"A Science of Consciousness: Buddhism (1), the Modern West (0)"

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Introduction

In his classic work ***Science and Civilization in China*** Joseph Needham explored the historical reasons why China, for all its long civilization, never developed science as we understand it in the modern West, namely a quantitative, technologically driven science of the outer, physical world. In this paper I shall first outline some of the reasons why Western civilization has never developed a science of consciousness. I shall then argue that Buddhism has made major strides in developing such a science, and that the contemplative refinement of attention, and the subsequent utilization of such attention in exploring the mind firsthand plays a crucial role in such an endeavor. Such training of the mind is vital for *investigating* the nature of consciousness, and it is also an important prerequisite to *transforming* consciousness in the pursuit of mental health and genuine well-being. While Buddhism has a rich contemplative tradition for the first-person exploration of states of consciousness, it never developed the sciences of the brain and behavior that we have in the modern West. So the integration of the first-person methodologies of Buddhism with the third-person methodologies of the cognitive sciences may lead to a richer understanding of consciousness than either Buddhist or Western civilization has discovered on its own.

Historical Impediments to the Emergence of a Science of Consciousness in the West

When asking why the West has yet to develop a science of consciousness, I turn first to the twin roots of Western civilization: the Greco-Roman and the Judeo-Christian traditions. In general, a pivotal element in the emergence of a new science is the development and refinement of instruments to precisely observe and possibly experiment with the phenomena under investigation. Galileo's use of the telescope to examine the sun, moon, and planets signaled the emergence of the science of astronomy, much as Van Leeuwenhoek's use of the microscope in observing minute life forms was instrumental to the emergence of modern biology. It is therefore reasonable to assume that if there is to be, or ever has been, a science of consciousness, it will be heralded by the development and refinement of an instrument with which states of consciousness can be observed with rigor and precision. The only instrument humanity has ever had for directly observing the mind is the mind itself, so that must be the instrument to be refined. The untrained attention is habitually prone to alternating bouts of agitation and dullness, so if the mind is to be used as a reliable tool for exploring and experimenting with consciousness, these dysfunctional traits need to be replaced with attentional stability and vividness.

While the philosophers of ancient Greece were certainly interested in the nature of the mind, there is little evidence that they developed any sophisticated means for refining the attention. The Pythagorean brotherhood and the mystery schools may have devised such methods, but if they did, such knowledge has not been preserved. Jewish mystics also wrote extensively on the nature of consciousness,[1] but the development of techniques to cultivate attentional stability and vividness for the rigorous exploration of consciousness was not a strong suit of this tradition either. The Greeks did coin the term *eudaimonia*,

commonly translated as genuine happiness, or human flourishing, referring to "the perfect life" in so far as perfection is attainable by humanity. For Plotinus, the source of genuine happiness lies within the human spirit, but when the concept of *eudaimonia* was absorbed into the Christian tradition, Augustine insisted that the soul must look outside itself—to God—for such perfection.[2] However, it must be added that a principal way he taught to go about this endeavor was through a contemplative process that draws the attention *inwards*, going beyond the self to a direct encounter with God, the very source of *eudaimonia*.[3] In this regard, perhaps the fundamental difference between Plotinus and Augustine has to do with their views on the parameters of human identity, the boundary between the human soul and the divine.

Within the Christian tradition, the early desert fathers were certainly aware of the need to calm the mind, as is evidenced in the seminal fifth-century volume on contemplative practice entitled *The Conferences of Cassian*.[4] But it is not clear that Christian contemplatives of that period or the later medieval era devised effective means for training the attention as a means for observing mental events. This failure may be at least in part responsible for the widespread conclusion among Christian mystics that the highest states of contemplation are necessarily fleeting, commonly lasting no longer than about half an hour.[5] This insistence on the fleeting nature of mystical union appears to originate with Augustine,[6] and it is reflected almost a millennium later in the writings of Meister Eckhart, who emphasized that the state of contemplative rapture is invariably transient, with even its residual effects lasting no longer than three days.[7]

With the advent of the Protestant Reformation and the Scientific Revolution, the gradual decline of Christian contemplative inquiry into the nature of consciousness rapidly accelerated. Given the Protestant emphasis on

the Augustinian theme of the essential iniquity of the human soul, and man's utter inability to achieve salvation or know God except by faith, there was no longer any theological incentive for such inquiry. Salvation was emphatically presented as an undeserved gift from the Creator. So genuine happiness, which is to be truly experienced only in the hereafter, is in no way earned by understanding the mind or achieving exceptional states of mental health and balance.

Descartes, whose ideological influence on the Scientific Revolution is hard to overestimate, was deeply committed to the introspective examination of the mind. But like his Greek and Christian predecessors, he did not devise means to refine the attention so that the mind could reliably be used to observe mental events. On the contrary, he naively believed that anything that was clearly and distinctly perceived by means of introspection was invariably valid—an assumption that was effectively refuted by William James at the end of the nineteenth century.[8] Moreover, in a theological move that effectively removed the human mind from the natural world, Descartes decreed that the soul is divinely infused into the body, where it exerts its influence on the body by way of the pineal gland. It was this gland, he believed, that, on decision of the soul, induces the voluntary actions of the body, while all other actions are reflexive. This philosophical stance probably accounts in large part for the fact that the Western scientific study of the mind did not even begin for more than two centuries after Descartes. And until the last three decades of the twentieth century, the pineal gland was uniquely neglected by physiological and biochemical investigators. Although various factors may be responsible for the scientific avoidance of this region of the brain, it seems plausible that one reason was that, given the special status attributed to it by Descartes, it was still considered to be outside the proper domain of natural science.

Another trend in Europe at the dawn of the modern era provided yet a further incentive for not delving deeply into the human mind, and that was the witch-hunting craze from the late fifteenth century through the mid-seventeenth century. During this period, anyone who exhibited exceptional mental powers, including the power of spiritual healing, was immediately suspect of being a witch. While nearly all traditional societies have believed in witchcraft, the Christian tradition in particular attributed the powers of witches to the Devil, which is the rationale for the biblical commandment that such people are to be put to death.[9] The common belief that demons and other spiritual entities roved about in the natural world (sometimes taking possession of human souls) was of course deeply incompatible with the emerging mechanical view of the universe. After all, scientists couldn't very well establish orderly physical laws in the objective world as long as there were immaterial spirits roving about, intervening at will in the affairs of man and nature. So many natural philosophers of the late sixteenth century simply dismissed them as illusions. Newton, on the other hand, who devoted much of his time to developing his own theology, withdrew evil spirits from the objective physical world and placed them inside the human mind in the form of mental disorders. God's outer creation had now been cleansed of these contaminating influences, leaving only the inner being of man defiled. It would take another two hundred years before Western psychoanalysts would have the nerve to begin the scientific exploration of these dark inner realities.

In short, the trajectory of Western science from the time of Copernicus to the modern day seems to have been influenced by medieval Christian cosmology. Just as hell was symbolized as being in the center of the earth, and heaven was in the outermost reaches of space, the inner, subjective world of man was depicted as being the locus of evil, while the objective world was free of

such moral contamination. It hardly seems an accident that the science that initiated the Scientific Revolution was astronomy, and it took a full three hundred years for the scientific discipline of psychology to begin. And it was only in the closing years of the twentieth century that the scientific community began to regard consciousness as a legitimate subject of scientific inquiry.

Why did it take psychology—which itself emerged only after many scientists felt that they had already discovered all the principal laws of the universe—a century before it began to address the nature of consciousness? This was due in large part to the fifty-year domination of academic psychology by behaviorism. In 1913, the American behaviorist John B. Watson declared that psychologists must avoid the use of all subjective terms such as sensation, perception, image, desire, purpose, and even thinking and emotion as they are subjectively defined. And he attributed belief in the very existence of consciousness to ancient superstitions and magic.[10] Forty years later, B. F. Skinner echoed this theme by asserting that mind as such does not exist at all, only dispositions for behavior. It took another decade before the futility of equating subjective mental processes with "objective" behavioral dispositions became increasingly apparent to the scientific community. The behaviorist approach did nothing to explain the nature of the mind, let alone consciousness; it just reduced these subjective phenomena to a class of objective processes they *could* study with the available tools of science.

With the emergence of cognitive psychology during the 1960s, subjective experience was once again allowed back into the realm of scientific research, but the role of introspection in exploring the mind was still marginalized in this field, just as it is in the rapidly progressing discipline of neuroscience. Rather than equating mental processes with behavioral dispositions, cognitive psychologists and neuroscientists now equate them with neural events. As neurologist Antonio

R. Damasio recently commented, "the biological processes now presumed to correspond to mind processes in fact *are* mind processes and will be seen to be so when understood in sufficient detail…the private personal mind…indeed *is* biological and will one day be described in terms both biological and mental."[11] However, what neuroscientists actually *know* is that specific neural events (N) are correlated to specific mental events (M), such that if N occurs, M occurs; if M occurs, N occurs; if N doesn't occur, M doesn't occur; and if M doesn't occur, N doesn't occur. Such a correlation could imply that the occurrence of N has a *causal* role in the production of M, or vice versa; or it could imply that N and M are actually the same phenomenon viewed from different perspectives. There is not enough scientific knowledge at this point to determine which of these types of correlation is the correct one. But Damasio seems to overlook this ambiguity and simply decrees the equivalence of mental and neural processes, without any logical or empirical justification. In other words, this equivalence is simply a metaphysical belief.

While writing this essay, I questioned Damasio on this point, and he responded that in his book *The Feeling of What Happens*[12] he goes to great pains to explain that neural patterns are *not* equivalent to mental images. There is an explanatory gap, he points out, regarding the process by which a neural pattern is converted to a mental image; and neuroscience, in particular, and science, in general, may never be able to bridge that gap. He further acknowledges that the "physicality" of mental phenomena has not yet been identified scientifically; it is simply a working hypothesis. As hard as I try, I just can't see the logic in his position. To say that A *is* B, implies an identity, not a causal relation between two distinct entities A and B. He seems to be saying that mental phenomena are biological phenomena produced by prior biological phenomena. But that still implies that mental phenomena are equivalent to some kind of biological

phenomena. So the distinction between mental and neural processes fades out immediately.

In the book cited above, Damasio explains why neuroscience has been wrong about not making clear the distinctions between first-person and third-person views regarding discussions on mind and consciousness. This is an important and valid point. At the same time, he seems to advocate that in the final analysis, mental processes *are* their neural correlates viewed from a first-person perspective; and neural processes *are* their mental correlates viewed from a third-person perspective. But this widespread belief is just that—an speculative hypothesis—and not a scientifically demonstrated conclusion, despite the fact that it is commonly taken for granted by researchers in this field.

How does Damasio explain the fact that the neural processes that he equates with mental processes have the capacity to be *about* other things? This question, called the *hard problem*, is regarded by many philosophers as a formidable, unsolved mystery. But Damasio assures his readers that this turns out to be no mystery at all: "evolution has crafted a brain that is in the business of directly representing the organism and indirectly representing whatever the organism interacts with." Brain cells, he declares, "designed to be *about* other things and other doings."[13] In short, his solution to this problem is that the brain has the capacity to represent other things because it was designed that way "by evolution." This "explanation" obviously illuminates nothing other than the fact that Damasio has great faith in the mysterious ways of evolution, which for the biologist here takes on the role theologians have long ascribed to God.

Mental events viewed introspectively appear to be radically different types of processes than neural events viewed objectively. Moreover, if one confines oneself to the introspective examination of the mind, one evidently learns little if anything about the brain. And if brain scientists were to confine

their research to the brain alone, without reference to any first-person reports of mental experience, they would learn little if anything about the mind. Indeed, they would have no reason, on the basis of neural events alone, to conclude that they are correlated to any mental events at all. Damasio accounts for this disparity as follows: "The appearance of a gulf between mental states and physical/biological phenomena comes from the large disparity between two bodies of knowledge—the good understanding of mind we have achieved through centuries of introspection and the efforts of cognitive science versus the incomplete neural specification we have achieved through the efforts of neuroscience."[14]

Many contemporary scientists and philosophers would challenge his assertion that we now have "a good understanding" of the mind as a result of centuries of introspection and discoveries in cognitive science. Biologist Edward O. Wilson maintains that logic launched from introspection is limited and usually unreliable, which is why even today people know more about their automobiles than they do about their own minds.[15] The general consensus among psychologists is that introspection is an unreliable means for investigating the mind. As for our current understanding of the mind and consciousness, two of America's most prominent philosophers of mind comment, "Consciousness stands alone today as a topic that often leaves even the most sophisticated thinkers tongue-tied and confused,"[16] and "where the mind is concerned we are characteristically confused and in disagreement."[17] The real gist of Damasio's assertion seems to be that we already have enough understanding of mental processes themselves, so now the emphasis should be placed on neuroscience to explore the biological processes that are, after all, the same as mental processes, just viewed from an objective perspective.

If scientists were presented with a new instrument for observing a specific type of natural phenomena, the first logical step for them to take before using this instrument would be to examine its nature and capacities. Does this instrument present the scientists merely its own artifacts, like looking through a kaleidoscope, or does it provide them with data that exist independently of it? If it does yield such information, does it distort it in the process of bringing it to them, or does it provide them with truly objective data from a source independent of the instrument? Only after they have understood the design, functioning, reliability, and capacities of the instrument could they confidently use it to collect data.

The primary instrument that all scientists have used to make any type of observation is the human mind. Does this instrument provide us only with its own artifacts, without any access to any objective reality existing independently of the mind? Of if the mind provides us with information about the objective world, does it distort it in the process? For reasons outlined above, the scientific study of the mind in the West was delayed for three centuries after the inception of the Scientific Revolution, which is tantamount to using an instrument for three hundred years before subjecting it to scientific scrutiny.

What kind of scientific worldview has emerged as a result of this profound oversight and the enormous disparity of our understanding of the mind and the rest of the natural world? Wilson expresses the view of many scientists with his assertion that outside our heads there is an independent, objective world, and inside our heads is a reconstitution of reality based on sensory input and the self-assembly of concepts. The proper task of scientists, he claims is to correctly align our inner representations of reality with the world outside our heads.[18] The problem here, which he openly acknowledges, is that scientists have no body of external objective truth by which the alignment of

scientific theories and the world outside our heads can be calibrated. In other words, the empirical data that we perceive, together with our scientific theories that account for them, all consists of mental representations "within our heads"; and we have no objective yardstick with which to compare those representations with what we assume to be the "real world."

How are we to get out of this conundrum? Wilson suggests, "Criteria of objective truth might be attainable through empirical investigation. The key lies in clarifying the still poorly understood operations composing the mind and in improving the piecemeal approach science has taken to its material properties."[19] Like Damasio, Wilson assumes that the mind is actually composed of brain processes, but as I have already pointed out, at this point such an assertion is simply a metaphysical belief, not a scientifically established fact. Given how little scientists presently understand about the relation between the mind and brain, it would be far more objective to regard this as a topic to be researched with an open mind, rather than assuming (or demanding) that science will one day confirm our current materialistic biases.

In order to understand the relation between scientific theories and the objective phenomena they ostensibly represent, we clearly need to have a more thorough, scientific understanding of the mind. As I commented earlier, the first step in developing a science of any kind of phenomena is to develop and refine instruments that allow one to observe and possibly experiment with the phenomena under investigation. The only instrument we have that enables us to observe mental phenomena directly is the mind itself. But since the time of Aristotle, the West has made little if any progress in developing means of refining the mind so that it can be used as a reliable instrument for observing mental events. And judging by the writings of many scientists, such as E. O.

Wilson, there continues to be considerable resistance against developing any such empirical science even today.

Thus, if we follow this present materialistic trend, no such empirical science of consciousness is likely to emerge in the foreseeable future. Rather, if the cognitive sciences continue to be constrained by the metaphysical dictates of scientific materialism,[20] all we will do is reduce consciousness to something that can be explored and understood within the parameters of that dogma, as various researchers, such as Crick and Koch,[21] are already attempting to do. Just as kinematics (the phenomenological study of matter in motion) must precede mechanics in the study of physics, the rigorous, firsthand investigation of consciousness must precede any formulation of the mechanisms that account the emergence of consciousness.

Modern science has never developed a rigorous introspective methodology for observing the phenomena of conscious mental processes and states. William James, the foremost pioneer of American psychology, acknowledged the importance of studying behavioral and neural correlates to mental processes, but he emphasized the primary role of introspection in this endeavor.[22] However, the untrained mind, which is prone to alternating agitation and dullness, is an unreliable and inadequate instrument for observing anything. To transform it into a suitable instrument for scientific exploration, the stability and vividness of the attention must be developed to a high degree. James was well aware of the importance of developing such sustained, voluntary attention,[23] but he acknowledged that he did not know how to achieve this task.[24]

To sum up, the modern West has developed a sophisticated science of behavioral and neural *correlates* of consciousness, but no science of consciousness itself, for it has failed to develop sophisticated, rigorous means of exploring the phenomena of consciousness firsthand. And this is the first step towards an

empirical science of *any* class of natural phenomena. Thus with regard to exploring the nature, origins, and potentials of consciousness, cognitive scientists and neuroscientists are more like astrologers (who carefully examine *correlates* between the celestial and terrestrial phenomena) than astronomers (who carefully examine celestial phenomena themselves).

A second result of the historical development of science is that the modern West has an elaborate science of mental illness, but no science of mental health. Indeed there is hardly any scientific consensus on the criteria by which to identify mental health. Nor do we in the West have any science that shows how to cultivate extraordinary mental health or genuine happiness. In short, the theme of *eudaimonia*, a state human flourishing sometimes glossed as a "truth-given joy," has been forgotten in modern science,[25] and the very existence of a truth that yields such well-being has no place in the scientific view of human existence or the universe at large.

In short, the West presently has no *pure* science of consciousness that reveals the nature, origins, and potentials of this natural phenomenon, and it similarly lacks an *applied* science of consciousness that reveals means for refining and enhancing consciousness and thereby achieving *eudaimonia.* But the fact that the West has failed to develop such a science does not necessarily imply that all other human civilizations throughout history have been equally deficient in this regard.

The Buddhist Science of Consciousness

Over the course of its 2500-year history, Buddhism has developed rigorous methods for refining the attention, and then applying that attention to exploring the origins, nature, and role of consciousness in the natural world. The empirical and rational investigations and discoveries by such great Indian contemplatives

as Gautama the Buddha profoundly challenge many of the assumptions of the modern West, particularly those of scientific materialism. This meeting of Buddhist and modern Western science also challenges our very notion of "metaphysics." In the nineteenth century, the origins of the physical universe, the constitution of distant galaxies, and the internal structure of molecules were all metaphysical issues. At that time, there were no known ways of exploring these topics empirically, but that is no longer the case. In the twenty-first century, the nature, origins, and destiny of human consciousness are still metaphysical issues for the West, but are they similarly clouded in mystery within the Buddhist tradition?

As new empirical strategies are devised for exploring phenomena, metaphysics gives way to science, mere belief is supplanted by knowledge. The approach that has repeatedly allowed for this gradual illumination of the natural world is called the *scientific method*. *Webster's Ninth New Collegiate Dictionary* defines this as follows: "Principles and procedures for the systematic pursuit of knowledge involving the recognition and formulation of a problem, the collection of data through observation and experiment, and the formulation and testing of hypotheses." Does Buddhism include this procedure in its inquiry into the nature of the mind and consciousness? In general, the framework of Buddhist theory and practice consists of the Four Noble Truths: the truths of suffering, the source of suffering, the cessation of suffering together with its source, and the path leading to that cessation. While Buddhist contemplatives have always placed a primary emphasis on fathoming the nature of the mind, their orientation to this endeavor has been fundamentally pragmatic. Their first task is to recognize the nature and full range of suffering to which humans are vulnerable. The first noble truth formulates that as the problem to be addressed. The second noble truth presents the hypothesis that the essential causes of

suffering are to be found within the mind, specifically in terms of cognitive, emotional, and attentional imbalances. The third noble truth hypothesizes that these afflictive tendencies can be irreversibly dispelled from the mind. And the fourth noble truth presents detailed procedures for collecting data by observing mental processes and experimenting with techniques for transforming the mind and eliminating its afflictive elements.[26]

The very notion of observing the mind with the mind appears problematic to many thinkers, for it does not allow for the separation of subject and object that characterizes other kinds of scientific observations. This is a legitimate concern. Is it even possible to observe mental states and processes with the mind? Even with no mental training, we can detect our emotional states, we can observe thoughts and images arising in the mind, and we can introspectively recognize from moment to moment whether our minds are calm or agitated. On a more basic level, we can perceive that we are conscious—we are aware not only of objects of consciousness but of the presence of our own consciousness of other things.[27] And this faculty of mental perception is the only instrument we have for directly observing any mental phenomena. While it is true in this case that there is no absolute separation between the instrument of observation and the observed phenomena, this fact does not necessarily ban the whole procedure from the realm of scientific exploration. After all, the inextricable relation between the system of measurement and the measured phenomena is a familiar theme in quantum mechanics, but no one has suggested that such measurements be banned from physics.

In Buddhist contemplative practice, the experiential investigation of the mind, including the nature, origins, and potentials of consciousness, is of paramount significance. But in order for such exploration be penetrating and reliable and for the insights gleaned from this process to be thoroughly

assimilated, the attentional imbalances of laxity and excitation must first be dispelled. Only when the attention is lucid and calm can it be used effectively in this venture.[28] The qualities of luminosity and stillness are actually innate to the relative ground state of individual mind, so the central challenge of this training is to settle the attention in that ground state. One of the remarkable discoveries of Buddhist contemplatives who have penetrated to this ground is that this stratum of consciousness is imbued with an innate quality of bliss. In other words, when the attention is settled in a deep state of equilibrium, temporarily free of laxity and excitation, one spontaneously experiences a sense of inner peace and well-being. In order to penetrate to this substrate consciousness, a necessary prerequisite is the cultivation of a wholesome way of life that supports mental balance and harmonious relations with others. This is the essence of Buddhist ethics, which is the foundation of all Buddhist practice.[29]

According to generations of Buddhist contemplatives, simply settling the attention in the substrate consciousness, with a high degree of attentional stability and clarity, is not enough to irreversibly free the mind of afflictions and obscurations. For this one must penetrate to the ultimate ground state of consciousness, prior to the conceptual demarcations of subject and object, mind and matter, and even existence and nonexistence. This primordial consciousness is metaphorically described as being empty and luminous, and its has never been sullied by afflictive imbalances of any kind. The realization of this state of consciousness is said to yield a state of well-being, or *eudaimonia*, that transcends the imagination, and it is the unified culmination of the Buddhist pragmatic pursuit of freedom from suffering and the epistemic pursuit of knowledge. With such insight, one comes to understand not only the nature of consciousness but the relation between mental representations and their referents in the objective world.

With this understanding of three dimensions of consciousness—ranging from the psyche that can immediately be viewed introspectively, to the substrate consciousness, to primordial consciousness—the Buddhist view of the mind challenges many common assumptions in the modern West. According to many psychologists today, the normal mind is deemed to be healthy, but it is nevertheless subject to a wide range of mental distress, including depression, anxiety, and frustration. But these can be managed with drug therapy and counseling when they become excessive. While unhappiness comes simply from being human, happiness comes from outside: from the sensual and esthetic enjoyments, from possessions, from other people, and, according to religious believers, from God. The modern Western view of the mind is still influenced by the Aristotelian assertion that all emotions, in the appropriate circumstance and in moderation, are to be accepted.[30] This believe has been incorporated into the theory of evolution, which maintains that all our emotions and other mental traits must have served us well through human evolution, otherwise we wouldn't have them.

In start contrast to the above views, Buddhist contemplatives state that the ordinary mind is dysfunctional, for it oscillates between states of (1) being obsessive/compulsive (succumbing to compulsive ideation and obsessively grasping onto thoughts and emotions) and (2) slipping into a stupor. We have grown habituated to experiencing such a dysfunctional mind and mistakenly take for granted the resultant mental discomfort, believing this to be normal and reasonably healthy. With this basic sense of inner dissatisfaction, we then take solace in outer and inner pleasurable stimuli, which veil the symptoms of our dysfunctional minds. While the normal mind is *habitually* prone to states of attentional, emotional, and cognitive imbalances, it is not *intrinsically* dysfunctional. By refining the attention we can make the mind serviceable and

thereby rediscover the innate sense of well-being that emerges spontaneously from a balanced mind. And by fathoming the nature of consciousness to its primordial ground, all the obscurations of the mind may be removed, resulting in irreversible freedom from suffering and its source.

Conclusion

While the scientific study of consciousness has come into vogue in recent years, it is overwhelmingly dominated by the metaphysical dogma of scientific materialism. The influence of belief system does little to impede progress in the physical sciences, but its stifling effect is evident in the biological sciences (including medical science) and even more so in the cognitive sciences. One of the most limiting aspects of this dogma is that it places a taboo on the empirical investigation of subjective events from a first-person perspective. And there is a widespread refusal among researchers in this field even to consider the possibility that mental events may be immaterial in nature, and not simply epiphenomena of the brain. Given the scientific ideals of empiricism and skepticism, it is ironic that the scientific community shows such resistance to the first-person, empirical investigation of subjective mental events (as opposed to their neural correlates) and that they show so little skepticism toward the metaphysical claims of scientific materialism.

If, as I have argued in this essay, the Buddhist tradition has developed a science of consciousness, why is this not commonly acknowledged? On the one hand, it emphasizes an introspective approach to the study of the mind, the value of which is not commonly accepted among scientists. But there are other compelling reasons as well. Over the centuries Buddhism become decreasingly empirical in its orientation to understanding human existence, and in the process elements of dogmatism and scholasticism have become increasingly prevalent.[31]

This degenerating trend has been exacerbated by much modern academic scholarship in the field of Buddhist studies, which tends to ignore the exceptional experiences and insights of Buddhist adepts, refusing even to consider the possibility that they may have made extraordinary discoveries that may be pertinent to our contemporary understanding of the mind and its role in nature. In the most extreme cases, Western Buddhologists even go so far as to make the absurd claim that experience has never played a prominent role in Buddhist practice.[32] But the problem is not just in the *representation* of Buddhist practice in this West. Over the centuries the spirit of open-minded inquiry seems to have faded among both Buddhist scholars and contemplatives. This has gotten to such a point, according to one contemporary Tibetan Buddhist scholar, that the primary concern of many Buddhist meditators is mainly to ensure that they are following the correct procedure of a meditation technique, rather than rigorously exploring the nature of the mind or anything else.[33]

During the Renaissance, Europe emerged from the shackles of religious dogma in part because of the influx of fresh and provocative ideas from classical Greece and the Arab world. Now the West (and all other countries dominated by the West) is in need of a Renaissance to free it from the intellectual tyranny of scientific materialism, which is often falsely conflated with science itself. The Buddhist tradition, especially if it is re-instilled with the spirit of empiricism and skepticism, may play an important role in such a Renaissance.

Researchers in the mind/body problem commonly appeal to the authority of future scientists to confirm their present materialistic assumptions about the nature of consciousness. Antonio R. Damasio, for example, claims "it is probably safe to say that by 2050 sufficient knowledge of biological phenomena will have wiped out the traditional dualistic separations of body/brain, body/mind and brain/mind."[34] It took the scientific community fifty years to recognize that the

mind couldn't meaningfully be reduced to a set of behavioral dispositions. Hopefully it will not take that long before neuroscientists open their minds to the possibility that the mind may not be meaningfully reduced to neural mechanisms either.

While science characteristically embraces the "disturbingly new," it has a much harder time embracing the "disturbingly old," namely, discoveries that were made long ago (let alone in an alien civilization), prior to the Scientific Revolution. Many Buddhists, on the other hand, rely so heavily on the insights of the Buddha and later contemplatives of the past, that they have a hard time embracing disturbing new discoveries that challenge Buddhist beliefs. Scientific materialists are so confident that the mind is nothing more than a biological phenomenon that they confuse this belief with scientific knowledge. Similarly, many traditional Buddhists are so confident of the validity of their doctrine that they confuse their belief with contemplative knowledge. In his book *The Discoverers: A History of Man's Search to Know His World and Himself*, historian Daniel J. Boorstin refers to "the illusions of knowledge" as the principle obstacles to discovery. The great discoverers of the past, he declares, "had to battle against the current 'facts' and dogmas of the learned."[35]

The scientific tradition has now joined the Buddhist tradition in its pursuit of understanding the nature, origins, and potentials of consciousness. At this point in history, it may be said that neither embodies a rigorous, unbiased, multifaceted science of consciousness. But as scientists and Buddhists collaborate in the investigation of this phenomenon so central to human existence, perhaps such a science may emerge to the benefit of both traditions and the world at large.

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[1] See, for example, Daniel C. Matt (1990) (1995).
[2] John Burnaby (1938: 47-49)
[3] Dom Cuthbert Butler (1967: 28-29)
[4] Owen Chadwick (1958)
[5] Dom Cuthbert Butler (1967:26)
[6]John Burnaby (1938: 52 & 67)
[7]M. O'C Walshe (1979: 1: 7)
[8] William James (1890/1950) I:191-2 & 197-8.
[9] Exodus 22:18. *New International Version*
[10]John B. Watson (1913).
[11] Antonio R. Damasio (2002:7)
[12] Antonio R. Damasio (1998)
[13] Ibid. p. 9
[14] Ibid. p. 6
[15] E. O. Wilson (1998: 96-97)
[16] Daniel Dennett (1991:21-22)
[17] John R. Searle (1994: 247)
[18] E. O. Wilson (1998: 60-61)
[19] Ibid. p. 60
[20] Cf. B. Alan Wallace (2000)
[21] F. Crick, and C. Koch (1998)
[22] W. James 1890/1950: I: 185
[23] W. James (1890/1950) I: 416-424
[24] Ibid. I: 424
[25] One very promising development in modern psychology in this regard is the emergence of "positive psychology." See C. R. Snyder & Shane J. Lopez (eds.) (2002).
[26] For a more detailed presentation of these Four Noble Truths within a contemporary context, see Wallace (1998: 29-101).
[27] The process by which the mind can attend to consciousness itself is addressed in Wallace (1999).
[28] For a detailed account of this type of attentional training, see Wallace (1998).
[29] For a lucid presentation of Buddhist ethics presented within a modern, secular context see H. H. the Dalai Lama (1999).
[30] Aristotle (1985)
[31] For a discussion of scholasticism within Indo-Tibetan Buddhism see José Ignacio Cabezón (1994).
[32] See Robert H. Sharf (1995) (1998).
[33] Personal communication from Geshe Thupten Jinpa, June 6, 2002.
[34] Antonio R. Damasio (2002:9). See also John R. Searle (1994:100).
[35] Daniel J. Boorstin (1985: xv)