
Consciousness, states of consciousness, unconscious psychological processes, and psychological states

15

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Contents

1. Introduction	265
2. Four questions	266
Conclusions	273
References	273

1. **Introduction**

As psychology under the auspices of cognitive science once again welcomes consciousness to sit at its table, it becomes important to know what kind of guest we have invited back. Is he the same unmanageable critter

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he was in the 19th Century? Will he eat us out of scientific house and home while our behaviorist in-laws tell us, “I told you so”? And what about some of his old friends – mental contents, states of consciousness, and unconscious processes – will they break up the party and force a return to the Spartan fare of psychology’s preconscious era?

In my view these dangers exist as well as new opportunities for bringing together such disparate enterprises as cognitive science, neurophysiology, and psychoanalysis. There are at least four questions which need to be addressed: i) Is there an ambiguity in the current use of the term consciousness? ii) How are mental contents related to men-

tal processes? iii) How are consciousness, states of consciousness, and unconscious processes related to each other? iv) How are consciousness, mind, brain, and person related to each other? Clearly, there can be no definitive answers to these questions, in particular, as offered by me at this time, but we can hope for empirically useful, conceptually consistent clarifications. In what follows I will draw on several different sources including cognitive research, neurophysiology, and psychoanalytic clinical practice and theory.

2. **Four questions**

(i) **Is there an ambiguity in the current use of the term consciousness?**

There is indeed a significant ambiguity in the use of the term which needs to be clarified before any useful discussion can take place. I refer to the dual and often confounded uses of the term consciousness to refer to *experience*, or awareness, on the one hand, and to *psychological system* or *structure*, on the other hand. Thus, Sperry at one point speculates that there are "... central processes specifically organized for conscious awareness." (Sperry 1969, p. 535) Consciousness is defined as a "holistic systemic property and an active dynamic part of high-order brain functioning." (Sperry 1977, p. 117) Elsewhere, however, he stresses that the "... laying down, storage, cataloging, and retrieval of memories seem to proceed very largely on the basis of their holistic properties (i. e., consciousness) rather than those of the neuronal infra-mechanisms." (Sperry 1977, p. 122) In other words, "holistic properties" not only are associated with consciousness as awareness, but also with those systematic properties having to do with

memory formation and retrieval. Problems develop with this dual usage when we employ the term consciousness without any clear indication as to which meaning we have in mind. When James spoke of a "split-off" consciousness and when neo-dissociationists speak of "dissociated states of consciousness," is it intended to mean that the individual is *experiencing* that "split-off" state, or is it rather that the "split-off" state exists in some significant systematic sense albeit without the attribute of being experienced at the same time? Moreover, if it is experienced at the time, in what sense is it then "split-off"? Certainly we can have *alternating* experiences, but then once again we can ask in what sense is one state "split-off" while the other is being experienced? (I will return to this question in the section below dealing with consciousness, states of consciousness and unconscious processes.)

One can also apply this distinction between consciousness as experience and consciousness as system to split-brain patients, who have remarkably different experiences linked to the two hemispheres. In extreme cases when a female split-brain patient was shown a nude woman to the left hemisphere the patient described it as a nude woman without any apparent emotional reaction; when shown the same picture to the right hemisphere she became visibly embarrassed but could not describe the picture. The evidence shows that these patients, to a considerable extent (and only to an extent, not totally or absolutely), have two different *experiences* of stimuli appearing in the left and right half fields. But when Sperry goes on to argue that split-brain patients therefore have two separate *minds*, he is then saying that split-brain patients not only suffer from a "split" in conscious *experience* but also suffer from a division in psychological structure beyond experience as such. Moreover, some theoreticians have in fact gone beyond this and argue that if there are two minds, then

there are also two persons and we are all one variation or another of multiple personalities, some more dramatically multiple than others. But as Marks has argued, in my view persuasively, disunified consciousness (that is, disunified *experience*) does not necessarily imply a disunified mind or a mitotic personality (Marks 1981). Without at this point going into the details of Marks's argument, which will concern us later, I wish simply to underscore the importance conceptually of distinguishing consciousness as experience from consciousness as psychological system or structure.

Psychoanalysis has not escaped this ambiguous usage of the term consciousness. In Freud's early formulation of the relationship of unconscious to conscious processes (the topographic model), he talked simply about an idea *becoming* conscious: Freud, however, had also developed a *systems* model of conscious and unconscious processes so that instincts, for example, were located in the system Unconscious and all of what we ordinarily consider conscious experience was located in the *system* Consciousness. Moreover, different principles of mental organization prevailed in the *system* Unconscious from the *system* Consciousness – the so called primary and secondary processes. But then what was Freud to do with defenses such as repression which were *unconscious* in their operation, not experienced, but did not belong with the instincts in the system Unconscious because they were in fact directed at controlling those very instincts. He tried to resolve this dilemma by creating a *third* model which is the one that is most widely known – the so-called structural model composed of Id, Ego, and Super-Ego. In this model one could have *systematically* unconscious processes in the Ego as well as in the Super-Ego along with conscious experience.

The distinction between consciousness as experience and consciousness as system is

also useful in understanding much recent work on attention. There is, for example, a strong tendency among attention theorists to talk about consciousness as having certain structural characteristics which in effect implies that it is more than simply experience. Thus, to become conscious of a stimulus also involves a *single channel* (what Freud called the "defile of consciousness"). Now, it may be true that in the process of becoming aware of a stimulus only one stimulus can become conscious at a given time, but these are separable issues and in fact it is likely that this restriction may not be generally true. We are also conscious in the experiential sense during dreaming, states of intoxication, and psychosis. The fascinating characteristic of these states is the bewildering multiplicity of stimuli which present themselves simultaneously, so much so that words often fail us in describing what we are in fact conscious of. Once we distinguish between consciousness as experience and consciousness as system, the process of becoming conscious and what the process of *being* conscious can be clearly distinguished.

Similarly, in subliminal research, the effects of stimuli can be detected while the person remains unaware of what is affecting him and will provide rationalizations of his perceptions much as hypnotic subjects will after executing a post-hypnotic suggestion. Nisbett and Wilson (1977) describe how subjects may choose a particular association and provide a reason for this choice which is at variance with what the investigators know to be the real reason for the choice based on previous associative priming. Again it is necessary to distinguish between consciousness as experience and the process of becoming conscious. (I will leave aside the question whether the real cause is subject to introspective recapture.)

In short, distinguishing consciousness as experience from consciousness as system in-

creases the flexibility and precision of our thinking with respect to a number of interesting questions.

(ii) How are mental contents related to mental processes?

It would be a mistake to equate experience, or awareness, with mental content and to equate the systems meaning of consciousness with mental process. Some such distinction is relied on when it is asserted that we can only become aware of contents and not of processes. As James (1890) observed, "a permanently existing 'idea' which makes its appearance before the footlights of consciousness at periodic intervals is as mythological as an entity as the Jack of Spades." Rather, the *experience* of objects changes as a function of affect, motive, arousal, need, age, etc. Experience is therefore as much a process as any other except that it is a process associated with awareness. We must also be careful not to equate process or system with what is neurophysiological and experience with what is psychological. There are psychological processes which are not to be identified on a one to one basis with neurophysiological processes. Sperry, in particular, has insisted on the importance of this distinction. Moreover, experienced processes must also be associated in some way with neurophysiological events so that there can be no true symmetry present when we equate experience with the psychological and processes with the neurophysiological. Nevertheless there are constants in experience. These constants are the *referred-to-objects* not the experiences themselves which are highly variable psychological events in which a variety of factors play a role. When a person *perceives* an object, he is experiencing a process which has as its external referent an actual stable object. We should not confuse the referent with its in-

ternal representation which is usually subject to far more variability and instability than the referred-to-object. The importance of this distinction is borne home in the clinical realm in the study of phobic and delusional patients for whom objects may be associated with internal representations at great variance with reality. Whether a phobia be understood in terms of conditioning or unconscious conflict the internal representation is greatly influenced by powerful affective forces so that the apparent internal representation of the object has as its true referent not the object "out there" but some other internal state, whether it is the memory of a previously feared object or a symbolic representation of a feared, conflict-laden impulse. If, on the other hand, we link rigidly the experienced object, or internal representation, to the referred-to-object and omit experience as a variable process, then it becomes difficult to account for these clinical observations; one is left solely with an explanation based on *misperception* as a function of some *external* set of factors – poor lighting, structural ambiguity of the stimulus, etc. Once mental contents are redefined as experienced process, or internal representations of external referred-to-objects, much greater conceptual flexibility is made possible so that a much broader range of phenomena can be explained. Clearly, this position leaves unexplained how we know the real object from its distorted representations. My only defense is to cite the fact that psychologists, spanning about a hundred years of psychological thought, from James (1890) to Fodor (1981) have suggested that this problem is beyond psychology. Fodor, in fact, makes the solution of this problem contingent on the complete development of all other sciences first! – a position that has its difficulties. Perhaps a provisional solution is to rely on a consensus judgment on the nature of the external object.

(iii) How are consciousness, states of consciousness, and unconscious processes related to each other?

With the distinction between consciousness as experience and consciousness as system discussed above in hand, it becomes an easier task to conceptualize how consciousness, states of consciousness, and unconscious processes are related to each other. The superordinate term would need to be states of consciousness in which the term consciousness was used in its systematic and not its experiential sense. However, since most states of consciousness also include experienced consciousness, terminological confusion can be avoided by referring instead to psychological states and by restricting the term consciousness to its experiential sense. I will be following this convention throughout the remainder of the paper. A psychological state is a system or structure. There can be interesting sequences of such psychological states as occurs, for example, during the sleep-dream cycle. Of special interest is the fact that there appear to be neurophysiological markers for these shifts in psychological states. A desynchronized EEG accompanied by rapid eye movements marks a psychological state in which dream consciousness is highly likely to occur, along with those psychological processes giving rise to the dream experience. Psychoanalysts have offered a variety of hypotheses as to what these psychological processes are like. Interestingly, others have hypothesized (McCarley and Hobson 1977) that there are no meaningful psychological processes involved at all in dream experience but that the dream results from a random firing of cortical neurons which would account for the bewildering and incoherent nature of dream experience. Interestingly, James came up with the same hypothesis, likening what happens during dreams to short circuits in the customary neural pathways. On the basis of this

explanation we would no longer be dealing with a psychological state but with the dream as an epiphenomenal event not in need of a psychological explanation. Reductionism of this stripe has its serious drawbacks, not the least of which is that it dismisses out of hand an interesting question: What do dreams mean? or, perhaps more precisely put: "Of what psychological event is the dream an internal representation?", much as we may ask of what the phobic experience is an internal representation.

Of any psychological state we can ask: How do certain representations achieve consciousness, or enter awareness? Much research has been devoted to the normal, waking, alert psychological state in which representations of objects appear to become conscious automatically and are usually quite veridical. However, as cognitive research has explored the seeming automatic consciousness of external objects, it has learned that a great deal has to happen first psychologically before that internal representation is experienced as such. Elsewhere (Shevrin and Dickman 1980) I have reviewed several bodies of research (attention, subliminal perception, stabilized retinal image, and binocular rivalry) bearing on the relationship of unconscious processes to consciousness and arrived at three propositions which in my view summarize the main conclusions to be drawn from these investigations:

1. The initial cognitive stage for all stimuli occurs outside of consciousness.
2. This initial cognitive stage outside of consciousness is psychological in nature, active in its effects on consciousness, and can be different from conscious cognition in its principles of operation.
3. Consciousness of a stimulus is a later and optional stage in cognition.

I also suggested that three sets of factors determine the conditions under which a shift from unconscious processes to experience will occur:

1. Stimulus factors (e. g., loudness, brightness, figural coherence, etc.).
2. State factors (e. g., level of arousal, sleep stage, fatigue, distractability, etc.).
3. Motivational factors (e. g., avoidance of anxiety, guilt, conflict, etc.).

It will be noted that the psychodynamic hypothesis concerning motivation appears as one of a set of conditions not out of keeping with the view of some attention theorists that biologically relevant stimuli (e. g., those related to drives) have privileged access to consciousness through the mechanism of permanently lowered thresholds. Note also that state variables are distinguished from motivational factors insofar as state is taken to refer to *dispositions*. A *disposition*, which is itself an intrinsic part of a given psychological state, can combine with a motive as when a person decides not to pursue a task because he recognizes that he is too tired.

Once psychological state is established as the keystone hypothetical structure, it becomes easier to locate systematically a number of important concepts and to visualize their relationships. I refer to all those processes, unconscious and conscious, that are integrated in some unique pattern so that a particular psychological state emerges. One can begin to sketch a taxonomy of such states: The normal waking state, the rapid eye movement dreaming state, the Stage II sleep state, the Stage IV sleep state, psychotic states, states of intoxication, etc. Clearly once we go beyond these markedly different states the boundaries become less clear and not so easily demarcated. I believe, however, that it would be a useful empirical enterprise to develop such criteria, starting with those states which are markedly different as a basis for developing differentiating criteria. A taxonomy of this kind would be of great help in psychiatric diagnosis. Lastly, I believe we would need to assume that at any given time only one psychological state as such prevails, otherwise the concept of state fragments

into any number of ad hoc conditions and the important principle of integration as related to psychological phenomena would be violated. (I will deal with this principle in the next and concluding section.) It follows from this assumption of integration that there is no such psychological state as a truly dissociated condition, or "split-off consciousness," or different minds based in the right and left hemisphere, or multiple personalities in the sense of several truly different persons dwelling in the same body. Rather, it would follow from this principle of integration that in conditions of dissociation, split-brain disorders, and multiple personalities, that there is in fact a functional interaction present, much as in repression the psychoanalyst assumes that the disturbing impulse or fantasy is *kept from* consciousness; it is not simply "split-off", latent and inactive. In fact, in clinical practice the psychoanalyst relies on implicit influences of the repressed on consciousness to detect the underlying presence of repression. A patient of mine in the midst of a difficult erotic transference observed that she would hate to become pregnant because of the distortions her body would need to go through. She then commented that this was an important issue for her and she would need to pursue it further. The next session, less than 24 hours later, she was failing to get back to what was so important from the previous session until she said that somehow her thoughts wandered to the Pearl Buck novel, "The good earth", and the scene in which the heroine gives birth in a field. Despite the obvious link to her previous observations on pregnancy, the association failed to bring back the memory and with it the opportunity to pursue further the important issue of her attitude toward pregnancy. In cognitive terms the "good earth" association was an *implicit* memory related to the previous session's explicit memory. In psychoanalytic terms it was a *derivative* memory caused by the influence of the re-

pressed memory about pregnancy from the previous session. Whether or not the psychoanalyst chose to point this out or not would depend on other factors bearing on the status of the psychoanalysis. What needs to be stressed in terms of our present considerations, is that the repressed memory does not remain latent and inactive but influence the flow of thought occurring in another psychological state. In this important respect the unity or integration of psychological states is to an extent compromised, and this may be one of the hallmarks of psychopathology.

Lastly, if it is indeed true that the initial stage for all stimuli occurs unconsciously, then this is equally the case for each “split-off” personality or state. Each face of Eve has its unconscious aspect. Thus to speak of multiple states of consciousness or multiple selves, does not rule out the need to deal with the role of unconscious processes. For if consciousness as experience is always optional this principle would apply across the full range of experience, from a single idea to an alternate self. But no matter how major or minor the vicissitudes of conscious experience there is always a preceding unconscious phase and some hypothetical conditions that determine the particular emergence into conscious experience.

(iv) How are consciousness, mind, brain, and person related to each other?

If psychological states are central to our understanding of the role of consciousness as experience and consciousness as system how are psychological states related to our understanding of mind, brain, and person? In his critique of Sperry’s view of the psychology of the split-brain person, Marks takes the position that although such patients suffer from a *disunified* consciousness they possess one mind. Following Fodor, Grice, and

Perry, Marks defines mind as “those entities the states of which explain our ‘propositional attitudes’” (1981, p. 34); by propositional attitudes Marks refers broadly to memory, belief, desire, intention, etc. He concludes that in the case of the split-brain patient that it is the entire brain, rather than the divided hemispheres, which is the “best candidate for having the states the true human psychology countenances.” (1981, p. 35) He then offers a case of multiple personality (Mary Reynolds) as a striking opposite instance in which he feels it could be argued that two minds do indeed exist in one body because there is a total breakdown in the unity of propositional attitudes so that one personality has no interaction or knowledge of the other, apparently sharing no memories, beliefs, desires, intentions, which makes it possible to talk about two minds in one body. I would like to extend further Marks’s definition of mind while taking exception to his characterization of multiple personalities as possessing two independent minds.

Elsewhere Shevrin (1992) has proposed that what one ordinarily thinks of as *psychological* in nature, which we can for present purposes equate with Marks’s definition of mind, be defined as the consequence of brain integration. Although this has some similarity to Sperry’s definition, it differs from his in one important respect: It is not consciousness as such that is identified as the consequence of brain integration but *all things psychological*; this is done in order to avoid the ambiguity in the use of the term consciousness already discussed. It follows from this definition of the psychological that the integrated activity of the brain can best be known through psychological means. It also follows that neurophysiological processes are always to be considered as contributory *parts* to this psychological integration. Thus, there can only be partial correlations between neurophysiological and psychological measures. By the same

token these partial correlations can be theoretically quite significant. Take for example the desynchronized electroencephalogram (EEG) and rapid eye movements present during dreaming sleep, or Libet's findings relating a certain duration of cortical activation and awareness of a stimulus (1973), or my own research on evoked potential correlates of unconscious processes (Shevrin 2001). In psychiatry a psychopharmacological agent may have an unequivocal biochemical affect in the brain, but how the person actually responds to that effect will be a function of the total integration of brain activity, or of that person's psychology. Thus, a manic patient given lithium may begin to experience the moderating influence of the medication on his manic state but he may paradoxically stop taking the lithium because its beneficial effects disrupt a previous integration serving important adaptive psychological purposes. In the clinical instance I have in mind, the patient, a young sexually active woman, gave up lithium despite its beneficial effects on her manic states, because the lithium also dampened her libido, a not unusual side effect. The flagrant failure of upwards of 50% of patients to take effective medications can in large measure be attributed to this one factor, how the medication disrupts current psychological integrations.

One other consequence follows from defining the psychological as a function of brain integration: No psychological process can in and of itself be localized in a particular part of the brain; thus, this must be true for unconscious psychological processes which are also functions of brain integration and in this sense they are as psychological as conscious processes. It follows from this position that the psychological cannot be equated with consciousness as experience and the unconscious with neurophysiological processes. Both conscious and unconscious processes are fully psychological because they are both a function of brain integration and are sig-

nificant, interacting processes constituting psychological states.

Lastly, it is inconsistent with this view of the mind and the relationship of the psychological to the neurophysiological, to suppose as Marks does, that multiple personalities have plural minds. Rather, it must follow from this position that multiple personalities are characterized by a remarkable, exotic, and recondite form of integration. I believe this to be a logical necessity given my assumptions. However, I also believe that there is evidence to support this view as well as a clinical theoretical approach that is consistent with the evidence. Often in the close examination of multiple personalities it is found that there is a hierarchical relationship of acquaintanceship among the various personalities which in itself suggests that there is an underlying integration at work. Usually this hierarchical ordering of acquaintanceship is unidirectional, with one personality knowing more about the second than the second knows about the first. To understand this fact I would invoke psychoanalytic clinical theory which would hypothesize that this kind of "splitting" must serve defensive needs for the *individual* understood in this instance to be one *superordinate* person possessing one mind albeit fractionated into several self-identified "personalities." It would make better sense to consider each "personality" as a certain special subset of psychological states, rather than as a separate mind or person in the true sense.

The notion of "person" within the proposed frame of reference, is a higher order construct referring to the necessarily unique organization of psychological states characterizing each individual with its enacting and adaptive capacities primarily in mind. By this definition "person" could not refer to one part of the brain, as in split-brain patients, or to one set of psychological states as in multiple personalities and dissociated conditions, but to one overarching organization.

Conclusion

To return to my opening remarks, I would welcome consciousness back to psychology with the following provisos which should be clearly spelled out in the invitation: i) Consciousness should be identified unambiguously as experience or awareness; ii) It should not be considered to be made up of mental contents but of mental processes; iii) Conscious processes are one important subset of processes constituting psychological states, which also include unconscious psychological processes; iv) That it would make for clearer discourse and research if the term consciousness were restricted to its meaning as experience or awareness, so that *psychological state* would then become the superordinate hypothetical structure. If these provisos were accepted I would be confident that the festivities would go well and that at the very least cognitive science, neurophysiology, and the clinical and conceptual contributions of psychoanalysis, would find some good work to do together.

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