Science and Religion

Introduction

I will talk about the basis for seeing conflict between science and religion and demonstrate that there is really no conflict. I will show the relevance of the Baha'i Revelation to science and religion.

Importance of Conflict between Science and Religion

Religion satisfies our need for self transcendence, to be part of a greater purpose. Science addresses our need to know, understand, and control the world around us. However in our society we see some leaders claiming that science or religion is going too far. We see religion being used to stifle human development and we see both science and religion being used to promote hatred and conflict between groups of people. Are the findings of science and the teachings of religion really incompatible?

Clearly we do both all the time. We are part of family, community, nation, profession, religion or church, and other associations. We also try to control the environment around us (more or less successfully) so that we can eat and drink, sleep safely, not be eaten by wild animals, not be killed by extreme cold or heat or drowned by floods. In some parts of our lives we transcend and associate with greater entities. In other parts of our lives we control or influence our environment.

A child shows complete dependence as an infant. The child shows too much independence as an adolescent as he learns to exert control over his surroundings As adults we try for a balance between dependence and control. The same can be said of human society over time as we have progressed from complete dependence on nature to a high degree of control over nature. Now we need to find that balance between dependence and control as a society.

Causes of Conflict between Science and Religion

Religion is knowledge and experience of God or the Infinite. This is personal, mystical, emotional, moral, and immaterial.

Science is knowledge of the material world. It is actually an ever changing structure of theoretical and factual statements about the material world. These statements are interrelated and are falsifiable (more on that later). As these statements are modified (by the scientific method) they lead to ever more objective knowledge about their subjects.

You may think that religion (or mysticism or spiritualism) and science are addressing completely different areas of life. In a sense that is true but not completely so. Both are addressing different aspects of the same underlying reality. One addresses the spiritual and immaterial aspect of reality, while the other addresses the physical and material aspect.

Conflict comes when each tries to address the other aspect of reality. Well known historical examples include -- the Roman Catholic hierarchy telling Galileo to deny that his telescope showed objects circling around Mars because they held that everything had to circle the Earth. -- and Soviet officials saying that they had disproved religion and God because the first cosmonauts had not

found the pearly gates and throne of God when they went into space and rotated the earth. We have creationists attacking the theories of evolution and geology and proclaiming that the earth has only existed a few 1000 years. We have psychologists denying the existence of the spiritual because they cannot measure it.

We need a little understanding of the nature of science and scientific method in order to resolve conflicts between science and religion.

Science and Scientific Method

Science is based on statements about the physical world. Science developed over many centuries. That development became more rapid and systematic with agreement among scientists on using scientific method. Here is a link to an article on scientific method:

http://en.wikipedia.org/wiki/Scientific_method

One key aspect of scientific method is that statements must be falsifiable to be part of science. Lets look at some statements. "There are 7 people in this room." This can easily be tested. We just count the people (once we agree on what is a people, not the cats or the cockroaches). Yes there are 7 so its true. Oops the children just came so it is falsified - untrue.

"When we die our souls go to heaven." This is also a factual statement but it is not falsifiable. There is no physical or material way to disprove it as we have no observable evidence.

"$e = mc^2$." This is a well know scientific statement. It is potentially falsifiable. Measure the speed of light (c). Convert some amount of matter to energy and measure the resultant energy.

We frequently see people apparently speaking as scientists and presenting us with statements. An example might be "I have proven that pale skin and blue eyes are superior to ..." but this value judgement is not potentially falsifiable as we cannot measure superiority - it is a spiritual (moral) quality. So if the speaker is posing as a scientist, then it is a form of lie. Either the person is ignorant of scientific method (actually not all that uncommon among practicing scientists) or knows that it is not a scientific statement.

Scientific method can be applied to a wide range of seemingly unlikely subjects such as subatomic physics (particles that we can not possibly see), the geologic history of the earth, inter-galactic space, imaginary mathematical systems, linguistics, psychology, and comparative religious study. It is only necessary to restrict oneself to falsifiable statements when applying scientific method.

To summarize, scientific method is organized knowledge. It is based on conscious experience - we do things and see what happens (experiments) or we watch things and see what happens (astronomy). It is also based on conscious reason. We use logic and mathematics to find the interrelationships between scientific statements. We use intuition to guess how things might work and formulate a hypothesis or theory. We then use experience and reason to try to disprove (falsify) our idea. As ideas are disproven, new ideas can be developed about how things work. Ideas that cannot be disproven (but are potentially falsifiable such as "$e = mc^2$) are provisionally accepted into the body of scientific knowledge. Sometimes theories are shown to be subsets of greater theories.

Issac Newton's gravitational laws are a good example - they work on the level of everyday sized things but become inaccurate at the subatomic particle scale and at extremely high speeds.

The body of scientific knowledge is constantly changing. Sometimes the changes are very large as when relativity replaced Newtonian physics. Mostly the changes are obscure as when new understanding of the sex relations of red spider mites is discovered (although that information allowed better control of some agricultural pests so it was not unimportant). All scientific knowledge is relative, i.e. we are XX% sure about it. We may be 99.999...% sure that Newton's gravitational laws will work as expected on the surface of the earth at normal temperatures but nothing in science is 100%. This is in contrast to religious knowledge or faith which is often either 0% or 100%, i.e. we either believe or we do not.

Resolving the Conflict between Science and Religion

Science only applies to things in the physical world. Mostly it applies to things involving matter and time although it is hard to characterize some sub-atomic particles as matter or existing in time. Some people feel that science removes the mystery from creation. Lets look at that!

Matter is composed of a few particles (molecules and atoms). Atoms are composed of a few sub-atomic particles. The sub-atomic particles (quarks, charms, bosuns, ...) are hypothetical, impercievable, and unimaginable. We can only know about them through the theories that we are not able to falsify. The sub-atomic particles are somewhat stable forms of energy (or possibly probability distributions of energy in time). Energy is a mystery, poorly defined in terms of physics and mathematics. This is the same mystery that awed primitive humans and it does the same to us only now we know in much greater detail how unknown and mysterious it is.

The 2nd law of thermodynamics tells us that energy will always be dissipated (to some degree). Thus the universe is (as a whole) moving to a more disordered state. Life operates by increasing order locally. The sun is burning (converting matter to energy and dispersing it). Life on earth captures some of that energy (through photosynthesis and now through solar cells) and organizes it - increasing energy concentration and order locally.

Random events do not increase order. If a tornado shuffles a pile of bricks, the result will not be a complex structure such as a house or the layout of a sudoku but will be a scattering of bricks. Life increases order and complexity - that seems to be inherent in its structure. Physically this is unlikely as it goes against the 2nd law of thermodynamics.

So life has developed to produce more and more complex structures. The fossil record shows life developing from relatively simple (but still enormously complex) single celled organisms to increasingly complex organisms and finally culminating in self-aware humans with the ability to purposely manipulate and control our environment and even to speculate about it.

Now if the goal of life was just to reproduce DNA (survival of the species), then all that complexity was not necessary. It is not at all clear that large complex animals are better able to reproduce DNA than single celled organisms. So the process of evolution from simpler to more complex life forms

seems unlikely. The human brain is the most complex physical structure that we know about so perhaps it is the most unlikely.

Science (and scientific method) does not address why life came to be on earth and then proceeded to become increasingly complex. If a scientist tries to answer this question, he/she is not being scientific. Science talks about how this happened but not why. Of course a scientist is free to speculate about non-scientific subjects, it should just not be presented as science.

Religion tells us that the existence of life leading to human consciousness is due to a plan by a Creator or an Unknowable Essence underlying or in some way beyond the universe. Life has developed to seek a relationship with this Essence. This Essence communicates with us through the medium of revealed religions and so guides us toward fulfilling the purpose of our existence.

This leads us to a possible resolution of the conflict between science and religion. We must recognize that both science and religion have their roles in human culture and each must respect the role of the other. Baha'u'llah (the founder of the Baha'i Faith) and his son Abdul-Baha have clearly stated that the development of human civilization is not possible without an active role for both science and religion.

The fourth principle declares that religion must be in conformity to science and reason. If a religion does not agree with the postulates of science nor accord with the regulations of reason it is a bundle of superstitions; a phantasm of the brain. Science and religion are realities, and if that religion to which we adhere be a reality it must needs conform to the fundamental reality of all things.

Baha'u'llah, Baha'i Scriptures p 569

Thirdly: Bahá'u'lláh taught, that Religion is the chief foundation of Love and Unity and the cause of Oneness. If a religion become the cause of hatred and disharmony, it would be better that it should not exist. To be without such a religion is better than to be with it.

Fourthly: 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.

Abdul-Baha, Abdul-Baha in London pp 28-29

Now, all questions of morality contained in the spiritual, immutable law of every religion are logically right. If religion were contrary to logical reason then it would cease to be a religion and be merely a tradition. Religion and science are the two wings upon which man's intelligence can soar into the heights, with which the human soul can progress. It is not possible to fly with one wing alone! Should a man try to fly with the wing of religion alone he would quickly fall into the quagmire of superstition, whilst on the other

hand, with the wing of science alone he would also make no progress, but fall into the despairing slough of materialism.

Abdul-Baha, Paris Talks p 143.

So science must be guided by religion and religion must conform to the findings of science in the physical world. In our individual lives we must follow this same principle.

Science and Religion

The knowledge of God comes through religion - through the teachings of the founders of the religions or revelations. This is how God communicates with us since purely human knowledge such as what we attain through science cannot tell us about God.

If we look back through recorded history, we see that every thousand or so years a great religion appears based on teachings revealed by a special person who founded that religion.

- Each religion is founded by an outstanding historical figure
- Each religion has a similar pattern of development, (1) a nucleus of followers are gathered, (2) certain teachings and principles are imparted to those followers by the Founder, (3) the Founder claims to be inspired or influenced by God (or an unknowable essence beyond ordinary existence), (4) the Founder claims to be a Manifestation or Exponent of God, (5) a book is prepared from the Founder's teachings, (6) the government and religious authorities of the time move against the Founder and His followers and try to destroy or suppress them, and (7) a great civilization eventually arises based on these teachings.

There is reasonable historical evidence for the existence of these individuals considering the times and places where they lived and taught. Thus we have very good evidence of the existence of Muhammad, some evidence regarding Jesus (an obscure carpenter in a remote province of the Roman empire), and some evidence for Buddha, Moses, and Zoaraster.

Are Their teachings really from a supernatural source (such as God)? There can be no scientific determination of this as it is not something that science or scientific method can address. To judge this we can look at the facts about Their lives, the records we have of the teachings that They imparted, the principles They established and implications of those principles, and finally Their effect on the human societies where they taught.

Scientists have often been reluctant to look objectively at religions. The Founders are not available to study. The followers of each religion have claimed that their religion is perfect, has an exclusive ownership of spiritual truth, and that all other religions are wrong or imperfect. Many of the religions are filled with superstitions and some are actively hostile to science.

The Baha'i Faith is a modern religion. The Founder (Baha'u'llah) lived in the 19th century and His life is well documented. Original copies of His writings are stored in the Baha'i archives building in Haifa, Israel and are available for scholars to study. The Baha'i Faith has a positive and open attitude to scientific method and objective analysis. Because of its teachings on science and religion, most Baha'is have a very positive attitude toward science and scientific inquiry. The Baha'i Faith

makes to claim to exclusive truth, rather it states categorically that all the great religions are of divine origin and based on truth. It also states that its followers have an imperfect grasp of truth and are striving to improve their knowledge and understanding.

Religious Knowledge and Scientific Knowledge

As we have seen above scientific knowledge is always relative with a degree of uncertainty. We can talk about several types of religious knowledge. First there is the knowledge of God which is absolute and complete by definition since God is All-Knowing. Second there is the knowledge of the Messengers of God. Baha'u'llah tells us that all the Messengers (Manifestation is the Baha'i term or Founders of the great religions) have the same station and the same knowledge. They also can know what ever they need to know. Thirdly there is the knowledge of ordinary humans about God, religious topics, or spirituality - in this I include all the modifications and interpretations that religious leaders have promulgated after the departure of a religion's Founder.

Human knowledge of religion is imperfect and changing. This is immediately apparent since we have many religious sects in the world, with a large portion of them claiming exclusive access to truth and then disagreeing on fundamental points. Obviously they can't all be right. Furthermore the teachings of all the religious groups have changed over the centuries of their existence.

Can science be applied to religious knowledge? Obviously not to the first category (the knowledge of God) but to a degree to the second and third categories. The original teachings of the Messengers can be collected and verified to some degree. For very old religions, there will be a great degree of uncertainty about the accuracy of what we can find. For religions that are less than about 3000 years old we can be increasingly sure of the original teachings. Thus we have a fair idea of what Jesus actually taught, and some idea of the teachings of Buddha and Zoaraster but less clear information about Moses, Abraham, and the teachers of Hinduism. We know very little about teachers of the Americas, central and southern Africa, northern Asia, and Australia. Our knowledge of the lives and teachings of Muhammad, The Bab, and Baha'u'llah are increasingly detailed and accurate.

We can compare these teachings and look for commonalities among the religions. This is part of the discipline or science of Comparative Religious Studies. Studying the beliefs, behaviors, and structures of religious communities over time is another aspect of this discipline or field of knowledge. Baha'u'llah directly suggests that such studies can assist us in identifying religious beliefs that are not part of the core teachings of the Messengers. These additions to the core teachings tend to vary between religions and are often at the root of conflicts between religious communities. The core teachings are the same between religions and provide a basis for unity and fellowship between different religious communities.