

An Introduction to the Perceptual Kind of Conception of Direct (Reflective) Consciousness

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In view of the return of consciousness as psychological subject matter, there is good reason to begin to explore different conceptions of the various kinds of consciousness. The present article considers consciousness₄—our direct (reflective) awareness of some of our own mental episodes—from the perspective of the perceptual kind of conception of this inner access. First, consciousness in the present sense is distinguished from other kinds of consciousness. Then, the perceptual kind of conception of direct (reflective) consciousness is distinguished from inner-sense, self-intimational, behaviorist, and inferential conceptions. After some motivational comments, close attention is given, in the final section, to the perceptual kind of conception in the context of the last version of James J. Gibson's visual perception theory.

Whereas we are now privileged to witness a renewed disciplinary interest in the psychology of consciousness (Natsoulas, 1978a, 1981, 1983c), this belated interest may well diminish and eventually disappear, unless psychologists discover means of submitting the indicated subject matter to fruitful empirical investigation. However, we cannot get directly to the observational dimension of this potential area of scientific knowledge. The experimental or empirical study of phenomena such as consciousness, which cannot be pointed to at present, requires much conceptual and theoretical preparation. Thus, from the start, the psychological study of consciousness suffers from a major disadvantage. Not only are we uncertain about how to proceed, but it must be admitted that, in this case, little clear thinking exists among us as regards the kind of thing it is that we want to study (Natsoulas, 1983c).

With rare exceptions, consciousness is for psychologists as St. Augustine (397-398/1961) characterized his own comprehension of time:

What, then, is time? There can be no quick and easy answer, for it is no simple matter even to understand what it is, let alone find words to explain it. Yet, in our conversation, no word is more familiarly used or more easily recognized than "time." We certainly understand what is meant by the word both when we use it ourselves and when we hear it used by others. . . . What, then, is time? I know well enough what it is, provided that nobody asks me; but if I am asked what it is and try to explain, I am baffled. (pp. 263-264)

Freud (1938/1964) admitted to the same kind of bafflement about consciousness as St. Augustine had expressed about time:

The starting point for this investigation is provided by a fact without parallel, which defies all explanation or description—the fact of consciousness. Nevertheless, if anyone speaks of consciousness, we know immediately and from our own most personal experience what is meant by it. (p. 157)

For familiar historical reasons, whose review falls beyond the present article's scope (except to mention that Freud, at the same time, ridiculed the attempt by behaviorists to construct a psychology that disregarded consciousness), the years of psychological thought since Freud have not added much to our scientific understanding of consciousness. Certainly, we have not progressed to the conceptual point where it becomes clear how best to investigate the essential phenomena.

The topic of consciousness is far too large for me to address thoroughly in a single article. The best that I can do each time (e.g., Natsoulas, 1974, 1979, 1983e) is to consider an important part of "the problem" just as other psychologists treat of only aspects of human perception, say, or of personality theory. My purpose here is to contribute to the psychological reader's understanding of *one kind of consciousness from the perspective of one kind of conception of it* (cf. Natsoulas, 1983b). I speak of different *kinds* of consciousness since there are, as I have previously discussed, a number of concepts of consciousness that possess different referents (Natsoulas, 1978a, 1983a, 1983c). This article consists of four main sections of which the first three are preparatory, yet no less important in introducing *the perceptual kind of conception of consciousness*.

1. I am addressing in this article what I have called "consciousness₄" following the order of listings under *consciousness* in the *Oxford English Dictionary* (Natsoulas, 1978a, 1978c, 1983a, 1983b, 1983c). In the first section, this sense of consciousness is distinguished briefly from other senses of consciousness, though not as briefly as will be possible later in the historical development of psychological knowledge about consciousness. One must take pains with these basic concepts because a consensus about them has not yet been achieved among psychologists. As I recently stated (and illustrated), "At the present time, conceptual confusions and difficulties in mutual comprehension attend scientific discussions of consciousness, even where the participants are relatively sophisticated students of the topic" (Natsoulas, 1983c, p. 14).

2. The second preparatory section differentiates the perceptual kind from other kinds of conceptions of consciousness₄. Such a section is needed for expository reasons and to forestall assimilative tendencies that would downplay the distinctive characteristics of perceptual conceptions in the interests of showing agreement among the advocates of alternative accounts. After all, someone might say, all the discussed conceptions of consciousness₄ are attempts to account for consciousness in the same sense. But, of course, the different

conceptions claim different things about consciousness₄. To consider them versions of a single account is to resist theoretical development in this area of scientific inquiry.

3. For motivational reasons, a section is then included that gives some justification for the special attention that I am devoting, in the present article, to consciousness₄ and to the perceptual kind of conception of it.

4. Finally, the article focuses on the perceptual kind of conception of consciousness in the present sense. Since this kind of conception attributes some of our direct (reflective) awareness to the perceptual systems themselves, exposition can proceed best, it would seem, in terms of a particular theory of the functioning of the perceptual systems. For this purpose, the last version of Gibson's (1979) very prominent theory of visual perception is used. The perceptual kind of conception of consciousness is introduced in terms of it.

Consciousness in the Present Sense

Consciousness₄ characterizes or attends an occurrence of a mental happening and makes it conscious, as opposed to unconscious or not conscious. This kind of consciousness takes place, it would seem, either (a) in the form of a mental occurrence's intrinsically *exemplifying* the property of consciousness or (b) in the form of an accompaniment that somehow *bestows* consciousness on the mental happening. Since *conscious* and *mental* are not synonyms, it is a further question whether a mental happening (e.g., the occurrent thought that it is raining in London at this moment) can occur other than consciously. The collective experience of modern psychologists leads them to conclude that a mental happening can transpire in either mode, consciously or unconsciously. Surely, at least some mental happenings vary in this way over the instances of their occurrence (Natsoulas, 1970, 1973).

For example, suppose you become aware by sight of an obstacle in your path while you are walking and engaged in conversation. In the *conscious* instance, you are in a position to report the fact of your seeing the obstacle. Your being in this position is due not only to your (visual) awareness of the obstacle but also to your (somehow) being aware of having such visual awareness. In the *unconscious* instance, your successful maneuver around the obstacle gives to the psychologist evidence of the respective visual awareness, though you are not in a position to report seeing the obstacle in your path. The situation is for you as though there were no obstacle in your path. That is, you do not notice how or that you behave in response to it, nor are you cognizant of your visual awarenesses of it.

With this example, I have already distinguished between two kinds of consciousness. In the remainder of this section, I make this distinction explicit and then I draw three further contrasts between consciousness in the present sense and other kinds of consciousness.

1. In terms of the above example, the first distinction lies between (a) simply being aware of the obstacle in your path (another example: simply having the occurrent thought to the effect that it is raining in London at the moment) and (b) being aware firsthand that you are having awareness of the obstacle (or of the thought's occurrence in you). We may call the first kind of consciousness "simple awareness" and use this name for any awareness, however produced, of anything whatever, whenever the awareness occurs unwittingly, that is, without its being conscious. The second kind of consciousness has been variously called direct, immediate, reflective, and introspective awareness and is consciousness in the present sense.

To grasp this distinction—between simple awareness and direct (reflective) awareness—one needs to realize that, if *only* simple awareness takes place, then it is for the person *as though it does not*, in the following sense. Given only simple awareness of an obstacle, the person in whom the awareness occurs is not in a position to report the obstacle's presence any more than he or she is in a position to report being aware of the obstacle (cf. Natsoulas, 1982a). Perceptual reports are not mere responses to a stimulus-object or to one's perceptual awareness of it. They are pieces of deliberate communicative behavior that a person performs for an audience when it seems to the person that he or she is perceiving the stimulus-object whose presence and character he or she reports.

In the absence of direct (reflective) awareness to the effect that the proper perceptual awarenesses are occurring, the person would lack *the requisite perceptual grounds* to report about the object, though he or she has simple (perceptual) awareness of it. One does not have such grounds simply by having perceptual awarenesses since these may occur without one's cognizance of them. Think of someone who (a) wants to report the contents of an open box just handed to him or her, (b) sees what there is in the box, and (c) is unaware of so seeing. Of course, this person who lacked direct (reflective) consciousness of his or her perceptual awarenesses of the contents of the box might *infer* the occurrence of these awarenesses from (a) bodily signs (cf. commissurotomy left-hemisphere inference about right-hemisphere experiences), (b) conscious presentiments produced associatively by unconscious perceptual awareness of the box's contents, or (c) conscious inclinations to utter certain words.

I do not mean to imply that direct (reflective) awareness is an intrinsically different kind of mental happening from all forms of simple awareness. This is a matter that has to be decided explicitly rather than definitionally introduced from the start. In particular, I want to leave open that direct (reflective) awarenesses may be simple awarenesses; in fact, I shall assume this until reason for doubt develops. I intend the notion of simple awareness to cover all cases of being unwittingly aware of anything. And I do not see that the idea of unconscious direct (reflective) awareness is incoherent. Moreover, if our direct (reflective) awarenesses are themselves in very large number unconscious, this would explain the failure of psychologists to recognize their importance, for example,

in deliberate behavior that takes one's mental occurrences into account (e.g., the issuing of perceptual reports).

If the present view is correct, whenever unconscious (simple) direct (reflective) awareness occurred in one, one would not be in a position to report the occurrence of the mental happening of which one was thereby aware. One would be aware of the mental happening and unaware that one was; therefore, one would not have a reflective basis on which to report the mental happening's occurrence. And the concerned psychologist would have to judge from other behavior that simple direct (reflective) awareness occurred, just as the psychologist must judge that a person has simple visual awareness when the person maneuvers unwittingly around an obstacle in his or her path (and is not in a position to report the obstacle's presence, having only simple awareness of it). It follows that just as the extent or frequency of perceptual consciousness is better shown by behavior than by perceptual reports alone, so too the extent or frequency of direct (reflective) consciousness is better indicated by behavior (including perceptual reports) than by introspective reports alone.

2. When I refer in the present article to consciousness, or to someone's being conscious of something, or to a conscious mental occurrence, I do not mean at any point to refer to the general state of consciousness that we commonly call consciousness when we speak, for example, of someone's coming to consciousness (or becoming conscious) from being in one or another state of unconsciousness (e.g., sleep, faint, coma). The general state or condition of mind that is called consciousness is the normal waking state. It is a general mode of psychological functioning that differs, presumably, from how the mind functions in other general states of consciousness, such as absorptive states and alcoholic intoxication, as well as in states of unconsciousness (Natsoulas, 1981, 1983c).

While one is in the normal waking state, there occur in one mental happenings of great variety, some of which are conscious in the sense of the present article; that is, they are objects of direct (reflective) consciousness. But their being conscious is not due to their occurrence in the context of consciousness *qua* normal waking state. Only some of the mental happenings transpiring therein are characterized or attended by a property or further occurrence that renders them conscious as opposed to unconscious (or not conscious). Moreover, other general states of consciousness (e.g., meditative states) may include immediate awareness of one's mental flow. And even certain general states of unconsciousness sometimes partake of consciousness in the present sense, as when one is aware during sleep of having a certain thought or seeming to see a certain object.

3. The word *consciousness* is also used (though not in this article outside this paragraph) to refer to the collection or totality of mental occurrences that constitute one's conscious being over time (Natsoulas, 1978a, 1979, 1983c, 1983e). That is, the word may refer to what I call one's personal consciousness, which consists of those parts of one's stream of mental life to which one now has either

direct (reflective) consciousness or first-person memory (cf. Brewer and Pani, 1983, on "personal memory"). Elsewhere, I have referred to the distinctive subjective organization of one's personal consciousness with the term conscious personality. The main kind of consciousness that I am addressing in the present article makes personal consciousness possible and cannot be equated with it. Personal consciousness is normally an evolving, persisting, subjective unity of mental happenings across often great temporal extents.

4. We speak at times of consciousness in the sense of self-knowledge or self-conviction, referring to the judgments people make (as in the exercise of conscience) about their own performances, actions, and inactions and what these mean as regards their personal characteristics, namely, their abilities, limitations, temperament, deficiencies, character, and the like (see Natsoulas, 1983c, under "consciousness₂"). Whatever one's source of evidence, in order for a judgment about oneself to qualify as part of one's consciousness qua self-knowledge or self-conviction, one's judgment must be a firsthand judgment in the sense that it is based on what one has witnessed about oneself rather than on what others say about one (hearsay). While it is true that we may use our direct (reflective) consciousness as a source of evidence about, for example, the kind of life that we are leading, still that which our conscious mental happenings may evidence, when pertinent to self-knowledge (consciousness₂), is something objective rather than subjective. That is, it is something (e.g., one's well-spent life) about which other people can have equally as authoritative evidence as one's own. This kind of consciousness is not difficult at all, therefore, to distinguish conceptually from the property or occurrence that renders mental happenings conscious. Whatever one may derive from consciousness in the latter, present sense, whether this be, for example, the subjective organization of one's mental life (conscious personality) or a self-witnessed conception of oneself as a person, it is clearly not equivalent to these.

Distinguishing the Perceptual Kind of Conception of Direct (Reflective) Consciousness from Other Kinds

In addition to the perceptual kind of conception of consciousness in the present sense, there are also the inner-sense kind of conception, the self-intimational kind, the behaviorist kind, and the inferential kind. These differ, of course, in how each explains the special event or property that attends or characterizes the conscious occurrence of a mental happening. In this section, I distinguish these kinds of conceptions of the present kind of consciousness from the perceptual kind of conception.

1. The perceptual kind of conception of direct (reflective) consciousness risks being confused with the inner-sense kind of conception. According to the latter conception, we purportedly possess a faculty or power of the mind (e.g., Locke's, 1706/1975, "reflection") by which we are enabled to perform observa-

tions on the mind's own activities. We are said to be equipped with an inner sense that works like an outer sense (perceptual system) and makes mental happenings conscious by producing introspective awarenesses of them strongly analogous to perceptual awarenesses. It is sometimes claimed that we use inner sense analogously to how we use one of our outer senses, namely, to scan our mind, to orient relative to one or another function of it, and to detect therein the occurrence of particular mental happenings as such. An inner-sense theorist may consider the mind to be continuously vigilant toward itself (so long as it is active) or may propose that mental happenings occur unperceived as well, the "mental eye" having turned away or become inoperative.

The fundamental difference between the perceptual and the inner-sense kind of conception of consciousness may be expressed by saying that only the one kind is properly labeled perceptual. The perceptual kind of conception does not hold that the means of rendering mental happenings conscious is *analogous* to the functioning of perceptual systems; rather it *attributes to the perceptual systems themselves the ability to make at least some categories of our mental happenings conscious*. This is not a small difference in views. It is a difference between (a) introducing an additional power or faculty of the mind, perhaps an undiscovered inner-observational system, and (b) extending the ordinary perceptual systems' powers along the lines that they are already understood to function. Moreover, a perceptual conception is *likely to encompass only part of the job an inner sense is supposed to do*, not being pertinent to how mental occurrences that are external to the perceptual systems are made conscious. The perceptual kind of conception may well require, therefore, supplementation by a behaviorist conception of the same kind of consciousness (and vice versa: Natsoulas, 1982a).

2. The self-intimational kind of conception places the mental eye, as it were, within every conscious mental happening. The very occurrence of a mental happening contains an apprehension of the fact of its occurrence and perhaps other things about it as well. A self-intimation theorist may contend that consciousness in the present sense is an intrinsic property of all occurrences of every mental happening; for example, Brentano (1911/1973) proposed that no mental act occurs without "inner perception" of it. Or, a self-intimation theorist may take this view of only certain categories of mental happenings; for example, Freud (1895/1966, 1915/1957, 1923/1961, 1938/1964) proposed that only those psychical processes transpiring in the "perception-consciousness system" of the psychical apparatus (i.e., only those processes that possess "quality") are intrinsically conscious in the self-intimational sense (see Natsoulas, 1984a). Their very occurrence—without an "appendage" (as Freud called the further process some theories require for consciousness)—includes a self-apprehension.

Freud contrasted these (necessarily) conscious psychical processes with the unconscious psychical processes, which "become conscious" only when they enter into a certain special relation with a process that is itself intrinsically,

self-intimationally conscious. The contrast between Freud and his teacher is that, according to Brentano, intrinsically conscious mental happenings occur outside the perceptual systems as well. But not so in the view of Freud, for whom all psychical processes that occur in systems other than the perception-consciousness system derive their consciousness, if and when they do, at a distance, artificially and transiently from certain psychical processes that occur in the latter system: "Consciousness remains where it is . . . ; but, on the other hand, the *Ucs.* does not arise into the *Cs.*" (Freud, 1923/1961, p. 21; Natsoulas, 1984a).

In the present context, self-intimation means that conscious mental happenings cannot but be conscious; their being conscious is not separable or eliminable from them. Whereas a particular conscious mental happening may not occur, may be inhibited from occurring, may never occur again, if it does occur then it occurs in its only possible mode, which is to be conscious (cf. Freud, 1915/1957, on "unconscious emotions"). In contrast, perceptual conceptions of consciousness *can allow for the unconscious occurrence of mental happenings that may also occur consciously*. Their consciously occurring requires (see below) that the respective perceptual system function in a certain manner, that it perform a further (consciousness) function.

3. Behaviorist conceptions propose that a mental happening is conscious, in a particular instance of its occurrence, when it evokes a certain conceptual response (see Natsoulas, 1978c, 1982a, 1983b). This conceptual response to the mental happening is *itself* one's being aware of the mental happening that produced it. The response characterizes the mental happening in some respect, be this only the fact of its occurrence. Even where the mental happening thus rendered conscious is a perceptual awareness, there is nothing perceptual or perceptionlike about the postulated (behavioral) consciousness-process. The causal link between a mental happening and the conceptual (awareness) response to it is not mediated by a pre-response awareness. Nor is the response based on a kind of self-intimationally conscious "dwelling-in" the mental happening (i.e., a consciously experiencing it). Perforce, given a behaviorist conception of direct (reflective) consciousness, the "stimulus" (mental occurrence) is external to the conceptual response, which is a kind of "blind" awareness, therefore, of the mental occurrence.

By calling such awareness "blind," I mean to emphasize the nature of the one kind of immediate contact with our mental life that we have in the behaviorist view. This contact is immediate or direct in the sense that it is not mediated by other mental happenings or awarenesses. But it is not really a "contact," since direct (reflective) consciousness is supposed to be one among other effects of one's mental life and to involve a no more intimate relation to the latter than some of its other effects. For example, one can tell that one is hearing rather than seeing something because the respective mental happenings directly produce different judgments in one about the kind of perceptual process that is

occurring. There is no other way by which we become "acquainted" with our seeing and hearing; responding to mental happenings is the relation basic to direct (reflective) consciousness. (I speak here of mental happenings without stating how these are construed by the behaviorist conceptions of consciousness in the present sense; however, see Natsoulas, 1983b, 1983d, 1985.)

Note first how markedly the behaviorist kind of conception differs from the above two "mental-eye" kinds (i.e., inner sense and self-intimation). According to these, you know all or some of your mental happenings in a unique subjective way unlike how you know all other things in the world. To be aware or to know in this special way is not a mere matter of a certain judgment's being evoked in you (as takes place when you think suddenly, out of the blue so far as you are concerned, that something in particular is the case). According to the "mental-eye" conceptions, you are aware of having mental occurrences through an inner (subjective) access that gives you a clear idea of what they are like.

But not so according to the behaviorist conceptions, which hold, as stated, that only *in responding* to your mental life can you know anything about it. Another example: "Feelings are as observable as anything else; that is, they are capable of governing differential responding . . . Feelings can enter into the control of verbal behavior" (Day, 1975, p. 95; cf. Natsoulas, 1983d, 1985). How clear an idea one has of one's feelings depends on one's responses to them; one's discriminative conceptual (awareness) responses may be highly unsophisticated in their characterization of one's mental life. Responding differentially to your visual, auditory, gustatory, and other conscious content, for example, you may nevertheless be ignorant, in this view, about its true nature and character. According to Skinner (1969), this content really amounts to private stimulation from the body outside the nervous system: "Proprioceptive and interoceptive nerves respond to private stimuli [giving you inner access to your mental life], but they do not seem appropriate to visual, auditory, gustatory, and other mental events [which you take to be events in the world of the mind, not in the body outside the nervous system]" (p. 265).

The perceptual kind of conception is easily distinguished from the behaviorist conceptions. It locates at least some of our direct (reflective) consciousness in the activities of the perceptual systems themselves. Such consciousness is topographically perceptual, as Freud would say, not topographically behavioral. And being perceptual in this sense, consciousness partakes of properties of ordinary perceptual awareness of the world. More, the perceptual kind of conception holds that direct (reflective) consciousness *consists of perceptual awarenesses of a certain kind*. Without reference to direct (reflective) consciousness, let me say that in having perceptual awareness, there is always something that we experience or seem to experience beyond the awareness itself. The same can be said about direct (reflective) consciousness as this is understood by the perceptual kind of conception. But when we have, say, visual awareness of

that special reflective sort, we become aware thereby, additionally, that we are having visual awarenesses of some kind (see final section below).

If a psychologist of perception has a conception of perceptual awareness as being a (sensory) qualitative awareness of the world (e.g., Natsoulas, 1974, 1977, 1978b, 1980, 1982b, 1983f, 1984b), he or she will also hold (assuming adoption of a perceptual conception of consciousness) that *qualitative awarenesses are involved in direct (reflective) consciousness*. According to the behaviorist conceptions, in contrast, none of our introspective awarenesses are qualitative, since awarenesses are all responses in the literal behavioral sense (see Natsoulas, 1985; they may be "incipient responses," i.e., occurrences in the brain that are the initial phase of a response's occurrence, which may occur without the subsequent phases). Behaviorist conceptions make it theoretically impossible for us consciously to experience anything; if we do have experiences, these can only serve as causes of the behavior by which we know them; that is, experiences must remain, *ex hypothesi*, external to our awareness of them. (And therefore the issue of the existence of experiences may be raised; see next section below.)

4. Because the inferential kind of conception of consciousness in the present sense relies so heavily on the perceptual systems, one may be tempted to assimilate this kind to the perceptual kind, in part at least. However, insofar as an inferential conception remains consistent and is not partially diluted to a perceptual conception, the nature of the perceptual functioning that figures in the account will not include direct (reflective) consciousness. The relevant inferences will be based on perceptual evidence that consists entirely of ordinary perceptual awarenesses of the environment or body outside the nervous system. In the case of imaginal and hallucinatory awarenesses, a perceptual system will be said to operate to give us awareness of what may seem to be part of the physical environment here and now, rather than awareness of something to do with the perceptual system's functioning. Although imaginal awarenesses nearly never fool the person, they amount to illusory perceptions, anyway, of the external world or body outside the nervous system; that is, they do not have, in the inferential view, anything introspective about them. Again, the perceptual kind of conception of consciousness in the present sense holds, in contrast, that a perceptual system can function in such a way (see below) as to provide immediate cognizance of some of its own mental occurrences.

In the final section, I have occasion to discuss further a particular inferential conception of consciousness (i.e., Hebb, e.g., 1980, 1981) because this conception weakens at a crucial point and virtually admits to requiring supplementation by a perceptual conception of direct (reflective) consciousness. Let me say now, however, something more about the wholly consistent inferential kind of conception. (However, it should be noted that a thoroughly consistent inferential conception could not be sustained; for criticism, see Natsoulas, 1983c, pp. 38-41.) A mental happening is considered to have transpired consciously if the

person drew from perceptual evidence the conclusion that the mental happening was occurring or had just occurred in him or her. Therefore, one might just as well say that all the occurrences of mental happenings are unconscious (not conscious). For, in the purely inferential view, there is neither immediate inner subjective encounter nor noninferential recognitive response, to distinguish the conscious occurrence of a mental happening. Perhaps an inference theorist would propose the length of the inferential process (by which a mental happening is known to have occurred) as the basis for distinguishing the conscious from the unconscious occurrence of a mental happening.

The Special Interest for Psychology

If psychology's social function is, among other things, to develop an adequate conception of what psychologically it is to be a person, then consciousness in the present sense is of crucial importance. This kind of consciousness is centrally involved in the person's relation to himself or herself, specifically, to the person's own flow of mental life. Lacking direct (reflective) consciousness, one's whole mental life would be radically exteriorized from one's own (subjective) perspective. *The entirety of one's mental life would proceed at an inferential remove from one.* That which many thinkers have claimed is the only thing that one can immediately encounter, namely one's own experiences, would be hidden from one's "view" and a matter of one's conjecture, even as regards the occurrence of one's experiences. Thus, relative to this crucial part of oneself, one would be in the same position as another person—who has to infer anything that goes on in one's mind from observing one's behavior and other aspects of how one appears to him or her. One would have, normally, more observational information about oneself than others do (because one simply makes more such observations), but one's access to one's mind would not be privileged or unique in any way, since one would lack inner (subjective) access to any of one's mental happenings.

This view of people, as in effect lacking a conscious mental life, is actually the one that a consistent inferential conception of consciousness in the present sense would project. The view has its source in the methodologically inspired psychology of the other one. Here, however, the psychology of the other one is turned substantively upon the person's relation to himself or herself. In discussing the stream of thought, James (1890) wrote that the mind plays psychologist upon itself. According to the inferential kind of conception, the mind has no choice but to play objective psychologist upon itself. Though we may strongly believe in the existence of perceptual experiences, thoughts, wishes, intentions, and so on, no human being has ever been directly aware of one. They are strictly theoretical entities that we learn, from others, to postulate in explaining our behavior. This is the consistently inferential view.

In a strongly positivist era of psychological science (physical-thing language variety), a conception of people with their minds shrouded in inner darkness (i.e., the self-conscious mind as a black box to itself) would have great appeal. It would allow psychologists to pursue their professional goals without the distraction of having to take seriously what people claim to know directly about the inner, mental causes of their behavior. These inner causes are not observationally available to the psychologist so that he or she can verify an experimental subject's statements about them. A positivist psychologist would consider all unverifiable reports scientifically useless. In his or her view, they would be just more responses that require explanation in terms of what the psychologist can manipulate or observe.

(Such reports could constitute a challenge in practice, however, since the positivist psychologist would perforce interact with people (e.g., in the classroom, colleagues) who claimed to be reporting on the basis of direct (reflective) consciousness the occurrence of real and efficacious happenings in their mind. The positivist psychologist might rise to the challenge by correlating reports with subsequent behavior to assess their putative predictive value. The reliability of reports across and within people under the same conditions might well be included in such a study. Poor correlations would be interpreted as evidence that the proposed subjective access does not exist, since the nonexistence of direct (reflective) consciousness is the hypothesis most compatible with the program of a positivist psychology of the physical-thing language variety. Good correlations would be troublesome and would have to be explained away in terms of common observable determinants of the correlated measures.)

However, although it is well known that many pockets of positivism remain, the present era of psychological science is not strongly positivist. At the present time, much psychological interest and effort are directed on how the mind functions. Psychologists now feel free to attribute to people all sorts of highly complex "cognitive processes" that would seem to require for their proper function the sort of reflexivity exemplified by consciousness in the present sense. Consequently, the conclusion of no inner access to the mind by the mind would be widely considered premature. One even begins to hear expressions of surprise that we have so little access to our own mind; with so much of a psychological nature now hypothesized to transpire in people, we might expect that more mental life would be conscious than appears to be according to general psychological opinion (which holds that such processes proceed very largely unwittingly, in the dark). I believe that these expressions of surprise presage the growth of a contrary general opinion. With the further erosion of psychology's commitment to a strict verificationist philosophy of science, this article's special attention to direct (reflective) consciousness will be vindicated as, consequently, concern with the problems of consciousness keeps on growing.

It should be kept in mind that the conclusion of no inner access depends on the false conviction that somewhere in psychology's short history the predictive

value and reliability of direct (reflective) consciousness have been properly assessed; therefore, we can be sure that the problem lies with the subjects' lack of or limited inner access rather than with the psychologists' understanding of the central processes reported, what their occurrence depends on, and how they interact with other processes in the production of behavior. None of this is true. Nor has the extent of our inner access been as yet adequately estimated, on the basis of a thorough, well-informed empirical methodology, with a clear idea of how inner access is to be determined. (Cf. my earlier comment on the need to use behavior including perceptual reports, i.e., not only introspective reports, in determining the frequency with which this human ability comes into play in ordinary psychological functioning.)

Having provided some justification for discussing direct (reflective) consciousness, I want also to comment on the attention I devote here to the perceptual kind of conception of this kind of consciousness. In a recent article, I discussed direct (reflective) consciousness with special reference to behavioristic contributions (Natsoulas, 1983b). Behaviorist conceptions of this kind of consciousness seem to me to be well off the mark in how they try to account for the person's inner access to perceptual and other qualitative awarenesses. As I pointed out above, the evocation by mental happenings of judgments about them does not capture the intimate access that we feel ourselves to have to our experiences. And I do not believe that the large majority of psychologists are prepared to follow a behaviorist conception, to consider this intimate access illusory, that is, a mere matter of one's responding to one's experiences with the strong but false conviction of their being given to one in a more intimate way.

Moreover, it is a small theoretical step for a doctrinaire behaviorist from (a) postulating this external, causal relation between experiences and direct (reflective) consciousness of them to (b) doubting the existence of experiences. However causally direct responding to our experiences may be, it does not amount to an "acquaintance" with them. Therefore, an exclusively behavioral inner access allows for the possibility that other central occurrences than experiences produce the immediate judgments that seem to refer to and to characterize experiences.

Skinner's (1974) view is worth mentioning again because it takes the last point one step further: All "conscious content" (i.e., feelings, tastes, smells, and so on) really consist of proprioceptive and interoceptive stimuli. Therefore, when someone describes the bulk of his or her experiences, the person describes something that is otherwise than he or she thinks it is. In fact, we are describing, according to Skinner, a peripheral rather than a central occurrence (cf. Natsoulas, 1983d, 1985).

The general point is that, from the perspective of a behaviorist conception of consciousness in the present sense, we could be systematically deluded in our strong conviction that we have experiences. However, it is hard to accept—and why should we?—that (a) our direct (reflective) consciousness of, for example,

our pain-qualitative experiences amounts to mere conceptual responses to occurrences in us, none of which might possess pain qualities, and that (b) whether any of them do possess pain qualities is a theoretical question to be decided on the basis of inference to the best explanation of our behavior. Therefore, we may feel driven to another extreme.

We may begin by suspecting that inner access is self-intimational rather than a causal effect of conscious mental happenings. Accordingly, if a mental happening included as part of itself an apprehension of its occurrence and other things about it, perhaps this could constitute a sufficiently intimate access by the person to his or her experiences. But there is, clearly, a theoretical price to pay for the intimacy that a self-intimational conception provides. Namely, such a conception would seem to exclude the evident possibility of becoming distracted from mental happenings that nevertheless continue to transpire. According to a thorough self-intimational view (i.e., one that applies the same conception of direct, reflective consciousness to all mental happenings), there could not be an unconscious occurrence of a mental happening.

In order to handle the case of *apparently* unconscious mental happenings, the self-intimation theorist may have to distinguish between "attentive" and "inattentive" occurrences of mental happenings that are conscious whenever they occur. Although Freud (1895/1964) held that all perceptual awarenesses are intrinsically conscious, he wrote of the "passage of perception without attention, as it must occur countless times every day" (p. 363; cf. Natsoulas, 1984a). From a self-intimational perspective, what would being "attentive" to a mental happening require beyond one's being directly (reflectively) aware of it? No doubt, a consciousness of being conscious of it is necessary, because only then could the mental happening occur to some conscious effect; only then could the fact of a mental happening's occurrence be put to use in a deliberate way (cf. my discussion above about being directly, reflectively conscious of a mental occurrence without knowing that one is).

The person could be conscious of mental happenings in passing, that is, without reason to take note of the fact of his or her being conscious of them. If this interpretation is correct concerning what, according to the self-intimation theorist, an "inattentive" direct (reflective) consciousness would mean, then he or she would be countenancing some mental apprehensions that were unconscious. Direct (reflective) consciousness could be either conscious or unconscious. This would seem to contradict the thorough self-intimational view (Brentano, 1911/1973) that all mental occurrences are conscious, since the self-apprehension that is contained, *ex hypothesi*, in every mental happening would be on occasion blind to the fact that it contains a self-apprehension. Although the mental happening could still be said to be conscious, a significant aspect of it—one of the mental apprehensions that it purportedly contains—would be unconscious and constitute a departure from self-intimation.

An unconscious direct (reflective) consciousness also would contradict Freud's partial self-intimational conception. If a mental happening in the perception-consciousness system includes, for example, both a visual perceptual awareness of an obstacle in one's path and an awareness of itself, why should it ever occur that only the first of these was self-intimationally conscious? Why should there not occur, according to this conception, a further awareness that rendered the direct (reflective) awareness conscious, as part of the occurrence of the one mental happening? After all, in Freud's view, self-intimation is an intrinsic characteristic of certain neuronal processes (see Natsoulas, 1984a); such processes, whenever they occur, cannot but be directly (reflectively) conscious. If they include an apprehension of the conscious psychical process, then this apprehension would have to be, it seems, also conscious, and so on.

This raises a further problem: how to stop theoretically an infinite series of apprehensions contained in every mental happening of the perception-consciousness system (which would mean, presumably, that each mental happening never ends). Moreover, without an added assumption ending the series at a very early point, it would be inconsistent to propose that direct (reflective) awareness may occur unconsciously. For example, one might want to add an assumption about attentional charge (cathexis), that is, the variable amount of charge that a process in the perception-consciousness system receives from the rest of the psychical apparatus on different occasions; a greater charge making direct (reflective) consciousness itself conscious because the conscious perceptual process then lasts longer.

There is, of course, an alternative kind of mental-eye conception that introduces an inner sense by which we become observationally aware of our experiences and other mental happenings. A motivation for introducing an inner sense is the inability to see how else direct (reflective) consciousness of a mental happening might be accomplished (self-intimation being difficult to accept due to its assuming that a single mental act includes more than one apprehension with different objects). The implicit reasoning goes: since the senses are the means by which we become directly aware of our environment and body, the conscious occurrence of mental happenings, which is to be directly aware of them, must be the function of an analogous inner sense. A further motivation is the intimate qualitative access, already mentioned, that we seem to have to our experiences. To some people, a kind of quasiperceptual system directed upon the mind itself seems necessary in order to account for the qualitative presence to us of our experiences. (Herein lies an appeal, also, of the perceptual kind of conception; see below.)

But the analogy to how perceptual systems accomplish awareness of the environment and body outside the nervous system quickly breaks down. And certainly, we have no physiological reason to believe that the brain possesses a kind of sense organ directed upon its own processes. (This gives the perceptual conception further appeal, if it can be made to work, at least with regard to

mental happenings in perceptual systems.) A difficulty with inner sense is that we have direct (reflective) consciousness, as well, of nonqualitative mental occurrences, and this access is not evidently of the same intimate kind as we have to qualitative mental occurrences. That is, inner sense would have to include "making observations" that were in fact presentiments or inclinations to believe (i.e., nonsensory awareness), which stretches the analogy to a perceptual system. In reply, an inner-sense theorist might suggest that, in fact, perception gives us nonqualitative access to external things (see Gibson, 1966, 1979). But the arguments in favor of the latter do not seem persuasive. In brief: although we may be visually aware of something not in sight about an object (e.g., its other sides) we are so aware while having particular visual experiences of the object (see Natsoulas, 1984c).

This brings me finally to the perceptual systems themselves and to mentioning two advantages of the perceptual kind of conception of direct (reflective) consciousness. (a) As I have stated, our being aware seems to be a function of these systems in the first place. Our concept of being aware of something derives from how they give us information about the world. The perceptual kind of conception of consciousness in the present sense is attractive because it assigns to the perceptual systems the kind of job for which they were designed, namely awareness, though this added job is direct (reflective) awareness. (b) Our perceptual experiences occur within our perceptual systems. The intimate contact that we take ourselves to have with our perceptual experiences is improbably an external contact by a different system (e.g., a tokening system: see Natsoulas, 1974, p. 615). Since we know that our perceptual systems give us qualitative experiences, it seems the theoretical path of least resistance to hold that they also make direct (reflective) consciousness possible (at least of our perceptual experiences).

The Perceptual Kind of Conception of Direct (Reflective) Consciousness

When I mentioned earlier that I would have occasion to discuss a specific inferential conception of direct (reflective) consciousness, I had in mind Hebb's (e.g., 1980, 1981) inferential position—which, at a certain point, becomes a perceptual conception without Hebb's acknowledgement. By focusing on this point, one can see why the need implicitly asserted itself for such supplementation. Following that, I shall turn, in the rest of this final section, to Gibson's (1979) visual perception theory. This theory provides me with a context for expressing what a perceptual kind of conception of direct (reflective) consciousness amounts to.

To speak of an inferential conception of direct (reflective) consciousness is to speak somewhat paradoxically. Such a conception, if consistent, would not include direct (reflective) awareness of a mental occurrence at any point. How-

ever, an inference theorist may not be consistent in this regard though he or she explicitly rejects the possibility of consciousness in the present sense. I shall argue next that Hebb (1980) meant something mental by "world" when he stated that "the perceived relation of the world to one's body" is the most obvious, fundamental, and least discussed basis for inference to one's mental occurrences. Hebb continued his statement as follows:

The student will discover what I am talking about if, in a noisy room, he will put his hands over his ears and observe the change that results; or if he will go to the window, look out, and then close his eyes. As he closes his eyes a whole pattern of existence ceases, and returns as the eyes open again. While the eyes are closed he may still have imagery, he will undoubtedly be certain that the street or landscape still exists, but that is not the same thing. Such knowledge is a pallid alternative to the vividness that is contingent on having the eyes open. Without touching one's chair one can imagine the feeling of hardness and rigidity as the arm of the chair is gripped, but that is nothing to what one perceives when the hand is seen making actual contact with the wood. The brightness of the landscape, the liveliness of the conversation, the hardness of the chair, have a unique relation to the phenomena of the body: The eyes must be open, the ears must be uncovered, the hand must be in a certain place. (Hebb, 1980, p. 28)

Perceived in relation to the body, according to Hebb, are "certain existences—things that simply *are*," which we might call visual or auditory or tactual or, in general, sensory. These existences are what Hebb meant by "world" in "the perceived relation of the world to one's body." Hebb has the student perceiving the relation between what the student does with part of the body and (a) a "change" that results, or (b) a vivid pattern of existence that ceases and returns, or (c) a feeling of hardness or rigidity. What are the latter three "existences," which according to Hebb, the student perceives?

Clearly, they cannot be construed simply as parts of the student's environment. The student's actions that Hebb mentioned do not change the parts of the world involved. The street or landscape does not in fact go out of existence. The chair does not change when its arm is gripped. The noisy room does not become less noisy when the ears are covered. In these and other cases, the changes that one notices are changes in what is taking place in one's nervous system. This is the conclusion forced by Hebb's argument. In effect, the inference theorist Hebb was suggesting that one perceives such changes; he was implicitly proposing in part a perceptual kind of conception of direct (reflective) consciousness. Those changing existences (also called by him "the phenomena of the body") that he emphasized in his argument are given to our awareness in the instances that he discussed by no means other than our respective perceptual systems.

Before I exhibit and examine further the perceptual kind of conception of consciousness in the present sense, I should make a further comment that will prevent miscomprehension of Hebb's position. Having virtually admitted the existence of direct (reflective) consciousness, Hebb (1980) claimed advocacy of a thoroughly inferential view. He believed that the idea of direct (reflective) consciousness implies the recognition of a mental occurrence for what it is. This

is why he stated that calling those phenomenal existences “sensory” begs the question; the person who is perceptually aware of them does not know, to begin with, that they are sensory. For Hebb, the issue is not what these existences are and our means of direct access to them. Rather, the question is, as he now stated it, how we know of the mind’s existence. Hebb wanted to say that the mind is a postulation introduced to make explanatory sense of perceptually evident facts about our behavior and those existences.

However, a perception theorist of direct (reflective) consciousness would have no reason to contradict Hebb on this score. Moreover, both positions hold, it now seems, that it is by perceptual means that we have direct (reflective) consciousness of our perceptual awarenesses. Of course, Hebb needs to acknowledge this, and the fact that his position is not a strictly inferential one. Not having direct access to any of one’s mental occurrences is one thing; having such access to some of them and inferring further beliefs about them is another thing.

We find some of the “makings” for a perceptual conception of direct (reflective) consciousness in Gibson’s (1966, 1979; Reed and Jones, 1982) theory of perception — as well we should since perception itself is how we are supposed to know of our perceptual awarenesses firsthand. Moreover, Gibson discussed the character of the perceptions that occur when one adopts an attitude of introspection. Presumably, this is the kind of perception that gives, or is, our direct (reflective) consciousness. Engaged in visually perceiving the world in a nonreflective, naive attitude we may adopt an attitude of introspection; that is, we may attempt to become aware of our seeing and its content (i.e., what is visually present or experienced by us here and now). The result is that we become aware of “the seen-now and the seen-from-here,” which Gibson (1979) defined as follows:

What is seen now is a very restricted sample of the surfaces of the world, limited to those that are inside the boundaries of the field of view at this head-posture. It is even limited to that surface being fixated at this eye-posture, if by *seen* one means *clearly seen*. This is at most half of the world and perhaps only a detail of that.

What is seen from here is at most the optically uncovered surfaces of the world at this point of observation, that is, the near sides of objects, the unhidden portions of the ground, the walls, and the bits that project through windows and doors. (p. 195)

That which takes place when we adopt an introspective attitude while visually perceiving, Gibson (1979) also expressed as “viewing the world in perspective, or noticing the perspective of things” (p. 196; italics deleted).

Gibson’s statements about (what I shall call) “reflective seeing” result in questions about the nature of the perspectives that are experienced. When one “notices” the perspective of things is one aware of a part of the world or is one aware of one’s own visual experience of it? What is clear is Gibson’s implication that one continues, in a sense, to experience the environment when one adopts an attitude of introspection vis-à-vis one’s seeing the world. When “viewing” begins, we may say, visual perceiving does not stop; “viewing the world in

perspective" is a kind of visual perceiving (as visual-field seeing was: Gibson, 1963), though it is not the kind of seeing characteristic of the naive attitude of perception (cf. visual-world seeing: Gibson, 1963, 1979).

An important statement in trying to comprehend Gibson's (1979) interpretation of introspective "viewing" (reflective seeing) is his statement that when we view an object in perspective, "we *separate* the hidden from the unhidden surfaces and observe the occluding edge" (pp. 286-287). Note, first, that this represents a change in Gibson's theory. Earlier he wrote, "The modern adult can adopt a naive attitude or a perspective attitude. He can attend to visible things or to visual sensations" (Gibson, 1971/1982, p. 279). Gibson's recent view seems to be, instead, that attending to visual sensations actually is visually perceiving the environment in a special way, with a certain attitude, and with certain results of awareness.

What are these results of awareness, and how do they connect with direct (reflective) consciousness? A perceptual kind of conception of the latter may hold that one can perceive in such a way that makes one aware of that which one perceives as a content of one's perceptual awareness. One notices the parts of the environment that are now visible to one, which of them one is now literally experiencing. Gibson might have objected to this last phrase, having argued that what one sees is "the world," not simply the part of it that one "sees now from here" (see last indented quotation above). That is, visually perceiving the world in the naive attitude, one's stream of visual experiencings includes as content, surfaces and objects that cannot be "seen now from here" (as well as those that can). When one successfully adopts an introspective attitude (engages in reflective seeing), these surfaces and objects are not part of the content of one's stream of visual experiencings.

Others will object to Gibson's ideas about perceiving hidden objects and surfaces, but he insisted that visual availability of objects and surfaces at a point of observation is not necessary for seeing them—so long as there is available in the light over time information that "specifies" their properties:

What we see *now* (when it is carefully analyzed) turns out to be at most a peculiar set of surfaces that happen to come within the field of view and face the point of observation It does not comprise what we see. It could not possibly be the basis of our perception of the environment. What we see *now* refers to the self, not the environment. The perspective appearance of the world at a given moment of time is simply what specifies to the observer where he is at that moment. The perceptual process does not begin with this peculiar projection, this momentary pattern. The perceiving of the world begins with the pickup of invariants. (Gibson, 1979, p. 254)

The perspective appearance of the world at a given moment, Gibson said, perceptually specifies where the perceiver is. Information is picked up from the light that specifies where the perceiver is, as well as specifying properties of the environment.

However, the perceptual pickup of visual stimulus information about oneself does not imply direct (reflective) consciousness; that is, my awareness of visually perceiving is not constituted by awareness of where I am and how I am moving my eyes, head, torso, or whole body through the environment. According to Gibson, such self-perception (along with world-perception) is typical of perceiving in the naive attitude. In contrast, adopting an introspective attitude, I “notice the perspective of things;” I engage in a new activity of “viewing” the environment. It would seem that only then does direct (reflective) consciousness enter the perceptual situation. (I shall qualify the latter statement shortly in order to take into account the spontaneous obtrusion of reflective seeing on naive seeing.)

When one adopts an introspective attitude in a perceptual situation, what changes? (a) According to the implications of Gibson’s (1979) view, we restrict by our use of the visual system the pickup of information from the light; we restrict it to that which specifies those surfaces that are at the moment within our field of vision, that is, facing our point of observation (at whatever slant). (b) In addition, we undergo thereby a special kind of visual experience, different from that which we have when we are aware in the naive attitude. An apparent key to understanding what such visual experience amounts to is Gibson’s (1979) statement that what “one does is *separate* the hidden from the unhidden surfaces and observe the occluding edge” (pp. 286-287). One is supposed to learn to do this, to put the visual system to use in a reflective way and to have thereby these special experiences.

But what is it to “separate” in visual experience the hidden from the unhidden surfaces and to “observe” the occluding edge? I take this to be a rather obscure reference to a kind of experience organized around the job occluding edges do. Gibson (1979) defined an occluding edge as

an edge taken with reference to a point of observation. It both separates and connects the hidden and the unhidden surface, both divides and unites them. The same can be said of the far side and the near side of an object. As the point of observation moves in the medium, or as the object moves, the hidden and the unhidden interchange, or the far side becomes the new side and the reverse. For curved surfaces and tangential occluding edges, instead of flat surfaces and apical occluding edges, the rule is the same. (p. 308)

The occluding edge is perceived in the naive attitude as is the connection of hidden and unhidden surfaces (Gibson, 1979, p. 202). Gibson must have meant by “observing” the occluding edge a different kind of visual experience of this edge and the unhidden surfaces: “Our attention is called to the fact of occlusion . . . I notice the surfaces that face me, and what I face, and thus where I am” (p. 286). But not just where I am, since I perceive this without adopting an introspective attitude or engaging in reflective seeing.

I would put it this way: Whereas one continues to look outwardly when in the introspective attitude—not “inwardly,” Gibson insisted—what one finds there

one perceptually takes relative to oneself as that which is now in sight, visually appearing, or qualitatively present. Gibson (e.g., 1971/1982) used to speak of the introspective awareness of "visual sensations" because the visual appearance of a surface is a visual qualitative effect that the surface has on one's visual system. Noticing its appearance is noticing how it looks to one. In Hebb's (1980) example, one perceives the environment through the window but one may also notice as one perceives that the scene appears to one with great vividness. This vividness is a characteristic of the visual experiences that one is having of the scene rather than a characteristic of the surfaces that comprise the scene. It pertains to how they are appearing to one.

Gibson (1966) had written earlier of the obtrusion of sensation on perception. In terms of his later account, this would translate as follows. While perceiving the environment in the naive attitude, there occur to us from time to time without deliberate adoption of an introspective attitude perceptual awarenesses of the reflective kind. How often do such obtrusions occur? Are they perhaps the more important phenomenon than the deliberate adoption of an introspective attitude? Psychologists do not know these obtrusions' frequency. As to their importance, this may be far greater than psychologists now suspect.

Consider those frequent moments throughout an ordinary day when we are concerned to establish the truth of our perceptions of the world. At such times, we must have direct (reflective) consciousness of our perceptions, and we become especially concerned with the appearance of things, how they look, feel, sound, and so on. We perform "double-takes" not only to perceive accurately what is there but also to perceive what it is that we are at present literally perceiving, what is in sight and qualitatively experienced by us. I would suggest that insofar as the validity of one's perceptions is of concern, there will be a spontaneous moving in and out of the introspective attitude, perhaps as quickly as certain visual figures reverse. In this way, we become aware of having perceptual awarenesses of a certain very specific kind with certain parts of the environment as their literal content. According to the perceptual kind of conception of direct (reflective) consciousness, in the absence of reflective perceptions, perceptual awarenesses would flow along in a stream, acquainting us with the environment and our place in it, but we would not know that we were having this stream of experiences. Of course, ordinary nonreflective perceptual experience is not about the activities of our perceptual system (except when we look in a mirror or the like).

How do perceptual systems produce perceptual awarenesses of the reflective kind? Gibson (1979) believed he had given a significant part of the answer—when he insisted that such visual awarenesses occur as a result of maintaining a fixed point of observation. In this way, we would be enabled to pick up from the light perspectival information that flows along too quickly while we are in motion (cf. the analogous difference between active touch and passive touch: Gibson, 1962, 1963). But do we not also pick up the flow of perspective struc-

tures, the variants of stimulation, and experience them reflectively? After all, Gibson (1979) held that we pick up the flow for purposes of "visual kinesthesia." Why could we not pick it up for purposes of reflective perception?

For example, riding on the back of a train and looking toward where the train is coming from, we can notice the flow of the scenery backward toward the disappearance point. According to Gibson, this is how we visually tell, from that position, that the train is moving in the direction that it is moving. Do we not also see the flowing perspective pattern as how the scenery is appearing to us? Gibson (1979) himself suggested that we can: "A person can face backward while riding a vehicle, or walk backward for that matter, and observe how the array flows inward, instead of outward as it does when one faces forward" (p. 122). Here, Gibson was speaking somewhat loosely, as though we could observe the light itself (i.e., the flowing optic array), which he explicitly denied: "We do not perceive stimuli" (p. 55). Consequently, he left us to ask: What do we perceive in that case, when we "observe the flowing array"? From some Gibsonians, the likely answer will be "ourselves moving," which misses the point. Although the same stimulus information picked up in the naive attitude does give us the experience of ourselves (or the train) moving, Gibson was pointing to a different experience. Again, however, if we cannot see optical arrays because they are made of light, what do we experience when we "observe how the array flows inward"?

The answer must bring in the environment, specifically, how it looks to us. We speak of it as racing by as the train picks up speed. The flowing optic array produces in us a stream of visual experiences analogous to perceiving the "seen-now-from-here." This visual experience that we have so often under the specified conditions is a reflective obtrusion in the sense that it is a noticing of the perspective of things; we "view" the environment. This is how the environment looks to us, how we are experiencing it, though we also can see some of its own properties at the same time. A fixed point of observation is not necessary for the obtrusion of reflective perceptions or for the deliberate adoption of an introspective attitude. Reflective perception goes on perhaps all the time, alternating with naive perception and making our stream of experience as a whole more or less conscious in the present sense, depending on the proportion of it that is reflective. This does not mean, of course, that stretches of perception cannot go on unreflectively (such as in unwittingly maneuvering around an obstacle; see early example in this article). It does mean that when such stretches occur, for how long, and so on, they are matters of potential scientific investigation.

A further question pertains to the nature of reflective perception. What does it amount to? How is it constituted? How will psychology describe those perceptions that make the perceptual stream conscious? The answer cannot be given independently of the development of the theory of perception. Reflective perception is a kind of perception. Gibson tried to inform us about the environmental conditions and behaviors whose interaction produces the perceptual

stream, but he had much less to say about the nature of perceptual experience itself (other than what it is not). He has interpreted perceptual experiences as being fundamentally nonconceptual kinds of occurrence, although he did write from time to time, perhaps inconsistently (Natsoulas, 1978b), of perceiving that something is the case and perceiving something as having certain properties. By taking a nonconceptual stand, however, he ruled out an account of reflective perceptions as being informed by a conceptual system that pertains to how the environment appears to one. In reflective perception, ordinary perceptual experience might make an implicit phenomenalist description of what is experienced, rather than the implicit realistic description exercised in the naive attitude (cf. Gibson's, 1979, p. 260, interest in "tacit knowledge," which is implicit in perceptual awareness and becomes explicit when verbalized—if it can be verbalized). Thus, the pickup of the identical stimulus information may result in either naive perception or reflective perception, although certain stimulus information may make one or the other kind of perception more likely, as does the attitude one adopts.

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