

The Presence of Environmental Objects to Perceptual Consciousness: An Integrative, Ecological and Phenomenological Approach

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This article is the promised sequel to a recently published article in this journal (Natsoulas, 1996b), in which I sought to make more available to psychologists Edmund Husserl's attempted explanation of how perceptual mental acts succeed in presenting to consciousness their external, environmental objects themselves, as opposed to some kind of representation of them. Here, I continue my exposition of Husserl's effort and, as well, I begin a project of seeking to bridge the gap between his phenomenological account of perceptual presence to consciousness and James J. Gibson's ecological conception of direct perception. I am concerned, with what happens at the juncture of (a) the perceptual system's resonance to the stimulus energy flux and (b) the perceiver's awareness of those environmental objects, events, properties, and relations which are specified by the informational variables that the picked-up stimulus flux instantiates. I believe that simultaneously considering the environment's phenomenological perceptual presence from both sides of the great epistemic divide — from the ecological outside and from the phenomenological inside — is worth a serious try. In the case of both these perspectives, we fortunately can draw upon a lifetime of intensive work by a major theorist operating at the highest level, work directly relevant to the general phenomenon of special interest here.

Introduction

If and when, perception psychologists, in general, come to hold that James J. Gibson (1979/1986) and Edmund Husserl (1900/1970, 1913/1970) were right — that, *in ordinary, straightforward perceiving by means of the senses, it is*

environmental objects themselves that are directly present to our consciousness — then psychological science will have acquired the difficult task of explaining: How is such direct presence possible? It is one thing for us, as scientists, to become convinced by everyday observation or by empirical research that we live consciously in a common world, rather than at one or more removes from it. And another thing for us to be in a position to proffer a cogent account for how it happens that the (one and only) world itself possesses phenomenological perceptual presence for us. Psychologists of perception will have to deal with that great epistemic chasm which is *the causal distance separating any environmental object from our perceptual awareness of it*. We will have to work toward dispelling the picture that the notion of direct perceptual consciousness conjures up in some of our colleagues' minds: a kind of merging or union of each perceptual awareness with its "object," that is, with whatever it may give awareness of. To some colleagues, perceptual directness seems to imply that a perceptual awareness somehow manages ("magically," critics will say) to be right there wherever its object happens to be, so that the awareness forms together with its object "essentially an unmediated unity."¹

The idea of perceptual awarenesses' being numerically indistinguishable from their respective objects readily leads, if adopted, to *philosophical idealism*, the world as idea, the view that everything in the world is constituted of ideas, awarenesses, or other mental-occurrence instances; that is, environmental objects have no existence independently of our perceptual awareness of them. This is a metaphysical position to which not many present-day psychologists would subscribe. The large majority of them are, rather, *commonsense realists* with respect to the one world in which we all evidently live and breathe (i.e., Gibson's ecological environment, Husserl's *Lebenswelt*). As far as, at the very least, perceptual awareness is concerned, most psychologists would want to argue in favor of all or nearly all of the theses that are expressed in the following paragraph, which I reproduce from William James's masterwork *The Principles of Psychology*.

¹Husserl (1913/1983) used the latter phrase for a purpose different from my present one. He held that, in the case of what I call "inner awareness" — i.e., our firsthand awareness of our own present mental-occurrence instances — the inner awareness and its object "form essentially an unmediated unity, a single concrete cogitatio" (p. 79). That is, an inner awareness is a real part of the mental-occurrence instance that is its object, so that the inner awareness can only be distinguished "abstractively" from its object, only as an "essentially non-self-sufficient moment" (cf. Brentano, 1911/1973; McDowell, 1995; Natsoulas, 1993c; Woodruff Smith, 1986, 1988, 1989). In the same section, Husserl goes on to say how different in this regard is the present awareness (the remembering) of past mental-occurrence instances, as well as the perceptual awareness of environmental things.

The psychologist's attitude towards cognition will be so important in the sequel that we must not leave it until it is made perfectly clear. *It is a thoroughgoing dualism.* It supposes two elements, mind knowing and thing known, and treats them as irreducible. Neither gets out of itself or into the other, neither in any way is the other, neither makes the other. They just stand face to face in a common world, and one simply knows, or is known unto, its counterpart. This singular relation is not to be expressed in any lower terms, or translated into any more intelligible name. Some sort of *signal* must be given by the thing to the mind's brain, or the knowing will not occur — we find that the mere existence of the thing outside the brain is not a sufficient cause for our knowing it: it must strike the brain in some way, as well as be there, to be known. But the brain being struck, the knowledge is constituted by a new construction that occurs altogether in the mind. The thing remains the same whether known or not, and when once there, the knowledge may remain there, whatever becomes of the thing. (James, 1890/1950, pp. 218–219)

Irreducible to a Causal Relation

Phenomenological perceptual presence is not reducible to a causal relation, no matter how immediate the latter may be. An environmental object's direct presence to consciousness is not reducible simply to the fact that this object causes an awareness of it to occur on the spot. This kind of presence to me is not the equivalent of something's "being appropriately before me and affecting my senses on the occasion of perception" (Woodruff Smith, 1989, p. 45). My point is not that a perceptual awareness and its object do not instantiate a causal relation together. I hold that they always do. Even supposing, contrary to fact, that, in a particular case, the causal distance between an environmental object and a perceptual awareness of it could be truly minimal, so that the environmental object produced the perceptual awareness of it directly, without any other causal mediation between them, even in such a case the environmental object's direct perceptual presence to consciousness would constitute a difficult explanatory problem. Spatial, temporal, or causal adjacency does not eliminate James's unbridgeable gap that exists — with certain important exceptions, in my view (see Natsoulas [1996a]) — between an instance of knowing and whatever is therein known. Notwithstanding any kind of close adjacency, the problem remains:

How does the complex activity or process of perceiving — within which, as both product and part, there flows a stream of perceptual experience or awareness (Natsoulas, 1993a) — make an environmental object present to consciousness? How does the living observer's "psychosomatic" activity of perceiving (to use Gibson's [1979/1986] adjective) achieve this feat of bringing the environment itself to consciousness, rather than functioning in such a way as to represent environmental entities, events, properties, and relations, and to provide direct apprehension, instead, of internal representations of parts of the environment? How does a stream of perceptual experience manage

not only to give awareness of its objects, just as a stream of thought does, but also to make those objects themselves present to consciousness in a way that thoughts do not make their objects present?²

A psychologist who treats only of the causal relation that may exist between an awareness and its object, would err if he or she then proceeded as though having adequately treated of the relation of awareness that exists between an awareness and its object, or how an awareness mentally apprehends its object. No further comment may be needed here concerning the difference between an awareness's being caused to occur by something and an awareness's being mentally directed upon this same cause (cf. Brentano [1911/1973] and Searle [1983] on intentionality). However, let me say one final thing. Note that, if an awareness's object were always, as it is not, the awareness's most proximal cause, then we could only be aware of occurrences in the brain — since, as James (1890/1950) too held, all awarenesses are evoked ultimately by brain processes (cf. Woodruff Smith [1995] on Husserl).³ Even supposing it were true that we could only be aware of brain processes, *the fact of the causal efficacy of the ultimate brain process prior to a particular awareness's taking place would not explain how the awareness succeeded in being an awareness of its immediate cause.* Just as James (1890/1950, p. 218) insisted, a perceptual awareness cannot “get out of itself or into the other,” no matter how this awareness is caused to occur.⁴

²When you have the veridical thought that it is raining in London right now, you are aware of rainy London, but not as you would be if you were there, or watching on television the rain falling on London. However, sometimes we include imaginal awarenesses in the category of thoughts. Can the same be said about them as about ordinary thoughts in comparison with perceptual awarenesses? As will be seen, Husserl (1900/1970) proposes a certain difference between having vivid imaginal awarenesses of a certain environmental event and this event's having phenomenological perceptual presence to one. For now, however, we are concerned with nonperceptual awarenesses that are different from perceptual awarenesses in more than that particular way which Husserl identifies.

³I take this matter one step beyond James, identifying the stream of perceptual awareness with processes in the brain. As John R. Searle (1992) does too; however, I have disagreed in print with Searle's systematic contention that first-person, mental properties of brain processes never will be discovered to be identical with any third-person properties of those processes (Natsoulas, 1994b).

⁴Although James (1890/1950) wrote confidently regarding what he called the necessary “dualism” of an act of knowing (i.e., veridical awareness) and whatever is known therein (i.e., the object of awareness), he described the relation of knowing (i.e., the awareness relation) as “the most mysterious thing in the world” (p. 216). Whether or not it can be explained, this relation has to be acknowledged; James recognized, of course, that our inability to explain something is not a measure of its importance.

An Integrative Strategy

In order to do the best job that they can, perception theorists naturally circumscribe their efforts, concentrating on one or a few parts or aspects of whatever complex total perceptual activity happens to be their chosen subject matter. However, progress on the problem of phenomenological perceptual presence may repay a strategy of integrating and thus broadening certain previous approaches to perception. Perhaps we should try to take, as is rarely done, two different perspectives on perceptual awareness at the same time. I have in mind a strategy of combining a perspective that corresponds to an advanced attempt to account for the phenomenon of special interest "from the inside" and a perspective that corresponds to an advanced attempt to account for the same phenomenon "from the outside." After all, phenomenological perceptual presence is a phenomenon that connects something or other that, most often, exists completely independently of the mental with certain occurrences in the stream of consciousness.

To move the science of perception beyond what certain approaches have already achieved, we might try to get these approaches to meet, or to join up together, at a point where they now only converge. Accordingly, the present article begins an effort, which will extend over several articles, to bridge the gap between

(a) Husserl's phenomenological account of the perceptual presence to consciousness of environmental objects, or what may be going on in the stream of consciousness itself when these objects are in fact present to our consciousness, and (b) Gibson's objective, third-person understanding of stimulus information, its pickup, isolation, and extraction, that is, how the perceptual awareness of environmental objects themselves is made possible by our perceptual activities and the functioning of our perceptual systems with respect to the stimulus energies that surround us.

I believe that considering the environment's phenomenological perceptual presence simultaneously from the ecological outside and the phenomenological inside is worth a serious try. In the case of each of these two perspectives, we are fortunate to be able to draw upon a whole lifetime of intensive work by a major theorist operating at the highest level, work that is directly relevant, as will be seen, to the general phenomenon of special interest here.

More specifically, I shall be concerned, in the present article, with what happens at *the juncture* of the perceptual system's resonance to the stimulus energy flux and the perceiver's awareness of those environmental objects, events, properties, and relations which are specified by the informational variables that the picked-up stimulus flux instantiates. The fact that I have just described my topic in Gibsonian terms⁵ by no means implies the lesser

⁵Some readers may have doubts about this, because of my reference to perceptual awareness. If there are doubts, see Gibson (1979/1986, e.g., pp. 239, 253, and 282; Natsoulas, 1994a).

importance of Husserl's relevant contributions. Both approaches include a stream of perceptual awareness that flows at the heart of the activity of perceiving. And, of these two theorists, Husserl gives to the stream its more thorough internal, first-person characterization and analysis; while consistently insisting, as Gibson does too, that environmental entities, events, and so on, are the primary objects of perceptual consciousness.⁶

Although their approaches are, to say the least, mutually very different (e.g., as will be seen, Husserl posits sensations as real constituents of every individual perceptual awareness), both Gibson and Husserl theoretically conceived of us as being in constant epistemic contact with the ecological environment itself — not with a distinct, phenomenal environment that our perceptual systems or minds construct and that is immanent to consciousness. Gibson argued that we put a perceptual system to use with the effect that it picks up a stimulus energy flux possessing a spatiotemporal structure specific to the part of the environment that, together with our own activity of perceiving, contributes directly to producing the particular stimulus flux. And Husserl argued that how it seems to us is how it is, namely, that our perceptual consciousness is such that we have direct awareness of the part of the environment that is now before our senses, affecting them, and thereby determining the contents of our stream of consciousness. Both theorists argued against the notion that, analogous to the many external representations that we perceive, we possess inner pictures or other internal representations, which could explain our seemingly direct awareness of environmental entities, by their resemblances to the latter. Both theorists recognized that such an indirect attempt to explain perceptual consciousness only serves to create additional explanatory problems. For example, how do those posited internal representations themselves get apprehended, if not by being represented by further internal representations, and so on?⁷

Husserl's Account of Phenomenological Perceptual Presence

Let us begin with the stream of perceptual awareness, both (a) as conceived of phenomenologically, that is, from the first-person perspective, as it seems to the individual whose stream it is, and (b) as conceived of ecologi-

⁶Insofar as Husserl (see fn. 1 above) adopted an intrinsic account of inner awareness, he would distinguish between primary and secondary objects of perceptual awareness, the secondary object being, in each instance, the respective act of perceptual awareness itself (Natsoulas, 1993c).

⁷For discussion of Gibson's and Husserl's rejection of internal representations and phenomenal entities, phenomenal events, phenomenal properties, and phenomenal relations as objects of perceptual consciousness, see Natsoulas (1994c).

cally, that is, as belonging to a living observer who inhabits an environment with which he or she is constantly interacting and in informational contact by means of the senses. Consistently with Gibson's perception theory, I have stated that a stream of perceptual awareness is a part and product of a process of perceiving. The living observer puts "a perceptual system" (Gibson, 1966, 1979/1986) to use when he or she engages in one or another perceptual activity (which includes overt and covert behavior, as well as sensory and brain processes). Among other effects of engaging in a perceptual activity, a stream of perceptual awareness is thereby produced within the respective perceptual system (i.e., at the respective brain centers). Both the activity of perceiving and the stream of awareness that it produces may be rightly thought of as streams, the larger of these two streams including as part of it the smaller one, which the larger one is bringing into existence all along the way as it proceeds. Gibson (1979/1986) stated, "The act of picking up information is a continuous act, an activity that is ceaseless and unbroken Perceiving is a stream, and William James's (1890/[1950], Ch. 9) description of the stream of consciousness applies to it" (p. 240). Although Gibson did indeed conceive of perceptual awareness as an unbroken and continuous stream, in contrast, underlying James's (1890/1950) explicit description of the stream of consciousness as temporally continuous was an implicit conception of it as consisting of *pulses* of mentality, *individual awarenesses* of often great complexity, that were produced by the total brain process *one immediately after another* (so long as a time-gap in consciousness did not intervene; see Natsoulas [1992–1993]).

The Intuitive – Signitive Distinction

According to Husserl (1900/1970), in the vast majority of cases, a perceptual awareness (= any basic durational component of a stream of perceptual awareness) is not a purely "intuitive" mental act. Rather, it is both an "intuitive" mental act and a "signitive" mental act:

(a) A perceptual awareness is "intuitive" in that it presents to consciousness in person some features of its environmental object or objects; these features of the object themselves appear for as long as the stream of perceptual awareness continues to have them as its "intentional" objects. (b) And a perceptual awareness is normally "signitive," as well, in that it merely "points to" other features of its object or objects; these other features do not themselves appear, but they are nevertheless apprehended in having the identical perceptual mental act that gives other features of the object phenomenological perceptual presence.

Contrary to how it seems at first, this same contrast of Husserl's between a perceptual awareness's "making present" and its "pointing to" can be located in Gibson's (1979/1986) account of visual perception as well. Husserl's

distinction, not under that name, emerges in Gibson's book in a form that helps to make the distinction more clear.

"What is seen" versus "what is seen now from here." In an extended discussion of the visual perception of an environmental surface's being occluded by another environmental surface relative to a perceiver's point of observation, that is, in a discussion of the visual perceiving of a surface's going out of sight and then the surface's coming back into sight, Gibson (1979/1986) argues that awareness of the surface during the interval when it is not in sight is *no less perceptual* than prior to and subsequent to the surface's occlusion relative to the perceiver's point of observation.

Therefore, as might be expected, Gibson discourages all talk of the surface's "appearing," then "disappearing," then "appearing" again; these commonly used terms are misleading if one wants to develop an adequate understanding of the perceptual process which is involved. In marked contrast to Husserl, Gibson explicitly rejects the idea that our activity of perceiving causes the environment or parts of it to appear to us, or to be presented "in the theater of our consciousness" (in Gibson's own phrase). Appearances have no role to play, in Gibson's view, even when the individual is having imaginal awarenesses of items which have gone out of existence, have not yet come into existence, or cannot possibly come into existence. According to Gibson, it is fallacious to hold that there must be appearances present in such cases on the grounds that the apparent objects, being nonexistent, cannot themselves be present. When I vividly imagine or hallucinate a fire-breathing dragon, nothing appears to me; rather, I simply have "nonperceptual awareness," produced by the perceptual system, that is like my perceptual awareness of an actual environmental entity. Concerning such (visual) cases of "nonperceptual awareness," Gibson (1979/1986) states, "The visual system visualizes. But this is still an activity of the system, not an appearance in the theater of consciousness" (p. 256).

Yet, Gibson also makes a major point of distinguishing two categories of visual perceptual objects: the category of "what is seen" from the category, subordinate to it, of "what is seen now from here." I believe that, by means of this distinction, Gibson *implicitly reintroduces into his ecological approach the appearing of environmental objects to perceptual consciousness*. Gibson includes under "what is seen" those environmental surfaces, as well, of which we are now having visual perceptual awareness although they are not projecting light to our present point of observation. With regard to all of "what is seen," Gibson (1979/1986) states "What one perceives is an environment that surrounds one, that is everywhere equally clear, that is in-the-round or solid, and that is all-of-a-piece" (p. 195). For example, the ground is perceived to pass beneath everything although much of the ground does not project light

to one's present point of observation, because the ground is in large part occluded by all the objects that rest on it. In contrast, Gibson includes under "what is seen now from here" only those parts of the environment, those environmental surfaces and parts of such surfaces, that are projecting light to one's present point of observation. Moreover, Gibson allows that, by adopting an introspective attitude with respect to our activity of visual perceiving, we can *pick out* from "what is seen," from all the surfaces that we are now seeing, those surfaces among them that we are "seeing now from here." When we pick the latter surfaces out, we are engaging in a different perceptual activity, we are "*viewing the world in perspective, or noticing the perspectives of things*" (Gibson, 1979/1986, p. 196).

But to take notice of the perspectives of things is to apprehend their appearing to us. As I have elsewhere argued (Natsoulas, 1989), Gibson's line of thinking about the visual activity of "viewing," as distinct from straightforward seeing, has the effect of returning to Gibson's perception theory the notion that certain parts of the environment are appearing to us. One can conclude the same from other parts of his book. Indeed, a future article may be useful which answers in detail the question of "Does the environment appear to Gibson's perceiver?" Already, however, the discussion in Natsoulas (1989) about how "the seen now from here" is discriminated from other environmental surfaces shows that Gibsonians, no less than phenomenologists, must address phenomenological perceptual presence. My main point there was that a perceiver has no other basis on which to determine whether a particular environmental surface qualifies for inclusion in the "seen now from here," other than his or her taking notice of the surface's now visually appearing to him or her.

A Role for Sensations

Certain parts and properties of the environment have phenomenological perceptual presence, while other parts and properties, although they do not have such presence, may nevertheless be apprehended perceptually, according to Husserl, by means of the very perceptual mental acts that give to other parts and properties their phenomenological perceptual presence. Husserl held that a perceptual mental act normally provides awareness of both: features of the perceived object that appear and features that do not appear (e.g., the object's hidden sides). How does a perceptual mental act intrinsically vary with respect to performing its two functions of "making present" and merely "pointing to"? Husserl (1900/1970) would say, for one thing, that those surfaces of the environment that are being "seen now from here," in Gibson's sense, are distinctive in now producing corresponding visual sensa-

tions in the perceiver of those surfaces. Those other surfaces, which the perceiver is also seeing albeit only significantly, are not producing in him or her any visual sensations at the moment.

The visual sensations that are occurring, those corresponding to "the seen now from here," are real parts, or contents, of the perceptual mental acts presenting those surfaces to consciousness. Let me emphasize that, whereas visual sensations are literal constituents or ingredients of visual perceptual consciousness, the parts of the environment that produce those sensations, to which the sensations correspond, and that are present to consciousness are not themselves *contents* of consciousness. Parts of the environment can only be *objects* of consciousness. They can be themselves present to consciousness but this does not occur by their being incorporated, somehow, into perceptual awareness.⁸ According to Husserl, perceptual awarenesses bodily contain sensations, *but they do not contain whatever it may be that they are causing to appear to consciousness, whatever it is that they are giving phenomenological perceptual presence to.*

For example, the visual perceptual awarenesses of a particular red ball are, of course, not themselves round, red, and smooth, as their object is. Husserl does hold that the particular sensations that are produced by a red ball and are a part of one's visual perceptual awareness of the ball resemble in their properties the above features (and others) of the ball. And he ascribes such resemblances as well to imaginal awarenesses in relation to their objects, in those cases where they do have actual objects. It follows that the appearing to consciousness of the environmental object itself, which is supposed to occur only in perception, is not to be explained in terms of the resemblances between sensations and environmental object. After all, a perceptual mental act does not "offer" the complex of sensations that its environmental object therein produces. Rather, a perceptual mental act "offers" none other than the environmental object itself. Moreover, some perceptual awarenesses are not as detailed or as accurate as some imaginal awarenesses can be, with regard to the actual properties of their objects. Thus, resemblance — between

⁸Wilfrid Sellars (1978) stated, "We not only see *that* the ice cube is *pink*, and see it *as pink*, we see *the very pinkness* of the object; also its *very shape* — though from a certain point of view" (p. 177). However, Sellars took the nonHusserlian, scientific realist view that the ice cube itself is not pink. He held that we suffer a kind of systematic illusion throughout our perceiving of the environment: in perceptual mental acts, features of sensations are conceptually taken to be features of the environmental objects that produce those particular sensations (see Clark, 1982). In contrast, Husserl held that the very pinkness, which indeed we see, of a pink ice cube is not a sensation. The pinkness is not itself present in consciousness; it is not, as sensations are, a content of consciousness.

awareness and its object, however great this resemblance may be — does not suffice, in Husserl's view, to make the object present to consciousness.⁹

The Crucial Factor

Emmanuel Levinas (1963/1973) states that the crucial factor in Husserl's account of "making present" is the "specific character and meaning of perceptual intentionality" (p. 73). In this connection, Levinas calls our attention to the following important passage from Husserl (1913/1983):

The perception of a physical thing does not presentiate something non-present, as though it were a memory or a phantasy; perception makes present, seizes upon an it-itself in its presence "in person." Perception does this according to its *own peculiar sense*; and to attribute something other than that to perception is precisely to contradict its sense. If we are dealing, as here, with the perception of a physical thing then it is inherent in its essence to be an adumbrative perception; and, correlatively, it is inherent in the sense of the intentional object, the physical thing *as given* in it, to be essentially perceivable only by perceptions of that kind, thus by adumbrative perceptions. (pp. 94–95)

The perceptual mental act's "own peculiar sense," according to Husserl, is responsible for a physical thing's phenomenological perceptual presence. And this is subjectively so. That is, the perceptual mental act itself discriminates as such between those features of the environment which are themselves appearing, which the perceptual mental act is making present, and those which the perceptual act is merely pointing to. Since all perceptual mental acts make present some features of their object, it would follow that all perceptual mental acts relate their object to themselves; their object is perceptually apprehended as being, in certain of its features, present itself to consciousness. Returning to Gibson's discussion of the visual perceptual awareness of occluded and nonoccluded surfaces, we can say on Husserl's behalf that the surfaces "seen now from here" are visually apprehended as surfaces differently from how those other surfaces, which are also being seen though they are temporarily occluded, are visually apprehended. This difference is a difference of "sense," of meaningful apprehension by the perceptual mental act — not just a difference of sensations (present versus absent), which also obtains. From Husserl's perspective, it would seem, this discrimination takes place in the very having of the perceptual awarenesses of straightforward visual perceiving; this discrimination is not a matter, as

⁹Imaginal mental acts, too, possess "intuitive" contents. The question arises, therefore, of how, as Husserl holds, the presence to consciousness of the environmental object itself takes place in the perceptual case and does not take place, as well, in the imaginal case. I shall address this question in a future article.

Gibson (1979/1986, p. 195) would seem to suggest, of adopting a special attitude toward one's seeing. Gibson, in contrast, identifies no difference between the basic perceptual process that is involved in straightforwardly seeing nonoccluded surfaces and the basic perceptual process that is involved in straightforwardly seeing occluded surfaces (as distinct from "viewing" them; see Natsoulas [1989]).

When we are having perceptual awareness of an environmental object that gives to the object phenomenological perceptual presence, those of the object's features that are present to consciousness are, according to Husserl, apprehended as being so. They are so apprehended because they produce sensations which the perceptual awareness "construes," "interprets," or "gives a sense (or meaning) to." Only in this way, by bestowing meanings upon sensations, does a perceptual mental act transcend itself and manage to reach its environmental object in person.¹⁰ The sense bestowed on the complex of sensations produced by an environmental object is the peculiar sense of an environmental object as being itself perceived and present to consciousness. This part of Husserl's account requires much comment; however, I limit myself, for now, to just the following.

Ingredients of Perceptual Awareness

The bestowal of objective meaning on the respective sensations should not be misunderstood as the occurrence of a more basic mental act on which the perceptual mental act is based. About the perceptual mental act, Husserl (1900/1970) stated, "The manner in which it makes the thing appear present is *straightforward*; it requires no apparatus of founding and founded acts" (p. 788–789). A perceptual mental act is itself an act of meaning-bestowal — of a unique kind, which makes present to consciousness the environmental object itself that is producing the "interpreted" sensations. However, the mere occurrence of Husserl's sensations, on their own, would not be equivalent to the corresponding environmental object's or anything else's presence to consciousness: "By themselves, [Husserl's] sensations stand only in relations of causality and similarity — simple or brute, and structural — to objects and their features" (Mulligan, 1995, p. 183).

¹⁰Compatibility with Gibson's perception theory is here in question, as it is when Husserl invokes sensations as actual parts of perceptual mental acts. However, Husserl's inclusion of an interpretation, or a meaning-bestowal, that is performed on sensations by perceptual mental acts should not be understood as contradicting one of Gibson's (1979/1986, p. 3) main themes: it is a fundamental mistake to hold, along with Immanuel Kant, that precepts without concepts are blind. The "interpretive" activity which Husserl assigned to perceptual mental acts was supposed to be an entirely concept-free process, a process in which no concepts are exercised (see Mulligan [1995, pp. 206–207]).

However, a reader may be tempted to infer as follows, which is actually inconsistent with Husserl's account:

It is the corresponding *sensations* which present objects or features of objects to consciousness. The perceptual mental act's meaning-bestowal on those sensations is *no more than* a taking notice of those thereby presented objects' or features' phenomenological perceptual presence.

In fact, in straightforward perceiving, according to Husserl, our perceptual mental acts do not give us awareness of any sensations. It is always environmental entities, events, properties, and relations that we are straightforwardly perceptually aware of. The process of meaning-bestowal, or "interpretation," held to be intrinsic to all perceptual mental acts, transforms those sensations which it perforce includes into part of the unitary perceptual awareness of something in the environment. By virtue of the involvement in a perceptual awareness of sensations thus modified, the part of the environment responsible for the occurrence of those specific sensations is itself made present to consciousness. In sum:

It is this "interpretive" function of the perceptual mental act, operating with respect to sensations, that is supposed to bridge the gap between stimulation, or the pickup of stimulus information, and the perceptual awareness of the part of the environment that the picked-up information is specific to. The gap is bridged in such a way that a certain kind of concrete instantiation of the picked-up stimulus information within the perceptual system, namely, the corresponding sensations, is made use of by the perceptual mental act to give to the therein specified part of the environment phenomenological perceptual presence.

An objection considered. Notwithstanding my exposition of Husserl's account to this point, the objection may be brought anyway to the effect that, for Husserl, the presence *to* consciousness of the environment reduces, after all, to the presence *in* consciousness of certain "intuitional" contents. That is, the objects of perceptual consciousness are really those sensational contents as "interpreted," and not the environmental items that produce the sensations. Following Husserl, Levinas (1963/1973) admits that the latter statement would be true if the "intuitional" content of a perceptual mental act amounted merely to a complex of sensations. However, by virtue of their special inclusion in a perceptual mental act, sensations acquire "an irreducible sense." By virtue of the form that the perceptual mental act gives to the sensations that it includes, the perceptual mental act is enabled to make present to consciousness those features themselves of the object to which the sensations correspond.

A rough way to put the latter point is to say that the perceptual mental act "takes" (my word; cf. "mistakes") its intrinsic "data" of sensation to be the corresponding properties of the external object itself. However, this idea of

“taking” can easily be understood to imply the having of an awareness of that which is “taken,” even when it is “taken” for something else. In this case, it would indeed be a “mis-taking”; the perceptual mental act would be an awareness of the sensations included in it which took these sensations for what they were not. However, Husserl would be more accurately understood as having recognized that, in order to explain the unique character of our perceptual awarenesses, in making parts of the environment present to our consciousness, it is necessary *to identify the ingredients of individual perceptual mental acts and how these ingredients work together to do the job that perceptual awarenesses evidently accomplish*; accordingly:

1. Among these ingredients are sensations. But these do not participate in the awareness in a raw form. Such participation would contradict how the contents of our perceptual awarenesses seem to us. Rather than proposing that sensations get processed before being included in perceptual mental acts — as though the latter acts are capable of absorbing or incorporating into themselves other mental-occurrence instances which immediately precede them — Husserl held *that the processing of sensations takes place internally to each perceptual mental act*. Each perceptual mental act processes in a special way the sensations that constitute that mental act.

2. Thus, a second ingredient of individual perceptual mental acts is the process *that transforms raw sensations into awarenesses of the environmental object itself*. Husserl calls this processing the bestowal of meaning or sense upon the sensations. He also calls it an interpreting of sensations. Occasionally, he even speaks of the process as an “apperception.” However, none of these terms should be understood in the usual way. Husserl is not thereby referring to further components of the stream of consciousness, as though an environmental object’s presence to consciousness depended on some sort of a relation or interaction between different kinds of components of the stream (e.g., interpretive and perceptual components). Nor, for that matter, does Husserl suggest the usual perceptual mental act is, not only “intuitive” and “signitive” in the sense explained, but also “interpretive.” As already indicated above, whereas we are “intuitively” and “signitively” aware of environmental objects and features of such objects when we live through perceptual mental acts, we are not “interpretively” aware of sensations (or of anything else) by means of those same acts.

Contentless Awareness, Virtual Objects, the Flowing Optic Array: The Return of the Appearing Environment

It is well-known that Gibson explicitly and systematically rejected a role for sensations in our perceptual awareness of the environment. For example, he called for the abandonment of old perception theories to the effect that,

in the production of perceptual awareness, the mind or perceptual system operates in one way or another upon the deliverances arriving from the sense receptors. Gibson would likely say Husserl's bestowals of meaning on sensations are just another example of theoretically invoking old-fashioned mental acts which are supposed to work on sensory inputs with the outcome, or output, of giving awareness of the environment (Gibson, 1979/1986, p. 238).

In place of this old idea, Gibson would propose, among other things, the quite radical view to the effect *that phenomenological perceptual presence can be fully explained without ascribing any content at all to perceptual awareness*: "Perceiving is an achievement of the individual, not an appearance in the theater of his consciousness There is no content of awareness independent of that of which one is aware" (Gibson, 1979/1986, p. 239). In an effort to present a sympathetic understanding of this view of Gibson's, I have elsewhere stated that, according to him, the activity of perceiving and the stream of experience (perceptual awareness), which is a part and product of that activity,

are temporally continuous processes, which "track" properties and events in the environment, and are constantly changing as the molar activity of perceiving picks up different stimulus information from moment to moment. The stream of perceptual experience is not constituted of distinct entities, nor even of distinct "entitative processes" (Sperry, 1976). The stream is a single, continuous temporal object without internal lines of division; experience does not consist of pulses, as James [(1890/1950) implicitly] held. Whereas it seems natural to ask what a pulse of consciousness "contains," an ongoing process resonating to a stimulus flux will seem more amenable to description in terms of the environmental features the picked-up stimulus information is specific to (cf. Shanon, 1990, p. 146). At a high level of abstraction, one becomes like the world in perceiving it. (Natsoulas, 1994d, pp. 243–244).

Perceptual Awareness Without Content?

But can a content-free view of perceptual awareness be sustained? Here are four points that a Gibsonian would have to consider in trying to defend a thesis of contentless perceptual awareness.

1. Recall that Gibson's ecological approach has a perceptual system not only (a) picking up stimulus information by resonating to the stimulus energy flux at the respective sense receptors, but also (b) isolating and extracting picked-up stimulus information. The latter "processing" takes place at the more central levels of the perceptual system (Gibson, 1979/1986, e.g., pp. 57, 243, 263; Natsoulas, 1990).¹¹ And it results in — or is itself the equivalent of

¹¹Compare Edward S. Reed's (1989) reference to two mutually integrated components of Gibsonian perceptual systems: the "neural ensembles" that underlie exploratory skills and those that underlie the skills of information extraction (cf. Shepard, 1984, p. 419).

— the perceiver's having perceptual consciousness of the environment. As Reed stated (emphases added) on Gibson's behalf:

An observer whose perceptual system detects some optical structure is *therefore* aware of what [that optical structure] specifies — the environment, not the [optic] array. (Reed, 1987, p. 103)

If ecological information is uniquely and nomically dependent on its source, then an organism which can detect the information perceives at least one aspect of the source as well, *without any further ado*. (Reed, 1987, p. 105)

The *very* act of resonating to information *entails* the perception of the meanings of things for the observer. (Reed, 1989, p. 115)

However, the equivalence thus affirmed, between perceptual awareness and the acquiring of stimulus information, does not reduce our wondering: How does picked-up, isolated, and extracted optical structure contribute to awareness of what the optical structure specifies in the environment? Surely, such acts of visual detection must give rise to *visual perceptual awareness with a distinct internal content that has reference to the respective environmental object and gives to this object phenomenological perceptual presence of the visual kind, for as long as the object continues to produce visual sensations*.

2. Recall that, for Gibson, there flows a continuous stream of perceptual experience, or awareness, that is a part and product of the respective activity of perceiving. Thus, perceiving is not construed merely as a process that allows discriminations between environmental entities, events, relations, and properties to proceed. There is more to perceptual awareness than its instantiating some of the same stimulus information that is instantiated by a corresponding stimulus energy flux. The stream of perceptual awareness is not just another stimulus-like flux, which takes place more deeply in the perceptual system, consists of a different form of energy, and has the function of reducing stimulus information for the purpose of more efficient responding. The notion that, typically, either stimulation or inner states trigger behaviors is soundly rejected by Gibson (1979/1986) in his chapter on locomotion and manipulation. The latter overt actions are "constrained, guided, or steered . . . by information, that is, by seeing oneself in the world" (p. 225). It is the perceiver who controls his or her active locomotor or manipulatory behavior, and does so, usually, by repeatedly consulting his or her visual perceptual experience of the environment, as the experience is unfolding. *The perceiver is aware of the specific ways in which the contents of his or her perceptual experience are being transformed as a result of the actions that he or she is performing*. Gibson ascribes to the perceiver actions that take rules into account pertaining to how perceptual contents should be made to change in order to bring about specific locomotor or manipulatory results (Natsoulas, 1993b).

3. As Gibson stated for the corresponding imaginal awareness, whenever we have visual perceptual awareness, the visual system “visualizes.” And it visualizes no less so, of course, than it does when we have imaginal visual awareness. This is not to say that visual perceptual awareness is a form of visually imagining what it is that is before our eyes. Gibson (1979/1986, pp. 256–258) makes very clear that his account of perceptual awareness is not of the phantasmal kind. He argues that the visual system has “reliable and automatic tests for reality,” which allow us to tell very quickly whether we are seeing something or merely imagining it. For example, when one fixates an environmental surface that is projecting light to one’s point of observation, the surface consequently “becomes clearer,” as does not happen, in contrast, when one only seems to see a surface. Note that it is not the surface itself that improves in this respect, but one’s awareness of the surface; specifically, *it is the particular way in which one sees the surface that becomes “more clear.”* This suggests, of course, that the environment does appear, after all, to Gibson’s perceiver, and it can appear more or less clearly. Also, we can take notice of how clearly something is appearing to us, which means that the content of perceptual awareness can itself be an object of awareness. Another one of the examples of a quick perceptual test for reality that Gibson mentions pertains to how your perceptual awareness changes as you turn and move. One thing that happens is that surfaces and parts of surfaces come into sight and go out of sight with your movements. You can tell whether a surface is real, rather than imaginary, by *how your perceptual experience of the surface changes as you turn your head toward it and away from it.* What about your experience changes? Its content certainly changes, whereas the object of the perceptual experience may or may not be replaced by a different object.

4. The part of the environment that we are “seeing now from here” is apprehended differently from how we are apprehending any other surfaces of the environment which we may be perceptually apprehending at the same time. Suppose that our perceptual awarenesses of occluded and nonoccluded surfaces lacked all content. How could we distinguish between surfaces as, respectively, occluded versus nonoccluded relative to our point of observation?

Virtual Objects or Illusory Appearing?

Several times in his last book, Gibson (1979/1986) makes reference to virtual objects, either explicitly or nearly so. He would have done better to treat of, as Husserl does, the contents of perceptual awareness and how they make possible, as affected by stimulus information, the appearing to perceptual consciousness of environmental objects. Let me use just two examples to make my point.

1. In describing the experiential results found in the “invisibly-supported-object experiment,” Gibson (1979/1986) states,

The real object is held up in the air by a hidden rod attached to a heavy base. The virtual object appears to be resting on the ground where the bottom edge of the real object hides the ground, so long as vision is monocular and frozen. One sees a concave corner, not an occluding edge. Because the virtual object is at twice the distance of the real object, it is seen as twice the size. (p. 158)

This statement is misleading, because the observer is visually perceiving the very object, and none other, that the experimenter has arranged for him or her to look at under special conditions. The observer’s visual perceptual awareness of the object is affected by the experimental conditions which Gibson mentions above, so that he or she is aware of the object as though it were resting on the ground, rather than, accurately, as held up above the ground by a rod completely out of sight. Also, the real object appears farther away and larger than it actually is.

Gibson’s explanation of this perceptual illusion appeals to the fact that, by looking at the scene through a peephole, stimulus information, specifically increments and decrements of optical texture projected by the ground at the object’s edges, has been eliminated from the field of view. In other words, the spatiotemporal pattern of stimulation obtained under the conditions of the experiment is like that which occurs when in fact the object is resting on the ground, rather than when it is raised up off the ground. This experiment, as many others do, demonstrates the crucial role of stimulus information in determining how the ecological environment is perceived. Moreover, it clearly points to the fact that what it is that changes with a restriction of the stimulus information available for pickup is not merely something to do with apprehending facts or “false facts” about the object, but *how the object looks to one*: not only its size, its distance, how it is spatially located in relation to the ground, but the object itself actually or seemingly instantiating these properties and more. This is why Gibson finds it natural — despite his denial of the environment’s appearing to consciousness — to speak of the perceiver as seeing a virtual object. However, Gibson’s resorting to the latter idea runs the risks of theoretically transforming the object of perceptual awareness into something subjective, contrary to all that he has argued for many years, and contrary to the facts of the matter as I believe them to be. More consistently, Gibson could speak of informational variables of stimulation as so affecting the stream of perceptual awareness that the environmental object, which they specify, is appearing to consciousness in one or another way, sometimes in a way that does not entirely accord with its actual properties.

2. In his discussion of the stimulus information available in the light and specifying the perceiver’s own locomotion, Gibson (1979/1986) mentions

that, while riding in a vehicle, one can observe how the optic array flows inward behind one and outward in front of one, and he describes the experience as follows: "To say that one perceives an outflow of the world ahead and an inflow of the world behind as one moves forward in the environment would be quite false. One experiences a rigid world and a flowing array" (p. 123). To this, Gibson adds that the optic flow of the ambient array is normally perceived as oneself, or one's vehicle, moving, rather than as environmental motion. However, the latter statement clearly does not apply to those special observations of inflow and outflow which he also mentioned. The question is what it is that we are taking notice of in such a case, since it is neither simply ourselves moving, nor is it the environment that we perceive as moving. Ruled out as well by Gibson's general theory, contrary to his above quoted statement, is that we are perceiving the flowing optic array. For (a) this array consists of light, albeit highly structured patterns of it, (b) light at the visual receptors is a kind of effective stimulation, and (c) "all we ever see is the environment or facts about the environment, never photons or waves or radiant energy . . . We do not perceive stimuli" (Gibson, 1979/1986, p. 55). In the example, what is left to perceive is not something straightforwardly perceived; it depends on adopting or falling into an introspective attitude. That is, *one takes notice of how the environment is visually appearing to one, how its appearing is changing, and changing in a specific way that distinguishes one's awareness as one look backwards or forwards from the moving vehicle.*

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