IQBAL'S IDEALIST CRITIQUE OF HAWKING'S MATERIALIST CONCEPT OF TIME

Asad Shahzad

ABSTRACT:

Hawking's materialist and sectional concept of time has been assessed by Iqbal's concept of real time. A fundamental agreement between the approaches of Iqbal and Hawking has also been shown. It has been argued that Hawking has not succeeded to develop a concept of time based on "the whole of human knowledge", i.e. on the unified application of physics and philosophy. Iqbalian assessment reveals that Hawking's approach is not holistic and integrated but sectional and segmented and therefore inadequate. So, Hawking's psychological arrow of time is essentially physical time rather than psychological time. Hawking's claim that psychological arrow of time is determined by thermodynamic arrow has been analyzed and it has been maintained that Hawking's claim is unconvincing and is rooted in the essentially sectional character of his approach to the problem of time.

Introduction:

The secret of time is so entangled and at the same time so captivating that even though the philosophers, scientists and theologians have very thoroughly and meticulously scrutinized and explored the nature of time for some 2,500 years– that is since the time of the Greek theoretical scientists and philosophers to the scientists and philosophers of our time– but they have not yet fully succeeded in giving satisfactory and categorical answers to all questions and mysteries relating the reality of time. However with the "passage" of time the reality of time has become far more comprehensible than before. The problem of time is both physical and philosophical; and it has been analyzed and investigated by the geniuses of both physics and philosophy. This article considers some very significant aspects of Iqbal and

Hawking's concepts of time. It basically gives Iqbalian assessment of Hawking's psychological arrow of time.

Hawking's Concept of Time:

Hawking has striven to unite the philosophical and scientific concepts of time in his work. It is in this spirit that he has not restricted his study of time to its physical aspect only; he has also investigated the psychological aspect of time which in fact is the core of the reality of time. He theorizes that, "There are at least three different arrows of time", namely, thermodynamic arrow of time, psychological arrow of time and cosmological arrow of time. These three arrows imply the "movement" of time in three particular directions. Direction of these arrows is related to the expansion and contraction of the universe, which is central in his conception of time. The psychological arrow of time, "is the direction in which we feel time passes, the direction in which we remember the past but not the future", the thermodynamic arrow is, "the direction of time in which disorder or entropy increases", and the cosmological arrow is, "the direction of time in which the universe is expanding rather than contracting" (IX. 153). The thermodynamic and cosmological arrows of time are essentially aspects of physical time, whereas the psychological arrow of time is rooted in human consciousness.

Iqbal's Concept of Time:

Iqbal asserts that physical time[180] (or clock time) is unreal time. He holds the opinion that psychological time[181]is real time. For Iqbal, the secret of time

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[180] Physical time, which is serial in nature, is that time which is "formulated" by the movement of the earth and revolutions of the sun and other celestial bodies; this is objective time and is noted with hourglass and clocks and calendars. It is also called mathematical time, or serial time, or clock time or, public time, or quantitative time, or homogeneous time, or false time or dead time. Some scientists

[181]Psychological time, which is real time, is related to the consciousness. It is qualitative and heterogeneous; it is indivisible as it cannot be divided into present, past and future. Unlike physical time it is subjective time. For instance, consider a person, fond of tourism, enjoying his vacation with his best friend somewhere in the lap of overflowing natural beauty, and another one imprisoned for one month in a jail. Psychological time for these two persons will not be homogeneous. Each one will have his own subjective time. The subjectivity of time is also manifested when we compare our conception of time in dreams to our

does not lie in stars, moons, and galaxies; it lies within human consciousness. He does not reject the usefulness of serial time as he says, "a purely objective point of view is …. partially helpful in our understanding of the nature of time" (III. 76). But, to unravel the mystery of time we have to explore the inner recesses and various stages of our consciousness. He maintains, "The right course is a careful psychological analysis of our conscious experience which alone reveals the true nature of time" (III. 76). He very eloquently declares in Secrets of the Self:

Our Time which has neither beginning nor end,

Blossoms from the flower-bed of our mind.

He says in Gabriel's Wing:

Our days are illusion, our nights are a dream;

A current of time in which there is neither day nor night.

In the almanac of love, besides the time that passes,

Are myriad other ages, untold and unnamed.

Two Points of Agreement between Iqbal and Hawking:

We can discover at least two main agreements between the approaches of Iqbal and Hawking. Both Iqbal and Hawking are found to have unanimity on the significance of holistic interpretation of reality. Let us see a text from Iqbal:

> But we must not forget that what is called science is not a single systematic view of Reality. It is a mass of sectional views of Reality ___

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conception of time in waking state. Sometimes what we dream seems to last for several hours while in terms of physical time it lasted for no more than a few minutes. In Iqbal's verse we find, for instance, a comparison between the speed of the psychological time of a slave and that of a free man:

fragments of a total experience which do not seem to fit together. Natural Science deals with matter, with life and with mind; but the moment you ask the question how matter, life and mind are mutually related, you begin to see the sectional character of the various sciences that deal with them and the inability of these sciences, taken singly, to furnish a complete answer to your question. In fact the various natural sciences are like so many vultures falling on the dead body of Nature, and each running away with a piece of its flesh (II. 41-42).

A passage from Hawking's *A Brief History of Time* reads:

In the eighteenth century, philosophers considered the whole of human knowledge, including science, to be their field and discussed questions such as: Did the universe have a beginning? However, in the nineteenth and twentieth centuries, science became too technical and mathematical for the philosophers, or anyone else except a few specialists. Philosophers reduced the scope of there inquiries so much that Wittgenstein, the most famous philosopher of this century, said, "The sole remaining task for philosophy is the analysis of language." What a comedown from the great tradition of philosophy from Aristotle to Kant!" (XI. 185).

One can raise a question that the history of philosophy has produced philosophers of science even in twentieth century like Karl Popper, for instance, (whose name Hawking mentions on page 11 of his book), but has the history of natural science,

A free man's breath can match a subject's year,

How slowly moves the time of serfs, is clear!

Contains the whole eternity a free person's breath,

But slaves are every instant prone to sudden death. (The Rod of the Moses)

Since Newton, produced any scientist who has in-depth knowledge of philosophy and theology from Aristotle to Wittgenstein, on the basis of

which who can explain that how are "matter, life and mind mutually related"? However, we see a major agreement in Iqbal and Hawking; Iqbal wants "a single systematic view of reality" and Hawking admires those philosophers who explore "the whole of human knowledge." In harmony with the above-mentioned statement, Hawking says, "If everything in the universe depends on everything else in a fundamental way, it might be impossible to get close to a full solution by investigating parts of the problem in isolation" (p. 12). In formulating his concept of time, Hawking himself has tried to consider the whole of human knowledge. In his, *A Brief History of Time*, he considers, for example, Kant and Augustine's approaches to the problem of time. One can notice the impact of Zeno's paradox of motion in Hawking's analogy of arrow for the forward and backward movement of time. Thus we see that, he has not restricted his exploration of time to cosmological and thermodynamic arrows of time; he has also studied psychological arrow of time.

The second agreement between Iqbal and Hawking is that they both believe that psychological time is the time which is related to feeling. Pure time or real time, according to Iqbal is, "time as felt and not as thought and calculated" (II. 49). The psychological arrow of time, according to Hawking is, "the direction in which we feel time passes……." (IX. 153).

Sectional Character of Hawking's Approach:

Hawking hugely appreciates those who, in search of reality, considered the whole of human knowledge but he himself does not seem to be very successful to study Reality as one organic whole. Since Newton, scientists have created a gulf between mind and matter by the sectional study of nature. Hawking seems to have keenly noticed this bifurcation of mind and matter and has striven to bridge this gulf; but in spite of his efforts to study Reality as one organic whole, the sectional character of his approach starts emerging. We shall see that Hawking's psychological arrow of time does not exist independently but is basically an effect of thermodynamic arrow of time. He does want the unity of mind and matter but he sees, so to speak, the shades of matter in mind also. In order to comprehend psychological arrow of time, he does not delve into the psychological states of human mind; instead, he says, "I shall therefore discuss the psychological arrow of time for

computers. I think it reasonable to assume that the arrow for computers is the same as that for humans" (IX. 155). It appears that by likening the psychological arrow of time for humans with the psychological arrow of time for computers he, in fact, reduces the real psychological arrow to mechanical arrow of time. On the one hand, Hawking says that the psychological arrow of time, "is the direction in which we feel time passes……." while on the other hand, he equates the psychological arrow of time for human with the psychological arrow of time for computers. If psychological arrow of time, as Hawking says, "is the direction in which we feel time passes……..", then computers should also be able to feel time passes or otherwise, I think, one cannot reasonably say, "I think it reasonable to assume that the arrow for computers is the same as that for humans." Hawking's time in fact is not time as psychologically and intuitively felt but rather time as mechanically and electronically remembered; this time can be remembered even by inanimate objects like computers and digital clocks that are totally devoid of consciousness. But the felt time which is the real time is organically united with consciousness and cannot be felt by computers or clocks.

The sectional character of Hawking's approach is revealed more when we investigate what he basically means by the arrow of time. He says, "an arrow of time, something that distinguishes the past from the future, giving a direction to time" (IX. 153). It means that Hawking implies that both physical time and psychological time are divisible in past, present and future, or at least in past and future, while in real time (that is psychological time) past is not distinguished from future; they are both organically and inextricably interpenetrated. Hawking's very concept of arrow of time as something that distinguishes the past from future is objectionable. In fact, no time can legitimately be called psychological time if it is based on the division of present, past and future in three different times. To elucidate this point I am referring only to Ouspensky[182], Augustine and Iqbal. Ouspensky declares,

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[182] **Peter D. Ouspensky (1878–1947)** was a major contributor to Twentieth century ideas. He anticipated many of the key questions in philosophy, psychology and religion that have driven and informed us throughout the century. His extensive travels, personal studies, and a quest for the miraculous resulted in the publication of his brilliant *Tertium Organum* in 1912. Ouspensky's *Tertium Organum*, written in 1911, was published in New York in 1922 and within a few years became a best-seller in America and made him a world-wide reputation. Intended to supplement the *Organon* of Aristotle and the *Novum Organum* of Francis Bacon,

"The past and the future cannot *not exist*, because if they do not exist then neither does the present exist. Unquestionably they exist *somewhere* together, but we do not see them" (IV. 42). He adds, "The past and the future are equally undetermined, equally exist in all their possibilities, and equally exist simultaneously with the present" (IV. 45). According to St. Augustine, the conception of past and present is not possible unless they are conceived in present. He identifies past with memory and future with expectation; memory and expectation are both present facts, so the past can not be distinguished from future. Augustine conceives, as Bertrand Russell has mentioned, three times, but they are essentially one: "a present of things past, a present of things present and a present of things future" (p. 352). They are one in present. And let us now refer to Iqbal. Iqbal holds the opinion that, "Pure time, then, as revealed by a deeper analysis of our conscious experience, is not a string of separate, reversible instants; it is an organic whole in which the past is not left behind, but is moving along with, and operating in, the present. And the future is given to it not as lying before, yet to be traversed; it is given only in the sense that it is present in its nature as an open possibility" (II. 49). And the force that unites future with present and past is purpose. Iqbal gives a very cogent description of the role of purposes in the organic interpenetration of past, present and future. He says, "Purposes colour not only our present states of consciousness, but also reveal its future direction. In fact, they constitute the forward push of our life, and thus in a way anticipate and influence the states that are yet to be. To be determined by an end is to be determined by what ought to be. Thus past and future both operate in the present state of consciousness and the future is not wholly undetermined……" (II. 53). To Iqbal, pure time, which belongs to a higher state of consciousness, is non-successional change, while physical time is, "a measure of non-successional change" (III. 77). In the light of what we have discussed it appears that Hawking's time is not psychological time; it appears that he has presented physicalim in the guise of psychological arrow. Thus, Hawking's approach does not appear to be holistic. It is essentially scientific and sectional that presents psychological time as mechanical time.

Tertium Organum is based on the author's personal experiments in changing consciousness; it proposes a new level of thought about the fundamental questions of human existence and a way to liberate man's thinking from it's habitual patterns.

Inadequacy of Hawking's Essentially Scientific Approach:

Hawking's mechanical psychology cannot be the equivalent of the free creative consciousness that human beings possess. Hawking says, "the psychological arrow is determined by the thermodynamic arrow" (IX. 153). This presentation of independent creative mind in the form of dependant mechanical matter seems to be the continuation of Newtonian bifurcation of mind and matter. Hawking's approach at the core, is in line with that of Newton's and Darwin's, in interpreting matter and mind in the mechanical terms and therefore does not fulfill the conditions of holism. Let us see how Iqbal sees this approach; he says, "The discoveries of Newton in the sphere of matter and those of Darwin in the sphere of Natural History reveal a mechanism. All problems, it was believed, were really the problems of physics. Energy and atoms, with the properties self-existing in them, could explain everything including life, thought, will, and feeling. The concept of mechanism - a purely physical concept– claimed to be the all-embracing explanation of Nature" (II. 41). By declaring that psychological arrow is determined by the thermodynamic arrow, Hawking reduces the free creative consciousness to mechanical and artificial consciousness which is entirely dependant on the increasing or decreasing entropy of the universe. Hawking's approach implies that human beings are no more than a very sophisticated form of automata; this approach does not offer deep insight into the reality of psychological time. To him, the consciousness can only accidentally grasp the reality of the physical world while the physical world determines the shape of the consciousness. Our point here is that mind (psychological arrow) is not determined by matter (thermodynamic arrow). Iqbal pointed out, "To describe it (consciousness) as an epiphenomenon of the processes of matter is to deny it as an independent activity, and to deny it as an independent activity is to deny the validity of all knowledge which is only a systematized expression of consciousness" (II. 40-41). All the investigations and conclusions of Hawking himself are the outcome of his creative consciousness. If he believes that the working of his consciousness is dependant on the operation of expanding or contracting external world on his mind then what is the foundation of the validity of his conclusions? In Hawking's psychological arrow of time, man is 'bound by the fetters of time'; in this concept of time every psychological activity becomes mechanical activity. To exist in Iqbal's real time is totally different; as he says, "To exist

in real time is not to be bound by the fetters of serial time, but to create it from moment to moment and to be absolutely free and original in creation.

In fact all free activity is creative activity" (II. 50). Hawking's essentially mechanistic approach denies the spontaneity of life. Iqbal's objection to Hawking's essentially scientific approach is more lucidly expressed in the following words:

> Creation is opposed to repetition which is a characteristic of mechanical action. That is why it is impossible to explain the creative activity of life in terms of mechanism. Science seeks to establish uniformities of experience, i.e., the laws of mechanical repetition. Life with its intense feeling of spontaneity constitutes a centre of indetermination, and thus falls outside the domain of necessity. Hence science cannot comprehend life (III. 50)

Henri Bergson[183] is also one of the philosophers of time that find scientific approach inadequate to grasp the reality as a whole. He believes that mechanistic interpretation of time renders time unreal and dead. Let us see what Bergson[1] says about the insufficiency of mechanistic approach:

> The mechanistic explanations, we said, hold good for the systems that our thought artificially detaches from the whole. But of the whole itself and of the systems which, within this whole, seem to take after it, we cannot admit *a priori* that they are mechanically explicable, for then time would be useless, and even unreal. The essence of mechanical explanation, in fact, is to regard the future and the past as calculable functions of the present, and thus to claim that *all* is given (p. 187).

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[183] Henri Bergson (1859-1941): French philosopher who was awarded the Nobel Prize for Literature in 1927. Bergson argued that the intuition is deeper than the intellect. His *Matter and Memory* (1896) and *Creative Evolution* (1907) attempted to integrate the findings of biological science with a theory of consciousness. Bergson's work was considered the main challenge to the mechanistic view of nature. While such French thinkers as Merleau-Ponty, Sartre, and Lévinas explicitly acknowledged his influence on their thought, it is generally agreed that it was Gilles Deleuze's 1966 *Bergsonism* that marked the reawakening of a wide and growing interest in Bergson's work. Therefore, due to Deleuze's realization, a kind of revitalization of Bergsonism has been going on since around 1990.

Thus, Hawking's concept of time is sectional and mechanical, which, contrary to true psychological interpretation, almost entirely avoids the subjectivity and heterogeneity of psychological time. In Hawking's approach, time becomes a function of the space, whereas Iqbal thinks that time is like a boundless ocean in which the space is no more than a fish; and it is the human consciousness that is "spacious" enough to contain the sea of time. Iqbal declares in his verse:

This world of ours, stretched out infinitely,

Is drowned like a fish in the sea of Time.

But look into your mind, and you will see

The sea of Time contained in a small cup.

(Message from the East)

Conclusion:

In Hawking's concept of time we find a comprehensive effort to formulate a holistic theory of time, but we discover that the spirit of his theory of time is scientific and sectional. His equation of the psychological arrow of time for humans to that for computers and then his hypothesis that psychological arrow is determined by thermodynamic arrow show the neglect of psychological analysis which is necessary to comprehend the reality of psychological time. In contrast to the time presented by the philosophers of time who have studied the psychological aspect of time, Hawking's psychological time is embedded in matter. Iqbal's concept of time reveals the sectional character of Hawking's approach that, in fact, is based on physicalism that presents the creative psychological arrow as mechanical arrow of time. To grasp the reality of psychological time what is needed is the analysis of dynamics of mind and not the subtle transformation of mind into matter.

DR. SIR MUHAMMAD IQBAL (1877—1938)[184]

Iqbal is a pre-eminent poet and philosopher of the East. He is known for his philosophy of the self. Like his philosophy of the self, his philosophy of time has also found eloquent expression in both his poetry and prose. Maulana Jelal-ud-Din Rumi was a great source of inspiration for him.

In Europe, he acquired three degrees from three prestigious institutes in three years. He got his B.A from Cambridge in June 1907, PhD from Munich University in November 1907, and was admitted to the bar in London in July 1908. At Cambridge, he met with the philosophers John McTaggart and Alfred North Whitehead and attended their lectures on Western thought. His first book of poetry was the Persian *Asrar-i-Khudi* (1915). Nicholson's English translation of the work, Secrets of the Self (1920) introduced Iqbal in the West as a major literary and philosophical writer. Reviewing the English version, Herbert Read compared Iqbal to the famous American poet Walt Whitman (1819—92).

He was awarded knighthood at Lahore in 1923. His *Javed Namah* is a reply to Dante's Divine Comedy, while *Payam-i-Mashriq* was written in response to Goethe's West-östlicher Divan. His major philosophical work, The Reconstruction of Religious Thought in Islam (1934) originally consisted of six lectures delivered in several Indian cities; a seventh lecture, written at the request of London's Aristotelian Society, was later added. Many consider it the most important philosophical work of modern Islam. He was invited to give the Rhodes lectures in 1934, but ill health prevented him from traveling to England.

In 1931 and 1932, as a representative of India's Muslims, Iqbal participated in the London Round Table Conferences held to decide India's political future. He visited Paris in 1932 and met French philosopher Henri Bergson. Bergson was astonished to hear his remark on the Islamic concept of time. In 1933 he met Mussolini in Rome after Mussolini expressed his interest to meet him. His works have been translated into English, Arabic,

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[184] Iqbal's introduction has mainly been derived from Mustansir Mir's, *IQBAL*, published by Iqbal Academy Pakistan, Lahore, 2006. Mustansir Mir is one of the scholars of Iqbal Studies.

Turkish, German, French, Latin and Indonesian. Although he did not live to see the creation of Pakistan in 1947, Iqbal is revered as its spiritual father and as its national poet. The anniversary of his birth on November 9 is a holiday in Pakistan.

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Mustansir Mir is one of the scholars of Iqbal Studies.

STEPHEN WILLIAM HAWKING (1942—)[185]

Hawking is considered one of the most influential and important theoretical physicists of the twentieth century. His theories on black holes and his search for a grand unification theory, which would link the theories of relativity with those of quantum mechanics, have propelled him into the scientific ranks of Sir Isaac Newton and Albert Einstein. He has attracted widespread public interest through his best-selling work *A Brief History of Time (*1988).

Hawking was born on the 300th anniversary of Galileo's death, January 8, 1942, in Oxford, England. In 1965, he completed his dissertation on black holes and received his Ph.D. He received a fellowship in theoretical physics at Cambridge and continued his work on black holes. At the age of thirty-two, Hawking was named a fellow of the Royal Society and in 1978 he received the Albert Einstein award of the Lewis and Rose Strauss Memorial Fund, the most prestigious award in theoretical physics. The next year he was named Lucasian Professor of Mathematics at Cambridge, a position he continues to hold and one which was once occupied by Newton. While a student, Hawking was diagnosed with amyotrophic lateral sclerosis (ALS), commonly referred to as "Lou Gehrig's Disease," a degenerative disease of the nerve cells that control muscular movement. Hawking eventually became unable to move except for his fingers, and in the early 1980s he also lost the ability to speak; he now communicates with the aid of a talking computer.

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[185] Hawking's introduction has been drawn from websites.

In his most popular work, *A Brief History of Time*, which reached the best-seller list in both America and Britain, Hawking related the discoveries and implications of his lifetime of work. Written for the layman, *A Brief History of Time* offers a survey of historical and modern developments in physics, and addresses various cosmological theories. In this work Hawking develops a concept of time which is his own. One of his latest books, *The Universe In A Nutshell* is winner of The Aventis Prizes for Science Books 2002. It is generally considered a sequel and has been created to update the public of developments since the multi-million-copy bestseller A Brief History of Time. Stating the goal of his scientific and intellectual pursuit Hawking says, "My goal is simple. It is complete understanding of the universe, why it is as it is and why it exists at all."

[1] Hawking's introduction has been drawn from websites.

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