Pythagoras: Mathematician or Mystic?

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Abstract:

Pythagoras can be seen as a mathematician and a mystical philosopher. His theory of numbers and his mystical philosophy of the transmigration of the soul are outstanding. There are various postulations as to the originality of Pythagoras in his philosophy. The question is how can we justify him as either a mathematician or mystic? Which of these thought mostly affect or has influence on mankind? The essence of this paper is to make clarifications on this issue.

Key words: Numbers, Transmigration, Soul, Mysticism, Theorem.

INTRODUCTION

Pythagoras is more or less a legend taking cognizance of his philosophical leanings. He is noted as the first Greek Philosopher who stressed on the reality of numbers and postulated a mystical philosophy that has deep religious overtone. There have been various interests among philosophers and historians of philosophy as regards this legendary figure. His philosophy is of great interest to both mathematicians and mystics. Born a lonian in 530 BC and later migrated to Croton in Southern Italy, a native of the Island of Samos, he distinguished himself in the theory of numbers and esoteric mystical philosophy. The Pythagorean theory is

attributed to him. The question we may wish to ask is, is Pythagoras well known as a mathematician taking cognizance of his theory or can he be ascribed as a mystic?

The Question of the Mathematical Theory of Pythagoras

Pythagoras of Samos was the founder of the central mathematical school of the fifth and sixth centuries BC known as the Pythagorean School. He saw the universe from a mathematically inspired observatory. Nature or the universe is composed of numbers in various shapes – squares, cubes, oblong, triangle etc. "The individual points were" boundary stones which marked out "fields" moreover, these, "triangular numbers", squares numbers rectangular numbers and "spherical number" were differentiations by the Pythagoreans as being "old" and "even" thereby given them a new way of treating the phenomenon of conflict of opposites[1]. Numbers were seen as specific kinds of entities not as abstractions. They believe there is a numerical base for all things that has shape and size. With this conception of the universe, they graduated from Arithmetic to Geometry and the structure of reality.

The most popular modern image of Pythagoras is that of a master mathematician and scientist. His well-known geometric theory which posit "that the sum of the squares on the legs of a right triangle is equal to the square on the hypotenuse (the side opposite the right angle) – or, in familiar algebraic notation $a^2 + b^2 = c^2$. Scholars however have argued that though this theory has long been ascribed to Pythagoras, but they posit that it has already been used by the Babylonians. It has also been noted that the same theory has been recorded in the "Budhayana sulba-sutra of India" in 800 – 400 BC [2].

Scholars and historians of philosophy have argued on Pythagorean indebtedness to Thales of Miletus in the area of Mathematics and his journey to Egypt where it was believed that he spent twenty two (22) years[3] and received instructions in mathematics, physics, music, theology and philosophy in Egyptian mystery schools.

The overriding dictum of the Pythagorean philosophy was " Reality is number" and they appeared to practice a kind of numerology or number worship and considered each number to have its own character and meaning. The number One, was the generation of all numbers, two represented – opinion, three – harmony, four – justice, five – marriage, six – creation, seven – the seven planets, Planets or wondering stars. Odd numbers were thought of as female and even numbers as male.[4] All things for Pythagoras consists of points and units and all distance or lines consists of infinite number of points. To them reality is number and number constitutes the nature of all things.[5]

Generally Pythagoras is being taken as a principal mathematician, however, the question is, is he really the proponent of the theorem?

Some scholars posit that he was not the initiator of *Pythagoreanism* in the light of the fact that the Pythagorean standard was particularly present also in China in the tenth century BC.

Why Pythagorean Theory and Not Another

The interest and popularity of Pythagorean theory is not doubtful bearing the background from which we received information about him. It may interest most of us to note that almost all knowledge all over the world is western education.

There are several theories as to how and why the theorem came to be named after Pythagoras. The Egyptians belief that only the divine was capable of genuine universal knowledge. They had the practice of not ascribing knowledge to any mortal man. This explains why there are no extant names as father of Ancient African Philosophy. Though the calculation now termed Pythagorean was developed by Aahmes, an Egyptian Priest [6] it was never attributed to him by name. But when Pythagoras who himself, a student of the Egyptian Mystery school returned to Greece and began to teach, this mathematical science became a custom among the Greeks to

regard this teaching as the Pythagoras theorem. There is nowhere in ancient writings did Pythagoras claim that he was the originator of this writing; rather he admitted that he acquired his wisdom from Egypt where he stayed for twenty two years[7].

However, western scholars of pre-colonial and colonial era had made it available to the world that nothing good or scholarly came from Africa. While back, Homer himself a Greek historian stated: "In Egypt the men are more skilled in medicine than any of human kind" [8]. In Plato and Aristotelian writings there were statements that postulate that the Pythagorean Theorem was not original to Pythagoras.[9]

The knowledge we have of Pythagoras is from western account. Western education exposed us to many lost and forgotten accounts of legends and their contributions to mankind. However, our western orientation to knowledge did a dis-service to western oriented scholars such that we had little or no knowledge of advancement in relation to China and India hundreds of centuries before the advent of the Pythagorean theory.

Thus, our knowledge of Pythagoras as the exponent of the theory is predicated on our orientation as western oriented scholars.

The Pythagorean Theorem has been known as Kuo-Ku of the theorem in China. It is said that "the Kuo-Ku of the Chiu-Chang indicates that the Chinese had accumulated a wealth of experience in working with the right triangle in various mathematical situations well before the Christian era.[10] Guthrie, a western Philosopher, probably unaware of the existence of this theory in China and India before the advent of the theory wrote "The discovering which he made were totally and astonishingly new."[11]

Evidence has been shown that he was not the first to discover the theory, but that it has been known also by the Babylonians and Chinese at least a thousand years before him.[12]

Pythagoras as a Mystic

The popularity of Pythagoras may have its basis on the theory we have discussed so far, but an indebt analysis of all his teachings appear to reflect his mystical world view.

Pythagoras teachings show that he is interested in mathematics for religious reasons. This implies that they tried to use mathematics to interpret religious issues. This can be buttressed from the fact that he posits that the study of mathematics is the best way to purify the soul. According to Samuel Enoch Stumpf "what gave rise to the Pythagorean sect was the yearning among men for a deeply spiritual religion that could provide the means for purifying the soul and for guaranteeing its immortality." [13]

The Pythagorean philosophy postulates that the human soul is immortal and lives in a world for better than the present one we live in. the soul of man descended into this world for purification from sins committed from past incarnations. Its presence here is a punishment for offence committed. The body is the prison of the soul. At death the soul transmigrates into another body, thus leaving one prison for another.

The soul can move from a human body to an animal body depending on the gravity of the offence committed. It is based on this doctrine of transmigration of souls that the Pythagoreans forbid the killing or eating of animals. They believe that even to maltreat an animal is wrong because one could be maltreating a reincarnated soul of a friend or a member of one's own family. The process of reincarnation and transmigration of the soul continues until the soul achieves freedom or liberation.

The Pythagoreans believe that through philosophy and abstinence from eating any animal flesh, the soul will be able to achieve salvation and return to the world of the divine and reconcile with the universal spirit or soul.

Pythagoreanism as a philosophy was clearly concerned with the mystical problem of purification and immortality, and it was for this reason they turned to philosophy and

mathematics as a solution to purge the soul. The Pythagoreans were basically a mystic sect, a religion or order, brotherhood dedicated to orphic cult. They were seen as the orphic mystic religion. Orphism was not just a philosophy but an oriental mystery cult that preached the divine nature of man.

Man is seen as a dual creature, a combination of the evil and divine. Man's soul or mind is a fragment of Dionysus (god) his body, a heritage from the Titans. Salvation for them is the liberation of the divine nature in us from the bondage of the body. To effectively execute this, they posited that man should abstain from eating meat, beans or fish. The avoidance of beans as was posited is that it smells like the human fetus and many have magico-religious reason.[14] In addition, there was a belief that beans and human beings were created from the same material[15] thus eating it implies eating a human being which could also imply eating a close relation or friend.

The Pythagorean Mysticism in Relation to others

The Pythagorean mystical religious philosophy is very interesting and reflects the ideology of many ancient religions and mysticism. H. I. Summer however argued against the concept that Pythagoras posited in his philosophy that man should avoid beans. He states "what Pythagoras said to his disciples "Abstain from beans" he had no reference to them as an article of diet, for he ate them himself. What he did mean and what his immediate followers already understood was that they should abstain from the intrigues of politics as being antagonistic to a philosopher pursuit.[16]

Pythagoras knowledge of mysticism may not have come from the blues or should we say that he did not probably tap his knowledge from the world of universals but have acquired it through studies in Egyptian mystery schools, or got a hint of it in China or India.

The mind has been treated by the Pythagoreans as divine. It is the one, the source of all knowledge. Our souls are immortal but the part or portion of the One is not permanent

within the human body. Its dissolution is the "release" in death. The One was seen as Fire, as well as the Supreme God. The One according to them does not grow, but is responsible for the growth of everything.

The doctrine of the soul explains the spiritual mission of the soul or earth. It was taught that the only way to free ourselves from this cycle of reincarnation and transmigration of the soul was to obtain a higher understanding of the universe through introspective thought and philosophical study.

The influence of other cultures and religion on Pythagoras was highlighted by Daniel Farley, he state "…he was initiated for the first time into the "Ancient mysteries" of the Phoenicians and studied for 3 years in the temple of Tyre, Sidon and Byblos from there, he navigated to Egypt, the source of "Ancient Mysteries", on the road, he lingered for a while in the gulf of Haifa at a temple of Mount Carmel, Israel (after the destruction of the first Jewish temple of Jerusalem). In Egypt he was initiated and studied for 22 years'. Farley went further to post that the philosophy and many theories on the Pythagorean way of life transmitted orally by Pythagoras, were considerably influenced by the way of life of Judaism and the Bible.[17]

The Egyptians are said to have taught him geometry, the Phoenicians arithmetic, the Chaldeans astronomy, the Magians the principles of religion and practical maxims. He visited the Hebrews from whom he acquired the conduct of life, expert in the interpretation of dreams, and he was the first to use Frankincense in the worship of divinities.[18]

Modern science traces its mathematical origins to Pythagoras, but in development dropped off the mystical teaching. This idea of shelving the mystical teachings predicted on the idea of scientism as scientific realism. This is the view that the world as described by science is the real world as it is independent of what we might take it to be. Scientific realism usually holds that science makes progress. The characteristic product of successful scientific research is knowledge of largely

theory, independent phenomena and that such knowledge is possible (indeed actual) even in those cases in which the relevant phenomena are not observable.[19]

CONCLUSION

Pythagoreanism, which is a word describing the philosophy of Pythagoras and his followers revolved around two major areas. These areas are the Pythagorean Theorem and the Pythagorean mysticism. Our study has showed that Pythagoras did not just dabble into mathematics because it was his major interest. He tried to use mathematics to interpret religious and mystical issues. This is buttressed from the fact that he posited that the study of mathematics is the best way to purify the soul. Thus, what gave rise to *Pythagoreanism* or the sect was the yearning among men for a deeply spiritual religion. His doctrine of transmigration, reincarnation and immovability of the soul affect many lives and this mystical philosophy can be found in many religious doctrines and esoteric religious sects. Invariably, bearing in mind these leanings, it would be reasonably to deduce that Pythagoras was more of a mystical philosopher, hence a mystic than of a mathematician.

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