Research Institute of Science and Strategic Evolution

JCSRS

Research Centre for Science and the Quran
Ferdowsi University of Mashhad

Journal of Contemporary Studies on Religion and Science
Volume 0, Issue 1, (Fall & Winter 2024)
Homepage: https://jcsrs.risse.ac.ir

RCSQ

Clarification and Critique of Galileo's View on the Relationship Between Science and Religion

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Article Info

Article type:
Research Article

Article history:
Received 11 July 2023
Received in revised from 1 Sptember 2023
Accepted 12 October 2023
Published online 28 January 2024

Keywords:
Galileo, Science, Religion, Conflict, Happiness, Scriptures

Abstract

Galileo is among the thinkers who explored the relationship between scientific and religious propositions. He believed that the religious statements found in the Scriptures hold significant value, as they guide humanity toward eternal happiness. However, he regarded scientific propositions as neither harmful to human happiness nor central to it, considering them secondary and peripheral. In cases of conflict with new scientific discoveries, he argued that such religious statements should be interpreted metaphorically, rather than taken literally. The most significant critique of Galileo's view is twofold. First, if these statements are not directly related to human happiness, why are they included in sacred texts? Second, why do the authors of sacred texts present scientific propositions in ways that appear incompatible with modern science? Does this not suggest a lack of scientific understanding on their part? It is important to note that Galileo was a Christian, and his perspective on this matter specifically pertained to the sacred texts of his own religion.

Cite this article: Rostami, Y. (2024). Clarification and Critique of Galileo's View on the Relationship Between Science and Religion. ***Journal of Contemporary Studies on Religion and Science,*** 0(1), 66-77.

Publisher: Research Institute of Science and Strategic Evolution

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Introduction

One of the important issues in the philosophy of religion is the relationship between science and religion. The importance and necessity of this issue lies in the fact that in our time, many doubts have occupied the minds and consciences of the religious and believers. Issues that somehow call into question their beliefs and convictions. One of these doubts is related to the relationship between science and religion, which some claim today is a kind of incompatibility between religious and scientific propositions. In such a way that the founders of religions have said things that empirical sciences and rational reasoning call into question. In this article, the view of the Italian thinker Galileo (1564-1642) and his thoughtful response to this doubt are discussed. An article titled "Human Expectation from Religion in Galileo's View" was published in *Misbah* magazine, issue 2 and 3, 2002, by Abdul Hossein Khosrowpanah about Galileo. Also, an article titled "The Relationship Between Science and Religion in the West" by Amir Abbas Alizmani was published in *Kayhan Andisheh* magazine, issue 82, 1998, which expresses the views of various thinkers, briefly mentioning Galileo's view as well.

One of the important issues in the philosophy of religion is the relationship between science and religion. The importance and necessity of this issue lies in the fact that in our time, many doubts have occupied the minds and consciences of the religious and believers. Issues that somehow call into question their beliefs and convictions. One of these doubts is related to the relationship between science and religion, which some claim today is a kind of incompatibility between religious and scientific propositions. In such a way that the founders of religions have said things that empirical sciences and rational reasoning call into question. In this article, the view of the Italian thinker Galileo (1564-1642) and his thoughtful response to this doubt are discussed [1].

In this discussion, science refers to empirical and sensory sciences, although the basis of this science is reason and argument, and religion refers to a set of propositions that are found in the sacred texts of each religion. The conflict between science and religion can be presented in three ways:

a. Conflict between religious and scientific propositions: such as what is said about the seven heavens in sacred texts. It is possible that someone may say that this view was compatible with the Ptolemaic system, which believed in seven celestial spheres, but today the Copernican system has been accepted instead, and this conflicts with the seven heavens.

b. Conflict between religious and scientific presuppositions: Every scientist has presuppositions about different sciences, and every religious person, as a religious person, has presuppositions. Now, if there is a conflict between the presuppositions that have led a person to a religion and the presuppositions that have led to science, we face another type of conflict. One of the presuppositions of scholars of empirical sciences is that every material phenomenon

has a material cause; for example, the effort to find the cause of cancer shows that cancer (inappropriate cell growth), which is a material phenomenon, has a material cause. It is possible that someone may say that this presupposition conflicts with the religious presupposition that in some cases a material phenomenon may not have a material cause, such as the miracle, which many believers believe is possible.

c. Conflict between religious and scientific spirit: Someone who has acquired a scientific spirit due to dealing with various sciences may conflict with someone who has a religious spirit due to belief in religion, and incompatibility may arise between them. For example, believers believe that man is the noblest of creatures and all creatures are created for him. One of the psychological consequences of this discussion is that when man is like this, everything that exists in the universe must have benefits for man. Humans must be able to benefit from all phenomena of existence. But if someone has had contact with human sciences for a while and has acquired a scientific spirit, for example, someone who works in cosmological mechanics, asks a religious person who believes in the idea of man's nobility compared to other creatures, what benefit does a star or galaxy millions of light-years away have for humanity, what impact does it have on his life? Even if someone wants to exploit that star or galaxy based on that belief, how is it possible? This may not be compatible with the spirit of a religious person who believes that all the phenomena of existence are created for man and to benefit him. An empirical scientist may believe that the solar system is sufficient for humanity and the rest of the universe, including stars, galaxies and the like, is created in vain and remains unused. Of course, the scientist's view that most of the universe is superfluous and unused, and that religious view about the relationship between the universe and man, is not a logical inference, but both ideas have arisen from a kind of psychological inference. For this reason, it is called a conflict between spirits.

This paper addresses the first type of conflict, namely the conflict between scientific and religious propositions, from the perspective of Galileo, the famous Italian thinker. There are three distinct interpretations regarding the relationship between scientific and religious propositions. Some believe that science and religion are entirely in conflict, meaning that they are fundamentally opposed to each other. Others hold that science and religion pertain to two completely distinct realms, as the differences between them are so great that a collision between the two is impossible. Meanwhile, some seek a middle ground and believe that science and religion have points of contact but do not have points of conflict [1]

[1]Michael Patterson, and et al, *Reason and Religious Belief*, translated by Ahmad Naraghi and Ebrahim Soltani. (Tehran: Tarh-e No Publications 1999), 361

Galileo's view on the relationship between scientific and religious propositions suggests a kind of distinction and independence between these two realms, with each addressing different domains and topics. He also believes that in cases of conflict, one should abandon the literal meanings of scientific propositions found in sacred texts and interpret them metaphorically. Galileo can be considered the founder of modern science because he was the first to systematically establish the methodological indicators of modern science. When faced with the problem of the conflict between cosmological findings and the appearances in the Bible, he proposed a solution that involved separating the domains of religion from science and distinguishing between established and proven propositions and scientifically unproven propositions.

1. Galileo on the relation of science and religion

Since Galileo was a Catholic Christian, he acknowledged the importance and sanctity of the Holy Scripture. However, he believed that this book discusses not scientific facts but spiritual truths that lead to human salvation and are superior to reason and argument.[1]

In fact, Galileo claims that science and the Holy Scripture pursue different goals and are unrelated to each other. He cites Augustine's words that the Holy Scripture does not teach matters that are not related to human salvation, and says that consequently, since the Holy Spirit did not intend to teach us about the motion and rest of the heavens and does not seek a specific conclusion in such cases. Now, if the Holy Spirit has largely ignored teaching propositions of this kind because they are not related to the supreme religious goal of salvation, how can we accept that supporting them is necessary and obligatory.[2] He says that the purpose of the Holy Spirit is to teach us how man goes to heaven or the kingdom, not how the heavens move.[3]

By separating his faith from astronomy, he concludes that the motion or rest of the earth or the sun are not matters of faith. The main purpose of the Holy Scripture is the worship of God and the salvation of the soul[4]. In fact, in his view, the most valuable sciences are in the Holy Scripture. In Islamic terms, we consider Salman Farsi as truly fortunate, even though he did not know physics, so it becomes clear that in Galileo's view, the existence or non-existence of many sciences has no effect on the salvation of human beings. Therefore, if there are matters in the Holy Scripture about the heavens and the earth and the land and the like, they have been

[1] Ian, Barbour, *Science and Religion.* Translated by Bahā' al-Dīn Khorramshahi. (Tehran: University Publishing Center, 1999), 36

[2] Galilei, Galileo. *Letter to the Grand Duchess Christina.* (Chicago: University of Chicago Press, 1615), 185.

[3] Ian, Barbour, *Religion and Science.* Translated by Pirouz Fattorchi. (Qom: Research Institute for Culture and Islamic Thought, 2013), 63

[4] Maurice, Finocchiaro, *The Galileo Affair.* (Las Vegas: University of Nevada Press, 1989), 87- 117

incidental and should not be taken seriously[1]. In any case, Galileo believes in the separation and distinction of the realm of the Holy Scripture and science, and in a sarcastic expression, he stated that what the Holy Scripture states is how to go to paradise, not how the stars move.[2] And religion has come to show the way to paradise, not to show the path and orbit of space.[3]

2. Galileo's justification on the conflict between science and religion

Galileo, in another perspective, believes that the conflict between science and religion can be resolved by abandoning the literal meanings of scientific propositions found in sacred texts, which have been proven false by empirical sciences, and interpreting them metaphorically. In other words, if an interpretation of the Holy Scripture conflicts with other knowledge and sciences, it should be revised, amended, and adjusted. This stance put him at odds with the Church, which had a literalist approach to interpreting sacred texts[4]. He believes that if scientific knowledge is certain and contradicts the statements of the Holy Scripture, it must be said that we need a new interpretation of the Holy Scripture.

Galileo states that if absolute necessity demands it, some expressions in the Holy Scripture should not be interpreted literally or in their true sense (as opposed to metaphorically). In other words, he emphasizes that a metaphorical interpretation of the Holy Scripture can only be accepted when a literal interpretation conflicts with a scientifically proven theory. Scientific theories that cannot be irrefutably proven should be set aside in favor of a literal interpretation of the Holy Scripture[5]. If someone consistently confines their interpretation of the Holy Scripture to the simple literal meaning, they may fall into error. In this way, not only may judgments and statements far from the truth emerge in the Holy Scripture, but severe heresies and foolishness may also arise. For example, it may become necessary to attribute to God physical attributes such as feet, hands, and eyes, as well as human emotions like anger, regret, hatred, and even forgetfulness of what has passed and ignorance of what is to come[6]

In any case, Galileo advocates for the separation and distinction of the realms of the Holy Scripture and science, and he wittily stated that what the Holy Scripture expresses is how to go

[1]Arthur, Koestler, *The Sleepwalkers.* Translated by Manouchehr Rouhani, under the supervision of Foad Rouhani. (Tehran: Public Company of Pocket Books, 1982), 522- 523.

[2] Nancey, Murphy, *Reconciling Theology and Science: A Radical Reformation Perspective.* (Pandora Press, June 1997), 7.

[3] Koestler, *The Sleepwalkers,* 522

[4] Nancey, Murphy, "Religion and Science." In *Routledge Encyclopedia of Philosophy,* edited by Edward Craig. Vol. 1. (London: Routledge, 2002), 231.

[5] Barbour, *Religion,* 64

[6] Koestler, *The Sleepwalkers,* 521-523

to heaven, not how the stars move. [1]Religion is meant to show the way to paradise, not to illustrate the paths and orbits of space[2].

As an example, in the Holy Scripture it is mentioned that "the hand of Allah is over their hands" (Fath/10) and "Faces that Day will be radiant, looking at their Lord" (Qiyamah/22). In these verses, God is attributed with hands and eyes. Just as we interpret these verses metaphorically, we must also consider a metaphorical meaning for false scientific propositions. Of course, Galileo agrees with us that interpreting something metaphorically without proof and necessity is not acceptable - the apparent meaning of verses and words is authoritative as long as the contrary is not proven. He says that the correct meaning of the sun moving is that the light and heat of the sun are moving[3].

However, this doubt may arise that with every interpretation or change in sacred texts, we must abandon our previous beliefs, because science presents new theories every now and then. In response, it must be said that it is not the case that scientific propositions are constantly changing and every proposition becomes false after a while, because each proposition has only one negation - when the opposite is stated once, we should not expect it to be stated again.

The concept of God that Galileo presented did not differ much from what classical Christianity believed. He said that the Book of Nature and the Book of Scripture cannot be contradictory because one Creator produced them; therefore, he reinterpreted certain passages of Scripture whose literal interpretation conflicted with the Copernican theory. However, despite this, he was very committed to the Scripture and its liberating message.[4]

3. Critical review of Galileo's view

It seems that Galileo did not distinguish between two different levels. The first level is that scientific propositions should not and do not appear in the Holy Scripture, and if they do appear, they are not stated as such. The second level is that if someone wants to take the propositions present in the sacred books seriously, how should they resolve the conflict? And these two levels are different. In other words, the problem is what to do after the conflict arises, while Galileo initially assumes that the conflict will not occur, and resolving the conflict by eliminating religious propositions is moving away from the discussion.

What is the criterion for distinguishing between propositions related to eternal bliss and others? Conceptually, Galileo's words are clear, but identifying them in practice seems difficult. If we

[1] Murphy, *Reconciling,* 7
[2] Koestler, *The Sleepwalkers,* 522
[3] Koestler, *The Sleepwalkers,* 521-523
[4] Barbour, *Religion,* 66

want to express it in Islamic terms, for example, the story of Gog and Magog, Dhul-Qarnayn, and the faith of the jinn, which category do they belong to?

In response to this objection, Galileo says that the spiritual truths that lead to human salvation are realities that are superior to reason and argument and are not discovered through observation. The meaning of this statement is that without revelation, human reason can never discover these truths. He also believes that in some physical (natural) matters, we should not base our work on the authority of sacred texts, but on sensory experiences and necessary proofs. For both the verses of the Holy Scripture and the verses of nature (natural phenomena) are the Word of God, and both emanate equally from God, the former as the manifestation of the Holy Spirit, the second as the direct agent of God's commands.[1]

In fact, Galileo has answered the first objection in this way: any proposition of the Holy Scripture that we can reach through our own reason and senses is not related to eternal bliss. Propositions that our reason and senses do not reach are related to eternal bliss. Regarding the first category, if science says otherwise, we should side with science, because God of religion and the Holy Scripture has given us reason and senses, and reason and senses judge that the earth revolves around the sun.

However, it seems that Galileo's statement is incomplete. What argument shows that if something is related to eternal bliss, it must be beyond experience? In other words, reason does not consider it impossible that there may be a truth beyond reason and sense that is not related to eternal bliss, or that there may be a truth that is not beyond reason and sense but is related to eternal bliss. For example, they consider the proposition "God exists" to be related to eternal bliss, but they do not consider it outside the realm of reason and argument. And in general, the religious man considers the principles of religion to be related to eternal bliss, but they prove them through reason.

Another criticism of Galileo's statement about the superiority of the truths that lead to human salvation is that if someone believes that there is no reality in the world that cannot in principle and theoretically be discovered without revelation and inspiration, then there would be no room left for religious propositions. Another implication of his statement is that at any given time there are propositions related to eternal bliss about which we are ignorant, but as human ignorance is gradually dispelled, the space for religious propositions becomes narrower. Because perhaps if the human race continues, it will gradually discover all truths through reason and experience.

[1] Finocchiaro, *The Galileo,* 87-117

In other words, if we accept Galileo's view, it seems that the domain of religion is constantly shrinking and will eventually disappear as science progresses. The religious person may argue that there will always be truths related to eternal bliss that are beyond the reach of reason and experience, and that revelation is necessary to access them. Galileo's view, taken to its logical conclusion, appears to lead to a conflict with the religious worldview.

Another objection to Galileo's view is that if the scientific propositions mentioned in the sacred texts have no value, then why were they mentioned in those texts? As a devout Christian, how does he justify the inclusion of scientific propositions, when their value is constantly being questioned by various sciences? His theory is akin to someone writing a book on mathematics and randomly inserting passages on biology and other topics, and then the author or someone else saying these matters should not be taken seriously.

Here, Galileo argues that the key to understanding the inclusion of scientific propositions is that the contemporary people of the sacred texts lacked the capacity to comprehend more advanced ideas, and in these cases, he considers the thought processes and understanding of his ancient audience. [1]When the authors of the Holy Scripture dealt with cosmological issues, they were compelled to use the common parlance of the time in order to adapt to the comprehension level of the general public.[2] In other words, the mode of expression suitable for the common understanding of the time of revelation was observed. For example, the reason the sacred texts mention the seven heavens is that people at that time believed in seven celestial spheres, and since they were the primary audience of the sacred texts, they were addressed in this manner.

Galileo argues that the authors of the sacred texts used the language and concepts familiar to their contemporaries in order to convey spiritual truths related to salvation. The inclusion of outdated scientific ideas does not diminish the value or truth of the religious message. Rather, it demonstrates the authors' accommodation to the intellectual capacity of their audience. As scientific knowledge progresses, the need to interpret these passages metaphorically becomes apparent, without undermining the infallibility of scripture or its spiritual authority. Galileo sees this as a necessary concession to the limitations of human understanding at the time of the texts' composition.

However, by carefully examining the aforementioned points, three perspectives can be extracted, one of which is Galileo's view.

a. The prophets or authors of the Holy Scripture did not possess knowledge of human sciences. For example, they did not know that there are not seven heavens or that the Earth revolves

[1] Barbour, *Science,* 36
[2] Barbour, *Religion,* 63

around the Sun. As Rudolf Otto states, the authors of the Holy Scripture, such as Mark, Luke, John, Paul, and Matthew, were similar to the people of their time in some respects and different in others. In the spiritual and metaphysical realm, and in matters related to eternal bliss, they were higher and more transcendent than their contemporaries. However, in terms of the earthly and material aspects, they were similar to the people of their time. [1] According to this view, if the Holy Scripture states that the sun moves like a champion in the racecourse (Psalms: 4), it should be regarded as an error. Galileo argues that God descended to the level of the authors and readers of the Holy Scripture and used their understanding of nature to manifest Himself in the most effective way possible. Just as God descends to our level in prayer, He acted in accordance with the knowledge of the time during the process of revelation and manifestation in the Holy Scripture.[2] In response, it should be noted that Christians and Jews consider their sacred texts to be written by humans and do not regard these authors as infallible. Therefore, they accept the possibility of scientific errors in the works of Matthew, Mark, and Luke, believing that they had insights and revelations but sometimes made mistakes in interpreting and presenting those insights. In other words, their expressions sometimes blend with the culture of their time. According to this interpretation of the Holy Scriptures, it can be accepted that the authors made mistakes; however, this view is not acceptable to Muslims, as they regard the Prophet as infallible.

b. The authors of the Holy Scripture were knowledgeable about the sciences of their time but were unable to teach them to others. That is, the authors of the Holy Scripture have precise knowledge of matters related to the natural world, just like matters related to the spiritual world, but they cannot convey them to the people of their time. Because teaching and explaining scientific matters depends on the growth of science and the rising level of knowledge of the people. According to this view, Copernicus presented a new system in the 15th century AD, and his distance from the authors of the sacred texts was great, but they, although they knew these scientific matters, could not teach them to the people of their time. For example, if they had said that there is only one heaven, people would have referred to the different heavens and the seven celestial spheres that Ptolemy believed in, and the prophets could not have made them understand that the reality is contrary to this. In any case, according to this view, the advancement of sciences is not suddenly possible, and appropriate tools must be found so that new matters can be proven. Galileo says that this was not only out of respect for the general inability and incapacity, but also because of the prevailing view at that time. In other words, the Holy Scripture includes the science of its own time in the ancient world. Of course, God could

[1] William, Wright, "The Sacred Order from the Perspective of Rudolf Otto." Translated by Ali Shirvani. *Nameh-ye Mofid* 19 (1999),

[2] Finocchiaro, *The Galileo,* 87-117

have inspired the authors of the Holy Scripture that He created the world and life through the Big Bang and biological evolution. But would anyone understand it thousands of years ago?[1].

c. The authors of the Holy Scripture have knowledge of human sciences and the ability to teach, but they do not have the opportunity to explain, and they do not consider spending time on this to be beneficial. Rather, they adopt the assumptions of the people and, by accepting those assumptions, set out to prove their claim. In other words, they engage in logical argumentation. For example, the debate of the Prophet of Islam with the polytheists was that God is one or many, but if he wants to prove that there are not seven heavens, it takes a lot of time, so he refrains from this action and says "the seven heavens which you, i.e. the people, accept, whose creation is it? And if you ask them who created the heavens and the earth, they will surely say, Allah. Say, [all] praise is [due] to Allah; but most of them do not know" (Luqman/25). It seems that Galileo adheres to the third opinion.

However, the implication of this view is that wherever a scientific proposition is stated in the

Holy Scripture, it has been in the face of debate, whereas this is not the case, and except in rare cases, there has been no debate. And the fact that the authors of the sacred texts did not have the power to explain their own science is in itself possible, but not everything that is mentioned in the sacred texts and is from human knowledge is such that they themselves know and do not have the power to teach.

Galileo's view on the relationship between science and religion was in a sense based on two justifications. On the one hand, he believed in the separation and detachment of the realm of religion, distinguishing their domains in that religious teachings lead to human salvation, spiritual transformation and bliss, while the scientific truths present in the Holy Scripture do not contribute to spiritual evolution. He also held the view that religious truths, unlike scientific truths, are beyond rational argument.

His other justification was that scientific truths, if necessary and in conflict with sacred texts, should be interpreted, amended and adjusted, as those truths were commensurate with the common understanding of that era. The most important point regarding Galileo's view on the relationship between science and religion is that the scientific propositions present in sacred texts do not lead to human salvation and do not constitute the essence and substance of religion, and on the other hand, they were compatible with the comprehension of the people of that time, and with the advancement of sciences, their falsity becomes evident. If this is the case, one can ask Galileo the question that what is the necessity of mentioning these matters in religious texts? Were the founders of religions themselves aware of this? Galileo's view was that they had

[1] Finocchiaro, *The Galileo,* 87-117

knowledge of these propositions but did not have the time to explain them to their audience and did not see the necessity, because it did not undermine their goal, which was human salvation.

Galileo's view seems to be more applicable to the sacred texts of his own religion, Christianity, as they do not consider the authors of the Holy Scripture infallible, and in other words, do not regard the words and expressions present in the sacred texts as directly from the God who is absolutely powerful, absolute in knowledge, and absolutely benevolent. However, his approach appears incompatible with the sacred texts of Islam, in which the truths present therein, both scientific and religious, are from God.

It should be noted that since at the time of Galileo, the humanities had not yet achieved their growth and flourishing, and Galileo was more inclined towards the empirical sciences, especially astronomy and physics. Therefore, he felt that the common ground between science and religion was very limited and negligible. It seems that Galileo's response in our time, although it may be noteworthy regarding the conflict between religion and the empirical sciences, has not taken into account the problem of the potential conflict between religion and the humanities, which have more in common with religion. And that Galileo arrived at this solution from examples of the conflict between science and Christianity in his time, while this solution may not be applicable to other religions. Moreover, the question arises as to why the Holy Scripture should be considered ambiguous and modern science definitive, and science becomes the basis for interpreting the religious text. Another point is that Galileo easily confines the scope of religion to spiritual teachings, while referring to the texts of Islamic teachings, many issues of worldly and material affairs are observed, and this type of solution seems to mean excluding the rival from the arena of competition and challenge.

Conclusion

It can be said that although Galileo was a Christian, he was in a sense aware of the importance of science and its explanatory power, and the challenge it posed to religion in his time, and he took it seriously. In other words, alongside his religious spirit, he paid great attention to the scientific spirit prevailing in his time and could not simply overlook this issue, i.e. the relationship between science and religion, which had caused many conflicts. Although he was not unaware of the power and pressure of the Church in condemning his view.

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