

# Physics and Phenomenology

## Reflecting on Matter and Mind

Peter L. Nelson, Ph.D.

### Abstract

Physics and phenomenology, although appearing to be poles apart, share more in common as empirical enterprises than at first imagined. Arguing primarily from Bohm's interpretation of quantum theory and Sartre's reinterpretation of Husserl's phenomenology, this paper reveals a core common to both which is not unlike the Buddhist concept of Shunyata and James' notion of 'pure experience' as both consciousness and world. All things, states, etc. are thus seen as backward cast metaphoric 'shadows' of successive reflected explicate 'pan-consciousnesses' in a similar manner to Sartre's notion of the 'transcendental ego' as being the 'shadow' of successive consciousnesses.

### Introduction

Although phenomenology and physics appear to gain intellectual impetus from opposite poles in terms of both ontological position and methodology, an examination of the qualitative issues arising from the description of the physical world given to us by quantum mechanics reveals a surprising similarity to that given by phenomenology. In a sense both systems are empirical in that they are attempting to explicate our experience of the 'real' world. In the case of the former, however, this is attempted through a 'subjective' exploration of consciousness and its workings, while in the latter it is done through a reductionist examination of the 'objective' world. This apparent polarization of both ontology and methodology comes into its sharpest and most meaningful focus when one attempts to unpack the nature of the mind/brain relationship.

At first glance it is obvious that phenomenology has a great deal to say about 'mind' and physics has much to contribute to our understanding of the workings of the 'physical' universe, in general, and the human brain in particular. It also appears that these two aspects of our experiential/empirical world are intimately associated, yet irrevocably at odds epistemologically. It is the position of this paper that they are, in fact, not at odds and, rather, are different explications, to borrow David Bohm's term, of the same implicate source (Bohm 1980). In this view, neither metaphor, brain nor mind (consciousness), holds ontological

supremacy, but in order to take this position we must relinquish such notions as absolute reality, consciousness as an 'awareness container' and cease insisting on an organismic grounding or attachment of consciousness to an 'objective' site.

In a review article Karl Pribram examines the relationship of mind and brain.

He summarizes the problem as follows:

In the ordinary world of appearances there is no question but that human mental experiencing can be distinguished sharply from the contents of the experience. The issue has been labeled "intentionality" (or intentional inexistence) by Franz Clemens Brentano and has given rise to inferences about the nature of reality. The question is often phrased: Are my perceptions (my phenomenal experiences) the "real," or does the content of those perceptions make up the "real" world? My phenomenal experiences are mental; the world as it appears to me is material. I can give primacy to my experience and become a phenomenologist, or I can give primacy to the contents of the experience and become a materialist. But I can also give primacy to neither and attest to the dual nature of reality (Pribram 1986, 510).

Pribram suggests that this dualism is, in a sense, valid for the world of ordinary, commonsense experiential reality. He feels that these are two distinct modes, like mirror image optical isomers in chemistry. One we call 'material' and the other 'mental' but this appears to have more to do with the quality of our experience than any ultimate ontological fact.

In this paper I shall argue that, in fact, there is no way to escape our 'experience' in order to 'know' a material or 'other' reality existing apart from this experience. In this sense all knowledge is retrospective to, and inferential from experience - the only empiricism. Salient to this argument is the notion of consciousness in the sense that William James used it in his later writings and which was developed more fully in the phenomenology of Edmund Husserl and in the existentialist notion of 'egoless' consciousness of Jean-Paul Sartre (James 1967; Husserl 1962; Sartre 1972). In these descriptions of consciousness and the epistemological positions that naturally follow from each, consciousness does not exist as a 'thing', things do not exist as 'things' and the 'self' who witnesses all of this does not necessarily exist as a 'thing' either. The 19th Century Indian saint Ramakrishna framed this whole issue quite succinctly when he posed the following paradox to a disciple: "Once a salt doll went to measure the depth of the ocean...Now who was there to report the ocean's depth?" (Gupta 1973, 103)

A past issue of the journal Zygon was dedicated entirely to the work of Bohm. His notion of the 'implicate order', which derives from the theoretical and experimental work carried out over the past 75 years in particle physics, lends

further credence to the position of *apparent* dualism arising from an implicate monism (Bohm 1980). Bohm summarizes:

First, according to Albert Einstein's theory of relativity, the basic nature of the universe is not that of a set of interacting constituent particles. Rather, it may be described as a universal field, whose most essential quality is unbroken wholeness in flowing movement...Since this suggests that the whole is a primary notion, while the parts are abstractions from the whole, the traditional mechanistic notion of the constitution of the world out of separate existent parts is turned upside down...Second, the quantum theory implies that there are indivisible links of action between each object and its environment. This holds also for the observing instrument and what is observed. This means that ultimately, the distinction between observer and observed, which is necessary for a mechanistic view, cannot be maintained, not even in inanimate matter (and, ipso facto, even less in animate and conscious beings)...Third, the whole cannot be analyzed into separate parts with preassigned interactions. Rather the whole organizes and even creates the parts. This behavior is evidently closer to organism than to mechanism (Bohm 1985a, 128).

Bohm's position, taken in the context of the history of ideas, seems to be part of a long tradition of ontological speculation which tends to arrive at an operational monism that ultimately cannot be specified temporally or spatially. It has at its center, 'activity' - an 'activity' which generates a sense of space and time taken by us to be absolute.

Within Buddhism, too, we see a strong trend towards an operational non-substantial monism in the concept of 'emptiness' or shunyata, as expounded first by Nagarjuna and the Madhyamika philosophical school of Buddhist thought and now by the Mahayana tradition in general (Jackson 1986; Loy 1986; Santina 1986). In a paper analyzing the nature of 'emptiness', Jackson describes it: "*Philosophically*, emptiness is the term that describes the ultimate mode of existence of all phenomena, namely, as naturally 'empty' of enduring substance, or self-existence: rather than being independently self-originated, phenomena are dependently originated from causes and conditions. Emptiness, thus, explains how it is that phenomena change and interact as they do, how it is that the world goes on as it does." (Jackson 1986, 407)

He further presents the standard argument against self-existence as given by the Madhyamik: "If things have self-existence, they will, by the definition of self-existence, be permanent, independent and partless. That which is permanent, independent and partless cannot function at all, because functioning entails change and interaction. Things only can function if they are impermanent, dependent and divisible, i.e., if they are subject to the law of dependent

origination. To be subject to the law of dependent origination is, essentially to be empty. Emptiness/dependent origination is the only logical alternative to self-existence..."(Jackson 1986, 408)

The resurgence of interest in mind and consciousness, following almost 60 years of denial by academic psychology, requires that we address the mind/matter problem again. As we have seen from the above discussion, so far, this issue crosses the boundaries of psychophysiology, philosophy, physics and religion and thus has implications for all areas of human endeavor and knowledge. As the discussion proceeds a notion of a common relativized ontological ground will emerge that will allow us to not only mend the dualistic schism associated with mind and brain, but to see it as an accident of perception. This approach is not unlike that taken by Albert Einstein in his classic work on time, space and the ether - The Special Theory of Relativity. He argued that there was no need to disprove the existence of the ether. One merely must change one's assumptions about the physical world, viz., to adopt the idea that the speed of light is constant, and thus the ether is no longer necessary in order to explain the observed phenomena as described by the Lorentz transformation (Einstein 1961).

In the case of the supposed mind/brain dualism, however, we must relativize our *ontological* assumptions and move away from a matter-only or a mind-only position. In other words, we must assume that the 'constant' underpinning observations of the 'real' is *experience* and not a supposed 'thing' or a supposed 'mind'. This is intuitively difficult because of our commonsensical ideas about mind and matter which derive from the narrowness of our everyday experience. This experience, however, may be the most common for most of us, but it is not the only type of experience available for human beings and hence it is not the only grounds from which one can form ontological beliefs and epistemological theories. A long tradition of mysticism in both the East and West has created a data base which attests to the experiential fact that there is more than one state from which to make ontological judgements (Happold 1963).

Earlier work within the psychology of consciousness generated a notion of discrete states of consciousness (d-SoC) and the occurrence of a quantum-like movement between these states. Charles Tart, the foremost exponent of the SoC

approach, argues for a systems analysis of various states and the need to reframe all of our scientific endeavors such that the particular d-SoC of the experimenter/observer becomes part of the operational variables of the scientific description (Tart 1975). He further argues that we need to discover the clusters of behaviors and phenomenology that surround and define the various states of consciousness available to us so that we can ascertain the frame of reference in which our experiences are grounded. He summarizes his position:

Ultimately we need an *experiential operationalism*, a set of statements such as (1) if you stop all evaluation processes for at least three minutes, (2) and you concurrently invest no attention/awareness energy into the Interoception subsystem for perceiving the body, (3) so that all perception of the body fades out, then (4) you will experience a mental phenomenon of such and such a type. Our present language is not well suited to this ... so we are a long way from a good experiential operationalism (Tart 1975, 177).

Although Tart recognizes the formative role of states of consciousness in all our perceptions, he still appears to treat consciousness as a kind of epistemological 'box' through which experiential events flow and 'external' reality is apprehended. He differs from the usual epistemological stance of the scientific materialist in that he believes that the SoC determines *which* reality we perceive. Incorporated in this view is, of course, the 'many worlds' hypothesis of quantum physics and the dualistic interactionism characteristic of the writings of the neuroscientist, John Eccles (Popper and Eccles 1981). Whether we accept consciousness as generated by neurophysiology or the idealism of matter generated by mind, we are still left with two categories of reality, inextricably bound, yet infinitely separate, and the philosophical, empirical and existential problems that a two-categorized reality implies. This includes pragmatic problems such as: 1) determining whether or not someone is 'insane' if he or she is claiming to have experiences that seem not to exist for others; 2) understanding psychosomatic disorders - if mind is a separate category, then how does it cause physical illness?; and 3) knowledge - can we consider methods other than scientific materialism as meaningful avenues to useful knowledge.

Within the scientific *Weltanschauung* the dominant theoretical position is, of course, that consciousness is either an emergent property of brain or an artifact which is much overrated in its importance. Yet, for both science and religions such as Buddhism, experiential knowledge is the basic activity from which they are constructed. Whether we are reading the output on a scintillation counter

(‘objective’ empiricism), in a physics laboratory or visualizing a Dakini as part of Vajrayana Buddhist meditative practice (‘subjective’ empiricism) we are drawing all inferences from a *primary experience*. In the former case, many would argue that its veridical, ‘objective’ nature is assured by the access others have had to this observation which is summed up in the notion of repeatability as the *sine qua non* of scientific truth. Perhaps we should ask, “The repeatability of what?” The assumption is that the repeatability of events for multiple observers means that these events are ‘abiding’ and objectively present. Philosophers such as C.D. Broad and W.T. Stace found this notion insupportable and, on logical grounds as well, this position is untenable as an argument falling on the fallacy of *argumentum ad populum* (Broad 1914; Stace 1960; Copi 1968).

If we were to reverse the usual materialist ontological assumption and adopt that of the Madhyamika, which assumes emptiness and appearance generated by cause and transience, then we might find that ‘objective’ events are created by the repetition of particular *operations* of doing and observing, rather than by existent ‘things’. This would seem to hold for the supposedly ‘subjective’ mystical experiences of meditators as well as for the meter reading scientist. Each activity, science or meditation, prescribes a ‘place’ to go to and procedures to be carried out. When one follows the instructions, the phenomena associated with the appropriate experience occur within the given prescribed space/time/activity frame.

### Physics and Ontology

In some measure physics has been forced into just such an operational (instrumental) stance, particularly particle physics, and it is from this discipline that we witness some of the most vociferous questioning of ontological assumptions (Bridgman 1927). James Jeans, a physicist writing on the quantum revolution, sums up the theoretical position forced upon us by the findings of modern physics:

- (1) So far as the phenomena are concerned, the uniformity of nature disappears.
- (2) Precise knowledge of the outer world becomes impossible for us.
- (3) The processes of nature cannot be adequately represented within a framework of space and time.
- (4) The division between subject and object is no longer definite or precise; complete precision can only be regained by uniting subject and object into a single whole.

(5) So far as our knowledge is concerned, causality becomes meaningless.

(6) If we still wish to think of the happenings in the phenomenal world as governed by a causal law, we must suppose that these happenings are determined in some substratum of the world which lies beyond the world of phenomena, and so also beyond our access (Jeans 1958, 145).

The final point that Jeans makes is elaborated in the writings of Bohm. His last work was, like Jeans', a continuation of that line of conceptualization which attempts to address the epistemological issues raised by modern physics. Unlike Popper and Eccles and other dualists, Bohm moves more in the direction of a fundamentally monistic but yet functionally dualistic view and, hence, away from a purely interactionist position. Although the 1927 Physics Conference at Solvay seemed to hand down the final epistemological 'word' with the general adoption of the Copenhagen interpretation, the issue of consciousness and reality and their relationship in the paradigm of physics was not put to rest. In particular, the universe described by Einstein was, for him, objective and deterministic, while that described by the more radical exponents of quantum theory was phenomenological and probabilistic. Bohm felt a need to reconcile these differences and it was this that initially motivated his re-interpretation of quantum mechanics (Bohm 1985b).

The philosophical spectrum that emerged around the Copenhagen interpretation was fairly broad. From Bohr's point of view, the *existence* of the 'entities' could never be established and it was therefore necessary to accept the discontinuity that seemed to exist in nature and get on with the job of instrumental statistical measurement. If the equations worked (as they seemed to), then that was sufficient. Varying positions were taken vis-à-vis the existence of the 'things' being measured and their relationship to the observer, and hence consciousness. Jeans, Arthur Eddington and Erwin Schrödinger, at one end of the spectrum, advocated a quasi-identity between mind and matter, making existence inextricable from observation; Werner Heisenberg, in the middle with his belief that indeterminacy is a fundamental aspect of nature, insisted that the *mathematical functions* are determined by observation, not necessarily the existence of the events; while Einstein, Louis de Broglie, and Max Planck staunchly defended an objective determinism and hence mind as distinct and separate from matter. It was in this context that Einstein was said to have uttered

that now famous statement that “God does not play dice with the universe” (Jeans 1958; Eddington 1928; Schrödinger 1959; Heisenberg 1958).

Starting from deep concerns about the apparent fragmentation dominant in all aspects of life and knowledge, Bohm suggests that the theories of modern physics indicate that everything is connected through a total wholeness he calls the ‘implicate order’. He feels that not only quantum mechanics, but relativity theory as well, point toward this universal totality, and thus he attempts to reconcile the above spectrum of philosophical positions. For Bohm the ‘whole’ is in a constant flowing movement like an organism which he calls the ‘holomovement’ and it is this process which is fundamental to reality and consciousness, mind and matter. It is for Bohm immeasurable, undefinable and not limited or confined by any system or order. At this level, he states, there is no fundamental theory or description applicable (Bohm 1980).

Although the implicate order begins to take on an aspect not unlike the divine, Ted Peters argues that Bohm is still describing matter, not spirit (Peters 1985). Robert Russell, on the other hand, states that Bohm’s ideas are close to a pantheistic interpretation of a divine self-transcendent nature which points to an impersonal conception of God in Bohm’s theory (Russell 1985, 153). However, with or without an implicit divine principle, by stating that the whole creates the parts, Bohm is suggesting that reality comes about through some operation or operations of the whole. Geoffrey Chew, a physicist known for ‘Bootstrap Theory’, asserts that these operations are soft-photon interactions, and in statistical mass they generate the fragmentation of the whole into the ‘explicate order’ which we experience as the world of ‘objects’ in ‘space-time’ (Chew 1985).

But, if we recall that the very existence of these quantum particle/waves or photons of the ‘explicate order’ only can be understood, according to quantum theory, as the result of the use of particular instruments and the doing of certain activities of observation, then we must see these phenomena as directly connected to the workings of conscious awareness. So, from the perspective of Bohm and Chew, we arrive at a reality of ‘things’ in ‘space-time’ which emerges from the activity or operations of ‘conscious doing’. This is the case whether we start from the cosmological perspective of Einstein, or the microcosm of quantum

physics, and whether or not we call the whole workings 'God', the 'universe', or the 'implicate order'. Bohm appears to be pointing us in this direction: "So we are led to propose further that the more comprehensive, deeper, and more inward actuality is neither mind nor body but rather a yet higher-dimensional actuality, which is their common ground and which is of a nature beyond both...So we do not say that mind and body causally affect each other, but rather that the movements of both are the outcome of related projections of a common higher-dimensional ground." (Bohm 1980, 209)

This operational connection between the whole and its parts is analogous to the interference pattern method of information storage of the modern hologram, according to Bohm. Each piece of the hologram contains all the information of the whole. As we cut down to ever smaller pieces the clarity fades, but the complete picture is still there. It was, in part, the empirical demonstration of this process that helped Bohm to formulate his notion of implicate and explicate orders: "In terms of the implicate order one may say that everything is enfolded into everything. This contrasts with the explicate order now dominant in physics in which things are unfolded in the sense that each thing lies only in its own particular region of space (and time) and outside the regions belonging to other things" (Bohm 1980, 177).

Bohm apparently wants to maintain some notion of a separate ontological identity as argued by Einstein, yet he is attempting to walk a narrow path between this 'explicate' existence and an unfragmented 'implicate' wholeness. He does this by positing 'hidden variables', as yet undiscovered and existing on a much lower order of quantum events than yet penetrated, but somehow operating from within the implicate whole to create the fragmentation of the explicate order. Within this conception we can have apparent action at a distance, timelessness or time symmetry, and everything everywhere distributed without separateness on the one hand, and separateness, mind and matter, fragmentation and time asymmetric causality on the other. One cannot help but feel that this 'implicate whole' is a description of Mind as a total ontologically generative 'operational consciousness'.

Jeans, who also felt a need for these hidden variables, described them with more vivid imagery:

We may picture the world of reality as a deep-flowing stream; the world of appearance is its surface, below which we cannot see. Events deep down in the stream throw up bubbles and eddies on to the surface of the stream. These are the transfers of energy and radiation of our common life, which affect our senses and so activate our minds; below these lie deep waters which we can only know by inference. These bubbles and eddies show atomicity, but we know of no corresponding atomicity in the currents below (Jeans 1958, 193).

Again, one is struck by the similarity to a notion of a total Mind not unlike the unconscious posited by Sigmund Freud and developed by Carl Jung (Freud 1949; Jung 1953).

For Bohm, the holomovement, or the enfolding and the unfolding of the implicate and explicate orders, is a function of the usual quantum mechanical description, with the addition of what he calls the 'Q' wave (Bohm 1985b). On top of this conceptualization, Bohm posits a 'super-Q' function, or a 'super-implicate' order, from which the implicate orders of both mind and matter arise. In fact he believes that this process of enfoldment, in principle, can be carried on to a third, fourth, fifth and so on, higher order. He posits this super-Q function in order to maintain a definite ontological character to his conception and to give quantum mechanics a causal interpretation. He cannot, however, escape being left with a dualistic world, because each implicate order must arise as a sub-whole from a 'super-order' that encompasses it, suggesting an infinite regress of this's and that's. This merely translates the usual dualism of mind/body onto the 'enfolded'/'unfolded' bipolarism of Bohm's universe.

Perhaps the Copenhagen interpretation and Bohm are more similar than we suspect, each conceptualizing the workings of the observable world differently, however. Bohr's idea that one cannot reasonably discuss existence for quantum events, but merely the operations of measurement, implies a phenomenological and operational notion of reality. Bohm, on the other hand, wants implicit order, continuity and existence, which he finds in the implicate order. Since this order is governed by a higher order, which is in Bohm's terms 'immeasurable' and 'undefinable', we find ourselves returning to Bohr's concept of an unknowable or undefinable existence for quantum events. Further, Bohm states that existence *is* fragmentation, which is also a parallel function in both mind and matter, each finding its origin in the 'super-implicate' order. But this fragmented or discontinuous existence is still intimately tied to the behavior, and hence the

operations, of the implicate order (from which the measuring instrumentation also arises) and to the human observer's participation in that fragmentation through his observation and therefore to consciousness. We are thus again returned to the Copenhagen interpretation's emphasis on instrumentation and observation and the discontinuity of 'events' and their being inextricably tied to the observer. We seem to be left again with neither 'objective' body nor 'subjective' mind but, in the words of the Soto Zen Buddhist patriarch Dogen-Zenji, "...just a flashing into the vast phenomenal world." (Suzuki 1970, 101, 103)

However, in spite of Bohm's emphasis on existence and mind/matter parallels, he, like the more phenomenological interpreters of quantum events, states that, "Such a view of matter makes it rather similar to what we experience as *mind*. Mind is, indeed, generally felt to be much more subtle than matter...Such thoughts unfold from some deeper levels of consciousness that are too subtle normally to be seen. There is therefore a close analogy between what happens with matter and what happens with mind. They are thus similar enough to be intimately related." (Bohm 1985a, 129-130).

Although it appears that Bohm is walking a tightrope between a consciousness-based phenomenological reality and an objective ontology, he seems to want to incorporate *both* qualities into his world view. In discussing consciousness, Bohm often tends to equate it with mind and thought, as in the above quote. In this notion of consciousness he sees parallels rather than identity with the real world in which the principle of complementarity also applies to thoughts as well as quantum events. He continues this line of reasoning to the usage of language and its relationship to thought and hence its connection to the implicate order, viz., language is the process through which thought unfolds from the implicate into the fragmented explicate, order (Bohm 1980).

He indicates that meaning arises from, and is intrinsic to, what we *are* (and do) physically and mentally and that it in turn feeds back into the implicate ground, from which it arises, thus affecting both the enfolding and unfolding of reality. So it appears that meaning is an active factor in reality both in the mental and physical dimensions, which reminds us of the anthropologist Åke Hultkrantz's use of 'belief' in the occurrence of the supernatural, viz., our

intention or 'will to believe' in part creates the experiential world of the supernatural (Hultkrantz 1983). This somewhat 'intentional' notion is also reflected in the work of James whose later writings represent the earliest clear phenomenological position in American thought, although not widely recognized as such (Wild 1969).

### James and Radical Empiricism

James, the Harvard psychologist turned radical empiricist and philosopher, made an interesting attempt to bridge the 'subject-object' dichotomy in the latter part of the Nineteenth Century. He opens his argument for radical empiricism with what appears to be a major departure from his earlier psychology: "For twenty years past I have mistrusted 'consciousness' as an entity; for seven or eight years past I have suggested its nonexistence to my students, and tried to give them its pragmatic equivalent in realities of experience. It seems to me that the hour is ripe for it to be openly and universally discarded" (James 1967, 3).

At first glance it appears that the sympathetic writer on religious and mystical experience is foreshadowing Behaviorism and instrumental psychology. However, this is not actually the case. He sees no need for consciousness as a thing-in-itself whose content is 'filled' with the events of the mental, subjective world. Although he is denying the entity or 'thingness' of consciousness, he is not denying its function. In fact it is this functional approach that he wishes us to consider and to take 'pure experience' as the singular 'stuff' or material of the world. From this stance he argues for a radical empiricism that places 'subjective' events on an equal ontological footing with 'objective' events which, in his system, appear to vary more in degree than in any absolute kind. He explains: "My thesis is that if we start with the supposition that there is only one primal stuff or material in the world, a stuff of which everything is composed, and if we call that stuff 'pure experience', then knowing can easily be explained as a particular sort of relation towards one another into which portions of pure experience may enter" (James 1967, 4).

James accounts for the apparent dichotomy that we all intuitively sense between 'inner' and 'outer', 'subject' and 'object', as being the result of the 'relationship' between these qualities becoming part of this 'pure' experience in

which one of its 'terms' becomes the 'subject' or knower, and the other the 'object', or the 'known'. He feels that this model built on 'experience' as the ontological ground is the final step in the expulsion of dualism which was left behind by the Kantian detachable soul and Descartes' notion of 'extended' and 'unextended' substances. Consciousness is no longer required as the 'place' for the 'unextended', nor is a separate 'outer' world required for the extended. In James' system they seem to be more a functional relationship which is *operationally* determined.

An example of his notion of experiential operationism is found in his description of how we resolve the apparent paradoxical situation of an experiential event which appears to have both 'internal' (subjective) and 'external' (objective) aspects. He explicates this relationship by reference to an analogy of two lines sharing the same point at an intersection. It is the intersection of two processes of 'pure experience' which have two different sets of associations and can be counted as belonging to different groups - the 'inner' or the 'outer'. One such group is the context of our 'inner' biography and the other is the context of the 'outer' perceptual world in which the object is perceived. This duality of context gives the impression of both 'subjective' and 'objective' worlds simultaneously and separately existing in parallel. He extends this argument to include not only perceptual experiences, but states, memories, concepts, etc. (James 1967, 12-15)

Of course, arguing by the analogy of the intersection of two lines has the implicit danger of treating this geometric metaphor as intrinsically similar to the workings of experience and its relation to reality. An objectivist might ask, "where are the lines and where do they intersect, and how does this produce my experience in any case?" Conversely, James fails to ask two obvious questions that this analogy implies, viz., does the chair, as the 'objective line', on which I am sitting at this moment have ontological status and does it also have a conscious experience of me at this momentary 'crossing of paths'? However suspect his analogy might appear on first inspection, by placing 'pure experience' at center stage, ontologically speaking, he is, in effect, giving us a *functionally* useful way of conceptualizing *human* experience and reality.

Further, he does not directly confront the issue of creativity in 'subjective' experience and whether or not it would apply as well to 'objective' experiences, i.e., do we create the referents of our experiences, 'subjective' or 'objective', in whole or in part? Modern cognitive psychologists, such as Graham Reed, tend to regard creative activity within the experiential 'objective' function as hallucinatory behavior (Reed 1974). This reference to hallucination, however, has never solved the essential epistemological problem. It has merely relegated it to a collective descriptive dustbin in the same manner that biologists and psychologists once labelled behaviors that seemed inexplicable in reductionist terms as 'instinct'. For James then, 'subjectivity' and 'objectivity' appear to be primarily functional attributes which are grounded in the way experience is used and coordinated. He does not appear to be attempting to place either side of experience on an ultimate ontological footing when he states that: "The instant field of the present is at all times what I call the 'pure' experience. It is only virtually or potentially either object or subject as yet. For the time being, it is plain, unqualified actuality, or existence, a simple *that*. In this *naïf* immediacy it is of course *valid*; it is *there*, we *act* upon it; and the doubling of it in retrospection into a state of mind and a reality intended thereby, is just one of the acts." (James 1967, 23-24)

In relation to the nature of 'pure experience', James states, borrowing from Hodgson, that his final building block is: "...made of *that*, of just what appears, of space, of intensity, of flatness, brownness, heaviness, or what not'...Experience is only a collective name for all these sensible natures, and save for time and space (and, if you like, for 'being') there appears no universal element of which all things are made" (James 1967, 27).

As we have seen in our brief examination of modern physics, even time and space may be a construction from experience and not identifiable as the final ontological source. 'Being' becomes 'experiential being', without anything solid for it to sit upon or within. Although James seems to be clearly pointing us towards a non-epistemology, by taking the major step of discarding a solid, 'real' consciousness, he does not seem to have any motive other than to remove what he feels is extraneous to our understanding of human reality. He foreshadows the later phenomenologists when he states: "Consciousness connotes a kind of

external relation, and does not denote a special stuff or way of being. *The peculiarity of our experiences, that they not only are, but are known, which their conscious quality is invoked to explain, is better explained by their relations - these relations themselves being experiences - to one another.*" (James 1967, 25)

His reply to any would-be critics who defend the existence of an absolute consciousness by reference to the immediate, intimate experience of their stream of thoughts, feelings, and perceptions as happening 'some place', is that they are experiencing the stream of their own breathing and hence locating 'consciousness' in the context generated by the conglomerate of experiences referred to as 'my body'. For James, consciousness is a fiction, although he admits that thoughts are real and made of the same 'stuff' of things, consciousness being an extra addition extraneous to understanding the phenomena of experience. As we shall see in the next section, Sartre uses a similar argument for rejecting the transcendental ego, or abiding self, as a mere reflection generated from the continuity between conscious experiences or the contiguity of consciousnesses.

### The Phenomenological/Existential Perspective

Husserl, a major exponent of the European phenomenological movement, was seeking the key to all science and knowledge in what he believed to be the 'absolute structures' of consciousness. In this approach he hoped to sum up all of reality and place it squarely in the workings of conscious process. For Husserl, all is to be found in and by consciousness itself. According to Evan Zuesse, his effort was in part a reactionary and religious quest to restore the values being lost to an overly positivistic science and thereby return to a more religious base for existence, albeit in a more suitable form for the modern world. Reality was to be grounded in human perception and true 'things' were to be found in the logical structures of the mind (Zuesse 1985).

The 'intentional' act is the key to understanding the phenomenal world, according to Husserl's theory. All consciousness is 'consciousness of' and, instead of there being a world of material things which intrude upon awareness through the senses, all 'things' are experientially created through the intentional act. In this system the world of things, states, feelings, etc. are, in a very real sense, 'intended' into experiential existence. For Husserl this act of 'intention'

seems to be the functional ontological core of experiential existence (Husserl 1962). In this sense, Husserl appears not to be propounding an epistemology, but rather doing away with it by casting reality into the monism of consciousness. The main phenomenological issue is therefore 'intentionality'.

Tapper elucidates Husserl's notion of 'intentionality' when she states that it is to be understood as:

...noetic - noematic correlation and as constitution. Intentionality as noetic - noematic correlation shows us that experience is always of objects, that consciousness is directed to something other than itself. This means that consciousness is not a closed receptacle only aware of its own ideas, but is an activity directly engaged with the world, through which we understand both ourselves and the world. Not only is consciousness not closed, but the world cannot be opaque to consciousness, or merely in-itself. The world and its objects are necessarily related to consciousness; in and through this relationship objective sense is achieved. Objectivity and subjectivity are interdependent and interrelated (Tapper 1985, 66).

Husserl wanted to demonstrate that through 'intentionality' we bring our whole world into being and give it form and meaning. The intentional act synthesizes the 'raw data' of consciousness into an 'essence' of a given object. According to this system, there seems to be an analytic process in which we first 'deconstruct' the 'object' into its constituent parts which are then synthesized, or 'reconstructed', into the *istegeit*, or 'suchness' we know as the object. In this schema, 'essences' are the building blocks from which intentionality constructs the world and Husserl seems to have taken them as self-existent without reference to context or source. However, Zuesse criticizes Husserl's 'essentialistic' approach for not being contextual enough.

On the other hand, Tapper indicates that Husserl recognizes the importance of the 'natural attitude' or the 'life world' as common to most of us. It is in this attitude that we take for granted the existence of objects, time, space, horizons, and the general multiplicity of appearances. In this context we see ourselves as part of this world and hence we, in part, understand ourselves contextually. Husserl asserts that whilst in the 'life world' mode we cannot gain knowledge of how and what we experience because we cannot understand the 'natural' mode while in it. Therefore, it is necessary to perform the epoché (bracketing) in order to find a 'position' from which to survey the 'inner' workings (Tapper 1985).

These objects, states, etc. which Husserl wishes to examine, whether singularly or contextually existent in the 'natural world', are then transformed

into 'essence' objects by means of the phenomenological reduction or *epoché*. However, Husserl's attempt to thus create a structuralist typology of conscious content and processes suffers from the same problems of all such list-making; it becomes a static representation of the cultural *Zeitgeist* in which it is produced. Similarly in Freud, Jung, Wundt and other psychological typologists of that historical period, these lists tend to reflect the cultural and personal biases and selective perception of the time and place of their origin and are hence contextually relative. In other words, they fail to grasp the nature of the Gestaltian figure/ground relationship as an essential determinative part of perception and hence the 'knowing' process (Zuesse 1985). This type of selective blindness to context inevitably leads to a failure to realize that today's background is tomorrow's foreground. We can see this shift most clearly, for example, when we compare the attitudes expressed in the paintings of Constable with our current concerns. In many of these paintings we see the English gentry in the foreground as masters of the landscape, which exists solely to present riders and horses, whereas today, in the context of post-modern wholistic concerns, the landscape, or the awareness of the importance of the environment, becomes the foreground.

It is unclear from Husserl's position whether or not he maintains an objective ontology. Sartre, according to Phyllis Morris, does. Although Sartre accepts the notion of the intentionality of consciousness in its reflected and unreflected forms, he does not accept Husserl's 'transcendental ego' and it is on this ground that existential, as opposed to phenomenological, consciousness was born (Sartre 1972; Morris 1985).

Sartre argues in his essay, The Transcendence of the Ego, against a 'self' standing apart from and 'behind' consciousness. For Husserl, intentionality is an activity of consciousness which stands over and against the intended object, state, thought, etc., but for Sartre, intentionality *is consciousness itself*. Sartre's position is that all content is on the side of the object, not in consciousness as a container. Consciousness is simply a spontaneity, an *intuitional act*,<sup>1</sup> without

---

<sup>1</sup> According to Sartre's translators in this edition, "An intuition is an act of consciousness by which the object under investigation is *confronted*, rather than merely indicated *in absentia*." Such a confrontation can be in imagination or in perception. Perceptual evidence is the *sine qua non* of science whereas it is *consciousness* for phenomenology. The method is an intuitive

content or, metaphorically, it is like a wind blowing toward the intentional world through an empty space. Sartre seems to be pointing us towards a concept of consciousness which, like James, is neither a place nor a collection but rather an activity. In his system there is no 'transcendental ego' in or beyond consciousness nor are there any contents of consciousness to be explored. The 'I' and the 'me' are both intended objects of *reflected* consciousness, which is consciousness intending itself. They - self, objects, events, etc. - are, in effect, all given to awareness as the dynamic experiential sum of their related consciousnesses (Sartre 1967, 17-22).

Thus, what Sartre has accomplished is a separation of consciousness as an activity from everything else, that is, a separation between the 'intentional' and the 'non-intentional'. Consciousness is therefore never alone or an isolated 'thing' because it is inextricably bound to what it intends. It is a revealing intuitional act created by and enmeshed in what it intuits. A startling consequence of this position is that the Husserlian 'reduction' (epoché) is ipso facto impossible because any attempt to do so leads to consciousness collapsing in on itself. Because of this collapse, we are forced to recognize consciousness as empty, void and *defined by*, as well as defining, the forms and qualities that were 'bracketed' in the phenomenological reduction (Sartre 1967, 22-25). This reminds us of Bohm's notion of the reciprocal unfolding from and enfolding into the 'implicate order', as well as the Buddhist notion of phenomena arising out of emptiness (shunyata) and returning to emptiness.

Sartre insists that any attempt to locate consciousness is much like an effort to measure the inner dimensions of a house by first removing the house to leave the empty lot. 'Bracketing' is the act of removing the house which then leaves us

---

examination of what consciousness is and what it does and does not include. The translators then list what they believe are the salient characteristics of intuition as seen in Sartre's writings:

1. Intuitive knowledge 'has no traffic with' mystical insight.
2. It is not identification with the object as in Bergson.
3. Intuitive perception is not just of the external world, but of consciousness itself.
4. It is possible at any level of abstraction.
5. To intuit an object is not necessarily to know that it exists, except in the case of reflective intuition of the specious present.
6. Intuiting an object does not tell one everything about it. ("...the inadequacy of sense-perception, which is always an apprehension of the object 'in profile'.") This refers to a single 'horizon' (Sartre 1967, 110-113).

with no inner dimension of consciousness to be found. We find ourselves again in the position of Ramakrishna's salt doll. This emptiness of no consciousness per se, but yet aware experiencing remaining an actuality, seems to rub commonsense the wrong way because we experience a sense of 'place' in which our experiences live and happen. Sartre is apparently saying that consciousness itself is the creative act of 'intending' existence - that is, consciousness is inextricable from intentionality and existence; arising as a quality from the sum of all our intentional acts taken in retrospect. Of course, this is not unlike James' interpretation of Bergsonian 'experience'.

In summary, Sartre's concept of consciousness is dynamic, relational and, in a sense, operational in that it creates itself and the awareness of the world through its doings or 'intending'. In Sartre's own words, it is "a spontaneity producing itself." (Sartre 1967, 98) Although Sartre's writing seems to be unclear about the ontological status of the intended things, events and states in consciousness (i.e. 'existence'), he continues by stating that: "The Transcendental Field, purified of all egological structure, recovers its primary transparency. In a sense, it is *nothing*, since all physical, psychophysical, and psychic objects, all truths, all values are outside it; since my *me* has itself ceased to be any part of it. But this nothing is *all* since it is *consciousness* of all these objects" (Sartre 1967, 93).

Sartre continually refers to 'inside' and 'outside' of consciousness in his descriptions of its relation to objects of the world, yet his concept of consciousness seems to be non-spatial, non-temporal, and non-objectified. Where is this 'outside' and, if consciousness is void, where is its 'inside', other than in an operational, relational sense like that described by James? Perhaps this difficulty could be resolved if we were to pose a *pan-consciousness* as the 'real' - enfolding and unfolding itself as an act of intentionality. Within this operational system a 'self' emerges as an intentional act which includes the *apparent* source of the intentional operative behavior as well as that which is intended as object of the said act. This 'pan-consciousness' is not an ultimate 'object' in the same sense as that implied in Bohm's notion of the 'super-implicate order', but is merely activity in the sense of Heraclitus' notion of becoming.

Although we cannot consider Sartre's formulation of consciousness in his interpretation of phenomenology as a complete picture, it offers a number of useful features.

First, progressing from the phenomenology of Husserl, it places an operational consciousness devoid of 'substance' at the center of human behavior, perception, knowing and at the core of reality itself. In this sense it is nicely congruent with the world-view of certain religious traditions (i.e. Buddhism) as well as the some interpretations of the nature of the physical world as seen through the eyes of some of the quantum theorists. By so doing, it has the potential to obviate the notion of an ontologically split world where subject and object coexist, but never meet. I say that Husserl's phenomenology and Sartre's existentialism have the potential to transcend dualism, but the 'transcendental ego', in the case of the former, and the indecision about the ontological status assigned to intended and/or reflected objects in the latter, leaves some room for doubt. However, their value in focussing us on the creative and ontological sources in conscious process tends to override these shortcomings and ambiguities.

Sartre further explicates the relationship of consciousness to object when he states: "There exists an *immanent* unity of these consciousnesses: the flux of consciousness constituting itself as the unity of itself. And there exists a *transcendent* unity: states and actions. The ego is the unity of states and of actions - optionally, of qualities. It is the unity of transcendent unities, and itself transcendent. It is a transcendent pole of synthetic unity, like the object-pole of the unreflected attitude, except that this pole appears solely in the world of reflection." (Sartre 1967, 60-61)

However, he fails to recognize the arbitrariness of placing the object on an opposite qualitative and ontological pole to that of the transcendental unity of consciousnesses - the abiding self. Buddhism, as well as the more radical interpretations of quantum mechanics, on the other hand, appear to treat both as ontologically equal without ultimate status given to either.

Second, in pressing for a consciousness-based 'science', Sartre and Husserl both open the door to an *operational ontology* which is relative and flexible. It is relative in that it depends on attaching to certain perceptions ontological status

through emphasis and assignment, rather than by granting status *a priori*. Of course, Sartre goes further in this direction than Husserl by removing the transcendent, self-existent 'I'. Further, by positing a transcendent unity created through the synthesis of objects, ideas, etc., he opens the possibility of reassigning ontological status and, in a sense, this allows us to 'bend' or create reality much as a 'sorcerer' (sic.).

Sartre describes the act of 'sorcery' implicit in the creation of the 'me': "We are thus surrounded by magical objects which retain, as it were, a memory of the spontaneity of consciousness, yet continue to be objects of the world. This is why man is always a sorcerer for man. Indeed, this poetic connection of two passivities in which one creates the other spontaneously is the very foundation of sorcery, the profound meaning of 'participation'. This is why we are sorcerers for ourselves each time we view our *me* " (Sartre 1967, 82). Of course, there is no logical reason why this cannot be understood as the same ontological act which forms the 'object pole' of experience as well.

Third, the phenomenological/existential notion is epistemologically more congruent with modern physics, pointing towards a unifying relationship of observer and observed. This cross-disciplinary connection adds power and credibility to both and opens the door to the possibility of a new empiricism which is less at odds with experiential religion.

Sartre is presenting us, in a sense, with a notion of *existence*, a Transcendental Consciousness which is the intentional 'All and Everything' This Transcendental Consciousness is fragmented into individual consciousnesses by the intentional and reflective acts, but *not* by the apparent separation of our bodies as entities which are themselves intended 'explications'. That separation seems to be a product, rather, of the operations of reflected consciousness. Sartre explains that:

...transcendental consciousness is an impersonal spontaneity. It determines its existence at each instant, without our being able to conceive anything *before* it. Thus each instant of our conscious life reveals to us a creation *ex nihilo*...

It is enough that the *me* be contemporaneous with the World, and that the subject-object duality, which is purely logical, definitively disappear from philosophical preoccupations. The World has not created the *me*; the *me* has not created the World. These are two objects for absolute, impersonal consciousness, and it is by virtue of this consciousness that they are connected (Sartre 1967, 99, 106).

In spite of Sartre's attempt to put the world entirely on the side of existent objects, he leaves us with no knowable 'organism' or 'thing' other than that

which is apprehended as a conscious intentional act. The object therefore remains in the realm of the 'hidden variables' which are inaccessible to the human sphere. This notion points to an *experiential existentialism* in which materialism becomes merely another state. All is just a moment of happening. And this reminds us, again, of the Soto Zen patriarch, Dogen-Zenji - existence creates consciousness which creates existence in a cycle of dependent origination.

### Summary and Conclusions

Although Bohm appears to view consciousness as intentional (at least at the linguistic level) and determinative of the explication of the object world, he seems to confuse awareness with consciousness and he makes no distinction between consciousness as unreflected or reflected. Further, he seems to be unaware that most acts of awareness are reflexive retrospections and the mind, or consciousness, that he seems to refer to, is a functionally active retrospective reflected intentionality, the 'subjective' function of intending consciousness. This, of course, is not consciousness per se, which in this paper is seen as corresponding approximately to Bohm's 'super-implicate order' or 'hidden variables'. In spite of these differences, Bohm, as a major representative of the world view of quantum physics, appears to be describing a similar operational relationship between 'consciousness' and 'objective' existence to that of Sartre's interpretation of phenomenology.

Bohm's last contribution to this ongoing debate about mind and matter also sheds some light on the relationship of brain and consciousness. These two 'things' (events) can now be understood as differing levels of unfoldment of the same aspect of the implicate order, but distinguished and separately fragmented by contrasting emphases and types of operations occurring in their 'production'. Electrical stimulation of the brain produces 'mental' effects not because one is interfering with the physiological 'source' of the mind, but because mind and brain are different levels of unfoldment of the same process or aspect of the total 'energy field' (sic). In a very real sense they show complementarity share a metaphoric relationship not unlike that proposed by Julian Jaynes. In this view, however, the asymmetrical interpretation of consciousness (mind) as a linguistic

metaphor of behavior and brain, as posited by Jaynes, is relativized into a symmetrical relationship (Jaynes 1976). In other words, the mind and the brain are two different *experiential operational metaphoric explications* of the same underlying source (implicate order), and, depending on operational emphasis, one appears to be the 'cause' and the other the 'effect'.

Although the notions of consciousness that emerge from the paradox of quantum phenomena fail to fully bridge the epistemological gap, they do give us some insights into how this may be achieved. The notions of complementarity and implicate order, when taken together with the existential-phenomenological description of the operations of consciousness and the notion of metaphor, seem to point to a more total concept of consciousness, awareness and reality which is capable of functioning as an undivided, epistemic whole. The 'pan-consciousness' being proposed here is indistinguishable from Buddhist shunyata, Bohm's 'super-implicate order', Bergsonian and Jamesian 'pure experience', and Sartre's Transcendental Consciousness. The difference is to be found in the removal of ontological bias whether it is toward idealism or materialism. As in the case of time and space in special relativity theory we are asked to drop an absolute - ontological status for any and all phenomena. The constant that remains is *experience* (human experience for us) and all things, states, ideas, etc. are the activities of the intending operations which are without place or ultimate attribute and which arise from the substanceless, dynamism of 'pan-consciousness' (or curved space-time, etc.).

It is, in a sense, the 'all and everything' but without thing, time, or space which emerge only as explicate metaphors operationally thrown up and perceived as an operationally reflected act. We develop not only the sense of the 'I' through Sartre's notion of a backward cast 'shadow' of a multitude of reflected awarenesses confronted in the 'now' retrospectively, but our total ontological sense about everything is just such a 'shadow'. Underlying this continuous happening is the operational core of 'pan-consciousness' which has no place or organism in which it resides, but is both place and organism when unfolded and emptiness when enfolded. Such a non-epistemic stance obviates any need for a solid 'objectivity' observed by an insubstantial 'subjectivity' because reality is

both object and subject simultaneously and has substantiality and emptiness both.

### References:

Bohm, David. 1980. Wholeness and the Implicate Order. London: Routledge & Kegan Paul.

\_\_\_\_\_. 1985a. "Fragmentation and Wholeness in Religion and in Science." Zygon: Journal of Religion and Science 20 (June):125-133.

\_\_\_\_\_. 1985b. "Hidden Variables and the Implicate Order." Zygon: Journal of Religion and Science 20 (June):111-124.

Bridgman, Percy W. 1927. Logic and Modern Physics. New York: Macmillan.

Broad, C.D. 1914. Perception, Physics, and Reality. Cambridge: Cambridge University Press.

Chew, Geoffrey F. 1985. "Gentle Quantum Events as the Source of Explicate Order." Zygon: Journal of Religion and Science 20 (June): 159-164.

Copi, Irving M. 1968. Introduction to Logic. Third Edition. New York: Macmillan.

Eddington, Arthur S. 1928. The Nature of the Physical World. Cambridge: Cambridge University Press.

Einstein, Albert. 1961. Relativity: The Special and the General Theory. Translated by R.W.Lawson. New York: Bonanza Books.

Freud, Sigmund. 1949. Collected Papers. Volume IV, Translated by J. Riviere. London: The Hogarth Press.

Happold, F.C. 1963. Mysticism: A Study and an Anthology. Middlesex, U.K., Penguin Books.

Heisenberg, Werner. 1958. Physics and Philosophy. New York: Harper Torch Books.

Hultkrantz, Åke. 1983. "The Concept of the Supernatural in Primal Religion." History of Religions 22 (February): 231-253.

Husserl, Edmund. 1962. Ideas: General Introduction to Phenomenology. Translated by W.R.Boyce-Gibson. New York: Collier-Macmillan.

Gupta, M. 1973. The Gospel of Sri Ramakrishna. Translated by Swami Nikhilananda. New York: Ramakrishna-Vivekananda Center.

Jackson, Roger. 1986. "For Whom Emptiness Prevails: An Analysis of the Religious Implications of Nagarjuna's Vignahavyavartani 70." Religious Studies 21: 407-414.

James, William. 1967. Essays in Radical Empiricism and a Pluralistic Universe. Edited by R.Barton Perry. Gloucester, Mass.: Peter Smith.

Jaynes, Julian. 1976. The Origin of Consciousness in the Breakdown of the Bicameral Mind. Boston: Houghton Mifflin.

Jeans, James. 1958. Physics and Philosophy. Ann Arbor, Michigan: University of Michigan Press.

Jung, Carl Gustav. 1953. "Two Essays on Analytic Psychology." In The Collected Works, Vol.7, Edited Herbert Read, Michael Fordham, and Gerhard Adler, 2nd Edition, Translated by R.F.C.Hull. London: Routledge & Kegan Paul.

Loy, David. 1986. "The Mahayana Deconstruction of Time." Philosophy East and West 36 (January): 13-23.

Morris, Phyllis Sutton. 1985. "Sartre on the Transcendence of the Ego." Philosophy and Phenomenological Research XLVI (December):179-198.

Peters, Ted. 1985. "David Bohm, Postmodernism, and the Divine." Zygon: Journal of Religion and Science 20 (June): 193-217.

Pribram, Karl H. 1986. "The Cognitive Revolution and Mind/Brain Issues." American Psychologist 41 (May): 507-520.

Popper, Karl R. and John C. Eccles. 1981. The Self and Its Brain. London: Springer International.

Russell, Robert John. 1985. "The Physics of David Bohm and Its Relevance to Philosophy and Theology." Zygon: Journal of Religion and Science 20 (June): 135-158.

Reed, Graham. 1974. The Psychology of Anomalous Experience. Boston: Houghton Mifflin.

Santina, Della Santina. 1986. "The Madhyamaka and Modern Western Philosophy." Philosophy East and West 36 (January): 41-54.

Sartre, Jean-Paul. 1972. The Transcendence of the Ego: An Existentialist Theory of Consciousness. Translated by Forrest Williams and Robert Kirkpatrick. New York: Octagon Books.

Schrödinger, Erwin. 1959. Mind and Matter. London: Cambridge University Press.

W.T.Stace, Philosophy and Mysticism (Philadelphia: Lippincott, 1960).

Suzuki, Shunryu. 1970. Zen Mind, Beginner's Mind. Edited by Trudy Dixon. New York: Weatherhill.

Tapper, Marion. 1985. "Husserl and the Subject-Object Dichotomy." Philosophical Inquiry 7 (Spring): 65-73.

Tart, Charles T. 1975. States of Consciousness. New York: E.P.Dutton.

Whorf, Benjamin Lee. 1956. Language, Thought and Reality. Cambridge, Mass.: The MIT Press.

Wild, John. 1969. The Radical Empiricism of William James. New York: Doubleday.

Zuesse, Evan M. 1985. "The Role of Intentionality in the Phenomenology of Religion." Journal of the American Academy of Religion 53 (March): 51-73.