

Anaximander's World: Magic, Religion, and Science

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Abstract: The massive attention paid to science nowadays has already led to a prejudice against religions and magics. This paper is developed based on the unbalanced situation of ancient cultures and traditions against pure science. In this essay, Greek philosopher Anaximander's ideas and worldviews compared to ancient magic and religions will be demonstrated according to the passed down records. In order to fully cover his ideas, the essay is separated into three main parts, Thales's, Anaximander's, and Anaximene's ideas, making sure that every significant influence on him and the correlation among his ideas is incorporated. With the reappearance of Anaximander's claims, we wish to clarify the compact relationships between magic, religions, and early science and the blending elements in Anaximander's world. Moreover, the triple helix of these three crucial humanity topics is able to correct the one-sided mistakes caused by pure rationality and to reform a mentally comprehensive and physically fast developing world.

Keywords: heterogenous worldview, comprehensive understanding, inheritance of ideas

1. Introduction

As a result of the development of science, a mounting number of people are in faith of rationalism and pure mathematics, believing that theories and calculations are capable in solving most problems in the universe. To clarify, rationalism here is understood as an activity pattern that "Rationalists vary the strength of their view by adjusting their understanding of warrant." (Rationalism Vs. Empiricism [1]. The Stanford Encyclopedia in addition, added that "another dimension of rationalism depends on how its proponents understand the connection between intuition, on the one hand, and truth, on the other. Some take intuition to be infallible, claiming that whatever we intuitive must be true. Others allow for the possibility of false intuited propositions." [1,2]. However, while expediting scientific development, the ignorance of human society and history has led to a homogeneous view towards religions and ancient magics, declaring both of them as outdated and unreliable, also creating obstacles to pass down and rebuild. Karl Marx believed that religions are forms of alienation because humans created the images of gods based on humans themselves and religions separate human beings from their essence [2]. The discrimination of religions and mostly magics is permeated into the public through social media, such as classifying every type of prophecies into entertainment. Unfortunately, even though most people are already influenced by ideas that religions and magics are crooked, they haven't understood the meaning of rationalism in an all-rounded way, but just simply hold the claim that science is the only dependable source in understanding the universe. In this essay, I will discuss about Anaximander---who is regarded as one of the beginners of rationalism and science-- and use

resources such as historical sites, prehistoric records, magic traditions, and religions' histories to reappear his world, including explaining and comparing his understandings of the universe, the Earth, and other natural phenomena to ancient magical or religious views about them.

The reappearance of Anaximander's world can greatly fill up the gap of ancient philosophy, since few direct materials were passed down, and the origination of science. What's more, a clear reveal of magic, religion, and early science could help avoid drawbacks caused by pure mathematics and *ex parte* rationalism. Furthermore, ameliorates discrimination on magics and religions.

1.1. Thales and his ideas

The first philosopher in human history [3], who acted as Anaximander's teacher, Thales, had a profound influence on Anaximander in multiple ways. Thales advocated that "all things are full of gods" and souls exist in every creature. This idea mostly dominated the ancient world, including religions such as Shamanism [3]. It is reasonable that those claims that everything is alive and has their souls inside occupied the city-states after arriving in ancient European islands from Africa, remote European lands, and Egypt. Thousands of years ago in Egypt, people still believed that souls and bodies can be separated which is later referred to as "Dualism" [4]. They were in faith that they can magically transfer souls into whatever objects. To take an example from ancient Egypt, art works like the Seated Scribe interfered that people's soul which they referred as "Ka" can be transferred from an alive person to a stone carved figure. As the founder of European philosophy, Thales made another crucial point that water might be the origin of the world [3]. He made this conclusion was not because he wanted to dispute gods nor to complicate the nature. By contrast, he was wishing to explain natural phenomena by using simplifications of nature itself. This idea not only influenced Anaximander in a great way, leading him to his later perspective of the world's origin, but also so profoundly affected society's understanding of water that we can find mythologies with similar comprehensions of water even from Middle Ages-- the Arthur King [5], which revealed the containment nature of water. However, even though Thales had a worldview that was closely connected to religions and magic, he partly stood on the opposite side of magic and religions and also made a great effort in early science in trying to understand the world from a better perspective. He had major five breakthroughs in Maths [3], inspiring his students Anaximander and Anaximenes in scientific ways.

2. Anaximander's World

2.1. Anaximander and His Idea of Cosmology

Digging into Anaximander's ideas and their relations with early science, religions, and magic. In Anaximander's world, he created sufficient space for the development of early science while acknowledging the enchanted influences of magic and religion from beyond the bounce of science, exhibiting an internally heterogenous worldview from a modern perspective. Greek city-states were immersed by religions, but Anaximander brought in the seed of mechanism and rationalism [6]. First thing first, Anaximander and Thales were both supporters of animism that all things are spiritual, an action model which can create links between different species and is regarded as one the oldest magical and religious worldviews, inspiring a massive amount of people and successfully passed down until now. At the same time, Anaximander did not believe in gods, which was an unusual and dangerous worldview in ancient Greece. Anaximander's outstanding comprehension of the cosmos made him a famous philosopher. "He described the cosmos as originating from apeiron (the boundless) by a process of separating off; a disk-shaped earth was formed, surrounding by concentric heavenly rings of fire enclose in air." [7] The description of Anaximander in the Cambridge Dictionary reveals his rough understanding of cosmology. Unlike his teacher, Thales, who believed that water gave birth

to everything, Anaximander perceived that the world seems was born in something without structure and shape, rather than in a specific known source, meaning that this material has no limitation and is boundless, so he named it as "aperion" [8]. The aperion was able to change, and it could be a factor of changing or even the principle of changing. Because the definition of apeiron is blurry, we can plausibly infer that it can be partly related to nowadays atom as they are both unable to see and touch. "Anaximander constructed the first precise geometrical model for the universe, and produced maps of both the earth and the heavens." [9] In those models, the Earth was in the middle. Stars, the sun, and the moon were randomly put into the outer firing rings, which is identical to his early description of the aperion. When explaining how and why the earth performs stability in movement, he suggested that the earth floats and keeps still because there was no force to push it nor props to support it [7]. This might indicate that his teacher's theory of the floating earth on water, which was the world's origin, impacted Anaximander which in his comprehension, the earth is staying in aperion. After this, we can conclude that even though Anaximander and Thales believed in differentiated materials that the world was born in, they owned the same idea that the earth is motionless because it is floating on where it was created, no matter in aperion nor on water. Thales's and Anaximander's developing idea of where the cosmos began was astonishing and crucial. It is easy for modern people to understand their beliefs of the origination of the cosmos because most people now are rationalists, seeing the universe as a non-living thing and an unknown place to explore, but Anaximander's and Thales's ideas actually appeared to be unprecedented back then since there were legends explaining the universe's origin using "personification". Their theories were also the beginning of mechanism cosmology, in which people believe that we can analyze and forecast the universe. In ancient Egypt and the Mesopotamian plains, people worshiped the whole universe, respecting the cosmos as a person and believing the world is both spiritual and even reproductive. In most of the ancient magics, people were doing rituals to control the nature and universe, or asking for rare things to happen. Almost all ancient philosophers held the opinion that the cosmos is alive and can react to humans because ancient European lands had so few ideas that believe the universe is not human-like. Anaximander was a special case. There is one more thing worthy of noticing in his worldview the shape of the earth in his mind is related to Shamanism's understanding of the cosmos. Shamanism is an early religion with magic performances that is specialized in connecting nature and humans. Shamanists pointed out that the world was disk-shaped, unanimous with Anaximander's claim of the world's shape [10]. The only difference here is the Earth is alive in Shamism but is non-spiritual in Anaximander's idea.

2.2. Anaximander and His Inventions

Anaximander was indeed a great philosopher, but he brought up much more ideas as an atmospheric physicist in nowadays definition, encouraging the development of early science. He and his teacher Thales had both tried to draw maps of the known world, even though the maps they made were proved wrong soon by later travelers. Thales developed five mathematical theorems: "that a circle is bisected by its diameter; that angles in a triangle opposite two sides of equal length are equal; that opposite angles formed by intersecting straight lines are equal; that the angle inscribed inside a semicircle is a right angle; and that a triangle is determined if its base and the two angles at the base are given." [3]. These discoveries could be used in the map making processes. However, Anaximander did much more than just drawing maps. In his later-corrected maps, he saw the earth as a pie-like circle and separated the lands into equally three parts---Libya, Europe, and Asia. Comparing to later art works such as sculpture of the Last Judgment which depict the separation of heaven, land, and hell, we can absolutely conclude that in Anaximander's mind, the earth is only the earth, with no sign of the existence of the heaven and hell, more over, the gods.

2.3. Anaximander and Nature

In cosmology, Anaximander acted a torchbearer, and so did him in early earth science. We can may make an assumption that his contributions to earth science were also inspired by Thales. As mentioned before, Thales developed five mathematical theorems [3]. His interest in science and math inherited to Anaximander, and Anaximander expanded this rational sense into more diversified aspects. As his teacher was captivated by natural phenomena, Anaximander also did massive studies to explain the winds, rain, lighting, and storms by naturalistic hypotheses [7]. "This theory could perhaps, in light of another thesis of Anaximander's, accorded by Aristotle: 'At first, they say, the whole area around the earth was moist, and as it was dried by the sun the part which vaporized made the winds and the turning of the sun and the moon, while what was left in the sea; that is why they think that the sea is becoming smaller as it dries out and that in the end will at some time all be dry.'" [11].

2.4. Anaximander and Evolution

Anaximander had a profound influence on evolution theories. There was a comfortable situation for him to develop these ideas because Greek legends left enough spaces, or to say, few solid beliefs of the human origin. Most of gods that ancient Greeks worshiped in were about daily lives in micro ways, such as the goddess Demeter, a protector of agriculture and the fertility of the soil [12], as people paid more attention to live a more easier life rather than a more philosophical life. But political powers in Greece still considered some of the early scientific discoveries as an offense to gods. If the religions were focusing more on macro worldviews like the later Christianity, Anaximander would face a much more severe situation to do human studies which have a precondition of offending the gods' authorities in certain ways. We have to admit that Anaximander's approach to the emergence of human lives is a combination of modern science and ancient magic. In his idea, he did not conceive that humans and animals are completely distinguished from each other, at least not from their origins, nor their souls are fixed in settled forms. As a result of it, he gave the point that humans might have evolved from other creatures which are more adaptive to the surrounding like fish since human infants are too fragile to stay alive if they appeared as the form that we knew now after the world was made [8]. From his ideas, we can infer that he did not believe that there are solid borders between species, meaning that animals and humans can evolve to, transfer from, and connect. Moreover, he spoke about the instability of souls, in accordance with ancient magic and religions. The flexibility of souls and species were discussed for a long time. With Shamanism, scientists found active elements like metal, animals, and clothes above the bodies in tombs. Among transformation magics, animals, including humans themselves, can alter forms from species to species [6]. When people are alive, they can achieve this through rituals. After they died, the tombs will do. In the Shaman worldview, death could end a person's living state, but will not vanish his or her spirit, creating a transformable mental world, like the idea Anaximander had, indicating the equivocal bounder between humans and animals. Another great example showing the connections between species is the Celtic culture. After 500 B.C.E, the Celtic culture emerged in Europe, exhibiting its unique understanding of the world. To be more accurate, the Celtic culture was maybe influenced by early Egypt art. In the Celtic culture, people are always fascinated in exploring borders, showing the transformation from one species to another but never really separating different species. In these Celtic arts, blurry individuality of species was found, performing the possibility of nature and the mix of time [6]. The idea of Celtic culture is parallel with Anaximander's idea on creatures, so it can be a strong social evidence to support his theory that evolution is possible. The reason why Anaximander speculated that the fish were human ancestors might have a deal with his teacher Thales too. Water is a crucial element in Thales's understanding of the world, as he suggested that the world began in water and believed that water is a classic simplification of nature. Because of this, Anaximander may have regarded water in

dominance as the pattern of earth at its beginning form, so he came up with the idea that as the result of the fragility of human infants, water was a perfect place to keep them safe [11]. In short, humans are on the cards to evolve from fish. It was a pity that this understanding of human was not spread widely enough that until Darwin published his idea of species' origins, the public was still acutely against evolution.

3. The influence of Anaximander's Statements on Later Philosophy

3.1. Anaximenes

Anaximenes, a student of both Thales and Anaximander's. His ideas revealed a mixture of Anaximander's and Thales's ideas. In Anaximenes's view, he believed that the air is holy and the world was born in it [13], which is similar with his teachers' claim --- the air is a specific material but is boundless and unable to be shaped nor structured. Another famous thought of his is that the winds, rain, or other natural phenomena are the result of condensation [13]. While in Anaximenes' time, a clear ideology of science had started to form, explaining events happening in reality, and an apparent decline in the persuasion of magic and religion began to intensify.

4. Limitation

The limitation in this essay is apparent because the lack of direct materials and studies about Anaximander have brought up issues clarifying his ideas. To be more specific, information provided in both Cambridge dictionary of philosophy and Oxford dictionary of philosophy about Anaximander are alike and brief, suggesting few detailed arguments of his. Spontaneously, profound philosophy collections such as the Stanford Encyclopedia of philosophy does not even contain Anaximander's introductions like other philosophers do, which made the paper more difficult to find representative structures or presents of his work and worldview. The unofficial history, on the other hand, cannot ensure an acute origination of his claims. Also, since Anaximander is the student of Thales, studies tended to focus on his teacher instead of him, resulting in an insufficient previous works or papers to check on. As the result of this, assumptions must be made in order to fill up the blanks in his world. By contrast, since there are little supports of the guesses, they are indeed vulnerable and easily overturned, which are in need of further studies and invests.

More over, even until now there is a severe isolation between magic, religion, and science, that people are in faith that they took over each other one by one after time, representing an impossibility that these three crucial elements in human society can coexist. For example, in "Religions of the world", the author mainly expresses the idea that magic was in control of the human society as a wish to control the universe and nature, then was failed and replaced by religions, which were used to communicate with the stars and species, wishing to corporate together. Finally, science emerged and human eventually turned to look for a way, seeking for their own good like always, in a more rational form, and this is when science won the importance over magic and religions. However, as the introductions of "The Golden Bough" said: "Although Frazer's theory of the evolutionary sequence of magical, religious, and scientific thought is no longer accepted, his work enabled him to synthesize and compare a wider range of information about religious and magical practices than has been achieved subsequently by any other single anthropologist." [14]. Those contradictory views against the evolution consequence of magic, religion, and science has no settled answer of which is more reasonable and it is undeniable that there are huge number of people standing for each of the view. Nonetheless, while rebuilding Anaximander's ideas, these voices that support the separation of the three made great obstacles towards the process of making sense of his worldview. Because, strangely, even though Anaximander was one of the beginners of rationalism, he declared many statements that

contains magical and religious element, leading to my final risky conclusion-- magic, religions, and science are blended and balanced together, or, at least they are triple pillars in Anaximander's work.

5. Conclusion

Anaximander's world is a mix of blending elements. In his universe, a rough understanding of how the world was created is presented. Even though he is considered as the beginner of early science with massive amount of contributions, he incorporated ideas from religions and magic into his forming of the world. The ethos that people can see through his works are the eclectic opinions and evolutionary mind set. With his work and mental treasure, we are in wish to build a more idea welcomed society with the inheritance and protection of religions and magic while digging into new technologies.

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