Title

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“… the deepest roots and first emergence of an expectation which is still flourishing today. That there will shortly be a marvelous consummation, when good will be finally victorious over evil and for ever reduce it to nullity; that the human agents of evil will be either physically annihilated or otherwise disposed of; that the elect will thereafter live as a collectivity, unanimous and without conflict, on a transformed and purified earth- this expectation has had a long history in our civilization… On the other hand there had been great civilizations, some of them lasting thousands of years, which knew nothing of any such expectation.” These are the words with which Norman Cohn starts his book Cosmos, Chaos and the World to Come.

In this rather short essay regarding the time span it covers I want to give the reader a sense of the environment that set roots for this belief and expectation. What were the prerequisites of the emergence of such beliefs and how the dream of a purified earth was transferred from one civilization to another? Just as the first year of the Management Academy started, I as well, will talk about the first ancient societies that arose in Egypt and Mesopotamia, the societies in the Levant, the societies among the banks of the Danube River, the societies in the Italian Peninsula, in the Greek Peninsula and the Peloponnese.

The single, decisive factor that made it possible for humankind to settle in permanent communities was agriculture. A turning point in human history, the invention of farming and the tremendous changes it brought about have been called the agricultural revolution. After farming was developed in the Middle East about 6500 bc, people living in tribes or family units did not have to be on the move continually searching for food or herding their animals. Once people could control the production of food and be assured of a reliable annual supply of it, their lives changed completely.

People began to found permanent communities in fertile river valleys. They settled around rivers for a number of reasons. Rivers were an important source of fresh water for drinking. They could be used for transportation. Settlers also learned to use the water supply to irrigate the land for farming. Sedentary settlement, or being settled in one place, made it possible to domesticate animals in order to provide other sources of food and clothing.

Farming was indeed a revolutionary discovery. It not only made settlements possible—and ultimately the building of cities—but it also made available a reliable food supply. With more food available, more people could be fed. Populations therefore increased. The growing number of people available for more kinds of work led to the development of more complex social structures. With a food surplus, a community could support a variety of workers who were not farmers. The agricultural revolution thus resulted in a division of labor, with some people farming, while others worked at various crafts, such as making pottery, cloth, or tools. Craftspeople traded the goods they made to farmers for food.

Farming the world over has always relied upon a dependable water supply. For the earliest societies this meant rivers and streams or regular rainfall. The first great civilizations grew up along rivers. Later communities were able to develop by taking advantage of the rainy seasons.

All the ancient civilizations probably developed in much the same way, in spite of regional and climatic differences. As villages grew, the accumulation of more numerous and substantial goods became possible. Heavier pottery replaced animal-skin gourds as containers for food and liquids. Cloth could be woven from wool and flax. Permanent structures made of wood, brick, and stone could be built.

The science of mathematics was an early outgrowth of agriculture. People studied the movements of the Moon, Sun, and planets to calculate seasons. In so doing they created the first calendars. With a calendar it was possible to calculate the arrival of each growing season. Measurement of land areas was necessary if property was to be divided accurately. Measurements of amounts—for example, of seeds or grains—was also a factor in farming and housekeeping. Later came measures of value as commodity and money exchange became common.

The use of various ways of measuring led naturally to record keeping, and for this some form of writing was necessary. The earliest civilizations all seem to have used picture-writing—pictures representing both sounds and objects to the reader. The best known of the ancient writing systems is probably Egyptian hieroglyphics, a term meaning “sacred carvings,” since many of the earliest writings were inscribed on stone.

All the major ancient civilizations—in Mesopotamia, Egypt, the Indus valley, and China—emerged in the 4th millennium BCE. Historians still debate over which one emerged first. It may well have been in the Middle east, in an area called the Fertile Crescent. This area stretches from the Nile River in Egypt northward along the coast of the historical region of Palestine, then eastward into Asia to include Mesopotamia. In this area people settled along the riverbanks and practiced field agriculture. This kind of farming depended on the reproduction of seed, normally from grain crops.

Mesopotamia (from a Greek term meaning “between rivers”) lies between the Tigris and Euphrates rivers, a region that is today part of Iraq. By about 5000 BCE, small tribes of farmers had made their way to the river valleys. On the floodplains they raised wheat, barley, and peas. They cut through the riverbanks so that water for their crops could flow to lower lying soil.

These early irrigation systems were more fully developed by the Sumerians in Mesopotamia. They drained marshes and dug canals, dikes, and ditches. The need for cooperation on these large irrigation projects led to the growth of government and law. The Sumerians are thus credited with forming the earliest of the ancient civilizations. The early cities, which existed by 3500 BCE, were called temple towns because they were built around the temple of the local god. The temples were eventually built up on towers called ziggurats (holy mountains). The ziggurats had ramps or staircases winding up around the exterior. Public buildings and marketplaces were built around these shrines. The Sumerians developed the first calendar, which they adjusted to the phases of the Moon. The lunar calendar was adopted by the Semites, Egyptians, and Greeks. Trade increased between Sumerian cities and between Sumer and other, more distant regions. This led to the growth of a merchant class.

The Sumerians organized a complex mythology. It was based on the relationships among the various local gods of the temple towns. In Sumerian religion, the most important gods were seen as human forms of natural forces—sky, Sun, earth, water, and storm. Each of these gods was originally associated with a particular city. The gods were worshiped not only in the great temples but also in small shrines in family homes.

**Egyptian** farmers had settled in the long and narrow valley of the Nile River by 5000 BCE. Within 2,000 years Egyptians had invented writing and built massive irrigation works. They had established a culture that bequeathed the pyramids and other magnificent monuments to posterity.

The ancient Egyptians depended heavily on the Nile River. The river created an oasis in the surrounding desert, providing water for drinking and for farming. Each year, the river rose, flooded, and fell. It’s flooding deposited sediments along the riverbank, making the land good for farming. The fertility of the land and the general predictability of the Nile’s flooding ensured farmers a high yield from a single annual crop. Eventually, the Egyptians could store large surpluses of grain, to trade and to keep in reserve in case of crop failures. Surplus crops would form the chief basis of ancient Egypt’s great wealth. The Nile was also the society’s most important transportation route.

Most of the ancient Egyptians lived in the Nile valley and delta, and nearly all were farmers. The primitive farming settlements of Egypt were concerned with the raising of grains, fruits and vegetables, and animals. These settlements slowly gave way to larger groupings of people. Probably the need to control the Nile floodwaters through dams and canals eventually led to the rise of government in the region.

By the end of the prehistoric period before about 2925 BCE, Egypt was divided into two kingdoms. Lower Egypt had its capital at Buto, while Upper Egypt was centered at Hierakonpolis. In this period travelers brought in ideas from Sumer, including the concepts of writing and the pottery wheel.

Egyptian civilization began with the unification in the 3rd millennium BCE of the upper and lower regions by King Menes. He established a new capital at Memphis. In this era the Egyptians developed the first 365-day calendar. They invented the plow and made use of copper. They developed hieroglyphic writing and began to build with stone. Trade and exploration flourished.

**Minoans**

By about 2500 BCE a civilization had emerged on the island of Crete in the Aegean Sea. Excavations in 1900 at the site of Knossos revealed the existence of a culture named by archaeologists as Minoan after a mythical king, Minos. Minoans probably settled in Crete before 3000 BCE.

There is evidence of outside influence in Crete; apparently Egyptian traders reached the Aegean Sea soon after the Minoans did. Nevertheless, Minoan civilization developed its own unique features. By about 2000 bc, great cities with elaborate and luxurious palaces were built, and sea trade was flourishing.

The Minoans had a picture-writing system, as had other ancient peoples. The Minoan religion seems to have centered on a mother goddess and on the figures of the bull and the snake. The Minoans are known for their beautiful and colorful wall paintings and their fine pottery. About 1400 bc Minoan civilization began to decline. The end was hastened by invasions from mainland Greece.

**Ancient Rome** began as an [Italic](https://en.wikipedia.org/wiki/Italic_peoples) settlement, traditionally dated to 753 BC, beside the [River Tiber](https://en.wikipedia.org/wiki/River_Tiber) in the [Italian Peninsula](https://en.wikipedia.org/wiki/Roman_Italy). The settlement grew into the city and polity of Rome, and came to control its neighbors through a combination of treaties and military strength. It eventually dominated the Italian peninsula, and acquired an Empire that took in much of Europe and the nations surrounding the Mediterranean. It was among the [largest empires](https://en.wikipedia.org/wiki/List_of_largest_empires) in the ancient world, with an estimated 50 to 90 million inhabitants, roughly 20% of the world's population at the time. It covered around 5 million square kilometres (1.9 million square miles) at its height in AD 117.[[2]](https://en.wikipedia.org/wiki/Ancient_Rome#cite_note-2)[[3]](https://en.wikipedia.org/wiki/Ancient_Rome#cite_note-:0-3)

The Roman state evolved from an [elective monarchy](https://en.wikipedia.org/wiki/Roman_Kingdom) to a [democratic](https://en.wikipedia.org/wiki/Direct_democracy) [classical republic](https://en.wikipedia.org/wiki/Classical_republic) and then to an increasingly [autocratic](https://en.wikipedia.org/wiki/Autocracy) [semi-elective](https://en.wikipedia.org/wiki/Elective_monarchy) [military dictatorship](https://en.wikipedia.org/wiki/Military_dictatorship) during the Empire. Through conquest, [cultural](https://en.wikipedia.org/wiki/Cultural_assimilation), and [linguistic](https://en.wikipedia.org/wiki/Language_shift) [assimilation](https://en.wikipedia.org/wiki/Romanization_(cultural)), at its height it controlled the [North African](https://en.wikipedia.org/wiki/North_Africa_during_Antiquity) coast, [Egypt](https://en.wikipedia.org/wiki/Egypt), [Southern Europe](https://en.wikipedia.org/wiki/Southern_Europe), and most of [Western Europe](https://en.wikipedia.org/wiki/Western_Europe), the [Balkans](https://en.wikipedia.org/wiki/Balkans), [Crimea](https://en.wikipedia.org/wiki/Crimea) and much of the [Middle East](https://en.wikipedia.org/wiki/Middle_East), including [Anatolia](https://en.wikipedia.org/wiki/Anatolia), [Levant](https://en.wikipedia.org/wiki/Levant) and parts of [Mesopotamia](https://en.wikipedia.org/wiki/Mesopotamia) and [Arabia](https://en.wikipedia.org/wiki/Arabia). It is often grouped into [classical antiquity](https://en.wikipedia.org/wiki/Classical_antiquity) together with [ancient Greece](https://en.wikipedia.org/wiki/Ancient_Greece), and their similar cultures and societies are known as the [Greco-Roman world](https://en.wikipedia.org/wiki/Greco-Roman_world).

Ancient Roman civilisation has contributed to modern language, religion, society, technology, law, politics, government, warfare, art, literature, architecture and engineering. Rome professionalised and expanded its military and created a system of government called [res publica](https://en.wikipedia.org/wiki/Res_publica), the inspiration for modern [republics](https://en.wikipedia.org/wiki/Republic) such as the United States and France. It achieved impressive [technological](https://en.wikipedia.org/wiki/Roman_technology) and [architectural](https://en.wikipedia.org/wiki/Ancient_Roman_architecture) feats, such as the empire-wide construction of [aqueducts](https://en.wikipedia.org/wiki/Roman_aqueducts) and [roads](https://en.wikipedia.org/wiki/Roman_roads), as well as more grandiose monuments and facilities

**Relevant prerequisites for human religion**

Increased brain size

In this set of theories, the religious mind is one consequence of a brain that is large enough to formulate religious and philosophical ideas. During human evolution, the hominid brain tripled in size, peaking 500,000 years ago. Much of the brain's expansion took place in the neocortex. The cerebral neocortex is presumed to be responsible for the neural computations underlying complex phenomena such as perception, thought, language, attention, episodic memory and voluntary movement.[11] According to Dunbar's theory, the relative neocortex size of any species correlates with the level of social complexity of the particular species.[12] The neocortex size correlates with a number of social variables that include social group size and complexity of mating behaviors.[13] In chimpanzees the neocortex occupies 50% of the brain, whereas in modern humans it occupies 80% of the brain.[14]

Robin Dunbar argues that the critical event in the evolution of the neocortex took place at the speciation of archaic Homo sapiens about 500,000 years ago. His study indicates that only after the speciation event is the neocortex large enough to process complex social phenomena such as language and religion. The study is based on a regression analysis of neocortex size plotted against a number of social behaviors of living and extinct hominids.

Stephen Jay Gould suggests that religion may have grown out of evolutionary changes which favored larger brains as a means of cementing group coherence among savanna hunters, after that larger brain enabled reflection on the inevitability of personal mortality.

Tool use

Lewis Wolpert argues that causal beliefs that emerged from tool use played a major role in the evolution of belief. The manufacture of complex tools requires creating a mental image of an object which does not exist naturally before actually making the artifact. Furthermore, one must understand how the tool would be used, that requires an understanding of causality.[17] Accordingly, the level of sophistication of stone tools is a useful indicator of causal beliefs.[18] Wolpert contends use of tools composed of more than one component, such as hand axes, represents an ability to understand cause and effect. However, recent studies of other primates indicate that causality may not be a uniquely human trait. For example, chimpanzees have been known to escape from pens closed with multiple latches, which was previously thought could only have been figured out by humans who understood causality. Chimpanzees are also known to mourn the dead, and notice things that have only aesthetic value, like sunsets, both of which may be considered to be components of religion or spirituality.[19] The difference between the comprehension of causality by humans and chimpanzees is one of degree. The degree of comprehension in an animal depends upon the size of the prefrontal cortex: the greater the size of the prefrontal cortex the deeper the comprehension.[20]

Development of language

See also: Origin of language and Religion and mythology

Religion requires a system of symbolic communication, such as language, to be transmitted from one individual to another. Philip Lieberman states "human religious thought and moral sense clearly rest on a cognitive-linguistic base".[21] From this premise science writer Nicholas Wade states:

"Like most behaviors that are found in societies throughout the world, religion must have been present in the ancestral human population before the dispersal from Africa 50,000 years ago. Although religious rituals usually involve dance and music, they are also very verbal, since the sacred truths have to be stated. If so, religion, at least in its modern form, cannot pre-date the emergence of language. It has been argued earlier that language attained its modern state shortly before the exodus from Africa. If religion had to await the evolution of modern, articulate language, then it too would have emerged shortly before 50,000 years ago."[22]

Another view distinguishes individual religious belief from collective religious belief. While the former does not require prior development of language, the latter does. The individual human brain has to explain a phenomenon in order to comprehend and relate to it. This activity predates by far the emergence of language and may have caused it. The theory is, belief in the supernatural emerges from hypotheses arbitrarily assumed by individuals to explain natural phenomena that cannot be explained otherwise. The resulting need to share individual hypotheses with others leads eventually to collective religious belief. A socially accepted hypothesis becomes dogmatic backed by social sanction.

Morality and group living

Main articles: Evolution of morality and Morality § Evolution

Frans de Waal and Barbara King both view human morality as having grown out of primate sociality. Although morality awareness may be a unique human trait, many social animals, such as primates, dolphins and whales, have been known to exhibit pre-moral sentiments. According to Michael Shermer, the following characteristics are shared by humans and other social animals, particularly the great apes:

attachment and bonding, cooperation and mutual aid, sympathy and empathy, direct and indirect reciprocity, altruism and reciprocal altruism, conflict resolution and peacemaking, deception and deception detection, community concern and caring about what others think about you, and awareness of and response to the social rules of the group.[23]

De Waal contends that all social animals have had to restrain or alter their behavior for group living to be worthwhile. Pre-moral sentiments evolved in primate societies as a method of restraining individual selfishness and building more cooperative groups. For any social species, the benefits of being part of an altruistic group should outweigh the benefits of individualism. For example, a lack of group cohesion could make individuals more vulnerable to attack from outsiders. Being part of a group may also improve the chances of finding food. This is evident among animals that hunt in packs to take down large or dangerous prey.

All social animals have hierarchical societies in which each member knows its own place. Social order is maintained by certain rules of expected behavior and dominant group members enforce order through punishment. However, higher order primates also have a sense of fairness. In a 2008 study, de Waal and colleagues put two capuchin monkeys side by side and gave them a simple task to complete: Giving a rock to the experimenter. They were given cucumbers as a reward for executing the task, and the monkeys obliged. But if one of the monkeys was given grapes, something interesting happened: After receiving the first piece of cucumber, the capuchin monkey gave the experimenter a rock as expected. But upon seeing that the other monkey got grapes, the capuchin monkey threw away the next piece of cucumber that was given to him.[24]

Chimpanzees live in fission-fusion groups that average 50 individuals. It is likely that early ancestors of humans lived in groups of similar size. Based on the size of extant hunter-gatherer societies, recent Paleolithic hominids lived in bands of a few hundred individuals. As community size increased over the course of human evolution, greater enforcement to achieve group cohesion would have been required. Morality may have evolved in these bands of 100 to 200 people as a means of social control, conflict resolution and group solidarity. According to Dr. de Waal, human morality has two extra levels of sophistication that are not found in primate societies. Humans enforce their society's moral codes much more rigorously with rewards, punishments and reputation building. Humans also apply a degree of judgment and reason not otherwise seen in the animal kingdom.

Psychologist Matt J. Rossano argues that religion emerged after morality and built upon morality by expanding the social scrutiny of individual behavior to include supernatural agents. By including ever-watchful ancestors, spirits and gods in the social realm, humans discovered an effective strategy for restraining selfishness and building more cooperative groups.[25] The adaptive value of religion would have enhanced group survival.[26][27] Rossano is referring here to collective religious belief and the social sanction that institutionalized morality. According to Rossano's teaching, individual religious belief is thus initially epistemological, not ethical, in nature.

Evolutionary psychology of religion

Main article: Evolutionary psychology of religion

Cognitive scientists underlined that religions may be explained as a result of the brain architecture that developed early in the genus Homo in the course of the evolutionary history of life. However, there is disagreement on the exact mechanisms that drove the evolution of the religious mind. The two main schools of thought hold:

either that religion evolved due to natural selection and has selective advantage

or that religion is an evolutionary byproduct of other mental adaptations.[28]

Stephen Jay Gould, for example, saw religion as an exaptation or a spandrel, in other words: religion evolved as byproduct of psychological mechanisms that evolved for other reasons.[29][30][31]

Such mechanisms may include the ability to infer the presence of organisms that might do harm (agent detection), the ability to come up with causal narratives for natural events (etiology), and the ability to recognize that other people have minds of their own with their own beliefs, desires and intentions (theory of mind). These three adaptations (among others) allow human beings to imagine purposeful agents behind many observations that could not readily be explained otherwise, e.g. thunder, lightning, movement of planets, complexity of life.[32] The emergence of collective religious belief identified such agents as deities that standardized the explanation.[33]

Some scholars have suggested that religion is genetically "hardwired" into the human condition. One controversial proposal, the God gene hypothesis, states that some variants of a specific gene, the VMAT2 gene, predispose to spirituality.[34]

Another view builds on the concept of the triune brain: the reptilian brain, the limbic system, and the neocortex, proposed by Paul D. MacLean. Collective religious belief draws upon the emotions of love, fear, and gregariousness and is deeply embedded in the limbic system through socio-biological conditioning and social sanction. Individual religious belief utilizes reason based in the neocortex and often varies from collective religion. The limbic system is much older in evolutionary terms than the neocortex and is, therefore, stronger than it - much in the same way as the reptilian is stronger than both the limbic system and the neocortex.

Yet another view is that the behavior of people who participate in a religion makes them feel better and this improves their biological fitness, so that there is a genetic selection in favor of people who are willing to believe in a religion. Specifically, rituals, beliefs, and the social contact typical of religious groups may serve to calm the mind (for example by reducing ambiguity and the uncertainty due to complexity) and allow it to function better when under stress.[35] This would allow religion to be used[by whom?] as a powerful survival mechanism, particularly in facilitating the evolution of hierarchies of warriors, which if true, may be why many modern religions tend to promote fertility and kinship.

Still another view, proposed by Fred H. Previc, sees human religion as a product of an increase in dopaminergic functions in the human brain and of a general intellectual expansion beginning around 80 thousand years ago (kya).[36][37][38] Dopamine promotes an emphasis on distant space and time, which can correlate with religious experience.[39] While the earliest extant shamanic cave-paintings date to around 40 kya, the use of ochre for rock art predates this and there is clear evidence for abstract thinking along the coast of South Africa 80 kya.

Paul Bloom suggests that "certain early emergent cognitive biases [...] make it natural to believe in Gods and spirits [...]".

      