

DEBATE

Science and religion

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Religion and science have often been in conflict throughout human history. There are many who think that they can never be reconciled. In this essay, it will be argued that religion and science are in harmony, and, in fact, they are both necessary for the advancement of human civilization. In essence, religion and sciences represent to pathways in the search for truth. In general, religion deals with spiritual matters and science with physical matters. In some cases they overlap. The very word, „science“ has had different meanings throughout the centuries. The sciences studied in the ancient world, such as alchemy, would have no meeting today. It is likely that some sciences, which are considered very important today, will in future centuries become irrelevant. (Ref. 15.)

Key words: science, religion, medicine.

And the king spake unto Ashpenaz the master of his eunuchs, that he should bring certain of the children of Israel, and of the king's seed, and of the princes; Children in whom was no blemish, but well favoured, and skilful in all wisdom, and cunning in knowledge, and understanding science, and such as had ability in them to stand in the king's palace, and whom they might teach the learning and the tongue of the Chaldeans.

(King James Bible, Daniel 1: 3–4)

Religion and science have often been in conflict throughout human history. There are many who think that they can never be reconciled. In this essay, it will be argued that religion and science are in harmony, and, in fact, they are both necessary for the advancement of human civilization. In essence, religion and sciences represent to pathways in the search for truth. In general, religion deals with spiritual matters and science with physical matters. In some cases they overlap. The word, “science” has had different meanings throughout the centuries. Some of the sciences studied in the ancient world, such as alchemy, would have no meeting today. It is also likely that some sciences, which are considered very important today, will in future centuries become irrelevant.

What is science?

Scientific knowledge is an outcome of relating the causes and effects of natural events, or a discovery of the elemental

properties and scientific laws. Every branch of science in its course to perfection must pass through the following four stages:

1. The collection of relevant information.
2. A systematic arrangement of this information in the formation of elementary laws based on tests in experiments.
3. The discovery of specific laws.
4. The accumulation of the results of specific laws in order to frame general laws.

To make this concept more clear we can cite astronomy as an example. Astronomy is a well-known science that has gone to these four stages in its progression to reach its present status. Before Hipparcus (2nd century B.C.) and Claudius Ptolemaeus (2nd century A.D.) very little information was available about this science. It was with the work of these two scientists at the elementary laws of this science were established. Later Copernicus and Galileo proposed that the sun was the center of the solar system, a proposal that was met with significant opposition. Still later Johannes Kepler (1571–1630) discovered a se-

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This work is the short version of the Part *Science and Religion* of the Book Hulin I. Introduction in the Science Research. Bratislava, SAP

ries of specific laws and finally Isaac Newton (1643–1727) gave the general laws, which strengthened the science of astronomy. In the modern era, Einstein's theory of relativity further explains some findings of modern astronomy and allows important calculations regarding various phenomena to be made, such as black holes.

In the first stage, the scientist has to make a supposition based on his reasoning to explain relationships between the causes and effects of natural phenomena. This is known as a hypothesis, and is the starting point of investigation. Of course, a hypothesis is essential for the expansion of scientific knowledge. In the second stage, the scientist accumulates the results of his experiments and observations and formulates different theories and hypotheses to explain their relationships. Many of these theories, when tested, will be proved wrong. In the third stage, the scientific findings reach a higher level and most of the hypotheses and theories are proven to be correct when tested and thus become laws. In the fourth stage of science, human knowledge reaches a point where the general laws of science are so well known that there are no exceptions to them at any time or place.

Many scientific hypotheses, which are currently thought to be correct, are actually still in the first stage of this knowledge. Scientific books are full of such hypotheses and theories. Even medical science, although very ancient, has not been able to discover unchangeable laws despite its reliance on physics, chemistry, physiology and anatomy.

The more a science is based on general laws and the more free it is from theories, the more reliable it is. Mathematics, astronomy, physics, chemistry, etc. are more exact than medical science, education and fine arts. For example, no one is able to challenge Archimedes' Principle (287–212 BC), the laws of motion, the law of gravity, Pascal's Law (1623–1662), and Joule's Law (1818–1889). If anyone could prove that a body does not lose weight equal to the weight of water displaced, Archimedes' law would lose its validity. However, after 2200 years, this appears unlikely, so we accept this as a general principle of science.

From the above discussion it becomes apparent that science is the discovery of the reality of objects and is composed of human knowledge about the external world and the means to bring about systematic changes in it. True science is based on general principles and is above the knowledge of hypotheses, theories of and specific laws. This is in agreement with the ancient Greeks, who regarded knowledge as philosophy and divided it into logic and ethics. In the 16th century, Francis Bacon (1561–1626) divided knowledge into history, poetry, and philosophy. However, Auguste Comte (1798–1857), however, classified knowledge in the following stages: 1) knowledge of inanimate objects, 2) knowledge of animate objects, and 3) knowledge of objects above the animate. The last category alludes to supernatural or spiritual matters, which would fall in the field of religion.

What is religion?

The word "religion" is derived from the Latin "religio" which means to bind closely. According to the German scholar, Max

Mueller (1823–1900), "Religion is a spiritual power, which helps man to understand the infinite." In Schleiermacher's (1768–1834) view, "Religion is man's conscience which leads to complete obedience." Feuerbach (1804–1872), while defining religion, has stated "religion is man's desire to know God." In Kant's, (1724–1804) opinion, religion is "the recognition of our duties as Divine commands."

Morris Jastrow, in his book "The Study of Religion", defines religion in accordance with three principles.

1. man's belief in the existence of some Absolute Power,
2. man's effort to establish a relationship with that Power, and
3. the establishment of a link with that Power.

This faith in the Supreme Power is the basis at man's belief and the longing to establish a relationship with his Power nurtures man's spiritual feelings. He establishes a link with the Creator by prayer and meditation. Thus, according to Jastrow, "Religion may be defined as the natural belief in a Power beyond our control, upon whom we feel ourselves dependent." Fichte (1762–1814), the founder of German idealism observes "Religion is moral perfection and moral perfection is the essence of religion." Jean Marie Guyau (1854–1888) states "Religion is the goal of man and is indeed the relationship of man to the Universe in its Truth." Abul-Fadl, a distinguished Baha'i scholar says, "Religion is the code of rules and laws revealed from God through Divine Revelation to a Chosen One, which shape the social and spiritual order of the world."

There are probably hundreds of other definitions of religion, but the ones mentioned above are sufficient for our purpose.

Science and religion

From the previous statements, it becomes evident that science and religion are complementary. These two powerful forces help mankind progress, solve human problems, and expand man's physical, spiritual and intellectual faculties. Whereas science strengthens the mind, religion purifies the heart and soul. The first can make man physically comfortable and the other gives insight and opens spiritual doors. Science enables man to govern the forces of nature, while religion can free man from inordinate and selfish desires and of attachment to nature. Hence both are pathways to the truth. Science enables man to understand the external phenomenon of nature and religion enables him to understand some of the mysteries of the spiritual world.

Acting alone, neither science nor religion can develop man's faculties to the fullest. Neither can enter the other's territory. Every branch of science is confined to its own field, and does not deal with matters beyond its field of inquiry and research. For example, mathematics deals with quantities and calculations, mechanics with motion and forces, physics and chemistry with material properties, biology with living things, psychology with the mind, and sociology with human society. But none of these deal with the question of man's creation, the immortality of the soul, the Day of Judgment and man's spiritual origin and purpose. These questions are not subject to experimentation in the laboratory. Therefore, they are outside the domain of natural sci-

ences. This is why a materialistic philosophy alone cannot satisfy us with an explanation of these matters. Only religion, with a spiritual philosophy based upon history, can solve mankind's spiritual problems.

Since ancient times, man is tried to know the Creator and the mystery of Creation, and the fear of mortality has haunted him. The great philosophers have always struggled with questions such as "Who am I?" "Where do I come from and where am I going?" Is science able to supply an answer concerning the nature of man and the purpose of his existence? Those who give a positive answer to this question have overestimated science and failed to recognize its inherent limitations. These questions can be answered only by religion. Science has not entered into this realm, and is incapable of answering these types of questions. Science trespasses outside its borders when it claims that human existence is without purpose and asserts that this is a scientifically proven fact. This dismisses the human capacity for culture as the functioning of a useful mechanism in the struggle for existence. Viewed from this standpoint, man is an animal whose nature is to develop history, language, art and religion, while culture as a whole is simply a special manifestation of evolution. What a pitiful way to describe such phenomenon as Plato, Goethe, Shakespeare, Bach, Mozart, Michelangelo, Kant and the many other geniuses in human history, not counting the founders of the great religions! (1).

The need for both religion and science

Religion and science have coexisted since the beginning of human history. It is possible for them to be in harmony, because they always been with us. When one studies the main principles of both, one realizes that there is no disharmony between the two. According to Ernest Haeckel (1834–1919), "One of the foremost problems which man wants to solve is the question of the origin and reality of things. Both science and philosophy are inadequate to answer this question. The scope of science is limited to the study of natural phenomena and the discovery general laws whereas philosophy merely deals with theoretical ways and ignores the practical aspects."

"Man cannot live on intelligence alone. He also has sentiments and emotions. Science can defeat religion only when it satisfies man's emotional and spiritual needs better than religion. Therefore, science must make peace with religion and put aside enmity and antagonism."

Is material science alone enough for the development of civilization? A civilization which focuses purely on material and scientific advances could achieve great things. However, great scientific advances can be misused without the guidance of some moral values. For example, the development of advanced weapons systems without a corresponding development in political and moral systems for their control could lead to ruinous wars and destruction. Thus it can be argued that both science and religion are necessary for proper human development. The development of morals and virtues can help direct scientific research into areas which will be most valuable for all mankind. "The

civilization, so often vaunted by the learned exponents of arts and sciences, will, if allowed to overleap the bounds of moderation, bring great evil upon men. If carried to excess, civilization will prove as prolific a source of evil as it had been of goodness when kept within the restraints of moderation" (2).

Likewise religion alone is not sufficient for the development of civilization. Religion which does not concern itself with science or attempts to suppress science will degenerate into mere superstition. This approach also leads to fanaticism. The splitting of science and religion is an example of the tendency of the human mind to concentrate on one virtue to the exclusion of others. In extremes cases this leads to fanaticism and distortion of the truth and in all cases it leads to some degree of imbalance and inaccuracy.

Conflict Between Science and Religion

Many historians deplore the treatment of men of science and learning by the clergy. Some regard such persecutions as evidence of the conflict between science and religion and cite the following examples in support of their argument.

In the past, some religions have felt threatened by the discoveries of science. This has led to the suppression and persecution of scientists in some cases. This had a secondary effect of preventing the development of religion and civilization. After the invention of the printing press by Guttenberg, those in power felt a greater need to regulate that which was set before the public.

Copernicus was allowed his revolutionary heliocentric ideas, but only because he was a Canon of the Frombork Cathedral in Poland, and because his work was published at the end of his life in 1543. But others were not so fortunate. Galileo is an example. A year after the publication of his book, *Dialogue Concerning the Two Chief World Systems* in 1632, he was placed under house arrest and was required to withdraw his contention that the sun was the center of the solar system. It is interesting to note that none of these ideas represented a threat to Christian doctrine. Nor was it the intention of either of these authors to attack the Church. The suppression of these ideas, unfortunately, held back the advance of science and medicine. Thus, it can be argued that for civilization to advance, freedom of scientific investigation and publication is needed.

During the Spanish Inquisition, Thomas Torquemada (1420–1498) one of the brutal leaders, signed the death warrants of some 8000 people and many other were tortured on his orders. Historians of the Inquisition state that Thomas Torquemada and his accomplices put to death 12,220 people, branded another 6800 and tortured 97,000 people over a span of 18 years. Many of these were punished merely for having unconventional views.

Some scientists state that many parts of the Bible, such as the creation of the universe in six days, the manner of the creation of Adam and Eve and the animals, the belief in the darkening of the Sun and of the Moon, and the fall of the stars during the second coming of Christ are all opposed to the established truths of science. Scientists also complained that many priests have propagated superstitious ideas and beliefs contrary to sci-

ence. For example, St. Augustine, one of the Church fathers (354–430 AD) did not believe that man existed on the other side of the earth because when the children of Adam are referred to in the Bible there was no mention of it. Also if there were any men on the other side of the earth they would not be able to see the second coming of Christ. These beliefs have caused some scientists to turn away from religion.

Religion is not opposed to science

One can find many passages in religious literature indicating that religion is not opposed to science. For example Tertullinus (160–238 A.D) wrote a thesis in defense of Christianity in which he stated that was not opposed to science and knowledge. In the Koran, we find the following verse, “Are those who know and those who did not know alike?” (3). In the Islamic mystical work, the Mathnavi or Rumi we find the following, “Know real science is seeing the fire directly, Not mere talk, inferring the fire from the fifth fifth with his fifth smoke” (4). The Bhagvad Gita mentions the importance of knowledge and science as follows: “The conquerer of senses stands steadfast as if on a rock, he it is who is well contented with knowledge and science” (5). “To thee, the uncarping, verily, shall I declare this profoundest secret: Knowledge coupled with science, which, having known, thou shalt be freed from darkness” (6).

Also, apparent conflicts between religion and science can be explained by misinterpretation of the Bible and other scriptures. For example, the story of creation and Genesis was written at a time when people would not be with understand such words as and concepts and is evolution and house biology. The Big Bang theory would have meant nothing to people living thousands of years before Christ. When the story of creation is regarded as and a symbolic or allegorical tale, there is no conflict with established scientific facts. In the book of Genesis, the story of creation is told in terms understandable to the people of that time. One can reason that the author knew the truth, but wrote the story in terms understandable to the people at the time.

In the Baha’i Writings, we find the following: “Knowledge is as wings to man’s life, and a ladder for his ascent. Its acquisition is incumbent upon everyone. The knowledge of such sciences, however, should be acquired as can profit the peoples of the earth, and not those which begin with words and end with words. Great indeed is the claim of scientists and craftsmen on the peoples of the world... In truth, knowledge is a veritable treasure for man, and a source of glory, of bounty, of joy, of exaltation, of cheer and gladness unto him” (7) of “Religion and Science are inter-twined with each other and cannot be separated. These are the two wings with which humanity must fly. One wing is not enough. Every religion which does not concern itself with Science is mere tradition, and that is not the essential. Therefore science, education and civilization are most important necessities for the full religious life” (8).

Dostoevsky decisively rejected the claim made by religion to autonomy or to moral and political authority. He considered that reason and science “have, from the beginning of time, played

a secondary and subordinate part in the life of nations” and believed that “reason has never had the power to define good and evil, or even to distinguish between good and evil, even approximately; on the contrary, it has always mixed them up in a disgraceful and pitiful way; science has s only ever supplied answers which are as crude as fist blows” (9).

Pribilla aptly expresses is as follows: “Without God, or to morality is cut adrift: the last mornings are gone”, and goes on to ask: “Why should man shy away from the barriers which he or his kind have erected? Even culture, humanity and communal welfare pail into insignificance if, with without a ray of eternal hope, happiness and life has to be sacrificed for them” (10).

Religion and science are not opposed to one another; they are to be regarded not as alternatives, but as correlates. The scientist Max Planck, expressed it in this way, “The one does not exclude the other; rather they are complementary and mutually interacting. Man needs science as a tool of perception; he needs religion as a guide to action... Just as knowledge and ability cannot be replaced by philosophical speculation, so too the proper attitude to moral questions cannot be derived early from intellectual reasoning” (11). He emphasized that ethical questions lie quite outside the field of competence of science.

In the writings of ,Abd’ul-Baha, we find the following: “In brief, man through the possession of this ideal endowment of scientific investigation is the most noble product of creation, the governor of nature. He takes the sword from nature’s hand and uses it upon nature’s head. According to natural law, night is a period of darkness and obscurity, but man by utilizing the power of electricity, by wielding this electric sword overcomes the darkness and dispels the gloom. Man is superior to nature and makes nature do his bidding. Man is a sensitive being; nature is minus sensation. Man has memory and reason; nature lacks them. Man is nobler than nature. There are powers within him of which nature is devoid. It may be claimed that these powers are from nature itself and that man is a part of nature. In answer to this statement we will say that if nature is the whole and man is a part of that whole, how could it be possible for a part to possess qualities and virtues which are absent in the whole? Undoubtedly the part must be endowed with the same qualities and properties as the whole. For example, the hair is a part of the human anatomy. It cannot contain elements, which are not found in other parts of the body, for in all cases the component elements of the body are the same. Therefore it is manifest and evident that man, although in body a part of nature, nevertheless in spirit possesses a power transcending nature; for if he were simply a part of nature and limited to material laws he could possess only the things which nature embodies. God has conferred upon and added to man a distinctive power, the faculty of intellectual investigation into the secrets of creation, the acquisition of higher knowledge, the greatest virtue of which is scientific enlightenment.”

“This endowment is the most praiseworthy power of man, for through its employment and exercise, the betterment of the human race is accomplished, the development of the virtues of mankind is made possible and the spirit and mysteries of God become manifest. Therefore I am greatly pleased with my visit

to this university. Praise be to God! that this country abounds in such institutions of learning where the knowledge of sciences and arts may readily be acquired.”

“As material and physical sciences are taught here and are constantly unfolding in wider vistas of attainment, I am hopeful that spiritual development may also follow and keep pace with these outer advantages. As material knowledge is illuminating those within the walls of this great temple of learning, so also may the light of the spirit, the inner and divine light of the real philosophy glorify this institution. The most important principle of divine philosophy is the oneness of the world of humanity, the unity of mankind, the bond conjoining east and west, the tie of love which blends human hearts” (12). This passage indicates that man needs both material and spiritual development.

The Present Need for Harmony between Science and Religion

Countries that emphasize and use science in their educational systems and industry will clearly advance. “Consider carefully: all these highly varied phenomena, these concepts, this knowledge, these technical procedures and philosophical systems, these sciences, arts, industries and inventions – all are emanations of the human mind. Whatever people has ventured deeper into this shoreless sea, has come to excel the rest. The happiness and pride of a nation consist in this, that it should shine out like the sun in the high heaven of knowledge. Shall they who have knowledge and they who have it not, be treated alike?” (13). But it is clear that scientific education is not enough. In the present day, religious value-systems lie shattered. The pluralistic society is the reality of the present day. Everything pertaining to a religious worldview or to moral principles has become a personal and private matter. The only thing to which people mutually agree is that they do not agree.

In the 21st-century, it is clear that scientific advances are progressing rapidly. As stated by the Universal House of Justice in 1992 referring to the major wars of the last century, “In the wake of such horrendous disruptions, there have been unexampled advances in the realms of science, technology and social organization; a veritable explosion of knowledge; and an even more remarkable burgeoning in the awakening and rise of masses of humanity which were previously presumed to be dormant. These masses are claiming their rightful places within the community of nations which has greatly expanded. With the simultaneous development of communications at the speed of light and transportation at the speed of sound, the world has contracted into a mere neighbourhood in which people are instantly aware of each

other’s affairs and have immediate access to each other. And yet, even with such miraculous advances, with the emergence of international organizations, and with valiant attempts and brilliant successes at international cooperation, nations are at woeful odds with one another, people are convulsed by economic upheavals, races feel more alienated than before and are filled with mistrust, humiliation and fear” (14). Today we are faced with the need to use modern science and technological knowledge to resolve long-standing problems in poverty, disease and significant social problems, such as extremes of wealth and poverty. It is paradoxical that some of these rapid advances in science have also led to greater economic inequalities in different parts of the world. Only the recognition that science and religion in their broadest terms, are indispensable partners will allow mankind to resolve these serious problems.

The Indian religious philosopher, Sarvapalli Radhakrishnan, describes the situation and our alternatives as follows: “The contemporary situation is pregnant with great possibilities, immense dangers or immeasurable rewards. It may be the end or a new beginning. The human race may end by destroying itself or its spiritual vitality may revive and a new age may dawn when this earth will become a real home for humanity” (15).

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Received November 15, 2003.

Accepted November 27, 2003.