealth based on taxes and tribute, and a monopoly of force. After about 1,000 years, central authority weakened, but from about 1570 BCE, a new dynasty arose that created an Egyptian empire extending far upriver and into Southwest Asia.

Some kind of central authority, perhaps a state, almost certainly existed in the early Harappan civilization of the Indus valley. This is suggested by the existence from around 2500 BCE of cities scattered over hundreds of miles sharing similar urban layouts with parallel streets intersecting at right angles. There is also evidence of uniformity in the size and shape of bricks, weights, and pottery. However, no direct evidence of central rule has been found: no palaces, no elaborate royal tombs, no depictions of monarchs, no inscriptions that anyone can read.

Perhaps the most significant and enduring innovations that peoples of the early civilizations contributed to history were in the realm of ideas. The people of these civilizations invented writing, developed abstract thinking in mathematics, worked out ethical codes, and experimented in the arts.

Writing emerged as a system for recording information. It overcame the inaccuracy and impermanence of memory, eased communication between widely separated people, promoted the flow of information, and made possible both the cumulative storage and the control of knowledge. According to our most reliable current information, the earliest written records appeared in Mesopotamia on clay tablets about 3,600 BCE, though some tantalizing recent evidence suggests that Egyptians may have been the first writers. Writing appears on seals in the Indus valley dating to about 2,600 BCE. In China, the earliest evidence is on bones and bronze vessels dating to around 1,600 BCE.

The earliest written signs were pictures (pictographs) of objects and notations of quantities. Gradually, the objects came to stand for ideas, such as an image foot to represent the idea of walking. Eventually, sounds of words that identified objects began to be used to write concepts for which pictures could not be made. An hypothetical example in English would be to combine the pictograph for "bee" with the one for "leaf" to create the abstract word "belief."

Writing was hard to learn because a scribe had to remember thousands of symbols. Eventually, the number of signs was reduced from thousands to hundreds, and their forms simplified. In both Mesopotamia and Egypt, knowledge of writing remained restricted to the higher ranks of society, and almost entirely to men. Knowledge of

writing became quite widely used in Sumer for both commerce and government, mostly to record quantities of goods received, rations given to workers, and agricultural products distributed. In Egypt, writing was for centuries concerned mainly with royalty and religion. Most Harappan inscriptions, which have not been deciphered, have been found on seals and apparently used to identify ownership. Monumental architecture and art were symbolic expressions of hierarchy and concentrated public power. Architecture also demonstrated technological, mathematical, and engineering know-how. Examples from the fourth and third millennium include city walls, palaces, temples, and tombs. Particularly well known are the ziggurats, or temple towers, in Mesopotamia; the pyramids of Giza in Egypt; and the citadels and great water tank in the Indus valley. The ziggurat of the Sumerian city Ur, built the third millennium, was 150 feet by 200 feet at the base, and 80 feet high. Egypt's 481 foot Great Pyramid, which served as a Pharaoh's tomb, was built at about the same time. Its 2.5 million twenty-ton limestone blocks were cut to within 0.01 inches of being perfectly straight.

Works of art were also produced as symbols of wealth and status. Many were deliberately designed to make forceful statements about the majesty of gods and rulers, to communicate socially approved ways of behavior, and to reinforce the social and religious hierarchy. Others were purely decorative. In all of the early civilizations, the arts reached very high levels of skill, creativity, and sophistication. Religious ideas heavily influenced behavior. In the societies whose writings we can read, we know that people believed in many gods (about 3000 of them in Mesopotamia). These were typically associated with forces of nature (sun, sky, earth, and certain animals such as the bull). In Egypt, an afterlife depended on divine judgment confirming that the deceased had lived a good life and on preservation of the corpse, along with grave goods that would ensure its comfort.

Mesopotamia's afterlife was a loss of identity in a shadowy world of sadness. Each god had priests and priestesses that served it. They organized and carried out the rituals that celebrated, made sacrifices to, and requested favors from the divinity. They also supervised public worship, which often involved impressive spectacles.

The first evidence for the use of mathematics comes from Sumer in the fourth millennium. This society adopted both a decimal (10-base) system, later abandoned, and one based on the number 60 and its fractions and multiples. In both systems, the value of an individual number sign depended on its placement in the entire number (as in 1111, first 1 stands for a thousand, the next for a hundred.). The Babylonians in the third millennium worked easily with fractions and solved quadratic and cubic equations. Babylon employed a calendar with a year of 360 days divided into 12 months, a week of 7 days, a day of 24 hours, and hours and minutes divided into 60 parts. Egypt's calendar had a more accurate year of 365 days, divided into 36 ten-day periods with an extra five days tacked on. Both societies practiced systematic astronomical observations, keeping records of eclipses, new moons, and motions of the planets. They used mathematics to calculate and predict the behavior of heavenly bodies, which were thought to influence human events on earth.