

# Emergence, Enchantment, Entanglement and Excellence of the Cosmos

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## The Emerging Universe

The message of the Revelation of Bahá'u'lláh is that the universe is God's creation and every created thing in this world is leading to God.

*Every created thing in the whole universe is but a door leading into His knowledge, a sign of His sovereignty, a revelation of His names, a symbol of His majesty, a token of His power, a means of admittance into His straight Path.... (GWB 160)*

This paper is exploring how science, studying the universe, is little by little discovering this vision of Bahá'u'lláh. This development of science is in its beginning and certainly not unchallenged, nevertheless, this trend ought to be followed up by those who have a knowledge of the *Most Sublime Vision* of Bahá'u'lláh. Every scholarly engaged Bahá'í can recognize what is said about the pervasiveness and generality of this vision.

*So pervasive and general is this revelation that nothing whatsoever in the whole universe can be discovered that doth not reflect His splendor. (GWB 184)*

First some new discoveries in Neuroscience and Neurocardiology will be presented and following that the interpretations of Quantum Mechanics, as presented today in numerous books will be sorted out from this perspective. The emergence of a new understanding of the universe is becoming a popular topic and the horizon of this development cannot be defined, as of yet.

That means that we can ask questions today in order to understand what the new view of the world means to Bahá'í theology, but we must be ready to revise them over time, as the scientific knowledge and the understanding of the Revelation is

constantly evolving in a progressive process. We can only see what is available today and have to develop our understanding in a progressive evolution, which will abolish some ideas, will change others, and will find new answers to the question of the harmony between religion and science in the future. If this approach is used in keeping the Covenant of the Faith, it will not endanger, but enhance our understanding of the Cause of Bahá'u'lláh.

The following two sections are rather brief and provisionally, yet they are inserted here to demonstrate that many aspects of modern science correspond and sometimes support concepts and thoughts presented in the Bahá'í Scriptures. That does not necessarily mean that these findings prove anything about the Bahá'í Cause, but it makes the message of Bahá'u'lláh less open to attacks from science, as the Christian message was attacked by a materialistic and mechanistic scientific world view. The Christian message, as presented in the different churches, was at the time in clear opposition to scientific progress.

It is a personal experience of this writer as to how much more difficult it is to believe in and defend the Christian theology, which requires a philosophical separation between religion and science, than to attempt the same with the Bahá'í Faith, which has as one of its principles the harmony of science and religion. That was why Teilhard de Chardin had so many difficulties with the church, yet was having such a great impact on religious thought, because he tried to avoid this separation and used his scientific expertise to write his book *The Phenomenon of Man* (1959). In it he attempts to explain that the Christian message, if understood progressively, is not in contradiction with the modern idea of evolution, but can be translated into these new conceptualizations of progression and unification. Teilhard was and is often misunderstood and misused, nevertheless his influence is still remarkable.

## Neurocardiology

The common medical understanding of the heart as a mechanical pump was in drastic contradiction to the historical understanding of the heart as the center and locus of personal self. Writing about the Education of the Heart Thomas Taaffe stated that this old and traditional understanding is based on the heart in a metaphorical sense only, implying that there is no reality to the metaphor of the heart as expressing the inmost self and our true identity. Science has recently discovered that

the old understanding of the heart as the center of emotions and health is more realistic and can be researched scientifically.

The new science of neurocardiology attributes to the heart the ability to have memory, to learn, to make decisions and communicate with the brain, yet there is no consciousness in these functions of the heart. According to McCraty et al.:

The heart is a sensory organ and an information encoding and processing center with an extensive intrinsic nervous system, enabling it to learn, remember and make functional decision independent of the cranial brain.

While these neurological pathways do not directly explain the above mentioned structure of the process, they might give us an indication that this spiritual process has its physiological correspondence in the human heart, nervous system, and brain. It has also been established that the heart is the first to perceive input from the perception through the senses. As a matter of fact, it could be proven experimentally that changes in sensual input are detected by the heart seconds before the random computer program is started that will select the presentation to the senses.

Of greatest significance here is our major finding, namely, the electrophysiological evidence that the heart is directly involved in the processing of information about a future emotional stimulus seconds before the body actually experiences the stimulus." ... "The heart appears to play a direct role in the perception of future events.

This fact of intuition of future events can only be explained scientifically if we consider the physical reality as seen in quantum mechanics. This will be explained below in the section dealing with physics and quantum mechanics. The heart, which is a key concept in the Bahá'í Writings, and its physical and spiritual capabilities, is a topic that certainly needs further research. Here a short anticipatory comment must suffice.

What is most important in the context of this paper is the fact that the heart is a sophisticated information processing center.

An understanding of the complex anatomy and function of the heart's nervous system contributes an additional dimension to the newly emerging view of the heart as a sophisticated information processing center, functioning not only in concert with the brain but also independent of

it. Further exploration of the part, that neurocardiological interactions play in sustaining healthy functioning may permit a more comprehensive understanding of the heart's multidimensional role in facilitating successful adaptation to the challenges of daily living.

Furthermore, it must be emphasized that, according to these new findings about the heart, the influence the heart has into the physiological, ethical and social well being of man needs to be further investigated and compared with the Bahá'í statements about the theological importance of the heart.

During states of psycho-physiological coherence, bodily systems function with a high degree of synchronization, efficiency, and harmony and the body's natural regenerative processes appear to be facilitated. Psychologically, this mode is associated with improved cognitive performance, increased emotional stability, and enhanced psychosocial function and the quality of life. Additionally, many people report experiencing a notable reduction in inner mental dialogue along with feelings of increased peace, self-security, and sustained positive emotions after practicing maintaining this mode even for short periods such as a few days or weeks.

To appreciate the following Hidden Word of Bahá'u'lláh about the heart becomes much more reasonable when it is placed in the context of the new scientific findings about the sensory capacity and ability of the heart to "learn, remember and make functional decision," so that we can talk about the knowledge and wisdom of the heart from a scientific point of view.

*Quaff from the tongue of the merciful the stream of divine mystery, and behold from the dayspring of divine utterance the unveiled splendor of the daystar of wisdom. Sow the seeds of My divine wisdom in the pure soil of the heart, and water them with the waters of certitude, that the hyacinths of knowledge and wisdom may spring up fresh and green from the holy city of the heart. (HW P78)*

## Neuroscience

Besides the unifying power of the heart, which has been described above, some ideas about the human mind or intellect will be added here.

The picture of Michelangelo in the Sistine Chapel is taken from a book with the title *The Humanizing Brain, Where Religion and Neuroscience Meet*. It is here reproduced in order to show how in the artist's imagination of a truth can be expressed that will take centuries to be fully understood.

As can be clearly seen below, the cloud around God the Creator has the shape of the human brain. Michelangelo was familiar with this shape and most likely selected it to show that man was created in the image of God, and the brain (or the mind, the human consciousness) is the most obvious element in man that can show this similarity in the image of God. It seems that "Michelangelo meant to portray that what God is giving to Adam is the intellect, and thus man is able to plan the best and highest and to try all things received." The authors continue to say: "Since we are created in the image and likeness of God, we have the ability to think and imagine and decide - yes, and the ability to distort and destroy."

This ability of the heart was described by 'Abdu'l-Bahá in similar words:

*He has bestowed upon him the power of intellect so that through the attribute of reason, when fortified by the Holy Spirit, he may penetrate and discover ideal realities and become informed of the mysteries of the world of significances.* (PUP 303)

In the above mentioned book it is stated that the human mind, as recently studied in neuroscience, presents a picture of the nature of God as perceived in traditional religion, a speculation that might go sometimes too far in speaking about God; but it indicates the way the human brain and mind is part of this world, and that consciousness is related to the material aspect of this universe. Much more about this ability of the human mind has recently been said in the interpretation of the findings of quantum mechanics and has been developed by many other writers, especially in the context of quantum mechanics and its implications.

## Unity in Quantum Mechanics

It is commonly accepted that the findings of quantum mechanics have consequences that reach into metaphysics and ontology. "It should be clear by now that one of the fundamental problems thrown up by quantum mechanics in general, and the measuring problem, in particular, is the nature

of reality – what is it that ‘really exists’ in the universe?”

The different interpretations of these connections fill books; how far these applications can go was described by E. H. Walker. At a conference at “New Visions of Reality”, sponsored by the Department of Physics of the University of Berkeley, and in the *Journal of Time, Space and Knowledge*, Evan Harris Walker stated: “What we have been doing here is laying the foundations for a religion of the twenty first century,” and he reports that he was astounded “how quickly the other speakers agreed with this assessment of a meeting in which neither God nor religion had figured as the primary topic.”

Most books on this topic try to insert these new ideas into Buddhist or Hindu thinking, into some New Age cosmology, or into the mystic traditions. The value and meaning of these diverse interpretations can be questioned. But these different interpretations make one thing clear, i.e., we cannot understand the new findings of quantum mechanics unless we place them in a philosophical and/or theological conceptual frame.

When writers attempt to conceptualize the new findings of Quantum Mechanics using old religious or philosophical conceptualizations, they frequently make the logical failure Ken Wilber calls the Pre/Trans Fallacy. In short, they think that an early developmental state can be compared to a more recent and more differentiated one, because often the undifferentiated magic, mythic or pre-rational notion looks for the superficial observer similar to a later differentiated and higher developed concept.

It is therefore easy to understand that Hindu, Buddhist, Biblical and other early conceptualization are used to explain the findings of Quantum Mechanics. The words of 'Abdu'l-Bahá about the *new age* and all the *new discoveries in science* indicate *that the old ways, the old concepts, are gone and forgotten* (SWAB 253). This is the truth of all Revelations and it is clearly stated in the Bible (Mark 2:22) in the form of the parable of the wineskins, translated as bottles in the King James translation.

And no man putteth new wine into old bottles: else the new wine doth burst the bottles, and the wine is spilled, and the bottles will be marred: but new wine must be put into new bottles.

Therefore, only those interpretations, which can be understood within the Vision of Bahá'u'lláh were used by this writer. And that is deliberate and required by the concept of

progressive theology.

In introducing this topic it must be noted that nothing fits the following description of 'Abdu'l-Bahá better than the findings of quantum mechanics:

*All the sciences and arts we now enjoy and utilize were once mysteries, and according to the mandates of nature should have remained hidden and latent, but the human intellect has broken through the laws surrounding them and discovered the underlying realities. The mind of man has taken these mysteries out of the plane of invisibility and brought them into the plane of the known and visible.*  
(PUP 351)

The science of quantum mechanics certainly is a breakthrough and a discovery of underlying realities, taken by the “*mind of man [from] the plane of invisibility ... into the plane of the known and visible*” through the science of the smallest particles of matter. Events observed in experiments at the microscopic level of subatomic particles are experimentally transferred to macroscopic effects through the instruments of observation, which transfer the effect of these microscopic events to the scientific macroscopic apparatus, such as a Geiger counter. In this way “*the mind of man has taken these mysteries out of the plane of invisibility and brought them into the plane of the known and visible.*”

It needs to be considered that 'Abdu'l-Bahá said these words about the scientific discoveries of His days, such as electricity, x-rays, radio and other new inventions of the time; nevertheless, these words fit equally well to the newest and most innovative findings of modern science.

Quantum mechanics is introduced here for two reasons. One is the change quantum mechanics has made to the cosmology and the presuppositions of the mechanistic milieu of modern science - away from a materialistic and reductionistic viewpoint toward an understanding, which is more open to spiritual issues. The other is that some of these findings and of their philosophical interpretations are in surprising harmony with the philosophical and theological implications of the Bahá'í Writings, as will be shown below.

This later point will be portrayed here with the understanding that the surprising development of quantum mechanics out of the physics of the smallest particles has not happened just “naturally” but rather follows this statement of Bahá'u'lláh:

*All the wondrous achievements ye now witness are the direct consequences of the Revelation of this Name. In the days to come, ye will, verily, behold things of which ye have never heard before. (GWB 141)*

Of all the achievements of science and technology, especially in the area of the natural sciences and physics, the findings of quantum mechanics, developed during the last century, and their interpretations can certainly best be described “*as wondrous achievement, ... of which ye have never heard before.*” Two things must be noted about this statement. Bahá’u’lláh predicts these wondrous achievements in general, and He claims that they are a direct consequence of His revelation of the name “*the Fashioner*” as one of the names of God presented in His Writings.

Additionally, quantum mechanics is not only such an achievement, it further stimulates explanations, at least in some of its interpretations, which make it easier to understand many of the statements of Bahá’u’lláh about the renewal of the whole world through His Revelation. Even in the Christian context, it explains how to understand the words about Christ, by Whom everything was made, as stated in the prologue of the Gospel of John (1:1-3):

*In the beginning was the Word, and the Word was with God, and the Word was God. The same was in the beginning with God. All things were made by him; and without him was not anything made that was made.*

In describing quantum mechanics there are several possible approaches. While even simple textbooks mention that the findings of this science have repercussions in the fields of cosmology, of philosophy and metaphysics, there are a number of scientific and popular books, mostly written by physicists, which develop these inferences in the different fields of thinking.

In this paper we will take some new concepts of quantum mechanics and develop their implication towards the Bahá’í Revelation. The different reference books are chosen as samples of how this new understanding can be presented; the last book of E. H. Walker was chosen because its findings are the most interesting for this writer and are most in harmony with the topic of this paper.

Quantum mechanics will here be presented under the topics of Enchantment through Spiritualization, Emergence of the

New Creation, Entanglement in Unity, and Excellence of the Human Mind and Consciousness. These concepts and findings will be compared with ideas presented in the Bahá'í Writings.

## Enchantment through Spirituality

Ervin Laszlo in his book *Science and the Reenchantment of the Cosmos, The Rise of the Integral Vision of Reality* describes the changes quantum mechanics has made to the understanding of the cosmos:

The current finding of the universe's wholeness is the fruit of sustained investigation, based on observation and tested by experiment. It provides an entirely different image of the world than the mechanistic, materialistic and fragmented image we were taught in school. A cosmos that is connected, coherent, and whole recalls an ancient notion that was present in the tradition of every civilization; it is an enchanted cosmos. (2)

In this book Laszlo connects the findings of quantum mechanics with the Hindu concept of the Akashi Field and develops an Integral vision of Reality in the sense of a "first meeting-ground between science and spirituality." (p. 93) As with many of the new books using quantum mechanics as a philosophical springboard to the area of spirituality, it is not necessary to follow all of their conclusions while evaluating their contributions.

In this case it is the connection with Hindu philosophy, which we cannot follow except in the sense of a unity of all religions. Other issues elucidated are valuable, i.e., the enchantment of the cosmos compared to the traditional and "objective" concept of classical scientific and deterministic cosmology, which can be described as a worldview devoid of spirituality, value and meaning.

The meaning of the word enchantment here is obviously not "bewitchment" but "fascination." Both meanings are used in the translation of the Bahá'í Writings, and they are clearly distinguished. Here a verse is presented from a prayer of Bahá'u'lláh, in which He compares the ordeal of the martyrs of the Faith with the Divine presence as Enchanter of the worlds in a question.

*The bodies of Thy chosen ones lie quivering on distant sands: Where is the ocean of Thy presence, O Enchanter of*

*the worlds?* (BP 212)

In order to understand this comparison, one must accept the Vision of Bahá'u'lláh, which includes the following belief expressed in another prayer:

*Had not every tribulation been made the bearer of Thy wisdom, and every ordeal the vehicle of Thy providence, no one would have dared oppose us, though the powers of earth and heaven were to be leagued against us. (PM 14)*

The apparent contradiction of gruesome martyrdom with an enchanting world, created by a loving God, who is called the Enchanter, can only be solved when we accept the Vision that all ordeals are signs of God's providence and wisdom. This is, according to Bahá'u'lláh, as quoted by Shoghi Effendi, the newness of the whole world and the fruit of His Revelation which He compares with the "loftiest trees" and its most "enchanting blossoms," which are the most "heavenly blessings."

"The whole earth," writes Bahá'u'lláh, "is now in a state of pregnancy. The day is approaching when it will have yielded its noblest fruits, when from it will have sprung forth the loftiest trees, the most enchanting blossoms, the most heavenly blessings. Immeasurably exalted is the breeze that wafteth from the garment of thy Lord, the Glorified! For lo, it hath breathed its fragrance and made all things new! Well is it with them that comprehend." (WOB 169)

Consequently, it could be said that quantum mechanics opens up the possibility of understanding the world as the fascinating Creation of God, which Bahá'u'lláh reveals to us in His new and Most Sublime Vision.

## Emergence of the New Creation

The Nobel Prize laureate in physics, Robert B. Laughlin, developed the concept of emergence in his book *A different Universe, Reinventing physics from the bottom down*. He considers this change as so important that he formulates it as a new age, stating

I think a good case can be made that science has now moved from an Age of Reductionism to an Age of Emergence, a time when the search for ultimate causes of things shifts from the behavior of parts to the behavior of the collective. (208)

In other words, reality is defined by a view that takes the whole into consideration, and this whole is a whole that integrates its parts; it is an integrated whole, as described in the section on philosophy of the previous paper “Unity of Revelation / Revelation of Unity.” The concept of emergence as presented by Laughlin includes a different understanding of reality in which the truth or certainty of a statement is not caused by its reduction to the smallest parts but by recognizing its organization on a specific level. This principle is accepted by modern biology as well and has been described psychologically and philosophically by Ken Wilber in his concept of the Holon. Holons are at the same time parts of higher Holons and at the same time have lower Holons as their parts.

According to Laughlin, reality is not an aggregate of elements amassed by the physical deterministic principles of cause and effects, but it is a product in a hierarchal order established by collective organizations on the different levels of reality. This is his understanding of the consequences of quantum mechanics in understanding the reality of this world.

The concept of emergence implies that the world is not organized from the bottom up, i.e., in a reductionistic and atomistic sense, but that the bottom, i.e., the atoms or smallest particles, indicate that the world is organized in a meaningful and hierarchical way, which cannot be explained in any reductionistic manner:

It is not uncommon for a committed reductionist to dismiss the evidence of the fundamental nature of collective principles on the grounds that there actually is a deductive path from the microscopic that explains the reproducibility of these experiments. This is incorrect. (ibid. 19)

This emergence and collective structure of reality originates in the fact of Creation, as Bahá'u'lláh revealed:

*Nothing short of His all-encompassing grace, His all-pervading mercy, could have possibly achieved it. How could it, otherwise, have been possible for sheer nothingness to have acquired by itself the worthiness and capacity to emerge from its state of non-existence into the realm of being?* (GWB, XXVII, 64-65)

This statement can certainly be understood in the sense that all emergence of unity at any level of reality is caused by God, by His “all-encompassing grace” and His “all-pervading mercy,”

i.e., by the creative power of God “the Unifier.” Therefore we are admonished to

*...strive ye to knit together the hearts of men, in His Name, the Unifier, the All-Knowing, the All-Wise. (GWB 8)*

Shoghi Effendi applies this principle of unification to the social and political unity of the world. He points out that unity has been misconceived in the past as uniformity, clearly referring to the classical view of the reality as particularistic and mechanistic, where unity can only be understood as forced uniformity, or to the fact that unity could be just a magical or utopian concept and not the reality of unity in diversity in the Bahá’í sense.

*The principle of unification which it advocates and with which it stands identified they have misconceived as a shallow attempt at uniformity, its repeated assertions of the reality of supernatural agencies they have condemned as a vain belief in magic, and the glory of its idealism they have rejected as mere utopia. (WOB 73)*

He further explains this unity of society and of religion as evolutionary or progressive and gradual, exemplifying it in the different forms of social unity during the history of humanity.

Just as the organic evolution of mankind has been slow and gradual, and involved successively the unification of the family, the tribe, the city-state, and the nation, so has the light vouchsafed by the Revelation of God, at various stages in the evolution of religion, and reflected in the successive Dispensations of the past, been slow and progressive. Indeed the measure of Divine Revelation, in every age, has been adapted to, and commensurate with, the degree of social progress achieved in that age by a constantly evolving humanity. (PDC 118)

The emergence of humanity and the gradual development of society and civilization in history are described by Shoghi Effendi as an internal process, requiring new virtues and moral standards, and higher capacities of humankind. He describes this newness as a process that leads humanity from the state of adolescence towards maturity.

Humanity has emerged from its former state of limitation and preliminary training. Man must now become imbued with new virtues and powers, new moral standards, new

capacities. New bounties, perfect bestowals, are awaiting and already descending upon him. The gifts and blessings of the period of youth, although timely and sufficient during the adolescence of mankind, are now incapable of meeting the requirements of its maturity. (WOB 165)

## Entanglement in Unity

Giancarlo Ghirardi, the chair of the Department of Theoretical Physics at the University of Trieste, described the concept of entanglement in his book, *Sneaking a Look at God's Cards, Unraveling the Mysteries of Quantum Mechanics*. This book gives a historical description of quantum mechanics without omitting the rather difficult conceptualizations necessary to understand its development.

In quantum mechanics, entanglement is developed from the findings that

Practically every interaction [of particles] brings with it a loss of identity of the systems that are interacting. But since in the long run everything in practice interacts with everything, what emerges is a vision of the universe as an 'unbroken whole,' an undivided unity whose parts no longer have any identity. The theory implies a fundamentally holistic vision of the universe. (190)

The analysis of this process of entanglement

brings an extension of the holistic view of reality even at the macroscopic level and in practice for all the physical systems of the universe. It was not by chance that David Bohm and Basil Hitley entitled their recent book *The Undivided Universe*. (191)

This process has been developed under the name of entanglement:

The original German expression used by Schrödinger, *Verschränkung*, has become known in the scientific literature as "entanglement. (165)

Erwin Schrödinger, born near Vienna, Austria, (1887-1961) formulated the importance of this concept:

I consider [Entanglement or "Verschränkung"] not as one, but as the characteristic trait of Quantum Mechanics, the one that enforces its entire departure from classical lines

of thought.

Ghirardi concludes

The analysis [of entanglement] brings an extension of the holistic view of reality, even at the macroscopic level and in practice for all the physical systems of the universe.

In other words all parts of the universe are entangled, interwoven or intertwined with each other; the universe is a whole and is organized as mentioned above in emerging units on all levels of existence.

The physical unity of the universe and its emerging hierarchical order is best described in the Bahá'í Writings by 'Abdu'l-Bahá (sentences separated by this writer):

*The rational proof of this is that the atoms of the material elements are transferable from one form of existence to another, from one degree and kingdom to another, lower or higher.*

*For example, an atom of the soil or dust of earth may traverse the kingdoms from mineral to man by successive incorporations into the bodies of the organisms of those kingdoms.*

*At one time it enters into the formation of the mineral or rock; it is then absorbed by the vegetable kingdom and becomes a constituent of the body and fibre of a tree; again it is appropriated by the animal, and at a still later period is found in the body of man.*

*Throughout these degrees of its traversing the kingdoms from one form of phenomenal being to another, it retains its atomic existence and is never annihilated nor relegated to nonexistence. (PUP 87-88)*

This description of the way of an atom from mineral to human is a clear description of the entanglement of all physical elements as well as of the emergence of organization on different levels of reality, which levels are here called kingdoms. In a letter, 'Abdu'l-Bahá added to this description that unity is a product of attraction and love:

*O honoured lady! Look about thee at the world: here unity, mutual attraction, gathering together, engenders life, but disunity and inharmony spell death.*

*"When thou dost consider all phenomena, thou wilt see*

*that every created thing hath come into being through the mingling of many elements, and once this collectivity of elements is dissolved, and this harmony of components is dissevered, the life form is wiped out. (SWA 3)*

Again, the created reality is considered in its structure as it emerges in the integral combination of its elements on the different levels of existence. It is important to realize that 'Abdu'l-Bahá stresses the unification of the elements through mutual attraction as the dynamic principle of this process. This mutual attraction is a consequence of God's love for the world, according to 'Abdu'l-Bahá. The harmony of their collective structure is stressed here, and how disharmony and disunity creates death or the end of their reality.

Concluding this section it can be summarized in this statement of Bahá'u'lláh - that the unity of the world of being is the concealed power underlying creation. This sentence introduces the Covenant of Bahá'u'lláh appointing 'Abdu'l-Bahá as His successor, but it could as well be understood in a wider sense as the *mighty unifying force* holding together not only the covenant but also and fundamentally the *world of being*:

*O ye My Branches! A mighty force, a consummate power lieth concealed in the world of being. Fix your gaze upon it and upon its unifying influence, and not upon the differences which appear from it. (TB 221)*

## Excellence of the Human Mind and Consciousness

Here in this section the most daring conclusions from the findings of quantum mechanics are presented. They have been questioned and doubted, depending on the bias of their critics, but have not been disproved. Quantum mechanics depends widely on conceptualization, and making conclusions from the findings in the subatomic level to the phenomenal world of human reality is necessary in order to understand it. How far these conclusions can go and remain still scientific and true is hard to evaluate. In this case the closeness of these conclusions to statements of the Revelation of Bahá'u'lláh presents an added proof, at least for those thinkers who accept this Revelation. The fact that, at least in some ways, these findings are in harmony with certain passages from the Christian Revelation as well, give them an added aspect of truth for the followers of Christianity.

Bahá'u'lláh explains the power of the human mind in the

following statement:

*Say: Spirit, mind, soul, and the powers of sight and hearing are but one single reality which hath manifold expressions owing to the diversity of its instruments. As thou dost observe, man's power to comprehend, move, speak, hear, and see all derive from this sign of his Lord within him. It is single in its essence, yet manifold through the diversity of its instruments.*

*Reflect upon this subject that thou mayest comprehend the true meaning of what hath been intended, find thyself independent of the sayings of the people, and be of them that are well assured. In like manner, when this sign of God turneth towards the brain, the head, and such means, the powers of the mind and the soul are manifested. Thy Lord, verily, is potent to do whatsoever He pleaseth. (SLH 154)*

The spirit, the mind and/or the soul are a single reality - are, as Bahá'u'lláh reveals “*single in its essence, yet manifold through the diversity of its instruments.*” In other words, the singleness of the mind cannot be studied except through the difference and the diversity of its physical instruments in the material body. Furthermore, Bahá'u'lláh says “*man's power to comprehend, move, speak, hear, and see all derive from this sign of his Lord within him,*” which means that the power of the mind is exerted through the senses and the human ability to move, speak and hear. The mind is described here as the manifestation of the “*sign of his Lord within*”, but it can only be seen in its effect in the material world. It is important that the mind is effective in the physical world, which usually is understood by the concept of free will, and that the mind, or the spiritual aspect of man, as it is expressed in the human mind, can therefore be studied only in its effects on the material world, when it is expressed in speech, in movement and/or when it communicates with other minds.

This will be described below in the comments on a book about the Quantum Mind by E. H Walker, *The Physics of Consciousness, the Quantum Mind and the Meaning of Life*. Walker calls the cause of these changes the Quantum Mind, and attributes to this mind powers that have been described before only in theological writings, describing God or God's Word in its universal and fundamental power.

How did E. H. Walker do this? What follows is a

concentrated and simplified summary of this book. As a physicist he said he is interested in reality, in everything that is real. And, consciousness is a fact of reality; we all have it and know it. How can a physicist approach it? The same way any other new phenomena in physics were recognized in the past. For example, when electricity was recognized as a reality that was unknown before, physicists developed methods and approaches that connected this new reality with known things and developed a new aspect of physics.

Walker tries the same approach with consciousness. First he defines it as not material and not mechanical, later as non-local and non-time dependent, all of which we know from knowing our mind. This definition actually can be said to define spirituality, or as the Bahá'í Writings say, the Unseen, the Hidden, Inwardness, contrasting it with the Seen, the Manifest, Outwardness, or in the above quoted passage, "*sign of his Lord within.*"

Then Walker says that we all know this consciousness of humankind acts on the physical reality of this world; i.e., the human consciousness has changed the world much more than the mighty dinosaurs. Bahá'u'lláh said something very similar in the quote above, i.e., that we know of the spiritual, the mind or soul only through its "*expressions owing to the diversity of its instruments.*"

Walker studies what we know about consciousness and how it acts on physical reality. He develops, in typical scientific manner for example, the field of consciousness, describing its speed of change as  $1/25$  of a second (if the pictures or the movie goes slower, we see them separate; if they are faster we blend them together, because consciousness does it that way). Then he describes the dimension of consciousness, explaining the size of the visual field during that fraction of second and brings in a certain number of "bits of information" that are transferred through the two million nerves from the eye to the brain. He knows the speed these nerves fire, and he can, in this way, mathematically describe the field of consciousness. He brings many other numbers together that define consciousness from neurophysiologic research, and develops his view of consciousness from the point of view as it affects physical reality.

And then he asks: how does this consciousness, this non material mind, make the brain do things with the body, with matter, like move, etc., which obviously is where the rubber

meets the road, where consciousness (and he appropriately includes here free will) affects physical reality.

To the contrary, the classical understanding in science was expressed in psychology by the behaviorist Skinner, who tried to solve the problem by negating mind and will, and claiming that our brain, which he calls an unknown black box, is exclusively determined by conditioning from the outside. This conditioning he then studies physically and materially, since it fits into the deterministic and materialistic cause and effect thinking of science. During my studies in psychology this understanding was in vogue, and I had a seminar on this rather strange and reductionistic approach, which was proven by Skinner in his experiments with the pigeon (and his young daughter) in the famous “Skinner box.”

Contrary to this, Walker would claim that all “scientific” denial of consciousness, of the mind or its reduction to neurophysiologic facts, is not really required by science but only by the materialistic and reductionistic bias of science, which developed from Newton’s mechanistic cosmology. He discusses several of these attempts, for example the work of the Churchlands, among others.

What is quite interesting is that Walker’s conclusions about the interaction between the spiritual (consciousness) and the physical is derived from some findings of quantum mechanics, and yet it fit surprisingly well in the description of the mind by Bahá’u’lláh, Who stated that *“Spirit, mind, soul, and the powers of sight and hearing are but one single reality which hath manifold expressions owing to the diversity of its instruments.”* (SLH 154) In other words, what Bahá’u’lláh reveals about the mind, the soul or the spirit is the fact that it is a single reality, therefore not physically located or describable, but this reality is expressed in the diversity of its instruments, which are the sensual and physical characteristics of the human brain and body.

According to Walker, the human mind or consciousness can be measured and physically described by its effects on the brain’s nervous synapses and consequently on the physical brain and nervous system that directs all bodily actions. According to Bahá’u’lláh, the human mind, soul or spirit finds its expression in its bodily instruments, which is saying almost the same from the other aspect of the relationship.

Seen from the world of physics we have to explain how this

spiritual aspect of man, his consciousness and mind, causes change in the material world. This Walker attempts to do. Seen from a spiritual point of view, we need to look at this question by asking how this spiritual element in man expresses itself in the physical world. Bahá'u'lláh states it expresses itself through its instruments, i.e. through the bodily senses and movements.

The astounding fact in this comparison is the new science of quantum mechanics, which according to Walker gives an explanation of this possibility of the spiritual affecting the material in quantum events in the synapses of the nervous system in the brain. These quantum effects, which are not deterministically defined by cause and effect, can be influenced by the observer, i.e., by consciousness of the human mind.

Therefore, according to Walker, the spiritual mind can influence matter at the level of the undetermined quantum processes in the brain's synapses that are small enough to allow quantum effects to happen. Walker describes this process in detail with the physics of quantum mechanics. In the context of this description he explains a number of functions of the mind, like sleep, ability to influence matter in rare cases, and why the power of the mind is usually restricted, as common sense experience tells us. Another not yet considered question is the effect of the little brain of the heart (as described above), which does not have consciousness. Walker does not consider this, but it needs to be included in this equation, a rather new and difficult task that this writer will develop in a later paper.

In the following we will take some concluding statements by Walker and compare them with statements from the Bahá'í Writings, drawing inferences from one to the other. The reader is referred to the book of Walker to see how he came to these conclusions, because, to describe these details here would breach the format of this paper.

When talking about the history of the big bang theory Walker states:

Consciousness may also exist somewhere without being part of either a living body or a data-processing system.  
(256)

This indicates that consciousness is transpersonal and not confined to the human person. Interestingly enough even Aristotle had said that the mind (nous) is coming from the outside. Then Walker relates the mind to quantum mechanics when, in summarizing, he said:

We have found that in their essential nature, quantum fluctuations are the stuff of consciousness and will.

And now, here, we find that this mind stuff was the beginning point of the universe – the stuff that out of a formless void created everything that was created. (334)

This is what Walker calls the Quantum Mind, which he describes as being the beginning of the universe and the underlying power of its existence.

In his chapter about “A God for Tomorrow,” Walker claims that

Everyone worships reality. Each person looks about him, listens a moment – listens as long as life will let him pause to listen – and then he falls down and worships whatever it is that looks like this is what it is all about. (372)

As a conclusion of his research into the reality of consciousness Walker then concludes:

There must exist a supreme Consciousness out of which everything else springs. (334)

Then he describes this reality (the sentence is here broken up to better compare its structure):

We discover that in the beginning, there was the Quantum Mind,

- a first cause
- itself time-independent
- and non-local
- that created space time and matter/energy.

In this quote from Walker, he seems to say something rather unexpected. He speaks about the Quantum Mind (which is capitalized by Walker), and gives Him attributes that do not fit to anybody else than the Manifestations.

First cause relates to the Big Bang theory, as Walker explains it, because the origin of all that came to exist is Consciousness.

This consciousness of the Quantum Mind is time-independent, another conclusion from quantum mechanics, and it is also non-local which was proven experimentally; one electron can influence its pair even if they are separated by wide distances. If one is observed as a wave or as particle, the other will be the same, and there is no possibility of physical

communication in space and time between these particles or waves. This unity of all particles and of the whole cosmos is called entanglement as described above. There are other non-local relationships in quantum mechanics, and Walker describes how the brain's consciousness functions on that basis.

In the following these three attributes given to the Quantum Mind (i.e., being time-independent, non-local, and the first cause of everything) are compared to how Bahá'u'lláh describe the Manifestations, albeit in different words but with a similar meaning, at least as I read it today.

The issue of First cause is expressed in this statement by Bahá'u'lláh:

*Nay, all else besides these Manifestations, live by the operation of Their Will, and move and have their being through the outpourings of Their grace. (GWB 179)*

The fact of the Manifestations being time-independent can be compared to the statement from the *Kitáb-i-Şqán* about the Manifestations:

*Even as in the 'Beginning that hath no beginnings' the term 'last' is truly applicable unto Him who is the Educator of the visible and of the invisible, in like manner, are the terms 'first' and 'last' applicable unto His Manifestations. They are at the same time the Exponents of both the 'first' and the 'last.'* (KI 163)

About the issue of non-locality, that plays an important role in quantum mechanics and is an attribute of the Quantum Mind in the description of Walker. The following can be said in comparison to the Revelation of Bahá'u'lláh about the Manifestations:

*Whilst walking amongst mortals, they soar in the heaven of the divine presence. Without feet they tread the path of the spirit, and without wings they rise unto the exalted heights of divine unity. With every fleeting breath they cover the immensity of space and at every moment traverse the kingdoms of the visible and the invisible. (KI 66)*

The Quantum Mind described by Walker above is the first cause and the creator of time and energy. This compares with the statement of Bahá'u'lláh about the Manifestations:

*Thus it is that through the rise of these Luminaries of God*

*the world is made new, the waters of everlasting life stream forth, the billows of loving-kindness surge, the clouds of grace are gathered, and the breeze of bounty bloweth upon all created things. (KI 33)*

Closer and more basic to Walker's understanding of religion is probably the quote from the Gospel of John (1:1-3), repeated here in the same sense of Christ, the Word, being the creator of everything:

*In the beginning was the Word, and the Word was with God, and the Word was God. The same was in the beginning with God. All things were made by him; and without him was not any thing made that was made.*

We need to mention here again that there is much more to know in the future about this surprising correlation of modern physics with the Bahá'í Writings, and progress of theology in understanding the Revelation of Bahá'u'lláh will give new and deeper meaning to all of these Revelations. It must be emphasized that this is what we can see today, contemplating the *wondrous achievement* of modern physics, cosmology and ontology. The harmony between science and religion is constituted by this progress of both, of science and of theology, coming closer as humanity progresses.

## Conclusions

In the book of Revelation (21:5) the returning Christ is on the Throne of the heavenly Jerusalem, which is described as the New Heaven and the New Earth, and it is said about Him:

And he that sat upon the throne said, Behold, I make all things new.

It is the thesis of this paper that this prophesy has been verified in the Revelation of Bahá'u'lláh, Who is regarded by Bahá'ís as the return of Christ and of all previous Manifestations or Luminaries.

*Thus it is that through the rise of these Luminaries of God the world is made new, the waters of everlasting life stream forth, the billows of loving-kindness surge, the clouds of grace are gathered, and the breeze of bounty bloweth upon all created things. (KI 33)*

How do we understand this? Bahá'u'lláh clearly explains what is understood with New Heaven and New Earth when He said:

*On the contrary, by the term “earth” is meant the earth of understanding and knowledge, and by “heavens” the heavens of divine Revelation. Reflect thou, how, in one hand, He hath, by His mighty grasp, turned the earth of knowledge and understanding, previously unfolded, into a mere handful, and, on the other, spread out a new and highly exalted earth in the hearts of men, thus causing the freshest and loveliest blossoms, and the mightiest and loftiest trees to spring forth from the illumined bosom of man. (KI 47-48)*

In this paper this earth of understanding and knowledge was followed up, especially as it is new and has changed the whole conception of this world *“in the hearts of men.”*

Concluding, it has to be kept in mind that all the ideas presented in this paper are provisional and related to the present level of understanding science, as well as, the Revelation of Bahá'u'lláh, with the understanding that both the processes of science and the comprehension of the Revelation are progressive. So, any conclusion presented here needs to be revised over time. The major conclusion of this paper can be summarized in the following sentence:

Metaphysics and physics of consciousness can facilitate the understanding of the Bahá'í Revelation, if compared to the sacred Writings of the Faith.

The absolute newness of the Revelation of Bahá'u'lláh and how it requires a new understanding of this world was expressed by 'Abdu'l-Bahá

*Until the old ways, the old concepts, are gone and forgotten, this world of being will find no peace. (SWAB 253)*

In a more prophetic and mystic pronouncement, this was stated by Bahá'u'lláh in a Hidden Word ... *“that with a clear vision, a pure heart and an attentive ear thou mayest enter the court of My holiness”*

*Blind thine eyes, that thou mayest behold My beauty; stop thine ears, that thou mayest hearken unto the sweet melody of My voice; empty thyself of all learning, that thou mayest partake of My knowledge; and sanctify thyself from riches, that thou mayest obtain a lasting share from the ocean of My eternal wealth. Blind thine eyes, that*

*is, to all save My beauty; stop thine ears to all save My word; empty thyself of all learning save the knowledge of Me; that with a clear vision, a pure heart and an attentive ear thou mayest enter the court of My holiness. (PHW 11)*