

# Muṭahhari's Encounter with Modern Science

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## Introduction

Modern science found its way to the Islamic world in the beginning of the nineteenth century, giving rise to various reactions. However, it is the philosophical underpinnings of modern science, rather than science itself, that has mostly perturbed the Muslim intellectuals. We find, among the exponents of science in the Muslim world, people with a wide variety of attitudes, including these wedded to a wholesale appropriation of the entire baggage of science with its positivist underpinnings. The result is that we find positivist slogans reverberating through the Muslim world.

Owing to a variety of frames of reference that exist among Muslims, there is a wide range of reactions to modern science in the Muslim world. These reactions can be mentioned under following four categories:

(1) There is, first of all, a small minority of religious scholars who do not welcome modern science as they considered it incompatible with Islamic teachings. In their view, Islamic societies should have their own science.

(2) There are some Muslim intellectuals who stand for the adoption of modern science in its totality. They are not content merely with appropriating the substance of modern science but are also fascinated by its empiricist worldview. They believe that mastery of modern science is the only solution to the stagnation of the Islamic world. They see science as the only means of real enlightenment.

(3) There are also some Muslim scholars who recognize that modern science has played a very important role in the advancement of the West and hence advocate the assimilation of modern science. At the same time they have religious concerns which distinguished it from the Muslim intellectuals mentioned under category 2. This group forms the majority of Muslim scholars, and one can further categorize them in the following subgroups:

(a) Some Muslim thinkers like Sayyid Jamāl al-Dīn (d. 1897) and Muḥammad Rashīd Riḍā (d. 1935), attempted to justify modern science on religious grounds. They saw modern science as the continuation of the science that

had flourished in Islamic civilization several centuries ago. They, therefore, tried to persuade Muslims to acquire modern science in order to safeguard their independence and to protect themselves from the criticism of the orientalist and Muslim intellectuals that Islam is an obstacle to scientific progress.

- (b) Some Muslim scholars attempt to trace all important scientific discoveries to the Qur'ān and to the Islamic intellectual tradition. They were motivated by a twofold purpose: (i) to show that modern science is compatible with Islamic teachings, and (ii) to show that by using the findings of modern science, one can explain various aspects of his faith. These people believed that modern science had arrived at some of those very facts which can be traced back to the Qur'ān and the Prophet Muḥammad (peace be on him) some fourteen centuries ago. Thus Islamic revelation could be seen to have virtually foretold what was discovered by science many centuries later: This trend is still alive in some Muslim societies.
- (c) Some scholars attempted to reinterpret a number of Islamic theological matters in the light of modern science. The Indian scholar, Sir Sayyid Ahmad Khan (d. 1898), was interesting in this regard in so far as he formulated a theology of nature through which one could re-interpret the basic principles of Islam in the light of modern science. His commentary on the Qur'ān is a good illustration of this trend.

(4) Finally, some Muslim scholars differentiate between the findings of modern science and its philosophical underpinnings. Thus, while they advocate the discovery of the secrets of nature through experimentation and theoretical work, they warn against empiricist and materialistic interpretations propagated in the name of science. In their view, scientific knowledge can reveal certain aspects of the physical world, but science *per se* cannot give us a complete picture of reality. They believe that science has to be embedded in the Islamic worldview in order to give a more comprehensive picture of reality. Murtaḍā Muṭahharī (d. 1979) has been one of the most prominent advocates of this view during the second half of the twentieth century.

### **Muṭahharī's Encounter with Modern Science**

While some Muslim scholars were busy reconciling the Qur'ān and the Islamic tradition with the findings of modern science, Muṭahharī was concerned with those fundamental problems of science that were liable to cause friction between scientists and religious scholars. He believed that the source of conflict frequently lay in the philosophical underpinnings of science rather than in science itself. He was disposed to look for the hidden philosophical assumptions which lay behind the scientific arguments. As he put it:

In studying the works of scholars, I have always been looking for the root of their thought, in order to understand why a scientist, after philosophical reflection on a subject, had chosen a specific way to enter it or to get out of it? What postulates one has taken for granted, before expressing his views on it?<sup>1</sup>

In Muṭahhari's view, some of the misunderstandings on the part of religious people has also contributed to the rise of conflict, as we shall see below.

We shall attempt to mention in the following pages some of the major issues on which there arose conflict between science and religion. This will be followed by our effort to elaborate Ayatullah Muṭahhari's approach to those problems.

## 1. Argument from Design

After the infiltration of modern science into the Islamic lands, some Muslims who were overly infatuated with modern science pleaded that even theology should be subjected to the methods of empirical science. They went so far as to claim that science was the only road to God. The Qur'ānic verses mentioning the natural phenomena were adduced as an argument for the self-sufficiency of the scientific method. Some scholars even identified the Qur'ānic wisdom with positivism.<sup>2</sup>

Muṭahhari admitted that observation and experimentation were necessary tools for understanding nature, but he did not believe in the sufficiency of the senses to accomplish that. In his view, intellectual effort was needed before one could give a theistic interpretation of the world. Empirical science can make us familiar with the works of God, but the inference of an Omniscient and Omnipotent God of the Qur'ān, as a result of studying a part of the nature, requires an intellectual exercise. The leap from the finite to the infinite requires intellection. As Muṭahhari put it:

The ways of proving God through the existence of order and guidance in the created world are very good but they are good up to the point that make us aware that this world ...is under the supervision of a designing force [نیروی مدبر] that governs it... What science can tell us at the most is that the designer of this world has had knowledge of the thing made, but can science [also] prove that "He has knowledge of everything?" (Qur'ān: 57: 3).<sup>3</sup>

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<sup>1</sup> Murtaḍā Muṭahhari, *Majmū'ah-i Āthār* (Tehran: Sadra Publications, 1374 AH), 13: 65. Cited hereafter as *Collected Works*.

<sup>2</sup> See 'Afif Ṭabbārah, *Rūḥ al-Dīn al-Islāmī* (Beirut: Dār al-'Ilm li' al-Malāyīn, 1982), 270.

<sup>3</sup> Muṭahhari, *Collected Works*, 4: 209–217.

The laws of physics and chemistry are not purely empirical facts; rather, their inference had required an intellectual effort. Matter itself is inferred intellectually, because experiments give us only the properties of matter.

According to Muṭahharī, one can deal with two kinds of order: the order related to the efficient cause and the order related to the final cause. The former only implies a chain of causes, whereas the latter signals knowledge and choice in the efficient cause. The order seen in the world is of the latter kind and that is the order that points to the metaphysical realm. In Muṭahharī's view, many people do not differentiate between these two.<sup>4</sup>

In Muṭahharī's view, the argument from design for the existence of God has an empirical component and a theoretical component. The neglect of this fact has led some people to criticise this argument. The real value of the argument from design lies in the fact that it takes us to the borders between physics and metaphysics. This argument indicates that there is a supernatural reality. But it does not say anything about that reality's uniqueness and whether it is finite or infinite.<sup>5</sup>

## 2. Darwin's Theory of Evolution

Darwin challenged the idea of the fixity of species and expounded the theory of "evolution of species." He explained the evolution of species in terms of the mechanisms of natural selection and the survival of the fittest. Those who subscribe to this theory to explain life in terms of chance processes and deny any role to design. On the other hand, they claim that the order we see in the living world is the result of chance and natural selection. In his 1987 programme on BBC 2, Richard Dawkins put the matter in this way:

Chance with natural selection, chance smeared out into innumerable steps over aeons of time is powerful enough to manufacture miracles like dinosaurs and ourselves.<sup>6</sup>

Darwinians claim to have succeeded in eliminating the role of the Creator. What they seem to overlook is that the introduction of a mechanism — the mechanism of the evolution of species — does not necessarily negate the role of the designer of that mechanism. The gradual appearance of the species has to be explained as to whether they are brought

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<sup>4</sup> Ibid., 86–87.

<sup>5</sup> See n. 3 above.

<sup>6</sup> Quoted in M. Poole, "A Critique of Aspects of the Philosophy and the Theology of Richard Dawkins," *Science and Christian Belief*, 6 (1994), 53.

about gradually or suddenly. As Abū 'l-Majd Muḥammad Riḍā al-Najafī al-Iṣfahānī (d. 1943), an eminent Muslim scholar of the early twentieth century, pointed out, the theory of evolution is not essentially opposed to theism. It is only the materialistic interpretation of this theory that negates God.<sup>7</sup>

In the last few decades, some atheistic exponents of Darwinism have made a great deal of noise concerning the incompatibility of the theory of evolution with theism. Richard Dawkins' words illustrate this point: "God and natural selection are, after all, the only two workable theories we have of why we exist."<sup>8</sup>

Dawkins, however, believes that Darwin's theory has made the belief in God superfluous: "Although theism might have been logically tenable before Darwin, Darwin made it possible to be an intellectually fulfilled atheist."<sup>9</sup>

Dawkins does not notice that natural selection is compatible with the existence of the Designer. In his 1884 lecture, Archbishop Fredrick Temple put the matter nicely:

What is touched by this doctrine [of Evolution] is not the evidence of design but the mode in which the design was executed...In the one case the Creator made the animals at once such as they are now; in the other case He impressed on certain particles of the matter...such inherent powers that in the ordinary course of time living creatures such as the present were developed.<sup>10</sup>

Muṭahharī was fully aware of this fallacy. In his 1968 lecture at the Islamic Association of Physicians in Tehran, he emphasized that both scientifically and theologically there is no relation between instantaneous or gradual creation of living creatures and belief in God. This misunderstanding is due to a nineteenth century mistake as a result of which some people saw a direct correlation between belief in God and the fixity of species. There is, however, no logical incompatibility between belief in God and in the theory of evolution of species. Muṭahharī, however, emphasized that Darwinian laws of evolution are not sufficient to explain the evolution of species. They have to be supplemented by metaphysical laws.<sup>11</sup>

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<sup>7</sup> Adel A. Ziadat, *Western Science in the Arab World* (London: The Macmillan Press Ltd., 1986), 97.

<sup>8</sup> Richard Dawkins, *The Extended Phenotype* (Oxford: Oxford University Press, 1982), 181.

<sup>9</sup> Idem, *The Blind Watch Maker* (New York: W.W. Norton & Co., 1987), 6.

<sup>10</sup> Quoted in M. Poole, "A Critique of Aspects of the Philosophy and the Theology of Richard Dawkins," 52.

<sup>11</sup> Muṭahharī, *Collected Works*, 4: 220.

According to Muṭahharī, two groups have contributed to the development of the thesis of incompatibility between theism and the idea of evolution of species. One group consists of religious believers who opposed the idea of the evolution of species because it seemed to them to be inconsistent with their religion. The other group consists of materialists who thought that by appealing to the theory of evolution they could dispense with the idea of God.<sup>12</sup>

In response to those who saw a discrepancy between the story of Adam, as told by the Bible and the Qur’ān, and the theory of evolution, Muṭahharī concurred with the idea that Adam is not necessarily the first human being. Rather, Adam emerged at an advanced stage in the development of human beings. The story of Adam is mentioned in the Qur’ān, in his opinion, in order to teach lessons in morality:

The story of Adam is in the Qur’ān, but no part of it has anything to do with the cognition of God or monotheism. It teaches us to see what pride did to Satan or greed did to Adam. The creation of human beings, however, is brought up to give us lessons on monotheism.<sup>13</sup>

### 3. The Problem of Life

The problem of soul and body and their mutual relationship is an old one. With the development and popularity of the theory of evolution and materialistic philosophies, scientists have increasingly tried to attribute all characteristics of life to physico-chemical processes, leaving no room to affirm the existence of soul. Muṭahharī admits that all of these physico-chemical processes are necessary to produce life effects, but he does not consider them to be sufficient for the emergence of life. A radio is necessary to receive the signals sent by a transmitter, but it is not sufficient for receiving a signal; there has to be a transmitter. In Muṭahharī’s words: “The synthesis, addition, subtraction and combination of the parts of matter are necessary conditions for the appearance of life effects, but they are not sufficient.”<sup>14</sup>

In response to those who mention the possibility of the production of life effects by the efforts of human beings, his position was as follows:

When the capacity for the appearance of life is developed in matter, life is endowed to it [by God]. In other words, matter in its developmental motion becomes alive. It acquires some perfection that it lacked, and bears effects and activities that it lacked before.<sup>15</sup>

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<sup>12</sup> Ibid., 223–224.

<sup>13</sup> Ibid., 164.

<sup>14</sup> Ibid., 13: 38.

<sup>15</sup> Ibid., 41–42.

This is not incompatible with the Qur'ānic teaching that life is given by God:

It is impossible that the conditions for the effusion of life [by God] be there and life does not appear. Is it not true that God is needless and is perfect and the Most Bountiful?...If one day human beings can have this success, what they have done at the most is to prepare the ground for life, rather than creating life [itself].<sup>16</sup>

Muṭahharī criticizes those theists who concern themselves with the question of the beginning of life in order to attribute its origin to God. In his view, they are looking for the God of gaps, i.e., they are looking for God in the areas of human ignorance:

Here we should find out the reason why theists seek the beginning of life in order to relate the origin of life to God's Will, whereas the Qur'ān, in its monotheistic way, never follows this route, and it considers life... as the result of God's direct Will, without any differentiation between its origin and its continuation... The truth is that the difference in the logic of the Qur'ān and other kinds of logic lies in a more fundamental difference: those theists are seeking God in the negative side of their knowledge, i.e., wherever they do not understand [something], they bring in God.<sup>17</sup>

#### 4. Creation of the Universe

The problem of the creation of the universe has always been associated with the concept of God. During the medieval times, recourse was made to the creation of the universe in one way or another, in the philosophical arguments for the existence of God. But during the last two centuries, specifically during the twentieth century, belief in the eternity of the world has been very popular in the scientific circles, and this has been one of the arguments of the materialists against the existence of God. After Hubble's discovery of the red shift of the light from galaxies, the theory of expansion of the universe, the so-called Big Bang theory, got off the ground and received considerable popularity. This was welcomed by the theists throughout the world. They took it as a clear evidence for the creation of the universe by God. But soon some atheist cosmologists tried to devise models that could circumvent the creation of the universe in time, and the debate on the question continues. However, some physicists have acknowledged that the assumption that the universe did not have a beginning in time, does not make the universe self-explanatory. As Paul Davies says:

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<sup>16</sup> Ibid., 58–59.

<sup>17</sup> Ibid. 55.

The fact that the universe might have no origin in time does not explain its existence, or why it has the form it has. Certainly it does not explain why nature possesses the relevant fields (such as the creation field) and physical principles that establish the steady-state condition.<sup>18</sup>

Muṭahharī emphasized that temporal createdness or eternity of the world has no bearing on the problem of the Creator. It is a mistake to assume that belief in God necessitates the temporal createdness of the world: “Why should we talk about the first day [of creation] and say that the world was created instantaneously? The world is all the time in the state of creation. Nothing is eternal in the world.”<sup>19</sup>

In fact, on monotheistic grounds, one can say that there is no beginning to the world. So, even if this world has a beginning, there should have been [prior to that] another world in a different form.<sup>20</sup> In Muṭahharī’s words: “Maybe they are right that if we go back so many years, the world had not assumed the present order. But how do we know that there had not been another world before ours with a different order?”<sup>21</sup>

The idea of multiple universes that Muṭahharī articulated in the mid-1970s became prominent in cosmology in the 1980s and 1990s. However, some cosmologists used this notion to dispense with the idea of the Creator, whereas Muṭahharī had used it to propagate the idea of an All-Bountiful God.

## 5. The Principle of Causality

Classical physicists believed in the principle of causality as a fundamental postulate, and they believed that by knowing the equation of motion of a system and its initial conditions one can predict its future exactly. In 1927, Werner Heisenberg (d. 1976) derived his so-called uncertainty relations according to which one cannot know simultaneously the exact position and velocity of a particle. However, Heisenberg jumped from his epistemological conclusion to an ontological one, declaring that the principle of causality does not hold in the atomic realm. Furthermore, he denied that there might be a sub-quantum level at which causality is operative. In fact, Heisenberg considered such speculations as fruitless and senseless:

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<sup>18</sup> Paul Davies, *The Mind of God* (London: Simon & Schuster, 1992), 56.

<sup>19</sup> Muṭahharī, *Collected Works*, 4: 169.

<sup>20</sup> Paul Davies, *The Mind of God*, 38.

<sup>21</sup> Muṭahharī, *Collected Works*, 10: 405.



As the statistical character of quantum theory is so closely linked to the inexactness of all perceptions, one might be led to the presumption that behind the perceived statistical world there still hides a “real” world in which causality holds. But such speculations seem to us, to say it explicitly, fruitless and senseless. ... quantum mechanics establishes the final failure of causality.<sup>22</sup>

Some physicists, like Einstein refuted this claim and attributed the indeterminacy in the atomic realm to human ignorance. But some eminent physicists and philosophers thought that Heisenberg’s idea solve the problem of human free will, because psychological processes depend on physical processes which are indeterminate.<sup>23</sup> But Einstein did not see any incompatibility between the rule of causality and human free will:

You are troubled by the conflict between the purely causal outlook of Spinoza, and the outlook which aims at an active effort in the service of social justice. In my view, there is no real conflict here; for our mental tensions, indeed not only our passions, but also our drive to bring about a just social order, belong to the factors which, together with everything else, take part in the causal nexus.<sup>24</sup>

In the last several decades some Muslim scholars have revived the forsaken theory of the Ash‘arites, and they have appealed to quantum theory to support their claim.<sup>25</sup>

In refuting the quantum physicists’ position on the uncertainty principle, Muṭahharī had the following observations:<sup>26</sup>

1. We do not want to deny experimental observation of the great physicists, but we want to challenge their philosophical inferences.
2. The law of causality is a philosophical law. Thus, it can only be refuted by philosophical arguments. Science cannot confirm or deny this law, but science has to accept this law as a fundamental postulate. Planck says the same thing:  
Of course it may be said that the law of causality is only after all a hypothesis. If it be a hypothesis, it is not a hypothesis like most of the others, but it is a fundamental hypothesis because it is the postulate which is

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<sup>22</sup> J. Wheeler and W.H. Zurek, eds. *Quantum Theory and Measurement* (Princeton: Princeton University Press, 1983), 83.

<sup>23</sup> Max Jammer, “Indeterminacy in Physics”, in P.P. Wiener, ed. *Dictionary of the History of Ideas* (New York: Charles Scribner’s Sons, 1973), 2: 589.

<sup>24</sup> T. Benagen, “Struggle with Causality”, *Science in Context*, vol. 6, 1, no. 1, 306. [The above quote is from the letter of Einstein to Benagen].

<sup>25</sup> Karen Harding, “Causality Then and Now: Al-Ghazālī and Quantum Theory,” *American Journal of Islamic Social Sciences*, vol. 10, no. 2 (1993), 165–177.

<sup>26</sup> Muṭahharī, *Collected Works*, 6: 671–691.

necessary to give sense and meaning to the application of all hypotheses in scientific research.<sup>27</sup>

3. Causality holds the whole world together. Thus, the breakdown of the law of causality in the microworld destroys the validity of this law in relation to the whole world. As Shabistari, the Persian mystic, put it:

If you remove a single piece out of its place the whole universe tumbles down.

4. The unpredictability in the atomic realm does not mean that the law of causality is not valid. We do not have any reason to think that we have reached the end of our knowledge or that we have discovered all the relevant factors. Our inability in prediction could be the result of our ignorance of some unknown facts. This point has been mentioned by many contemporary scientists. Henry Stapp, who is himself one of the contemporary exponents of quantum theory, has put the matter nicely:

And contemporary quantum theory treats these events as random variables, in the sense that only their statistical weights are specified by the theory: the specific actual choice of whether this event or that event occurs is not fixed by contemporary theory.

The fact that contemporary physical theory says nothing more than this does not mean that science will always be so reticent. Many physicists of today claim to believe that it is perfectly possible, and also satisfactory, for there to be choices that simply come out of nowhere at all. I believe such a possibility to be acceptable as an expression of our present state of scientific knowledge, but that science should not rest complacently in that state: it should strive to do better. And in this striving all branches of scientific knowledge ought to be brought into play...In this broader context the claim that choice comes out of nowhere at all should be regarded as an admission of contemporary ignorance, not as a satisfactory final word.<sup>28</sup>

Some scientists have even talked about the possibility of non-physical causes. In the words of the Canadian mathematician John Byl:

Suppose for the sake of argument, that one could establish the definite absence of a physical cause in Quantum events. This still leaves open the possibility of non-physical causes. These might be human minds, spiritual beings such as angels or demons, or even the direct action of God Himself. Such non-physical causes are, by definition, beyond scientific enquiry. Thus

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<sup>27</sup> Max Planck, *The New Science. 3 Complete Works: Where is Science Going ? The Universe in the Light of Modern Physics, The Philosophy of Physics* (New York: Meridian Books, 1959), 104.

<sup>28</sup> H. P. Stapp, *Mind, Matter, and Quantum Mechanics* (New York: Springer-Verlag, 1993), 216.

it is scientifically unwarranted to assert that the absence of physical cause entails the absence of any cause.<sup>29</sup>

In fact, it was in this spirit that David Bohm constructed a hidden variable quantum theory that is causal and can reproduce all of the experimental results of the ordinary quantum theory.

5. The generalization of the results of an experiment to a law is only meaningful if the law of causality holds. According to Planck: "Any hypothesis which indicates a definite rule presupposes the validity of the principle of causation."<sup>30</sup>
6. Those scientist who tried to explain human free will by appealing to the breakdown of the law of causality, misunderstood the meaning of free will. It is true that we freely make the decision to do this rather than that, but our decisions are based on our motivations and other causal agents.

It is interesting that all of these points that Muṭahharī had mentioned in the early 1950s, were pointed out by eminent physicists like Dirac and de Broglie in the 1960s and 1970s.<sup>31</sup> In fact, the work on causal quantum mechanics has received some momentum during the last two decades and some eminent physicists like the Nobel laureate physicist G. 't Hooft are working on causal theories.



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<sup>29</sup> J. Byl, "Indeterminacy, Divine Action and Human Freedom," *Science and Christian Belief*, vol. 15, no. 2, Oct. 2003.

<sup>30</sup> M. Planck, *The New Science*, 104.

<sup>31</sup> Mehdi Golshani, "Causality in the Islamic Outlook and in Modern Physics" in N. H. Gregersen, U. Gorman and H. Meisinger, eds. *Studies in Science and Theology* (Aarhus: University of Aarhus, 2002), 8: 187–188.