# **Simple MYSPHYT Theory:**

## The Return of Physics to the Tao

#### By James E. Beichler

To the best of our collective knowledge of human history, the classical Greek philosophers first developed the grand endeavor that we call science after 700 B.C. For some unknown reason, Thales and other philosophers began to question the conditions of the world around them and thus distinguish between the older 'mythic' and subjective concept of the cosmos and a newer objective view of the world around them. From this questioning spirit, western science began its long evolutionary path as a logical method for explaining and describing all with which humankind came into contact. The scientific ideal became reason rather than faith and logic rather than emotion or intuition, but these other qualities have never really been as far from the roots of science as some would have us believe.

Rene Descartes further institutionalized this dichotomy during the first Scientific Revolution of the seventeenth century. Descartes set the tone for all of later science by separating the studies of mind and matter, further objectifying the scientific ideal. His statement of "cogito ergo sum" (I think therefore I am) has attained the status of a cultural icon in the western world. Later in the seventeenth century, Isaac Newton's new system of natural philosophy (physics) stressed a universe of laws, forces and mathematical patterns. The success of Newtonian physics was so overwhelming that even God came to be viewed by some as the Master Mathematician and Designer of a mechanism which we call the universe. It was the task of science to discover the inner workings of this mechanism of a 'clockwork' universe. But once again, the attitude that fostered the acceptance of such a 'clockwork' universe has never really been absolute. Mind, intuition and consciousness have always played a crucial but rarely recognized role in the advance of science, as opposed to the purely objective modes of logic and reason, whereby the study of 'matter in motion' within physics has given science its primary view of reality,.

It would seem that this all changed during the second scientific revolution of the early twentieth century. The advent of relativity and quantum theory brought fundamental changes in the manner in which physics (and science) accounts for events and phenomena in the world around us. These changes in perspective then engendered further changes in our concept of ultimate physical reality as well as the manner in which we perceive and regard that physical reality. Within the context of this new scientific attitude, numerous authors have noted striking similarities between statements made by theoretical physicists and those made by practitioners of various Eastern mystical traditions. These similarities came to the attention, if not the conscious view of most scholars in 1975 with the publication of Fritjof Capra's book *The Tao of Physics. The Tao of Physics* became an immediate success, reaching far beyond Capra's early expectations.

Its rapid and overwhelming success demonstrated the fundamental nature of the underlying problem of reality and the extent to which scientists and laymen alike were willing to accept new and different views of reality.

Capra's approach was not totally unique, although his style and conclusions were definitely original. His work was preceded by the publication of *The Tao of Science* in 1957 by R.G.H. Siu. Lawrence LeShan first wrote *The Medium, the Mystic and the Physicist* in 1969 with corrected editions in 1973 and 1974, all before Capra's book was published. *A Sense of Cosmos: The Encounter of Modern Science and Ancient Truth* by Joseph Needleman appeared the same year that *The Tao of Physics* appeared, 1975. Then in rapid succession came Gary Zukav's *The Dancing Wu Li Master* (1979), *The Eye of Shiva: Eastern Mysticism and Science* by Amoury de Riencourt (1980), and Michael Talbot's *Mysticism and the New Physics* (1981). Each of these books was unique after its own manner, but they had striking and precise similarities of approach. All of these authors stressed the comparison between traditional mystic concepts of reality and physical reality as proposed by modern theoretical physicists.

The sudden appearance of so many books dedicated to the same theme could arguably be contributed to the introduction and popularization of Eastern religions in the West during the 1960's and 1970's. However, the depth of the similarities expressed by these authors and other scholars tends to indicate the validity of their comparisons, approaches and conclusions regarding mysticism and science. The very weight of their arguments begs a closer look at this cultural, philosophical, psychological and scientific phenomenon. There can be no doubt that these writers and other authors have provided a substantial amount of evidence, both circumstantial and substantive, that these two apparently different approaches to perceiving our world have more in common than would have been imagined several decades ago. In fact, it now seems far more likely that the further development of physics and mysticism are following paths that are converging.

It is from this last notion that the Mysphyt theory has evolved. This theory seeks to explain the phenomena that comprise the historical trend that has been implied by the research of these scholars. Their work must be placed within its historical context. It is simply not enough to assume that physics and mysticism are converging. If their convergence marks a true historical trend, then there should be historical markers and/or events that indicate the closing gap between these two disciplines. Shifts in worldview do not occur in a vacuum, but have identifiable evolutionary antecedents. Precursor trends should thus exist and identifying them should help to validate the theory. But before they can be identified, the Mysphyt theory must be more carefully defined.

#### II: All that's wrong

In his book, Capra chronicled the similarities between the eastern religions of Taoism, Buddhism, Hinduism and modern physics. He not only compared specific

statements, but carefully analyzed perceptions of reality as experienced by the eastern mystics and modern theoretical physicists. He found that

Although the spiritual traditions described ... differ in many details, their view of the world is essentially the same. It is a view which is based on mystical experience - on a direct non-intellectual experience of reality - and this experience has a number of fundamental characteristics which are independent of the mystic's geographical, historical and cultural background. A Hindu and a Taoist may stress different aspects of the experience; a Japanese Buddhist may interpret his or her experience in terms which are very different from those used by an Indian Buddhist; but the basic elements of the world view which has been developed in all these traditions are the same. These elements also seem to be the fundamental features of the worldview emerging from modern physics. (Capra, 132)

Capra was neither the first nor the last to reach this or similar conclusions, but his work became so popular that he was generally recognized as having originated the ideas he expressed. The fact that many others have made similar statements or drawn similar conclusions strongly imply that there is more to Capra's notions than might otherwise seem likely. For example, LeShan stated that

Nevertheless, it is interesting to note that in their general description of the universe they appear to be describing the same conclusion. This, in itself, that with all their differences of starting point, method, and goal, the conclusions are isomorphic, would seem to indicate a much greater probability that these conclusions are valid. The two groups whose conclusions we wish to compare are modern theoretical physicists and serious mystics. (LeShan, 253)

Within the context of his own book, Talbot comes close to the same conclusion as LeShan. They differ primarily on the fact that Talbot is not dealing with the paranormal phenomenon of mediumship, as is LeShan.

Throughout this book we find that both physicists and mystics are confronted with many indeterminate forms. Intuition betrays us, language fails us, and we will discover that our understanding of the universe depends upon modes of thought that Western civilization is only beginning to suspect. Our discovery of these indeterminate forms and our way of speaking and thinking about them is the exact point at which the confluence of mysticism and physics takes place. (Talbot, 12)

From these and similar statements, it can be concluded that many scientists, scholars and laymen have probably come to similar conclusions on their own. The notion that the mystics' and physicists' worldviews are much the same was 'in the air' when these books

began appearing. This would also explain the rapid acceptance and popularity of Capra's book.

In other words, there appears to be a great deal of validity, if not outright 'truth,' in Capra's approach and his primary conclusion that the view of reality as expressed in modern physics and traditional mysticism is fundamentally the same. However, the controversial nature of this single simple assumption has brought serious criticism. Capra's work, being the most popular and thus the best known of these books, has acted as a lightning rod, bearing the brunt of the criticism of this hypothesis. There are criticisms regarding the content of his work, criticisms of his intent and criticisms of his method.

The first criticism of content holds that Capra did not use a large enough context of science to base his conclusion. He relied too heavily on a single aspect of quantum theory. According to Capra, "Quantum theory thus reveals an essential interconnectedness of the universe. It shows that we cannot decompose the world into independently existing smallest units." (Capra, 137) However, Capra further limited the field and scope of his inquiries within the realm of quantum theory by stressing the Bootstrap hypothesis (or S-Matrix theory) as the standard bearer of all of modern physics.

The bootstrap philosophy constitutes the final rejection of the mechanistic worldview in modern physics.... The bootstrap hypothesis not only denies the existence of fundamental constituents of matter, but accepts no fundamental entities whatsoever - no fundamental laws, equations or principles - and thus abandons another idea which has been an essential part of natural science for hundreds of years. (Capra, 286)

It is, or at least it should be evident from Capra's statement that he is convinced the view of nature presented by the Bootstrap hypothesis epitomizes the Eastern mystical view of nature. (Capra, 288) But the Bootstrap hypothesis no longer fills the role in modern physics that Capra credited it with. In fact, the Bootstrap hypothesis is no longer accepted by physicists and exists only as an artifact in the history of modern science. This fact leads to the primary criticism of Capra's work.

Ian Barbour, who is himself a physicist like Capra, has been critical of Capra's adaptation of the Bootstrap hypothesis to "religion."

Unfortunately, bootstrap theory, while promising at the time Capra wrote, has few adherents today since the success of quark theory, which does provide hierarchically ordered constituents (though with the peculiar kind of inseparability mentioned earlier). This section of Capra's book shows the dangers of tying religious beliefs too closely to particular scientific theories that may turn out to be rather short-lived. (Barbour, 119)

Barbour's point is well taken, but not nearly strong enough. It is always difficult to base religious dogma on a scientific theory, whether short or long-lived. The Catholic church of the middle ages learned that lesson when the Copernican heliocentric solar system overturned the ancient geocentric system of Ptolemy upon which the Catholic religious cosmology was based. If it ever becomes prudent or necessary to base a 'religion' upon a scientific theory, it would be best if the most stable and widely accepted theory as possible were chosen as the basis of the new religion. It would be even better to find as fundamental a scientific concept as possible, because there would be less likelihood that so fundamental a concept would change in the future. Such a 'religion' should also be based upon the most universally accepted religious concepts, those that are common to all the world religions. By finding the most fundamental aspects of both science and religion any new 'religion' would be more impervious to changes in science or religious attitude, if that is even possible. However, it is unwise to base any religion on science because of their inherent differences. You cannot mix oil and vinegar.

The purpose of Capra's work is not to found a new "religion" based on science, even though he searched for what he thought were the most fundamental elements of science and "religion" as the basis for his comparison. Unfortunately, he found those elements only in the Bootstrap theory and Eastern mysticism. On the other hand, Barbour seems to have missed the essential points of Capra's work. First of all, Capra was speaking of mysticism, not a broad based "religion." But more importantly, Capra was mistaken in so closely associating his own comparison to a single, questionable scientific theory, even though his more general statements concerning the similarities between mysticism and modern physics are still valid. After all, Capra did relate quantum theory in general as well as relativity theory to the mystical worldview, even if that was only done to support his own Bootstrap hypothesis. The fact that Capra did the right thing for the wrong reasons should not belittle his basic argument that the worldviews of mysticism and science have become increasingly similar.

Victor Stenger, another physicist, has also criticized Capra on this same point and would agree with Barbour's evaluation.

But, as I have said, S-matrix theory failed to provide a useful description of elementary particles. The effort to find a self-consistent set of equations that predict all the properties of elementary particles withered away, as the less ambitious and more traditional quark-lepton theory met with success, after success to become today's Standard Model. Thus, Capra's argument that modern physics supports the holistic program falls like a house of cards with the demise of S-matrix theory and the reaffirmation of atomicity in the Standard Model. (Stenger, 266)

So, Stenger's criticism suffers from the same problem as Barbour's. Stenger misses the point that the more general similarities between the mystic's and the modern physicist's worldviews still exist even if the Bootstrap hypothesis is thrown out. Stenger's opinion is, after all, based on the success of the Standard Model, which is itself only a theory. His analogy to a house of cards falling apart could apply to his own criticism, given a future

theory that would replace the Standard Model. Although popular at this point in history, the Standard model is based on a specific explanation of quarks, which may not always be so well accepted by the scientific community. After all, quarks have never been confirmed as independent physical objects, they have only been detected as dependent parts of elementary particles. There is no guarantee that the Standard Model will stand forever. No physicist would seriously claim at this time that the Standard model is "THE" final theory of matter which would thus offer the final solution to questions on the nature of reality.

As a matter of comparison, Lawrence LeShan found that the mystical worldview is more closely approximated by relativity theory than by quantum theory.

The Einsteinian world-picture is often called the "Minkowski, fourdimensional, block universe," and it did not seem possible to find any real differences (someone once defined a "real difference" as "a difference that makes a difference") between the descriptions given by Minkowski, by Eileen Garrett [representing the worldview of the medium], and by Vivekananda [representing the worldview of the mystic]. (LeShan, 62)

LeShan has clearly demonstrated a relationship between the human perception of reality as expressed by mystics and modern relativists. The space-time continuum of relativity theory closely approximates the continuity, oneness and timelessness that are expressed in all of the great mystical traditions. It is not that Capra denied the same relationship between special relativity and the mystic view of an interconnected oneness, but Capra mistakenly thought that his Bootstrap hypothesis was the logical culmination of the space-time view as well as the quantum worldview. So, while Barbour criticizes Capra for basing his 'religious' speculations on a short lived theory, it is rather doubtful that either Barbour or Stenger could make that same criticism fit the worldview associated with special relativity. If they or others wish to further criticize the conceptual process by which the statements and worldviews of mystics and physicists are compared, then they should find another drum to beat.

Stenger has offered a far broader 'implied' criticism of Capra's work by way of an attack on Eastern mysticism itself. "In the vast literature of eastern thought, surely something must have been said about almost everything and everything said about something." (Stenger, 264) This statement implies a philosophical emptiness for all of Eastern philosophy and does a great disservice to all of Eastern thought. If Eastern philosophy were as broadly based as to say something about everything, and everything about something, as Stenger has charged, then it would lack the coherency of central concepts. In Stenger's view, "Eastern thought" seems to be a large bag of empty statements. His statement is inane and amounts to a bias against all non-Western philosophies. His tactic of criticizing Capra by attacking 'Eastern thought' can be compared to a person who can find no valid argument against a concept, so he refutes the concept by referring to the opinions of some undefined entity or authority called "them." Stenger is claiming no less than a complete denial of all mystical traditions and thus all

attempts to compare the central tenets of mysticism and modern physics with this one, uncorroborated statement.

However, Stenger's inane statement regarding 'Eastern thought' does bear an infinitesimally small resemblance to a valid criticism of Capra's work. Capra relies too heavily on Eastern mysticism, thus ignoring the many examples of similarities between Western mystic worldviews and modern physics. There are specific differences between the Eastern and Western styles of mysticism, but each gives a unique perspective to a single mystic view of reality. The perspective of Western mystics supplies another piece to the puzzle that Eastern mysticism cannot supply, so Western mysticism must be included in any study of this nature. Capra's approach of ignoring Western mysticism belittles what he is trying to accomplish. This is a valid criticism and other authors have avoided this trap by taking into account a broader spectrum of mystical philosophies, from both the east and west, in their own work.

Both LeShan and Riencourt directly addressed these concerns. When dealing with mystics from all of the different branches of mystic thought, LeShan stated that

All had a great deal in common. They spoke of something other than our usual way of conceptualizing reality, another way of describing how-the-world-works and, whatever their specific differences, all agreed on this idea of its structure. (Le Shan, 41)

On the other hand, Riencourt carefully analyzed the fundamental concepts of both the Eastern and Western mystics, comparing and contrasting their viewpoints.

By and large, the West has always believed that reality and the *knowledge* of reality is expressible in mental concepts, and that what cannot be so expressed is fundamentally unreal, that is purely 'subjective.' The East, on the contrary, believes that reality and the *experience* of it lies beyond the mind (*manas*) and all mental processes, that rational and discursive thought is incapable of apprehending it; furthermore, it believes that it can establish close contact with it, and eventually merge with it, by overcoming mental activity altogether. The West's ultimate goal is to know *about* and relate to the Ultimate Object, the East's is to identify with and *be* the Ultimate Subject. (Riencourt, 65)

After thus noting the similarities and differences between Eastern and Western thought, Riencourt concluded that

Mysticism is the same phenomenon the world over, in the East as in the West; but whereas the East bases its metaphysical insights upon it, the West has refused to do so. If we study the records and descriptions left to us by all the mystics of the world, we are struck by a universal insistence on the fact that all distinction between things, men, object and subject, is overcome and abolished - the world becomes "One," ... (Riencourt, 75)

By basing their studies on a much larger and diversified group of mystics, both LeShan and Riencourt gave an added validity to their approaches. But problems still exist.

Some traditional western philosophers have found it difficult to accept the Eastern philosophies because they consider Eastern philosophy too fatalistic in its 'otherworldliness' and denial of our physical world. On one level this is true, Eastern mysticism does deny this physical world. This is also true, to a small extent, of Western mysticism. However, the Eastern view is not fatalistic because it does not teach the abandonment of our physical world. The Eastern mystics claim that consciousness is the true reality, or at least a truer reality upon which to base our being and existence. Thus, their ideal is to realize this consciousness, not through a western style of reasoning and logic, but through an intuitive experience of that consciousness. This is not a denial of western philosophical methods and views of reality, just an admission that they are different as well as limited. The mystic view is more a realization that physical reality is only one aspect of our world and logic and reason cannot completely comprehend the total reality because it is reductionistic. An intuitive leap is necessary to experience the 'oneness' that is missing in the reductionism of western logic. In this sense, consciousness creates our physical reality. Very nearly the same problem occurs in the Copenhagen interpretation of quantum theory. It would seem in both cases that 'human' consciousness creates the physical world. Einstein totally rejected the Copenhagen Interpretation of quantum reality based solely upon 'human' consciousness in the famous Einstein-Podolsky-Rosen paper.

In quantum theory the creation of our physical reality occurs through the collapse of the wave packet, so physical reality cannot exist without the 'human' consciousness of an observer to initiate the collapse of the wave packet.

The crucial feature of atomic physics is that the human observer is not only necessary to observe the properties of an object, but it is necessary even to define these properties. In atomic physics, we cannot talk about the properties of an object as such. They are only meaningful in the context of the object's interaction with the observer. (Capra, 140)

But both Eastern philosophy and quantum theory are wrong in so far as they refer to 'human' consciousness or an observer who creates a physical event and thus physical reality by interacting with a material system which is represented only by the probability of existence, implying the necessity of a 'human' consciousness.

Our physical reality may eventually be shown to depend on consciousness, but not on 'human' consciousness alone. If humans did not exist, this same physical universe would exist, except, of course, minus the human race. And it could still exist while including a human race that lacked consciousness. The point being made is that questions whether consciousness is required for the existence of physical reality or not is valid, but humans and 'human' consciousness are certainly neither necessary nor sufficient to guarantee the existence of physical reality. Eastern mystics deny this physical reality (as 'maya'), but still admit that there would be no point in space or place for consciousness to reside without physical reality. Consciousness could never realize itself. Consciousness needs physical reality to realize itself and consciousness cannot be consciousness without realizing itself. Whether consciousness is necessary for physical reality is debatable in Western thought, but an accepted fact in Eastern philosophy.

Criticisms that Capra did not use a broad enough context for his work indicate the necessity of extending his comparison to include a broader base. This implies that there is more to the question of mysticism versus physics than meets the eye. Capra's book is what we, in science, would call a first approximation. At this point, it should be evident that *The Tao of Physics* accomplished no more than establish an indication of the possible connection between the worldviews of mystics and physicists. Since it is limited according to the above criticisms, one cannot rely on Capra's work alone, but must look at this whole genre of literature and philosophy to find the common elements necessary to answer questions regarding whether consciousness is either necessary or sufficient to explain physical reality. This approach may be reductionist and logical in a western sense, but it represents the manner in which the human mind works.

Just as western mysticism is not devoid of the central tenets of Eastern thought, Eastern mysticism does not disregard the logic and reason upon which Western philosophy and science are built. Eastern mystics do not deny the existence of automobiles, jet planes and electricity just because they are products of Western logic and science. So, while the methods for arriving at their respective views of reality clearly differ, the views of reality that mystics and physicists have come to agree upon have important similarities. These similarities lead to very serious questions that need to be addressed. For example, what does it all mean? What do the similarities between the mystic and scientific views of reality really mean? Pointing out similarities between the various conclusions on the nature of reality only begs the questions. These similarities and the sustained popularity of the subject indicate that there are more fundamental questions to be addressed than either mysticism or science could indicate alone. What is needed is not a simple conclusion that there are similarities between worldviews in spite of the differences between mysticism and science, but a working hypothesis or theory to explain the existence of the similarities and determine where mysticism and physics are taking us. That theory must include a plan or program on what to do with the information it explains. With this in mind, it is informative to look at the conclusions and suggestions of other authors who have written on the subject. It is in their work that we can see the intentions of studying this paradox.

#### III: All that's right

Since Capra limited his study to the narrower fields of Eastern mysticism and modern quantum physics, it would be expected that his final conclusion would be similarly limited. Capra does indeed assume that the Bootstrap theory is the end (and thus final) result of physics while Eastern mysticism says everything that can be said about spiritual inquiry, so he concludes that neither has anything to gain from the other. Neither can evolve from its present form, either by incorporating knowledge from the other or by a synthesis of the two.

He began his own journey from the premise that "the principal theories and models of modern physics lead to a view of the world which is internally consistent and in perfect harmony with the views of Eastern mysticism." (Capra, 304) So his scientific nature has forced him to ask certain questions based upon this assumption.

"The interesting question, then, is not *whether* these parallels exist, but *why*; and, furthermore, what their existence implies." (Capra, 304)

And these questions generated others.

"Is modern science, with all its sophisticated machinery, merely discovering ancient wisdom, known to Eastern sages for thousands of years? Should physicists, therefore, abandon the scientific method and begin to meditate? Or can there be mutual influence between science and mysticism; perhaps even a synthesis?" (Capra, 306)

Capra certainly asks the correct questions in the spirit of honest inquiry and the pursuit of knowledge, but then cops-out when he answers each of his later questions in the negative. He concludes that neither science nor mysticism can be reduced to the other and neither can be comprehended in the other, while neither needs the other. Capra has quite thoroughly surrendered himself to the duality of mind represented by the differences between intuition and reason. "But man needs both." What is needed is not a synthesis but a dynamic interplay between the two, modern physics and Eastern mysticism. (Capra, 307) Capra's final conclusion is neither mystic nor scientific, but sociological and aimed at the betterment of human social reality, not the discovery or realization of ultimate reality itself. Yet science and mysticism do have something to gain from each other and what they each have to gain does not directly deal with the social functioning of the human race. The results of combining the knowledge of mysticism and physics will most definitely have an affect on society, but not until they have reached a higher level than that at which Capra has ended his own journey. At the very least, science can gain a better understanding of reality and consciousness from mysticism and mysticism can gain a more thorough experience of reality from science. Humanity can learn from the interaction of both

Riencourt's analysis of the situation has yielded quite different results from Capra's. He has discovered a very specific convergence of mysticism and physical concepts.

This being the case, it is obvious that the mysterious spiritual force which appears to sustain life and consciousness, and which the mystic appears to apprehend in his ecstatic experiences, would have to be brought into play and, up to a certain point, objectified, and brought within the conspectus of science. How is this to be done and where is the scientifically-minded mystic who can point the way? (Riencourt, 184)

Obviously, Riencourt has detected a convergence of mystic and physical concepts that will result in a synthesis of the two. He goes still further and speculates on the type of person who he feels can make this synthesis, the "scientifically-minded mystic." This notion contradicts Capra's conclusions rather completely since Capra believes a synthesis is impossible. Riencourt also suggests how such a synthesis will affect society.

It might well be that mankind is now on the threshold of a psychological and physiological revolution of a magnitude that will overshadow all the social and political revolutions of our century - made possible by the seemingly incongruous, yet perfectly logical marriage between science and Eastern mysticism's insights. (Riencourt, 196-197)

There can be no doubt that bringing mystic and scientific thought together would cause a paradigm shift in human thinking. Whether or not such a synthesis would follow Riencourt's prescribed path is certainly open to debate as well as the whims and fancies of a history still to be made.

Talbot also foresees an emerging paradigm shift from the convergence of mysticism and the "new physics."

By far the most incredible insight we may glean from the convergence of mysticism and the new physics is that in the coming generations our lives will be changed, radically, awesomely. Indeed, if the implications of such a confluence come to pass, life will be transformed into something so different that its description is beyond language. ... Most importantly, the new physics is offering us a scientific basis for religion. ... It is a religion based upon the psychology of the human consciousness - indeed, on the psychology of the entire universe as a conscious force acting upon itself. (Talbot, 160-161)

Whether or not a new "religion" emerges from the convergence is debatable and the mere suggestion is itself highly speculative. Religion seeks an answer to the question "Why?" while science only asks the question "How?" and answers that question to the best of its ability. It is far too early to speculate that these two questions are also converging, or rather that both questions will eventually yield the same answer. Members of both the scientific and religious communities, as conservative as they are, would never consider this a possibility let alone consider the probability that this union could occur. What is more probable is a radical change in the scientific perspective of physical reality as well as a better understanding of our world by the mystic which would ultimately affect the older conservative religions.

On the other hand, LeShan uses the convergence as a means to further science. To be more precise, he has developed a theory of paranormal phenomena as suggested by the similarities in worldviews. LeShan defines two separate realities representing physics, the paranormal practice of mediumship and mysticism. He calls these the 'sensory reality' and the 'clairvoyant reality.' Talbot sees a single 'omnijective' reality emerging from the convergence of the two normal realities, the 'subjective' reality of mysticism and the 'objective' reality of physics. Talbot's two realities are closely related to LeShan's, except each uses them for different purposes and thus they bear different names.

Like the other authors, Talbot does not see an explanation of the paranormal as the endpoint of the convergence. He does, however, note a relationship of the convergence to paranormal phenomena.

Such a cosmic bootstrap picture of mind and reality provides a physical explanation for what we might call the reality-structurer - that portion of the consciousness which enables certain individuals to overcome the alleged laws of physics. (Talbot, 61)

In Talbot's view, the "reality-structurer" might have the power to construct our physical reality in such a way that physical events and phenomena may not follow the normally prescribed laws of physics. By his own suggestion, he relates this possibility to those paranormal phenomena known as psychokinesis. Even Riencourt acknowledges the possibility that some paranormal phenomena can be scientifically explained given the convergence and final synthesis of the two worldviews. (Riencourt, 176-177)

A relationship between psi phenomena, the psychic phenomena normally studied by parapsychologists and physicists, and the two worldviews should not be unexpected. In Buddhism, attaining the first level of enlightenment allows the initiate to perform what science would deem paranormal events. However, Buddhism urges the practitioner not to dwell on these phenomena, but to move past this level and attain still higher levels of enlightenment. Other disciplines and mystical traditions have been associated with paranormal activity throughout history. There does seem to be a distinct connection between the paranormal and consciousness, so an explanation of psi phenomena may well evolve out of the converging worldviews of physics and mysticism.

The psychological aspects of 'human' consciousness have been studied by Robert E. Ornstein and documented in a book, which he appropriately titled *The Psychology of Consciousness*. In a manner which closely parallels the search for similarities between mysticism and physics, Ornstein has discovered similarities between western views of the psychology of consciousness and those mystical practices which he terms 'traditional esoteric psychologies.' It could be argued quite effectively that the mystics have long practiced a form of transpersonal psychology in their struggles to intuitively overcome the limitations forced upon them by our physical world and rational philosophies. This study has lead Ornstein to delineate two modes of consciousness, the one normally recognized by western psychologists and scientists and another which has been traditionally sought by the mystics.

Two modes of consciousness exist in man and function in a complementary manner. Since the dominant mode in our culture is verbal and rational, recognition of the existence of the second mode may well lead us to a cultivation of the intuitive and holistic aspects of ourselves. The first mode is active, associated with our biological survival - the *day* in our metaphor. The second mode is receptive and constitutes the dark, subtle area of our consciousness, metaphorically, *the night*. (Ornstein, 194)

These two modes of consciousness are closely associated with the two modes of reality that have been studied independently by physicists and mystics, objective and subjective reality, respectively.

Ornstein's work differs only from the work of these other authors in that he is looking at the western concept of consciousness in psychological terms while the others are determining how consciousness is related to philosophical concerns. Like LeShan, who is also a psychologist, Ornstein sees the synthesis of these two modes of consciousness affecting the western view of the paranormal. "When such a change takes place [as in Ornstein's "new synthesis"], our conception of what is 'normal' and what is 'paranormal' may well undergo a redefinition." (Ornstein, 192) What Ornstein has found regarding psychology is not so different from what physicists say regarding our physical world. One must remember that physicists perceive our physical world through human senses, which gather data and transmit that data to human brains. Our brains filter that data according to our psychological convictions, so the physicists' view of reality, what the physicists "see" as our physical world, is directly affected by our psychological profiles. In turn, western psychology, like any other western science, follows the same procedures of scientific method, analysis and inquiry that are used in physics. It is no wonder then that the view of consciousness of western psychologists closely parallels the physical worldview of the physicists.

Needleman has cast his net wider than the others and considers all of modern science in his study, rather than just physics. Yet he still finds it necessary to comment on the similarities of view between modern physics and mysticism. According to Needleman,

It is more accurate to say that the discipline of theoretical physics offers a foretaste of consciousness, but does not understand or communicate the need for the development of consciousness. ... The science of physics no longer carries the burden of questioning man's ability to understand the universe. That task is now being performed by the systems of Eastern religious thought which have captured the interest of so many Westerners, including a growing number of scientists themselves. (Needleman, 103-104)

For Needleman, the relationship of consciousness to physics is a matter of degree. Physics only offers a "foretaste" of consciousness. He seems to say that consciousness is needed in some undefined manner to collapse the wave packet and thus substantiate our physical reality. Beyond this, physics offers nothing else regarding consciousness and thus capitulates its further commitment to understanding the universe in so far as consciousness is concerned. In other words, according to modern physics consciousness constructs physical reality on the quantum scale and says nothing about 'why' or 'how' that particular reality is necessary. "Eastern religious thought" then moves into the picture and fills this void in our understanding of reality. After his own manner, this is much the same as the other authors have told us. Needleman completes the picture by referring to the "new concepts" of space and time introduced in modern physics and thus incorporating relativity theory into the equation.

I have already suggested that in modern times it was physics alone that had the power to make us question our ability to understand the universe. This it did not only by introducing extraordinary concepts of space and time, but also by making it impossible for us to turn to the contents of the mind for help in understanding the laws of reality. (Needleman, 102-103)

The determinism of the relativity theory perpetuates the Cartesian separation of mind and matter, whereby mind refers to consciousness and matter is represented as the "laws of reality." So, in the end, Needleman would agree that modern physics and mysticism offer similar worldviews.

In the final analysis we have several scholars, representing different disciplines, who have come to very nearly the same conclusions regarding the similarities of worldviews offered by mystics and modern physicists. These similarities form the raw data for the construction of a hypothesis regarding the relationship between physics and mysticism. We cannot rely on the similarities between worldviews or pictures of reality alone if we want to remain on good philosophical footing. There must be more substantial evidence to any comparison for it to be valid. This constitutes the final criticism of Capra's work, but this criticism is general enough to cover the work of each and every one of these authors. They have all relied on the same similarities and have thus been driven to specific conclusions. For the most part, they have concluded that mysticism and modern physics have converged. Beyond this convergence, the further conclusions reached by these men depends upon their own agendas.

The criticism that their conclusions are based only on the similarities is not so damaging, as it may seem, although it must be taken seriously. However, these men did not take into account the differences between the two and this is an important omission. In his criticism, Barbour is very clear on this point.

In general, I think Capra has over stressed the similarities and virtually ignored the differences between the two disciplines. Often he finds a parallel by comparing particular terms or concepts, abstracted from the wider contexts that are radically different. (Barbour, 119)

But the point that Barbour and other critics have missed is the fact that there are so many similarities. The probability that two so radically different approaches to determining the fundamental concepts of reality could have lead to views of reality that have so many characteristics in common is so low that the mere existence of the similarities requires an explanation. The similarities are so numerous and overwhelming, under these circumstances, that coincidence must be ruled out as a cause. What we are then left with is a specific process at work.

When observations are made of the world around us, specific phenomena or events display a pattern of similarities. The scientific mind defines that pattern and the characteristics that seem to affect the phenomena involved and then derives a hypothesis to explain it. This process is the basis of the scientific method. When this method is applied to the worldviews of modern physics and mysticism, the development of a hypothesis regarding the convergence of worldviews becomes inevitable. It is only necessary to justify the need for the hypothesis and the above authors have developed that justification. When the hypothesis explaining the similarities, or rather the common characteristics of these worldviews, is placed within a more historical setting, it can be seen that mysticism and modern physics have not yet converged but are in the process of converging. The advance of human thought follows a distinct evolutionary path in which these two separate views of reality are intimately entwined. The recent growth in the number of similarities reflects the growth of the relationship of the different views of reality as they evolve toward a single view of reality. This relationship is so well documented and so strong that the hypothesis can be elevated to a 'theory' of convergence. As this happens, the differences between mysticism and modern physics become the important issue for the further advancement of both science and mysticism, at least until that time when they merge.

The Mysphyt theory basically states that both science, in the form of modern physics, and mysticism are converging toward the same goal, a knowledge or realization of reality. The closer that they get to their goal, the closer that will come to each other even though they are approaching that goal by different methods, reflecting their different modes of thought and basic philosophical approaches. Whether a person is seeking reality by strictly intuitive methods (the mystics) or reason and logic (the physicists), that person is still a 'human' seeking reality and carries with that search all of the mental and environmental prejudices that we, as humans possess. Nor does it matter whether that person is seeking God, physical reality, consciousness, nirvana, any similar 'thing' or 'seemingly' dissimilar final goal. If these qualities and quantities are in the end different 'things,' then seeking them individually or collectively by either science or mysticism will reach the same end point, since these individual things represent a single reality, as we humans understand it. The differences will evaporate at different levels along the search as it is discovered that each 'thing' is actually the same as the others.

The methods of perceiving reality may render that reality in seemingly different ways, but there is only one reality in the end. That single reality only appears different when viewed through different pairs of glasses. Since there is only one reality, and there is absolutely no reason to believe that this is not true, the method of discovering that reality should not affect that reality. Different methods will ultimately yield the same reality. The differences in the methodologies of mystics and physicists should not radically alter the fact that they are seeking the same reality. The independent existence of the seemingly different realities that mystics and physicists have found can be neither proved nor disproved until we can define them through our search. So our human search for the 'things' that we associate with that reality may not seem to be a singular search, but in the end, it is.

### PART II

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