



Kundalini Awareness



MYSTICAL EXPERIENCE:

BRAIN FUNCTION OR TRANSCENDENT STATE

by Michael Bradford

After performing a series of experiments, Dr. Michael Persinger of Laurentian University in Sudbury, Ontario, claims to have elicited mystical-type experiences from experimental subjects who were put into a controlled environment and then subjected to certain forms of auditory and visual stimuli. According to Dr. Persinger, these results indicate that mystical experience, and possibly other types of paranormal phenomena, are explainable totally by alterations in brain function. The result of these experiments has been that Dr. Persinger has received kudos from many of his more scientifically-minded colleagues, but severe criticism, and even death threats, from others who are not happy with his conclusions.

The questions thus arise; is Dr. Persinger's research doing exactly what he claims it is, i.e., are these really mystical experiences that are being induced, and are his conclusions consistent with, and justified by, the results he has obtained?

Before we can answer these questions, it is necessary first to examine the way in which modern scientific investigation relates to non-physical, or subjective, aspects of reality. The main reason that many paranormal phenomena, such as mystical experience and Kundalini awakening, have not been accepted by the scientific community in the West to date lies in the fact that modern science has a world-view which does not support phenomena of this type. This world-view or paradigm is profoundly different from that of cultures, such as that in India, in which means of perception of non-physical aspects of reality were developed to a very high level in the past and became an integral part of the culture as it evolved over the millennia.

The main difference between these two paradigms lies in the fact that the Western world-view is based on the supposition that matter is the ultimate form of reality, and that consciousness is an epi-phenomenon, or characteristic of it. The Eastern world-view, on the contrary, is the exact opposite, with the ultimate reality being consciousness and the physical universe a projection of it. Thus, the Western world-view is based on the premise that what is perceived with the senses is the highest form of reality, in contrast to the Eastern view which posits that higher faculties of mind must be developed in order to apprehend reality in a more direct way.

Science also makes the subtle assumption that the two primary tools with which it works — the intellect with its logic and reasoning powers, and the physical senses with their extensions, i.e. the equipment used for the observation of various physical phenomena, are the ultimate tools for the perception of reality and the formulation of theories about its nature. And yet it has become clearly evident from the discoveries made in physics in the last 150 years or so that matter at its very roots is profoundly different from what our senses tell us that it is and, as such, that this assumption is highly suspect. Since science has put its faith in matter, as opposed to consciousness, it would be good to review some of these discoveries in more detail to see just what the materialistic world-view is based on at its very roots.

The Downfall of the Deterministic World-View

By the middle of the 19th century, a comprehensive set of laws had been developed which seemed to accurately describe the effects of gravitation and the observed motions of physical bodies such as the planets. Time was fixed in its rate of flow and space was constant and uniform throughout its extent. It was also believed that all observed events were the direct consequence of the conditions which preceded them and, therefore, it was theoretically possible to accurately determine all future events from projections of current conditions. It was also believed that an event was, theoretically, totally independent of and separate from the observer measuring the event.

In 1905, Albert Einstein presented his paper “On the Electrodynamics of Moving Bodies” (now known as the Special Theory of Relativity), which stated that the observed speed of light was constant in all directions and in all inertial frames of reference. As a consequence of this, the shape of space and the rate of flow of time were dependent on the relationship between the observer and the observed phenomenon. This meant, for instance, that the observed length of the same object would be different when measured from two frames of reference moving at constant, but different, velocities. It also stated that the rate of flow of time as measured in these two frames of reference would also be different. Thus, Einstein’s theory shattered our long-held notions about the nature of space and time and demonstrated dramatically that our ‘common-sense’ ideas of how the universe worked were not necessarily true.

The next blow to the old deterministic world-view came from Werner Heisenberg’s Uncertainty Principle, which was based on the fact that the energy needed to observe a subatomic event (at least one quanta) altered the event itself. Therefore, it was not possible to know with complete accuracy both the location and velocity of a subatomic particle. The more accurately the velocity was determined, the less accurately its location could be pinpointed, and vice-versa. In effect, this principle put a finite limit on our ability to observe subatomic events and, as such, negated the principle of strict determinism.

Along with Heisenberg, Schrodinger and Dirac went on to develop quantum mechanics as a mathematical tool to predict the outcome of subatomic events. It was based on the idea that the quantum state of a particle implies a number of possible outcomes and assigns a probability to each of these outcomes. The notion that reality could only be described as a set of possibilities was repugnant to Einstein but quantum mechanics has since become generally accepted and has proven to be highly successful in predicting experimental results.

As an example of how this works, the process of radioactive decay, where an atomic nucleus splits, is based on the principle that each one of the constituents of the nucleus of an atom — its protons and neutrons — has only a probability of actually being located in the nucleus at any given time. Although this probability is extremely high, it is not totally 100% and, by the laws of probability, in a certain percentage of cases over a given time span, a proton or neutron will suddenly NOT be located in the nucleus, causing the nucleus to become unstable and break up. There is no external force which causes the proton or neutron to suddenly be somewhere else. It just is, instantaneously. The concept of causality simply doesn’t work here any more.

It became evident as time went on that the actual act of observation is ultimately important. The story of Schrodinger’s Cat is quite illustrative of this. Schrodinger did a hypothetical, or thought, experiment in which he placed a cat in a box with a random particle generating machine which would generate either a positive or negative particle. If the machine generated a positive particle, nothing happened. If it was negative, a flask of acid was broken and the cat was killed. The conclusion he reached was that the status of the cat — whether it was alive or dead — had no reality until an observation was made. Until then, there were only probabilities of the cat being alive or dead. The act of observation actually causes all the possibilities except one — the end result — to sum to zero, and the probability of the result itself to become 100%. What is important is not that the status of the cat is indeterminate till this time, but rather that *it has no reality* until the observation is made. In other words, it is the act of observation which creates the reality. William James summed it up beautifully with his remark that “the universe has come to look less like a gigantic machine and more like a gigantic thought.”

One conclusion that can be drawn from this brief history of exploration at the subatomic level is that the observer and the observed phenomenon are simply two aspects of the same event, and cannot be separated. The event simply has no reality without an observer to observe it. But even though these relativistic and quantum effects are thought to be negligible at the macroscopic level, the possibility that similar effects may be present in some shape or form at this higher level should not be summarily ruled out.

The Eastern world-view is based on the premise that the observed universe is a projection of the observer’s consciousness. Given that a very similar principle appears to hold true at the microscopic level, should this not call into question some of our basic assumptions about the relationship between consciousness and matter? And if such ideas are repugnant to our ‘common-sense’ notions of how reality works, we would do well to remember the fate of other such notions that have fallen by the wayside.

Another conclusion that may be drawn from the above review is that our description of reality is not the reality itself or, as Neils Bohr put it, “Physics is not about how the world is, it is about what we can say about the world.” The primary advantage of this attitude towards our level of scientific understanding is that it does not allow us to ‘rest on our laurels’ and become entrenched in one particular world-view.

The nature of the relationship between matter and consciousness can be further illustrated by the asking of the simple but profound question: "What do I know with absolute certainty?" Even modern science tells us that we do not experience external phenomena directly. Rather, we experience only fluctuations in the state of the chemistry and electrical potential of our brains. Yet beyond that lies the question of what exactly it is that our senses perceive. Science again tells us that the actual matter in an atom is confined to a very tiny fraction of 1 percent of its volume or, in other words, that it is almost entirely empty space. But how is it, then, that our brains perceive this near emptiness as solid? Ultimately, the answer to the question posed above can only be: "I know with absolute certainty only that I am."

It is interesting to note that modern technology is not far from the stage where it will be able to create an environment with holographic projection equipment in which we could not visually distinguish reality from manufactured images. And even without this technology, probably most of us have experienced sitting in a movie theatre and becoming so absorbed in the beams of light being projected on the flat, white screen in front of us that they become the reality for us. This brings into question the validity of the assumption that our waking consciousness is the ultimate tool for the perception of reality.

The Role of Consciousness

While we are dreaming during sleep, we are in a totally different state of reality from our waking consciousness. The dream state has its own unique mode of operation and type of perception. And yet during this time, although the dream world is totally real to us, we are usually oblivious to the fact that there is a much more real state of consciousness from which we came and to which we will return. How then can we be certain that there is not another state of awareness which is as different, and equally more real, than the waking state? The accounts of the great mystics throughout history would seem to suggest that such a state is actually available to us. But in the same way that we cannot conceive the waking state during a dream, we cannot easily conceive the mental state of the mystic with our normal consciousness, even with the descriptions provided in their accounts. As a consequence of this, science has given little credence to such accounts. But at the very least, these accounts should call into question the assumption that the waking state is the one and only valid condition from which reality can be assessed.

A 'Thought' Experiment

The mechanistic view that is generally taken by science, that our consciousness is only a result of brain function, is understandable in light of the world-view in which it is based. But it would be good to consider the effect that this world-view has on the way in which science functions. As an example, consider the following hypothetical or 'thought' experiment.

If we were somehow able to take a 'scientist' from the early or middle 1800's and bring this person forward to our own time and show them a television set, their attitude would be quite interesting from our perspective. They would tinker with the controls and watch the picture alter in depth or tone of color or shade. They would perhaps remove some of the components in the set and note the disruption or total disappearance of the image. It would therefore become obvious to them that any alteration in the state of the apparatus had a corresponding effect on the picture being displayed. And, not having a complete knowledge of how the television functioned, and not knowing anything about the electromagnetic spectrum or the radio waves that the set receives and translates into a picture, they would almost certainly come to the erroneous conclusion that the television set itself was the source of the images being displayed.

The current research being done on brain function and its relationship to various states of consciousness could very well be a parallel situation. In the same way that our researcher of the 1800's did not know how the television set functioned at a basic level, there are currently many basic brain functions and conditions, such as sub-vocalization, pattern recognition, creativity, genius, multiple personality disorder, and schizophrenia, to name a few, which are very poorly understood. In the same way that our researcher did not know about the electromagnetic spectrum, the researchers of today assume that there are no forces or energies beyond those that can be measured by the current state of technology. And in the same way that our researcher's incomplete knowledge led to the assumption that the television set generates the images, current research often comes to the conclusion that because many mental functions can be artificially induced, or altered with external agents, that therefore the brain is the sole source of our consciousness.

And it is even more interesting to take the above analogy a step further as a model of our brain and consciousness, as Gopi Krishna has done in *Kundalini for the New Age* (recently reprinted as *Kundalini: Empowering Human Evolution*, Paragon House, New York, 1996). In the article "Life is Everlasting," he describes our individual consciousness as a beam from a universal conscious source or broadcasting station of mind. Although our consciousness seems to originate from within our bodies, he states that it is actually coming from another dimension or level of creation via a medium which is far too subtle to be detected with the instrumentation currently available to science. Or, to use another of his analogies, it is like a beam of sunlight streaming into a room through a window. Although the beam is in the room and lights up the room, it actually has its source in the enormous life-giving sun, many millions of kilometers away.

Other Energies

The existence of psychic and paranormal phenomena should seriously call into question the assumption that there are no other forces or energies in creation beyond the ones we already know about. But the objection is often raised that the existence of psychic phenomena is not proven as it has not been possible to reliably replicate them in a laboratory, and that many accounts are either erroneous, fraudulent, or explained by already known phenomena. It is certainly true that a certain percentage of cases are due to mistaken perception, coincidence, and fraud, but the objection is irrelevant as it is almost impossible that all of these accounts, many of them from highly reputable sources, are invalid. If it were discovered that water flowed downhill 99% of the time and uphill the remaining 1%, science would immediately come to the conclusion that its theories about the law of gravitation were seriously flawed, incomplete, or incorrect. But the attitude in science has long been to simply dismiss paranormal phenomena as they do not fit nicely into the existing world-view, and the prospect of subjecting that world-view to a complete overhaul has been far too threatening to seriously contemplate.

This reluctance is clearly indicative of the fact that the paradigm in the mind of a researcher determines not only the interpretation of results of an experiment, but also the questions that are asked, the experiments devised, and the conclusions drawn. There also seems to be a subtle but unmistakable attitude in the minds of some researchers that science has learned most of what there is to be learned and that, as a result, it is now in a position to make categoric statements about the ultimate nature of reality. But it would be a grave mistake to assume that because we have reached a certain level of knowledge and understanding, that there is not an infinite amount of knowledge still to be gained about the creation we live in. The history of science is replete with one example after another of 'experts' who summarily pronounced that such and such a thing could never possibly be, only to be proven wrong a few decades or even years later.

For instance, in a recent article in *Time* magazine on predicting the future, the eminent Lord Kelvin is quoted as once having said that "heavier than air flying machines are impossible." Also, the commissioner of the U.S. patent office in 1899, Charles Duell, remarked that "Everything that can be invented has been invented." And, more recently, the president, chairman and founder of Digital Equipment, Ken Olsen, stated in 1977 that "there is no reason for any individual to have a computer in their own home." It is obvious that our ability to accurately envision the future is severely limited and it must always be kept in mind that it is just as possible now as it was 100 years ago for a new discovery to radically alter our perception and understanding of the universe.

Attitudes such as those presented above are quite prevalent even today. In his recently published book, *The End of Science*, (Addison-Wesley, 1996) John Horgan, a senior writer for *Scientific American*, advances the proposition that all the major areas of scientific inquiry have now reached the point where the basic questions involved have been answered and that what remains to be discovered is only the finer details. This view, although certainly not accepted universally within scientific circles, is obviously being seriously considered by many of today's foremost thinkers.

The problem with this view is that it ignores almost entirely some of the most basic questions of our existence: "What is the relationship between consciousness and the brain, and what happens to our essential being after death?" "What is the origin and guiding or animating principle behind life?" And even the most basic of questions: "Why is there even a universe in the first place instead of just NOTHING?" is a profound mystery. The apparent generation of the cosmos from nothingness (i.e. First Cause) is an outright affront to common sense! It would make far more sense for there to be nothing instead of something, as 'nothing' requires nothing to cause it! Even science admits that the conditions in effect prior to the so-called 'Big Bang' are indeterminate. Since there does seem to actually be a universe, it would imply that our cognitive apparatus, which is

rooted in time, space, and causality, is simply not capable of apprehending the answer to this question. If it is not, then what further evolution of this apparatus must take place before it reaches the level where it can unravel such mysteries?

Even the creation of the visible universe is an event that is totally beyond our comprehension. The present estimates are that the universe is tenanted by something on the order of one hundred thousand million million (10 to the 23rd power) stars, a figure which has been increasing by an order of magnitude every few years! The level of cognition needed to apprehend this number is probably as far in advance of our current state as we are from a microbe, if not further.

There is a very basic assumption that is being made by science in general, (as also by many of the proponents of religion) that our cognitive apparatus is capable of showing us enough of the reality we are a part of to fathom all of its mysteries. But if, for instance, our species had evolved without the faculty of sight, our understanding of the universe around us would doubtless be radically different. And if we were suddenly to begin to develop the faculty of vision, it would require us to totally revise our entire world-view. Since our forebears could have had no concept of the intellect before it evolved as a basic feature of our species, we also find it extremely difficult to envision the nature of higher faculties of perception than the intellect. But that should not rule out the likelihood that such an evolution is taking place.

Given all this, how can either science or religion be justified in making categorical statements about the nature of creation and our level of understanding of it? The wiser course would be to reserve judgment on such far-reaching issues and to assume that we still have a long way to go in the evolution of our understanding, and our cognitive faculties, before we can be confident in making such assertions.

Science and Consciousness Research

To return to our original questions about the validity of Dr. Persinger's research and the accuracy of his conclusions, we should first try to define as precisely as possible what a 'mystical experience' is. In his book *Cosmic Consciousness*, originally published in 1901, the Canadian psychiatrist Dr. Richard M. Bucke gave a number of criteria for what he called the 'cosmic sense'. The primary of these criteria are:

1. perception of inner light
2. intellectual elevation
3. sense of immortality / loss of fear of death
4. loss of sense of sin
5. suddenness or instantaneous of the experience
6. transformation of the person's moral character, perceptible to others

Other accounts commonly describe a feeling of expansion of consciousness till it encompasses the universe, and more recent research might also add to this list the development or enhancement of creative faculties such as art, music, writing or poetry. But beyond this, the accounts of the great mystics of the past indicate that the full-blown experience changes the person to the very roots of their being and blesses them (as they describe it) with indescribable bliss and a fount of knowledge and wisdom that could not be gained through a lifetime of ordinary experience.

Of the above criteria, the feeling of expansion of consciousness and perception of inner light were described as being present in Dr. Persinger's experiments, but the more profound effects, such as a lasting sense of immortality, development of artistic abilities, attainment of a 'lifetime' of knowledge and radical transformation of personality do not seem to be in evidence.

It would thus appear that the stimulation of his subjects has triggered the operation of a certain process or mechanism in the brain which does produce the rudimentary signs of a mystical experience. But this stimulation by external means appears to be very different in intensity and effect from that which can occur naturally from within the body. It is quite possible that the subjects in these experiments are experiencing only a tiny fraction of the full potential of the activation of this mechanism. If such a mechanism exists, it may be that it requires the stimulation of an energy produced from within the body itself in order to function at anywhere beyond a very rudimentary level.

The results of these experiments actually tend to confirm the reality of such phenomena as mystical experience as their reproducibility suggests that our brains are wired for such an experience. If this were not the case, then these phenomena would remain as purely subjective states of the mind and their existence and importance would remain questionable at best.

But Dr. Persinger's conclusion that the existence of a physical mechanism for mystical perception in the brain is adequate to totally explain the phenomenon is, as discussed above, rooted in the sensory-based paradigm that science currently functions under and is, as a consequence, wholly premature.

In order for this attitude to change, it will first be necessary for science to accept that its ability to understand subjective phenomena is radically limited by its current world-view and that this world-view or paradigm is long overdue for a radical transformation. What will aid enormously in this transformation is for scientists to begin the process of inner research or exploration of their own consciousness so that the states of mind being studied, such as mystical perception, become a part of their own experience. When the consciousness of the researchers starts to undergo a profound transformation, the old world-view or paradigm will correspondingly undergo a similar shift.

In the last few hundred years, science has miraculously transformed our civilization almost beyond recognition. It has eradicated many horrific diseases, advanced our standard of living to a level that even kings and queens in the past did not possess, vastly expanded our understanding of the physical universe, and given us the power to leave the earth and explore other worlds. But these achievements should not blind us to the possibility that other levels of creation exist and that it will be necessary to radically change the methods by which we pursue this exploration. It is to be hoped that science will make the necessary shift in approach while retaining the spirit of the scientific mode of inquiry so that it can expand the scope of its investigations into the more subtle realms of this vast creation of which we are a part.