Let science and intuition work together

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ABSTRACT

Does modern science, which depends totally on inductive and deductive investigation methodologies give us absolute knowledge, or is there another mode of generating knowledge outside these two methodologies? This paper attempts to explain that modern science has inherited the mankind, during its existence of over three hundred years, a body of knowledge, which is not only uncertain and transient, but also is relative. The very nature of the way the universe presents itself to us and human limitations prevent scientists from generating a body of knowledge that is absolute, or at least reliable. This study reveals that in some instances new knowledge have emerged in ways not akin to scientific investigation methodology. This source of knowledge is popularly referred to as intuition, but not much work has been done to ascertain the process and realities of intuitive knowledge. A conceptual model of the brain enables us to visualize it as having right and left halves and that those who are stronger on the right can get intuitive sparks that may become seeds of new knowledge. The paper concludes that scientific explorations could be complemented by intuition, which emanates from the right brain and directed training could develop right brain skills.

Key words: Inductive and deductive methodology, Evolution of knowledge, Intuition, linear and divergent thinking.

INTRODUCTION

After living in the era of "modern science" for a few centuries, only rarely the man has attempted to evaluate what science and scientists have given them. Mankind has entrusted the responsibility of probing the mysteries of the universe, its birth, existence, and death to scientists and humans have kept for themselves the routine of mindless living. Three hundred years later, scientists have turned back to tell us that they have found nothing concrete. Zukav (1980) stated that "We are not sure, but we have found enough evidence which indicate that the key to understand the universe is You".

What amount of wealth, resources, and time have we spent only to be dissatisfied receivers of this lamentable answer of scientists, and what amounts will be spent to let scientists repeat the same answer at different points in times in the future? This provoking revelation challenges the way we were used to look at the world for over

three centuries. Promises of the “look out to find the answer” approach of the scientific methodology in exploring the world are becoming increasingly blurred. In their outward approach, the scientists have unprofitably disregarded the aspect of their own mental construct of the universe, which creates a relationship between the observer and the observed, and make all measurements and observations relative, relative to the observer. Further, the scientists have totally disregarded the intuition as a source of knowledge. The new Physics advocates that the observer cannot observe the observed without altering what is being observed. Zukav (1980) observed that, “observer and the observed are interrelated in a real and fundamental sense. The exact nature of this interrelationship is not clear, but scientists themselves give us a growing body of evidence that the interrelationship between the observer and the observed is only an illusion”.

Zukav’s finding, later confirmed by many researchers and events in the lives of scientists, challenges the very foundations of scientific investigation. Scientific knowledge is not a revelation about an external absolute but an explanation of which the content is relative, relative to the observer.

METHODOLOGY

The methodology adopted in this paper is the critical examination of the mind process of scientific innovations that have apparently emerged outside the conventional deductive or inductive research methodology. The process through which such innovations emerged was examined in the light of contemporary findings on how the human brain functions, in particularly the findings on the role and functions of the right hemisphere. Based on these observations, an attempt was made to build a case for a third source of knowledge generation.

RESULTS AND DISCUSSION

Scientific method

Many scientists like Einstein, Mendeleev, Kekule and Heisenberg have affirmatively contributed to Zukav’s observation, which shatters and destroys the base or foundation of scientific knowledge, which depends on sense observations and logical inferences that use deduction or induction. Sense observations and logical inferences can only compare what we sense, which are converted into knowledge and beliefs, and stored in our mind. A new observation is compared with what is in the mind and if accepted, it can incrementally add to existing knowledge within the current axioms. Thus, it may be argued that “new” scientific knowledge is only a logical projection within the accepted axioms of scientists. This imperfect setting is aggravated by the painful issue of the elusive interrelationship between the observer and the observed, as theorized by Zukav (1980). According to Sai Baba (1981), “You create the world of your choice. You see many, because you seek many, not the one”. Sai Baba’s statement explicitly explains the basis or the framework within which the scientist explores and the sensitive and subtle interrelationship between the observer and the observed.

Due to this “natural to human” situation of the observer-observed relationship, scientists have left us inconclusive and transient knowledge in the form of ever

changing hypotheses, theories, principles and paradigms, which keep on changing with time, and each change producing different mind projections, which we respect and embrace as new knowledge. An argument in favor of this type of new knowledge is that man is an evolving being and thus his knowledge too is subject to evolution and there is nothing alarming in the transient nature of knowledge. This certainly is a seemingly powerful argument, though lamentably, knowledge evolution does not fit into the pattern of biological evolution. Biological evolution has been more or less linear but scientific findings have been "going around in never ending circles", and not followed an evolution in its true senses.

The argument that justifies an evolution of knowledge was grossly rejected by Heisenberg (1958). Heisenberg's remarkable discovery was that there are limits beyond which we cannot measure things, not because of the incapacity of instruments or the extremely small size of the entities we attempt to measure, but rather by the way nature presents itself to us. In other words, there exists an ambiguity barrier beyond which we can never pass without venturing into the realm of uncertainty. For this reason, Heisenberg's discovery became known as Heisenberg's "uncertainty principle".

The uncertainty principle of Heisenberg states that as we penetrate deeper and deeper into the sub-atomic realm, we reach a certain point at which one part or another of our picture of nature becomes blurred, and there is no way to clarify that part of the picture without blurring another part of the same picture.

Thus, the evolution of scientific knowledge as parallel to biological evolution cannot be accepted. In a related context, Bohr (1958) wrote that quantum mechanics, by its essence, entails, "the necessity of a final renunciation of the classical idea of causality and a radical revision of our attitude toward the problem of physical reality".

Cause of scientific imperfections

What causes the imperfections of scientific findings of the universe and its components? All what we know about anything, whether tangible or intangible, are what we have learned through the instruments of our senses and mind. Thus, our knowledge is the accumulated sum of what we have seen, heard, smelled, tasted, touched, accumulated in this life and previous lives (if you believe in re-birth), and translated into perceptions and knowledge. Mundane man has no other way of knowing. Consequently, man's knowing the phenomenal world is lamentably confined to what the senses can grasp and compare, sometimes using "sense capacity extending machines" like telescopes. We often make use of another weapon called logical inferences to generate new knowledge. Logical inferences too are derived from the treasure of sense experiences translated into knowledge, perceptions and beliefs. Logic is no more than a blunt weapon one uses to justify his own egoistic views and beliefs. The domain of human knowledge is confined only to a tiny part of the vast universe, tangible to narrow sense capacity, but we often tend to venture into metaphysical phenomena such as Nirvana, God, and astral beings, using our sense observations and logic. The limited capacity of human senses and mind is one cause of transience of scientific knowledge. As Murphet, (1993) stated "revisions, amendments, sometimes complete reversals of the explanations have been ongoing processes since the

beginning of science, and will continue to be so until the deepest secrets of nature are laid bare. And within the powers of the present level of our earth consciousness, that will be never".

The foregoing not only questions the validity of our knowledge and the process of knowledge generation, but also strongly demands a new mode of knowledge generation. The new mode may either boost conventional scientific knowledge by enabling the scientist to fill gaps in his findings or may generate completely new knowledge not akin to scientific processes. Processes that are beyond human senses and mind are not totally alien to science and scientists, though this phenomenon remains relatively less unexplored. In fact, a number of great scientific innovations have been resulted through such processes. However, the "beyond senses and mind" modes of generating knowledge change and perhaps shatter all the contemporary axioms we know and respect. As Murphet, (1993) stated "probing into the seemingly endless divisibility of the atom is taking the human mind beyond itself into the ideas and concepts that are no longer rational. Even the basic axioms of logical thinking have to be abandoned. Possible explanations appear to demand the paradoxical logic of mystical insights. So the new, more embracing laws of nature that must be formulated seem to contradict some of the old laws".

This is not a brand new observation; reporting of this type of dichotomy is as old as the Chinese Yin and Yan principle. Conceptually, our brain has two distinct cerebral hemispheres, one on the left, and one on the right. These two halves of the brain have two distinct functions. The left hemisphere helps linear thinking, the type of thinking involved when one attempts to solve a mathematical problem or writing a formal report. The right hemisphere of the brain acts or behaves in a different way; its functions are connected with imagery and intuition.

A person may be left brain dominant, right brain dominant, or left-right balanced type. The right brain dominance makes a man endowed with right brain qualities such as intuitive, imaginative and integrative. Consider Albert Einstein. For many, Einstein is a scientist, the great mathematician surrounded by his formulae, the ultimate rational, left brain thinker. Yet Einstein dropped out of school at fifteen with poor grades and no Diploma.

His ideas came as pictures and images. Ghiselin (1952) quoted Einstein thus; "Words or languages do not seem to play any role in my mechanism of thought. The physical entities which seem to serve as elements in thought are certain signs and more or less clear images". Einstein's observation about the mode of knowing things reveals not only the great power of right brain imagery, but also throw light on knowledge generated outside the deductive and inductive methods akin to modern science.

It is reported that one day in summer, Einstein was lying on a hillside, contemplating the rays of light shining into his half-closed eyes. He was dreaming what it would be like to travel down a light beam – when he had a sudden insight, an intuitive "right brain" image of what it would be like to travel with a ray of light. And so the great theory of relativity was born (Krippner, 1972)

From where do these right brain images emerge previous sense experiences, memory, or from an "external source"? Perhaps, finding an answer to this question would be a journey into ancient scriptures of Hindu or Buddhist traditions and is beyond the scope of this paper. However, two related questions are important in this

regard: (i) How best we could use divergent or right brain skills in generating new knowledge? and (ii) Can we develop right brain skills?

CONCLUSIONS

Modern science has rested on sense and logic based induction and deduction for the generation of new knowledge. This base and approach have not generated absolute or non-transient knowledge during more than three hundred years of existence of modern science. Intuition, which is outside the conventional inductive and deductive approaches, and which is a right brain skill, can be a powerful source of new knowledge that can be used either to fill existing gaps in knowledge or to yield completely new knowledge. History shows that some well-known scientific discoveries such as the Archimedes principle, periodic table, and the theory of relativity have emerged from intuition of the inventor. Evidence show that such "intuitive flashes" leading to new knowledge have occurred when (i) the "inventor" has been swimming in the issue or question area for sometimes, and (ii) right at the time of receiving the flash, he has withdrawn himself from linear thinking and embraced lateral thinking, which is characteristic of right brain dominant personnel. The intuitive flash has often come to fill a gap between the existing knowledge and desired knowledge, but not as a logical extension of existing knowledge.

It is important to note that the new knowledge has not been a logical, incremental projection of current knowledge, but a link between what the seeker explored and a totally new finding that emerged from the deep recesses of the mind, often resulting in a paradigm shift. The new knowledge that emerged belongs neither to induction nor deduction.

Human beings can consciously developed intuitive skills by changing their life style, attitudes, and through mind development. It is found that intuitive flashes occur when one's brain wave frequencies are lowered to what is known as the Theta range, while maintaining his consciousness. The Theta range of brain wave activity represents a very calm state of mind that normally occurs during semi-sleep state, when the conscious mind is inactive.

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