

Approaches to Consciousness in North American Academic Psychology

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This paper argues that increased interest in consciousness, in North American academic psychology, has not been accompanied by an appreciation of the possible value in approaching such an inscrutable subject from several perspectives. Inadequacies of dialectics and materialism, as currently powerful influences upon approaches to consciousness, are discussed. Some of the difficulties of current approaches to consciousness within the field of cognitive psychology are also discussed. Subjective approaches to consciousness, often criticised as unscientific, are presented as viable alternatives. Recent speculations about reality, cosmology and brain processes, in the form of a holographic model, are presented as one new metaphor which may lead to an increased understanding of consciousness. A plea is made for keeping metaphysical and paradigmatic options open rather than fortifying current values.

All psychologists, whether wittingly or not, have a stake in the psychology of consciousness because it is the ground of human experience. Ornstein (1973) goes so far as to say that "psychology is primarily the science of consciousness. Its researchers deal with consciousness directly when possible, and indirectly, through the study of physiology and behavior, when necessary" (p.xi). There seems little doubt about the importance of consciousness to the understanding of human behavior.

Natsoulas (1978a) examined seven entries under *consciousness* found in the *Oxford English Dictionary* as a guide to approaching the subject. He offers a modification of the fourth entry:

One exemplifies consciousness by being aware of, or by being in a position to be aware of, one's own perception, thought, or other current mental episode. It is a matter, however, of being non-inferentially aware of them, or of undergoing what we may call 'direct awarenesses.' To undergo a direct awareness in this sense is to have the thought (whose truth one takes for granted) that such and such is happening or has just happened, in one's mind or brain, when what this thought intends determines non-inferentially, and in no sensory way, one's having it. (p. 911)

Consciousness, as defined above is intended as a basis for reference in this paper. Other definitions of consciousness are available elsewhere (see Strange, 1978).

Any definition of consciousness needs to be accompanied by a reminder that, strictly speaking, consciousness is unique and, therefore, not definable in terms of anything else (Drever, 1975). A discussion of consciousness results in the paradoxical situation of speaking about something that does not lend itself to dialectics (logical argumentation). For this reason it is important to consider non-dialectically based approaches to consciousness.

If consciousness is the fundamental ground of human experience, its study has the potential to provide a basis for integration of the specialized, and often disconnected, areas of enquiry within the subject discipline of psychology (e.g., Hilgard, 1980; Weldwood, 1979). Considerations of consciousness bring the psychologist back to one of the original purposes of the discipline—to understand the nature of human experience within the context of the individual's life-world. Human scientific psychology (Giorgi, 1970) focuses upon this purpose, while natural scientific psychology is more concerned with those aspects of human nature that lend themselves to public observation and measurement. Human scientific psychology values the understanding of a person's search for meaning through the uncovering of the structures of human experience rather than the explanation, measurement, control, or prediction of that experience. If the psychology of consciousness does not ultimately address the phenomenal experience of the life-world, it may lack relevance for persons engaged in self-knowledge and self-understanding.

Interest in Consciousness

Although there has been a revival of interest in consciousness (cf. Hilgard, 1980; Mandler, 1975; Natsoulas, 1978b; Pope & Singer, 1978), mainstream academic journal articles have been largely devoted to theoretical issues. Natsoulas (1978b), for example, sees consciousness as the *ultimate theoretical* question. Although this claim may be true it expresses a latent bias towards approaching consciousness. If we approach consciousness only as a theoretical question we may overlook non-dialectical ways of knowing which depend upon sensation, emotion, intuition, and contemplation rather than logical enquiry.

The present paper argues that consciousness is ultimately a personal matter which may be approached in a variety of ways that lead to an understanding of, as Natsoulas (1978a) terms it, the "what like" aspect (unique subjective experience) of consciousness. An exclusively dialectical approach to consciousness tends to unnecessarily remove it from the world of the average psychologist to the rarefied atmosphere breathed by philosophers and psychological theoreticians. An inevitable result of

such a restrictive approach is to turn the study of consciousness into a complex dialectical exercise beyond the understanding of many people, whether they be psychologists or lay persons. Such a trend can be altered with increased acceptance of multiple epistemologies and paradigms providing a broader base for the exploration of consciousness. Structural knowledge (a formal system of knowledge) supplemented by "what like" understanding seems a more complete approach to the study of consciousness because it does not exclude ways of knowing which are difficult to reconcile with the emphases upon public observation and quantification found in natural scientific psychology.

Reluctance to accept the subjective experiential element in "knowing" may be a reason for the neglect of consciousness in courses offered at major North American universities. The vast majority of courses on consciousness in the United States are offered by smaller state and regional colleges rather than major universities (see "Degree Programs", 1978). Osborne (1979) also found that of the fifty-seven psychology and educational psychology departments in Canada, six offered courses dealing exclusively with consciousness while four offered courses dealing exclusively with transpersonal psychology. One approach to consciousness which probably receives adequate coverage is the physiological (cf. Hebb, 1968; Sperry, 1969; 1970). Most likely, this approach is acceptable to academic psychologists because it represents a natural scientific psychology with its attendant materialistic perspective.

In spite of considerable past discussion of the legitimacy of the psychology of mind and the method of introspection, as well as a revival of interest in consciousness (cf. Natsoulas, 1978b), the topic of consciousness is uncommon in courses offered at major North American universities. The discrepancy between the philosophy of science as professed and the philosophy of science as taught in North American academic psychology (here after referred to as American psychology), as far as consciousness is concerned, indicates a bias in favor of topics which are more amenable to the prevailing world-view (natural science). The study of consciousness in American psychology could be facilitated by a plurality of metaphysical perspectives rather than restriction by natural science and materialism (the metaphysical view that matter is the only reality).

The Influences of Materialism and Dialectics Upon Approaches to Consciousness

Natural scientific psychology tends to be the prevailing psychology of American universities. The usual implicit, if not explicit, metaphysical view of "scientific" psychology is materialism accompanied by heavy

reliance upon dialectics. A commitment to the "scientific method" has tended to limit enquiry to aspects of human experience which are accessible to such a methodology.

Proponents of the natural scientific paradigm, while acknowledging the importance of subjective experience, have difficulty in reconciling subjectivity with their commitment to the values of natural science. Although there is theoretical acknowledgment of the value of subjective experience (e.g., Natsoulas, 1978b), this seldom leads to the implementation of alternative paradigms or epistemologies in major American psychology departments. The low frequency of phenomenologically oriented course offerings, the absence of clinical programs, and the emphasis upon experimental psychology in many American psychology departments are strong indications of the hegemony of natural scientific psychology. Inspection of recent papers on consciousness in APA journals shows a concentration upon the materialistic perspective (e.g., Natsoulas, 1978a, 1978b). This paper does not deny the value of materialism as a philosophical basis for psychology but affirms that there is more than one way of knowing and that not all ways of knowing are scientific (see Wilber, 1979, p.17).

Although powerful objections to materialism as a *complete* epistemology have been available for many years (e.g., Bergson, 1911a; 1911b), materialism flourishes as the dominant philosophy manifested in American psychology (Joynson, 1970). The wisdom of favoring one way of knowing is questionable, if not ironic, particularly when it comes to studying consciousness.

Materialists seem to believe that natural science will lead to final answers. Nonetheless, it is possible that natural scientific paradigms and dialectical methods will prove inadequate in a field which may elude intellection, empirical analysis, or subject-object observation. When faced with this possibility many materialists respond by arguing that although alternative ways of knowing exist, they are unsuitable as a basis for science (e.g., Feigl, 1971). Materialism embodies values (e.g., quantification) which are incompatible with values implicit in alternative ways of knowing (e.g., intuition, mysticism). The ascendancy of the values of materialism is not the result of an unquestionably superior philosophical position. Kuhn (1962) has suggested that the evolution of scientific paradigms is a socio-political process involving conflicting values. Perhaps the root question here is whether psychology should be a science and if so, what kind? This paper suggests that the time has come to re-examine the prevailing commitment to natural science found in American psychology especially in relation to the study of consciousness. Perhaps it is time to pay greater heed to the view that psychology become a human rather than a natural science because of the unique problems

that arise when a person is both the subject and object of enquiry (see Giorgi, 1970).

The rise of materialism within American psychology began shortly after the birth of the new discipline. James (1890) noted the influence of materialism in an emerging view which sought to explain consciousness as a function of neuropsychology. Materialism was instrumental in the development of a more rigorous but conservative psychology which came with Watson's (1914) pronouncement that "psychology must discard all reference to consciousness." So began a long period in which the "objective scientific" approach to psychology (cf. Broadbent, 1961; Hebb, 1974) was, and still appears to be, the dominant force.

In the interest of scientific respectability, psychology became the study of behavior rather than mind. Knowledge of subjective experience had to be inferred from observed behavior. A major consequence of the shift towards positivism was that introspection was discarded because of its propensity for unreliability. Yet, much of what has been viewed as unreliability and error variance may constitute the organismic variables which are, perhaps, genuine subject matter for psychology (Burt, 1962; Joynson, 1970; Underwood, 1975). The effort to establish psychology as a nomothetic science of behavior seems to have led to the neglect of idiographic variables which were, and may still become, the focal point of the discipline.

The narrow metaphysical perspective of western psychology seems to result from the avoidance of the subjective human phenomena that constitute part of its *raison d'être*, and from the implicit value judgment that psychology should be a natural rather than a human science (Giorgi, 1970). Rather than trying to expunge the subjective element from the discipline, psychologists might give more consideration to the claim that the subjectivity of human consciousness is an inescapable aspect of the human being which can be explored with human scientific methods as well as natural scientific methods (e.g., phenomenology).

We need to keep an open mind concerning the validity of alternative approaches to the study of such crucial and puzzling areas of human functioning as brain, mind, and consciousness. Our knowledge and understanding of consciousness may be advanced by greater tolerance of the usefulness of personal experience as a basis for integrating conceptualizations of consciousness and a more flexible attitude towards the dialectical form of personal communications about consciousness (e.g., the alleged ineffability of mystical insights into the nature of consciousness).

Cognitive Psychology and Consciousness

Although the psychology of consciousness has been avoided in the past

by many cognitive psychologists, Mandler (1975) allows that the concept of consciousness is "respectable, useful and probably necessary." Mandler offers the view that although consciousness is an important aspect of human experience, it is neither "primary nor sufficient." According to Mandler consciousness is just one mode of cognitive processing. Such a view appears to conflict with the definition of consciousness offered earlier and leads to the question of just what consciousness means to cognitive psychologists such as Mandler (1975), Miller (1962), and Neisser (1967). These psychologists apparently conceive of consciousness as some sort of limited capacity mechanism of attention, and claim that only the result of and not the process of thinking is available for direct observation (cf. Nisbett & Wilson, 1977). The admission of consciousness to the field of cognitive psychology apparently has to be on terms dictated by theorists with pro-information processing and anti-introspectionist biases (see Nisbett & Wilson, 1977). Even Shephard (1978), a prominent cognitive psychologist, has noticed the neo-behaviorist and anti-mentalistic orientation of cognitive psychology.

Mandler's approach to the study of cognitive processes is an example of the restriction imposed by following the natural scientific model. Direct observation usually means public observation and measurement. However, there are experiences within a person's phenomenal field which, although not directly observable or measurable, are accessible to the individual (e.g., peak experiences). These types of experiences, while not subject to public observation, are concensually verifiable by those who have experienced them. For example, what does it mean to be "stoned" on marijuana? The disjunctive nature of the concept of being "stoned" cannot be understood through propositional statements in the way it can be understood through personal experience. The same can be said of other altered states of consciousness (schizophrenia, peak experience, mystical experience, being in love, etc).

Subjective human experience does not always produce unambiguous observable behavioral manifestations. The experiencer may wonder whether his or her phenomenal experience is an illusion or not. Concensual validation with other experiencers may lead to a shared experience but does not establish the truth or falsity of the common experience. Nevertheless, all epistemologies are relative to concensual agreement about their underlying assumptions, hence concensual validation of subjective experience is ultimately no less valid than other ways of knowing. Even when observable physical repercussions of human experience are available, their measurement does not fully explain the essence of a lived-experience. As Existentialists point out, a person's phenomenal experience is not a matter of speculation but a reality which is personally and passionately involving. Many psychologists will object to the inclu-

sion of such an "unscientific" type of knowing within psychology, believing that it belongs in philosophy or religion. Nevertheless, some psychologists and natural scientists realize that philosophical and religious questions are inextricably involved with the practice of science. Transpersonal psychologists believe that religious and philosophical knowledge, as well as the empirical knowledge of science, can contribute to the understanding of human nature. A person's capacity to know through the manipulation of conceptual abstraction or through intuition and contemplation are ways of knowing which form an important part of human experience. As Kuhn (1962) has shown, science, religion, and philosophy interact to shape the evolution of knowledge. To view psychology as a science removed from philosophical and religious influences is unrealistic. The phenomenon of scientism is a reaction to religious and philosophical "intrusions" into science which ironically makes science a practical religion. Psychology without philosophical and religious considerations is psychology with a limited frame of reference and consequently limited meaning (cf. Dennett, 1978; Giorgi, 1970).

Psychology *needed* to revolt against philosophy in the late nineteenth century in order to establish its identity as a discipline. Now that this need has been satisfied there appears another need for psychology to recognize the overlap and complementarity between itself and philosophy. As Giorgi (1970, p. 96) points out, "one does not do an experiment on a theory of man."

An idiographic approach to the study of consciousness through private experience and observation may be more useful, given our relative ignorance in this area, than insisting that the method of investigation conform to prevailing paradigms and values.

Eastern psychology has much to offer the individual who is interested in consciousness. Eastern methods of self-observation (see Ouspensky, 1949) differ from conventional introspection in that they require extended training and a special quality of attention. Eastern techniques of self-knowledge (e.g., meditation) require considerable effort and self-discipline. This approach to self-knowledge involves a type of empiricism which is almost unknown in American psychology (Weldwood, 1979). Through extensive experience the individual becomes more aware of the extent of self-deception (e.g., the meditator realizes that his or her observation of the absence of thought within his or her consciousness is in fact a thought and, thus, begins to recognize the perplex of subject-object contradictions which observation of consciousness entails).

There are similarities between Eastern techniques of self-knowledge and phenomenology. Both originate from outside North America and are small eddies in the mainstream of American psychology. They emphasize the suspension of premature analysis and evaluation in the in-

terest of extended observation and description of phenomenal experience. Underlying structures emerge slowly like a developing photographic print. The emphasis is upon uncovering what is there rather than attempting to make systematic interventions in order to test preconceived theories. The approach might be characterized as receptive rather than manipulative knowing.

Mandler, Miller, and Neisser seem to be preoccupied with the limits of attention but say nothing of the quality of attention [e.g., the quantum shift in world-view as a result of peak experiences (Maslow, 1968) or psychotherapy (Watzlawick, 1978)]. Mandler is troubled by "perjorative evaluations" such as "automatic" or "unconscious processing." The development of consciousness is seen by Mandler as dependent upon organism-environment interaction and not some "magical burgeoning of internal awareness." Consciousness is conceptualized operationally by Mandler in terms of information processing. The same positivistic orientation seems to underlie his characterizations of meditation as a "closed" system and the conventional acquisition of knowledge as an "open" system.

There appear to be two misunderstandings implicit in the approach of Mandler, Miller, and Neisser to consciousness. The first misunderstanding is related to the distinction between the quantitative and qualitative dimension of consciousness. A learned person may not be aware that he/she talks too much about things he/she may know but not understand experientially. For example, there is a difference, in the understanding of childbirth, between a male obstetrician and an obstetrician who is a mother. The second misunderstanding results from emotional reaction to the data of consciousness. The fact that an individual is not aware of the automaticity of much of his or her behavior is well documented (e.g., Greenspoon, 1955).

Simple exercises in self-observation can lead to dramatic changes in the quality of human consciousness (e.g., the obese person who makes a detailed record of food intake, or the meditator who watches the internal dialogue in his or her head). There is a qualitative dimension of consciousness that can transform knowledge to understanding. Such a dimension is always a personal experience—something ignored by Mandler and his colleagues. Rogers (1967) touches on the same point when he discriminates between "significant" learning, involving the whole person, and "associative" learning. The meditative disciplines of the East such as Zen Buddhism and Taoism stress the concept of "right seeing" for the same reason.

Mandler's characterization of meditation as a closed system appears to be a result of looking at consciousness in terms of quantitative attention. The transcendent aspects of meditation can transfer to the meditator's

life as a whole to produce a qualitative change. The system of Zen meditation, beginning with *zazen* (eyes open) and *kin hin* (walking meditation), helps generalize the meditative process to life at large. An expansion of awareness can produce a dramatic change in the quality of the lived-world. For example, a meditator's consciousness can develop to the point where he or she is aware of gravity in a way that avoids the effect of normal habituation. Although perceptual selectivity and habituation have obvious adaptive value, they also tend to blunt the cutting edge of life. More acute contact with the phenomenal field can be gained through meditation. Most people are not fully aware of their phenomenal field. This lack of self-awareness is sometimes described as a state of hypnotic or sonambulistic sleep (Merrell-Wolff, 1973a; Ouspensky, 1949).

Nisbett and Wilson (1977) suggest that it is somewhat improper for prominent theoreticians in cognitive psychology to dictate the terms for the study of consciousness when their research concerns memory and perception rather than higher order cognitive processes. The relative inaccessibility of consciousness via the domain of cognitive psychology is clearly described by Jaynes (1976). Jaynes describes what consciousness *is not*. For example, consciousness is not: a copy of experience, the repository of concepts, necessary for learning, necessary for thinking, necessary for reason, located in the head. He concludes that "we shall never be able to understand consciousness in the same way that we can understand things that we are conscious of" (p.53). Jaynes offers the analogy of a flashlight throwing a spot light in the dark as an analogy to explain peoples' lack of awareness of their general lack of awareness: just as we do not see what is outside the spotlight, so are we unaware of that of which we are unaware. Similarly, a man who has unknowingly fallen asleep is only aware of this upon awakening. Jaynes identifies the fundamental problem of approaching consciousness solely in terms of our conceptual apparatus. The problem of using metaphors based upon past experience is, as Jaynes concludes, that "there is not and cannot be anything in our immediate experience that is like immediate experience itself" (p.53). Such a statement seems compatible with the nonintellectual perspective of Zen and mystical traditions (mystical enlightenment experiences have an ineffable quality) but obviously creates a barrier for dialectical approaches.

The equation of consciousness with decision making and rationality overlooks the fact that cognitive processes can be just as automatic as other human behavior. The ultimate dilemma of the thinker is to be able to discriminate between truly conscious thought and mechanical thought (e.g., How can I be sure that what I believe is a heightened state of awareness is a new experience rather than the habit of perceiving

heightened states of awareness? How can I determine the extent to which my existing values and conceptual processes shape what I take to be new perceptions of reality?) Zen Buddhism and other Eastern mystical traditions have developed meditative techniques as ways of resolving this dilemma. The resolution involves the exploration of non-dialectical ways of knowing.

Introspection and Consciousness

Because consciousness is often associated with introspection, it has tended to be tarred with the same brush. Reservations about introspection have resulted in avoidance of consciousness as an area for psychological enquiry and contributed to the ascendancy of materialism.

Although maligned and misunderstood, introspection has been acknowledged in many quarters as a valid means of obtaining knowledge which would not be otherwise available. Introspection can be a useful method, especially in the fields of cognitive psychology, social psychology, and consciousness. This paper argues a case for increased use of introspection as a methodology which may be particularly valuable, especially at the individual level, as a means of studying consciousness. Introspection can provide a personal empirical method of learning about consciousness which is more meaningful to the individual than conceptual "hand-me-downs."

In discussing the history of introspection as a psychological method Giorgi (1970) describes the way in which "introspection" confused the observation of internal and external events. Introspectionists failed to allow for the fact that they were both the subject and object of their own enquiry. Their self-observations were presented as if they were the result of public observation. The propensity for unreliability in such a pseudo-objective perspective led to "introspectionism's" loss of credibility as behaviorism became popular. Nonetheless, introspection remains a valuable method especially for cognitive psychology and the study of consciousness.

Hilgard (1980) describes a more sophisticated use of introspection ("new introspectionism") based upon phenomenological reports unhindered by the imposition of a priori conceptual templates. Flavell and Wellman's (1977) work on meta-memory is an example. Hilgard (1980) and Pope and Singer (1978) cite a variety of other examples of "new introspectionism" in such areas as fantasy, day dreaming, dreams and thought flow. Introspection has also played a large part in social psychological research (see Nisbett & Wilson, 1977).

The value of introspection lies in its ability to "make direct observations of a particular class—observations of events not otherwise accessi-

ble" (Radford, 1974, p.247). A detailed description of the various types of introspection has been made by Radford. The essential points about introspection are: (1) it is a method of observation; (2) it provides access to subjective experience; (3) it is *a method* and not a subject of psychology; (4) it is subject to error like any methodology; and (5) it invokes subjective consciousness (as does all observation).

Skepticism regarding the value of introspection appears to have received support in a recent review of attribution, dissonance, and problem solving studies (Nisbett & Wilson, 1977). Data suggested that experimental subjects were not conscious of their cognitive processes. These authors found that introspective verbal reports did not correlate with explanations hypothesized a priori by experimenters. Further evidence suggested that verbal reports were more likely to be a priori causal explanations applied by the subject rather than genuine introspection. Although this evidence appears to support a skeptical attitude towards introspection, such a simple approach can neither validate nor repudiate introspection as a potential methodology.

The evidence assembled by Nisbett and Wilson (1977) strongly suggested that subjects in the experiments were generally not conscious of their cognitive processes. What may be occurring in these studies is pseudo-introspection (subjects who believe they are more aware of their behavior than they actually are). Experienced introspectionists report the ways in which they learn to suspend judgment and allow an observational mosaic to gradually develop. Further research with trained introspectionists or subjects experienced in a consciousness-raising activity such as meditation is needed to clarify this point. The fact that most people are not conscious of most of their behavior, apart from cognitive processing, is no surprise to adherents of Eastern mystical traditions. Nisbett and Wilson point out that the willingness of subjects to offer verbal explanations of their cognitive processes, in spite of the above evidence, is worthy of investigation itself. Such behavior could be interpreted as indicative of how unaware most people are of their lack of awareness. Techniques of self-observation which reveal to the individual an awareness of his/her general lack of awareness may yet provide a basis for the study of personal consciousness.

Eastern traditions of self-knowledge, while using introspective techniques, are acutely aware of the types of problems cited by Nisbett and Wilson, especially the propensity for self-deception. In these traditions (e.g., Buddhism) emphasis is upon simple observation without evaluation or analysis; this allows the eventual development of a type of detached awareness. Emphasis is upon the quality of attention. This type of training is fundamentally different from that of early introspectionist methods. "Right seeing" is something which develops gradually as

fragments of information form into meaningful wholes (see Needleham, 1975; Weldwood, 1979).

In a recent critique, Smith and Miller (1978) point out that Nisbett and Wilson (1977) framed their arguments against introspection in a Manichaeian way—both incorrect and correct introspective reports could be used to indicate the invalidity of introspection (incorrect reports are failures of introspection while correct reports are explained away as guesses based upon a priori causal theories). Smith and Miller suggest focusing upon the situation where introspective reports are correct. They view Nisbett and Wilson's conclusion regarding introspective awareness as an overstatement.

Smith and Miller also point out that it is unreasonable of experimenters to expect subjects to be introspectively aware of factors which are deliberately concealed from their awareness within the experimental context. Moreover, the failure of the subject to register awareness of what appears, to the experimenter, to be an explanation of his/her behavior may well be an artifact of his/her attending to the situation in a way not thought of by the experimenter (e.g., A right choice preference may be an artifact of processing identical stimuli serially from left to right until the subject concludes that the last instance is as "good" a choice as any other. Right preference is not a causal factor.). What is cause for the experimenter is not necessarily cause for the subject.

Smith and Miller found that reanalysis of some of the data cited by Nisbett and Wilson, using more appropriate statistical procedures, produced support for introspective awareness—the reverse of the conclusion offered by Nisbett and Wilson's paper. Smith and Miller also question the validity of the distinction made between content and process by Nisbett and Wilson. The distinction seems to result from labelling accessible mental events as "content" and inaccessible events as "process."

Another important aspect of introspective awareness discussed by Smith and Miller is lack of awareness involved in overlearned mechanical types of behaviors in contrast to the relatively high level of awareness involved in novel problem-solving situations. Consequently, the latter type of behavior tends to be more accessible to introspective awareness. However, the majority of human behavior, including certain types of problem-solving, can become mechanical. People need to be taught to become more aware of their behavioral automaticity. The irony of this situation is that people need to develop the habit of observing habits. Meditation is a technique (habit) which functions in this way to produce greater mindfulness.

Other difficulties in assessing the generalizability of the major findings of Nisbett and Wilson's paper are the nature of the subjects and the use of group designs. Few people are taught to be self-aware, and if there

were such individuals, their data would have been buried in group means (cf. Smith & Miller, 1978). Research into the nature of consciousness is probably better served by idiographic rather than nomothetically oriented research designs. The extensive use of deception and the specialized area of study (social psychology) are other factors to be considered in assessing the validity of Nisbett and Wilson's findings.

Subjective Knowledge and Consciousness

Materialism has exerted a dominant influence upon efforts to develop a scientific psychology. It is argued in this section that a political commitment to materialism has led to the unnecessary exclusion of ways of knowing which are relevant to an attempt to understand consciousness.

Natsoulas (1974), writing from a materialistic perspective, recognizes the importance of the "subjective experiential element" in perception, awareness and knowledge. He sees both descriptive and subjective knowledge as valid modes of knowing and views any difference between them purely in terms of modes of knowing. Much of Natsoula's paper examines the view that the qualitative contents of both subjective and descriptive knowledge are explicable in the same terms (brain processes). The participation of the subject in subjective knowledge does not render such knowledge unique according to the materialistic world view because ultimately both subjective and descriptive knowledge are subject to the limitations of conceptual systems. Although subjective knowledge may be acquired noninferentially the operations of coming to know must be in terms of some code. Feigl (1971) contends that knowledge of the qualitative contents of our introspective awarenesses is structural, like knowledge of the external world:

...even in their [qualitative contents] introspective description we deal in their structural features. Whatever genuine knowledge we can attain is propositional. It reflects, for example, the similarities, disimilarities (and degrees thereof) of immediately experienced qualities (p. 305).

An important point made by Natsoulas is the distinction between knowing and understanding: An intellectual (cognitive) awareness may result in "knowing" but not the "understanding" that comes from personal experience. The distinction between knowing and understanding is especially relevant to the emphasis of this paper. Consciousness researchers, using introspective methods, need to understand the phenomena they research by participation rather than attempt withdrawal to avoid contaminating their work. Such involvement of the researcher's consciousness and values in his/her research needs to be explicitly recognized.

From a different perspective however, Natsoulas (1978a) appears to be

in a dilemma. While making a case for the inclusion of "residual subjectivity" within psychology, he continues to maintain that *all* real knowledge is structural and that to the extent that psychology includes subjectivity it is not a science. Natsoulas seems to be suggesting that psychology recognize the importance of subjectivity because of subjective experience's undeniable link with understanding and personal meaning. The problem then becomes one of reconciling natural scientific psychology with the significance of value and meaning found in human subjective experience.

An immediate pragmatic question is how does psychology reconcile "whatlike" understanding with natural scientific methodology until the arrival of utopian sciences based upon structural knowledge? An answer reflects values. This paper suggests that the search for personal meaning (exploration of what it means to be human) is too important to be constrained by a natural scientific epistemology or paradigm. Method is not the substance of psychology.

Another major constraint imposed upon the study of human experience by materialism is the denial of "deep knowledge." The feeling of knowing something "through-and-through" is an illusion, according to Armstrong (1968). Natsoulas (1974) attributes this illusion to the person's involvement in his/her own qualitative awarenesses, the person's ability to imagine such awarenesses, and the conviction that such awarenesses are true. While Natsoulas dismisses "deep knowledge" as an illusion the present paper suggests that the truth value of such knowledge is uncertain rather than false. Armstrong (1972) believes that the subject only experiences an "indication" whose precise nature is determined later by science. Personal or subjective knowledge is thus devalued by materialism, to the point where its validity is suspect until established by "objective science." The materialistic approach excludes "nonscientific" ways of knowing of psychology in general and the study of consciousness in particular.

In spite of a more sympathetic attitude towards subjectivity in a later paper, Natsoulas (1978a) appears to deny the validity of transcendent states of awareness such as the "right seeing" of Zen or the "self-remembering" of Gurdjieff (see Ouspensky, 1949) via his refusal to accept a "metaphysical subject of experience" or a "field of experience which belongs to no man." Reality, for Natsoulas, has to be confined to the subject-object world of human thought.

The refusal to accept a metaphysical subject of experience denies the validity of intuition, mystical experience, and non-propositional knowledge. Such a view seems to reflect the conviction that only dialectics have knowledge value and ultimately leads to scientism rather than the pursuit of knowledge. James also reminds us that "articulate reasons

are cogent for us only when our inarticulate feelings of reality have already been impressed in favor of the same conclusion" (1958, p. 73).

The materialists' exclusion of non-propositional knowledge obviously conflicts with the claim of Zen Buddhism that a type of knowledge exists which transcends intellection and logic. Although Zen theoreticians, such as Suzuki (1964) have written extensively on the meaning of Zen, they insist that propositional statements cannot adequately convey the experience of enlightenment or "right seeing" (e.g. the solution of a Zen *koan* is analogous to the solution of some problems of particle physics).

In spite of the reliance upon personal experience through "unscientific" practices, such as yoga and meditation, Eastern mysticism developed insights about the nature of life and the cosmos which have been found to be compatible with recent discoveries in sub-atomic particle physics (Capra, 1975). The method used by Eastern mystics was a direct observation of nature that was no less empirical than that of physicalistic science. However, it was a type of empiricism based upon a unified perspective of the observer and the observed, contrary to the mental habit of separating the two. The so called "failure" of Eastern mystics to separate themselves from their objects of observation has now been recognized in modern physics as an inescapable implication of the mutual determination of quantum theory (cf. Capra, 1975).

Another aspect of the antithesis between propositional and non-propositional knowledge is the assertion that awarenesses are not awarenesses unless they refer to something and make assertions about that thing (cf. Natsoulas, 1970). Such an assertion seems to be true within the subject-object domain but does not account for the phenomenon of "pure awareness" (Campbell, 1974, Chapter 2), unless one maintains that awareness of no object is itself an object of awareness. There are thousands of reports from mystics who claim to have voided their minds of qualitative contents and yet retained a state of consciousness which is called "pure awareness" (Stace, 1960). Campbell (1974) describes this state as analogous to watching a movie screen illuminated by a projector without film. The practice of meditation leads to reports of this experience. Whether such states are explicable in neurological terms or not is still conjectural.

Approaches to consciousness reflect an implicit metaphysical view or attitude [see Pope & Singer, (1978) for a discussion of such philosophical perspectives]. All approaches to consciousness have their epistemological strengths and weaknesses. Criticism of the ascendancy of materialism and dialectics in American psychology is not so much a criticism of this philosophy per se as it is a criticism of the way its adherents tend to exclude other philosophical and non-dialectical orientations to consciousness. The reader should not interpret such criticism as a plea for

another exclusive alternative (such as dualism or mentalism). The aim here is to encourage a variety of ways of learning about the nature of human consciousness.

Paradigms for Consciousness

American psychology seems to have a prevailing commitment to a philosophy (materialism) and a research paradigm borrowed from physical science. Materialism and the "scientific method" have become outmoded in some areas of science. As Capra (1975) indicates, Newtonian mechanics is still a viable model in the macro three-dimensional world of our senses, but it is inappropriate in the field of sub-atomic particle physics. Similarly, within psychology, the Newtonian model has been and is of great value, but may be inadequate as a meta-paradigm for the study of human behavior—especially consciousness. Perhaps psychology should be more receptive to paradigms which arise from the phenomena to be studied rather than being committed to paradigms and values borrowed from other disciplines. The extrapolation of natural science to psychology has restricted the application of other paradigms (cf. Gadlin & Ingle, 1975).

As indicated earlier, in psychology the study of individuals by individuals compounds the problem of subjectivity. There appears to be no way of separating fact and value. Facts appear to be a special class of values, as are nonfacts, according to Bixenstine (1976, p. 44). Any attempt to discriminate between facts and values is itself an unavoidable statement of value. Many psychologists overlook this issue by taking current paradigms as immutable which determine appropriate values for scientific conduct. Perhaps we need to increase awareness of the sociological and value-laden evolution of our paradigms and the relationship between "facts" and values (Kuhn, 1962).

The most provocative new paradigm for attempting to understand reality and its relation to brain, mind, and consciousness may be the holographic paradigm. Based upon the phenomenon of the hologram, this paradigm offers a metaphor for resolving some of the paradoxes and apparent inconsistencies of physics, brain functioning, consciousness, and psychic phenomena. The paradigm suggests the possibility of a higher order law which subsumes and explains some of the apparent conflicts arising out of existing physical laws and observed phenomena. For example, the distinction between mind and matter may be more apparent than real (cf. Bentov, 1979; Capra, 1975). Physics suggests that the closer we look at matter, the less matter we see. Matter seems to disappear into formless energy in the sub-atomic world.

The most significant example of the holographic paradigm is to be

found in a combination of the work of Karl Pribram and David Bohm (to be presented later). Although their ideas are speculative, the same can be said of most attempts to explain the overall operation and interpretation of brain, mind, and consciousness. The holographic paradigm is offered in this paper as one alternative metaphor for attempting to understand consciousness and is intended to supplement rather than replace other conceptualizations. Its limitations have been discussed elsewhere (Wilber, 1979).

Pribram (1971) has suggested that the human brain functions holographically. Bohm (1973) has suggested that the fundamental dimension of the universe is enfoldment or interpenetration. This dimension is called the "implicate order" in which everything is enfolded and interpenetrates. Taken in tandem the work of Pribram and Bohm expresses the theory that "our brains mathematically construct 'concrete' reality by interpreting a holographic universe" (Ferguson, 1978).

Bohm illustrates his hypothesis by describing an experiment in which a droplet of insoluble ink is stirred into a viscous liquid within an annulus-shaped container. As the droplet is stirred in a circular motion, it forms a thread-like spiral until eventually it is no longer visible. The droplet is then said to have been enfolded within the liquid (similar to an egg within a cake batter). The droplet interpenetrates the liquid although it is not visible. Reversal of the stirring for the same number of turns causes the droplet to reappear in its original form.

The "implicate order" is the primary realm which is not manifest to the knower operating within the usual three-dimensional world of the senses. The world of time/space relationships and the senses is called the "explicate order." It is a manifest part of the "implicate order" within which it is subsumed. Consequently, human thought as part of a manifest order is unable to know that consciousness of which it is part. The relationship between the "explicate order" and the "implicate order" has obvious implications for dialectical ways of knowing and the study of consciousness.

On the basis of these ideas, thought can enable us to realize in a limited way, within our current conceptual frame of reference, the impossibility of contacting the implicate through exclusively dialectical means. Any attempt to define the unmanifest in terms of the manifest is flawed because the manifest is subsumed within the unmanifest. All human conceptualizations are manifestations of "what is" and, by definition of the "implicate" and "explicate" orders, cannot comprehend the unmanifest. Bohm points out the tremendous danger of self-deception embedded in the use of human dialectical and symbolic processes as a means of attempting to apprehend the ultimate. By referring to the known and the unknown, we create the illusion of having covered (understood) "what

is." Yet, this apparent grasp of our predicament is confined by the limits of intellection—a manifestation of "what is."

The current speculations of Pribram and Bohm (see Ferguson, 1978) regarding the nature of brain processes and the universe, suggest that stages of enlightenment may occur when personal consciousness resonates sympathetically with a transpersonal consciousness which Deikman (1973) has hypothesized to be the structure of the biosystem. Anderson (1977) illustrates this relationship in terms of a tuning fork resonating sympathetically with another that has been struck to set of vibrations.

Non-dialectical methods may be necessary for reaching higher states of consciousness which transcend the subject-object domain of dialectics. Transpersonal psychologists, who value this perspective upon consciousness (see Ring, 1974), do not oppose natural scientific approaches to consciousness. They wish to supplement such approaches in order to explore dimensions of consciousness which lie beyond the conceptual tools of subject-object knowledge. Merrell-Wolff (1973a) succinctly describes the limitations of a natural scientific methodology in studying consciousness: "Value and meaning are elements of consciousness which cannot be observed—the question of the status of any reported inner state of consciousness falls quite outside the range of the methodological technique of western science" (p. 256).

While acknowledging the need for more open and less doctrinaire approaches to consciousness, some recent writers on the subject (e.g., Hilgard, 1980; Singer, 1974) express strong concern about the possible deterioration of scientific values within Western psychology. The emotional attachment to scientific values, well presented by Maslow (1966), shows clearly in the ambivalence of some psychologists who realize the value of openness to all knowledge but fear the erosion of other values they believe safeguard what constitutes science. Merrell-Wolff (1973b, p. 9) points to the elimination of this concern as a hidden precondition for defining knowledge as scientific. The two usual preconditions in modern science for acceptance of an interpretive theory are that it be: (1) logical and self-consistent, and (2) empirically testable. An unstated third precondition is that the new theory not challenge the world-view implicit in the first two conditions. Although Einstein's theory of relativity satisfied the first two conditions its acceptance was delayed because it threatened Newtonian mechanics. Another example of this type of situation can be seen in the psychology of learning. Almost all learning texts approach learning from a natural scientific world-view. The conceptualization of learning as a change in world-view (e.g., Giorgi, 1975) challenges the world-view implicit in other conceptualizations of learning. The view of this paper is that a complete and meaningful psychology

of consciousness may not be scientific in the ways of natural science.

Conclusion

The central argument has been that materialistic metaphysics has dominated American psychology at the expense of other viable alternatives. Areas of psychology such as mind and consciousness have been neglected (beginning with Watson's critique of mentalism) until the 1970's because of the difficulty of dealing with concepts of consciousness in materialistic terms. The influence of materialism has led to the avoidance of mentalism and the method of introspection because of their connection with subjectivity. However, they have reappeared as "new introspectionism." Ways of knowing such as self-observation, introspection, phenomenology, intuition, and mysticism have often been eschewed due to a belief that science cannot be based upon the "subjective experiential element" of knowing. The reluctance to accept subjective knowledge and the prevailing commitment to natural science in American psychology raises the fundamental question of the relation between science, psychology, and knowledge. To insist that psychology develop as a natural, rather than as a human science, is to restrict its meaningfulness and value.

This paper suggests that consciousness is a fundamental aspect of human functioning, that we understand little of its nature and operation and therefore need to be more open to alternative approaches, even though they are difficult to reconcile with the current values and paradigms of American psychology. An over-commitment to dialectical processes is also seen as a possible obstacle to greater knowledge and understanding of consciousness. A broader approach to the study of consciousness may be one that is more sympathetic to receptive and intuitive knowing, to phenomenological description leading toward an ethology of human consciousness, to the explication of paradoxes in terms of new paradigms, and to a mindfulness of possible indeterminacy and holistic relations rather than linear causation. We know enough about consciousness to know that we do not know very much. For this reason it is important to continually re-examine the values underlying current epistemologies and paradigms in the light of new ideas. There seems to be sufficient evidence to acknowledge the wisdom of keeping options open rather than fortifying existing values.

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