Asian Social Studies and
Applied Research (ASSAR)
Published by ASAR Council

Volume 3 Issue 2
May, 2022
ISSN (E): 2709-9229

Mathematics and Mysticism

Dr. MUHAMMAD JAWWAD
Assistant Professor Department of Philosophy
University of the Punjab, Lahore, Pakistan.
Email: jawwad.phil@pu.edu.pk

Dr. RIFFAT IQBAL
Assistant Professor, Department of Philosophy
Bahauddin Zakariya University, Multan.
Email: riffatiqbal@bzu.edu.pk

Abstract

Apparently, Mathematics and Mysticism seem two entirely different disciplines. Mathematics deals with numbers and equations; Mysticism is a worldwide phenomenon in which mystics try to find, comprehend, and develop a relationship with God. In ancient Greek Philosophy, one can notice the blend of Mathematics and Mystic practices in the case of Pythagoras and his followers. Plato gave an excellent explanation of Mathematical numbers but the influence of Pythagoras on Plato cannot be denied. In the history of Philosophy, one can come across the terms like 'Mathematical Mysticism.' The first Indian Mathematician (Ramanujan) whose name was included in the Fellow of the Royal Society was also a man of extreme religious nature. During his stay at Trinity College Cambridge, England he did not give up his religious practices or meditation, etc. This article is basically an attempt to understand the relation between Mathematics and some kind of Mysticism.

Keywords: *Mathematics, Mysticism, Pythagoreans, World of Forms, Analytic Statements, Universal, Incorrigible.*

Introduction

Unlike Physical Sciences, Mathematics is not testable. Unlike different kinds of prose writing, it is not linguistic and unlike different forms of Art, it is not subjective or personal. Now the question arises what Mathematics is all about? Mathematical numbers do not seem derived from the external, material, and objective world. The most interesting and mysterious thing about Mathematics is that although numbers are not derived from the external world, they can always be applied to it. Keeping in view this fact about Mathematics, Aristotle declared that number is the essential quality of all material things (Russell, 1971). The explanation of Aristotle about Mathematics can easily be challenged. When anybody says one pair of shoes or two shoes, he or she is saying the same thing. This simple example shows that numbers cannot be considered an essential quality of material things.

There are many forms of Mysticism but there are also some common elements within every form of it. They are as follows:

i. Every kind of Mysticism focuses on the relation between the individual and his Lord.
ii. Every kind of Mysticism believes that the ultimate reality is not material in nature.
iii. Every kind of Mysticism believes that ultimate reality is abstract and not concrete-like material

things.

iv. Every kind of Mysticism believe that although God is different from the material and external world and He is different from the mental and subjective feelings and emotions of individuals, He can comprehend, understand and rule over both of the worlds.

Keeping in view the above-mentioned characteristics of both Mathematics and Mysticism, it is not difficult to understand the relation between them.

Research Objectives

The research objectives of this study are as follows:

i. To share with the readers an interesting similarity between two apparently different but inwardly similar phenomena.
ii. To share with the readers an important aspect of Mathematics that is generally ignored.
iii. Apparently Mathematics seems to be an interlay different discipline- different from Physics, Chemistry, and Biology for its abstract nature and also different from Social Sciences and Literature, etc. for its numbers and equations, but it is not different from Mystic and Spiritual practices for its abstract, absolute and perfect nature.

Research Questions

The research questions of this study are as follows:

i. What Mathematics is all about?
ii. Is Mathematics closer to Mystic practices for its abstract, absolute, and perfect nature having no corresponding material entity?

Plato's World of Forms

The Metaphysics of Plato is called the World of Ideas or the World of Forms. Technically it is called Objective Idealism. Rejecting the common-sense point of view according to which Ideas are nothing but the general impressions of material things, Plato gave a unique explanation of the Ideas or Forms. He is of the opinion that material things are temporary, transitory, and momentary while their ideas of them are perfect, absolute, and eternal (Stace, 2010). The World of material objects is imperfect while the World of Ideas is perfect. An imperfect thing cannot produce the perfect one. In this way, Plato proves that Ideas are not the general impressions of material things but the material things are the imperfect copies of Ideas. The Metaphysics of Plato is called Objective Idealism because, in this Metaphysics, the ideas seem objective, external, autonomous, and self-existent. Mathematical numbers, according to Plato, have their objective existence in the World of Ideas. The numbers are not the essential quality of material things (as Aristotle thought) but they can be applied to every material substance. Interestingly, the Metaphysics of Plato is (sometimes) called Mathematical Mysticism (Stace, 2010) and Plato himself identified his metaphysics to Pythagorean numbers in the latter part of his life (Stace, 2010). According to Hubert Cambier, some kind of Platonism is a popular position among Mathematicians all over the world (Hubert, 2016).

Asian Social Studies and
Applied Research (ASSAR)
Published by ASAR Council

Volume 3 Issue 2
May, 2022
ISSN (E): 2709-9229

Bertrand Russell and Alfred N. Whitehead on Mathematics

In the 20th century, great Mathematicians and Philosophers Russell and Whitehead tried to present an explanation for the Ontology of Mathematics. They rejected Aristotle and Kant both and came very closer to the explanation given by Plato. This was the reason for Whitehead's extraordinary remarks about Plato as a philosopher. Popper wrote:

"As Whitehead remarked, all Western philosophy consists of footnotes to Plato." (Popper, 1983). The explanation given by Aristotle has been discussed in the previous pages; the problem with the explanation of Kant is that with this explanation the whole Mathematics becomes mental and subjective (Monk, 2016). The influence of Pythagorean Philosophy has been mentioned previously but it should also be kept in mind that the Metaphysics of Plato has been much used in the mystic, religious, theological, and semi-religious disciplines.

Different eminent scholars discussed the relation between Mathematics and Mysticism and gave their individual opinions about it. W. T. Stace wrote:

"The application of the number theory issues in a barren and futile arithmetical mysticism." (Stace, 2010). But the comments of Bertrand Russell about this issue are of different nature. "It might seem that the empirical philosopher is the slave of his material, but that the pure mathematician, like the musician, is a free creator of his world of ordered beauty" (Russell, 1971).

Keeping in view the above-mentioned statement of Russell, it is not difficult to understand the relation between Mathematics and Mysticism. It is quite interesting to notice that Russell, Whitehead, and Frege were great Mathematicians besides being Philosophers. They had their own different religious or a-religious ideas. The ideological journey of Bertrand Russell had been very interesting. At an early age, he was religious but gradually became doubtful about many of his religious ideas. He wrote a complete book Why I am not a Christian in this regard (Russell, 1957). In the later age of his life, he seemed inclined toward Agnosticism (according to Agnosticism in the matters of Religion and Metaphysics one cannot say 'Yes or No' due

to the insufficient proves). In his autobiography (Russell, 1998). Russell explained his intellectual journey in detail. He openly declared that loss of faith created in Man a painful vacuum and it creates anxiety and restlessness also. Russell claimed that he got inner peace and self-satisfaction from the equations and theorems of Mathematics. A very famous statement of Russell in this regard is

"Mathematics, rightly viewed, posses not only truth but supreme beauty."

The question arises where does this beauty come from? In order to explain or in order to understand the statement given by Russell fully, one has to have the arguments given by Plato in his dialogues (Edithe & Huntington, 1985). In order to explain the perfect and absolute Beauty, Plato distinguished it from all the beautiful objects of the temporal and spatial world. The problem with all the beautiful objects in the world is that they are not only imperfect in the pursuit of truth and reality but in the pursuit of beauty and Aesthetics also.

Robert Kanigel wrote an important book (Kanigel, 1991) on Ramanujan the famous South-Indian mathematician, and on the basis of this book, Mathew Brown directed a brilliant film named *The man who knew infinity*. In this novel and also in this film, Ramanujan can be seen or heard saying that

Mathematics is like a painting with invisible colors or declaring that patterns is everywhere in the universe and these patterns reveal themselves amazingly in Mathematics. The inner satisfaction and the spiritual pleasure of a mystic (or *Sufi* in the Muslim context) have some extraordinary resemblance with the inner satisfaction of a great mathematician.

For both (mystics and mathematicians) Reality is not only perfect but beautiful also. This beauty reveals itself through perfect harmony, proportion, measurements, and exactness. In my humble opinion, the beauty in Mathematics has some strong connections with its harmonic nature like music. It is a cosmos over chaos (Popper, 1992). The truth of Mathematics manifests itself through its universal and incorrigible nature of it.

As mentioned above Aristotle wanted to provide Mathematics with empirical grounds but did not succeed. In the 20th century, John Stuart Mill again tried to give Mathematics an empirical basis but failed in his pursuits. So far as Pythagoras, Plato, Russell, Whitehead, and Frege are concerned all of them were not only outstanding philosophers but great mathematicians, and all of them directly or indirectly to some extent or a large extent accepted the views of Plato in this regard. That is why Whitehead appreciated the philosophy of Plato in an outstanding way. Mathematics is the only subject that leads toward perfect beauty and absolute truth.

For any mystic, the ultimate reality is perfect, real, absolute, and universal. Like mathematicians, mystics do not take interest in the changing, imperfect, external, and dynamic material world. Like mathematicians, they (mystics) think that universal Ideas cannot be derived from the material world but the material world can be comprehended through these Ideas.

Another great similarity between mystics and mathematicians is the role of intuition in their epistemologies. Plato believed (and Aristotle adopted this view afterward) that Man could know the essence of any phenomenon through an intellectual intuition. To express this intuition in words was called a definition by Plato and Aristotle. Every student of Mathematics (especially the outstanding one) cannot deny that particular 'intellectual intuition'. Matter and energy can be a subject matter of Physics, the characteristics and composition of the material and living things can be a subject matter of Chemistry, and the physicality of animals can be a study of Biology but in the case of Mathematics, the thingness is completely absent. The extreme abstract nature of Mathematics and its omnipresent character of it always attract mystics or people having mystic tendencies. According to Pythagoras, it is impossible to conceive a universe in which a number is absent (Stace, 2010). According to him and his followers' numbers are the ultimate reality of this universe. Numbers are abstract, mysterious, perfect, universal, and incorrigible for them.

Frege's Semantics

Gottlob Frege (1848-1925) was an outstanding mathematician and philosopher. He was deeply interested in the Philosophy of Logic and Mathematics. In the early years of the 20th century in England, Russell and Whitehead were also working on the Philosophy of Mathematics. Russell came to know that Frege was working on the same lines. After being aware of this, he contacted Frege and discussed some of the problems (Monk, 2016).

Unfortunately, Frege became ill and was never able to complete the task but even the incomplete work of Frege is supposed to be as brilliant as the combined work of Russell and Whitehead. According to Frege, there are three Realms of existence (Cambier, 2016).

Realm 1 is the world of material objects which can be perceived by the senses.
Realm 2 is the world of human imagination, feelings, emotions, moods or instincts, etc.
Realm 3 is the world of 'Objective content of thought

It is the world of Mathematics. Mathematical numbers cannot be considered material but they cannot be considered subjective or mental either. They have their own reality and existence.

"An equation or a theorem has validity- it could be true or false- independently of the speaker who asserts them" (Cambier, 2016). The number for Frege is a universal concept or property.

In the 19th century, John Stuart Mill (1806-1873) tried to provide Mathematics with empirical grounds. Frege opposed these empirical attempts and explained the uniqueness of numbers.

Frege was of the view that numbers were completely independent of any human being and their understanding or misunderstanding of them. According to him, there could be many theorems and equations which are not discovered or understood, or misunderstood by any human being.

At this stage, Frege's Philosophy of logic comes very close to Platonism. Frege's aim and objective behind his Philosophy of logic were to give Mathematics a logical ground. Frege wanted to highlight the uniqueness of numbers. Frege wanted to reject the Philosophy of Mill who tried to explain Mathematics on empirical grounds.

Unsolved Questions about Mathematics and Mysticism

Interestingly the unsolved questions about Mathematics and Mysticism are also similar in nature.

i. In the case of Mathematics, it seems easy to understand the unique Ontology of it but it seems very difficult to explain the relationship between numbers and material things. In every kind of Mysticism, it seems easy to understand the importance, the universality, or the immortality of the mind or soul but it seems very difficult to understand the relation between soul and body.
ii. As mentioned above, the Metaphysics of Plato sometimes, is considered a Metaphysics having Mystic, religious or semi-religious trends on one hand and Mathematical Mysticism on the other but the biggest unsolved problem with the Metaphysics of Plato is also its failure to explain the relation with matter and Idea (or with the number and the material things around).
iii. In every kind of Materialism one can find no satisfactory explanation either for Mathematics or any kind of Mysticism. According to Materialism the ultimate reality of this world is matter and not idea, mind, soul, or number. Materialism can explain easily the phenomenon of matter and energy on one hand (the subject matter of physics) and the physical existence of animals and plants on the other (the subject matter of Biology) but for Material Philosophy the proper explanation of Mathematics is very difficult. Material Philosophy has no room for religious or Mystics ideas also The Idealist Philosophy (including the Objective Idealism of Plato) can easily explain the unique phenomenon of Mathematics and also the uniqueness of abstract philosophies and different kinds of Mysticism but they seem less successful in explaining the relation with an idea and the material thing or the relation with the number and the material world around or the relation with soul to its body.

Conclusion

In this article, it has been attempted to explain the similarities between Mathematics and some kind of Mysticism. It has been highlighted that both of the disciplines are abstract in nature. Both of them believe in abstract ideas. Both of them deny Materialism as an ultimate explanation of this universe. Both of them prefer ideas over material things, form over matter, abstraction over concreteness, and perfect ideas over imperfect material things.

Both of the disciplines seem successful in explaining the uniqueness of mind, soul, ideas, or numbers but both of the disciplines seem less successful in explaining the relation between mind and matter, soul and body, abstract and concrete, and number and concrete material things.

Recommendations

There are a few recommendations from the authors.

i. Mathematicians should concentrate on the philosophical aspect of this study also. No subject or discipline is complete without the proper synthesis of theory and practice.
ii. Mathematicians should focus their attention on the spiritual lives of great mathematicians like Pythagoras and his followers, Ramanujan from India, and Allama Mashraqi from Muslim India.
iii. Mathematicians should concentrate upon the different statements of Bertrand Russell, the great mathematician of the world about the perfect, absolute, and spiritual nature of numbers.

References

Cambier, Hubert. (2016). The Evolutionary meanings of World 3. *Philosophy of the Social Sciences*, 46(3), 254. doi: 10. 1177/0048393116641609.

Cambier, Hubert. (2016). The Evolutionary meanings of World 3. *Philosophy of the Social Sciences*, 46(3). doi:10. 1177/0048393116641609.

Edithe, Hamilton & Huntington, Cairns. (1985). *The Collected Dialogues of Plato including the Letters.* New Jersey: Princeton University Press.

Kanigel, Robert. (1991). *The Man Who Knew Infinity.* New York: Washington Square Press.

Monk, Ray. *Introduction to the Philosophy of Mathematics* August 21, 2016. https://www.youtube.com/watch?v=bqGXdh6zb2k.

Monk, Ray. *Introduction to the Philosophy of Mathematics* August 21, 2016. https://www.youtube.com/watch?v=bqGXdh6zb2k.

Popper, Karl R. (1983). "Knowledge: Subjective versus Objective (1967)," in *A Pocket Popper.* ed. David Miller. Glasgow: Fontana press.

Popper, Karl R. (1992). *Unended Quest* London: Routledge, 59.

Russell, Bertrand (1971). *History of Western Philosophy.* London: George Allen and Unwin Ltd.

Russell, Bertrand (1971). *History of Western Philosophy.* London: George Allen and Unwin Ltd, 53.

Russell, Bertrand. (1957). *Why I am not a Christian.* New York: George Allen and Unwin Ltd.

Russell, Bertrand. (1998). *The Autobiography of Bertrand Russell.* New York: Routledge.

Stace, W. T. (2010). *A Critical History of Greek Philosophy.* Auckland: The floating press, 183.

Stace, W. T. (2010). *A Critical History of Greek Philosophy.* Auckland: The floating press.

Stace, W. T. (2010). *A Critical History of Greek Philosophy.* Auckland: The floating press.

Stace, W. T. (2010). *A Critical History of Greek Philosophy.* Auckland: The floating press, 34.

Stace, W. T. (2010). *A Critical History of Greek Philosophy.* Auckland: The Floating press, 39.