

## “Viewing the World in Perspective, Noticing the Perspectives of Things”: James J. Gibson’s Concept

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Gibson distinguishes among activities of the visual system, including viewing a room (say) as opposed to seeing it, and, in effect, between a visual-system activity and the stream of experience (“awareness-of”) that is a product and part of it. During viewing, one perceives the surfaces (“here-and-now surfaces”) projecting light to one’s point of observation, and one’s location in relation to them. Thus, one does not view some of the surfaces that one sees when, instead, one engages in straightforward seeing at the same observation point. The latter activity produces direct awareness of both occluded and here-and-now surfaces, although the latter surfaces are not distinguished as such (which occurs in viewing). *Inter alia*, it is argued that, given Gibson’s account of visually controlled locomotion, viewing should be considered the visual perceptual activity involved therein since, in his view, one cannot see light and determine one’s behavior on that basis.

Presenting his ecological approach to visual perception in some detail, Gibson (1979/1986) distinguishes at a certain point between two kinds of awareness, respectively called “viewing” a part of the environment and “seeing” a part of the environment (p. 196); and he illustrates his viewing/seeing distinction by reference to an observer who sits in an ordinary room and either views or sees the room from that position. The main purpose of the present article is to help to improve comprehension of Gibson’s concept of viewing, as part of a broader effort to achieve a significantly greater understanding of his total contribution. This ongoing effort will include several

separate examinations of Gibson's perception theory through giving close attention to a different one of his concepts each time.<sup>1</sup>

### An Activity/Awareness Distinction

Improved understanding of Gibson's concept of viewing requires a firm grasp of a certain more general distinction, namely, the distinction between (a) the various activities of the visual system, such as the activity that Gibson called "visualizing," in which all of us so often engage, putting our visual system to use in a certain way (p. 256), and (b) the stream of visual awareness (or experience) that is a product and occurrent part of each of the activities of the visual system, for example, the stream of "awareness-of" that any "viewing" of a portion of the environment essentially involves (p. 196).

Gibson typically uses the term *perceiving* to make reference to the activity of an entire perceptual system when it is functioning in its basic mode — thus not merely to refer to the stream of awareness that in part constitutes any instance of that total activity. An important deployment of *perceiving* occurs in the section "A Redefinition of Perception" (pp. 239–240). Gibson introduces there his new concept of perception that is at work in his radically different theory of perceiving, a theory that he notably characterizes as being different from traditional theories in not leaving out of account "the eventful world" and "the perceiver's awareness of being in the world." Here is a paragraph from that section:

Perceiving is an achievement of the individual, not an appearance in the theater of his consciousness. It is a keeping-in-touch with the world, an experiencing of things rather than a having of experiences. It involves awareness-of instead of just awareness. It may be awareness of something in the environment or something in the observer or both at once, but there is no content of awareness independent of that of which one is aware. This is close to the act psychology of the nineteenth century except that perception is not a mental act. Neither is it a bodily act. Perceiving is a psychosomatic act, not of the mind or body but of a living observer. (pp. 239–240)

Gibson goes on to assert that perceiving is a stream, meaning a continuous activity rather than one that proceeds in bits or pieces, and that William James's (1890/1950) description of the stream of consciousness, in his famous "Chapter IX. The Stream of Thought," applies to the activity of perceiving.

This is Gibson's only mention of James in the book. Gibson's references to the writings of psychologists are never gratuitous, certainly not his references to James. Gibson's use of James at this point is not merely to make vivid how ceaseless and unbroken he holds the activity of perceiving to be. Gibson's

<sup>1</sup>All references to Gibson in the present article are to Gibson (1979/1986) unless otherwise explicitly indicated. Every bare page reference is to the same book.

next statement clearly indicates that he wants to include as well in his perception theory the stream-like character of the awareness-of that he stated a few sentences earlier is necessarily involved in the activity of perceiving, thus making his theoretical approach to this activity "close to the act psychology of the nineteenth century." No doubt, Gibson has in mind here Brentano (1911/1973), who was much concerned with basic durational components of streams of perceptual awareness, just as is James's remarkable phenomenological description of the stream of consciousness. Gibson's next statement, "Discrete percepts, like discrete ideas, are as 'mythical as the Jack of Spades'" (p. 240), includes a phrase from James's Chapter IX and applies the thought to the perceptual-awareness stream that flows as part of a living observer's engagement in the activity of perceiving.

Elsewhere, I have argued for the useful applicability of the activity/awareness distinction to Gibson's ecological approach to visual perception. I expressed my thesis as follows in the case of the perceiving kind of perceptual-system activity:

Gibson's theory nearly explicitly distinguishes the activity or process of perceiving from its component stream of perceptual experience (awareness). An activity of perceiving is a total process of a perceiver's using a perceptual system to perceive something in the environment or of himself or herself in that environment. An activity of perceiving includes, *inter alia*, an obtained stimulus energy flux at the respective receptors, as well as a stream of perceptual experience (awareness) which proceeds at certain brain centers of the respective perceptual system. Obtaining stimulation, though this be highly structured and nomically specific to environmental properties, is not the having of perceptual experience (awareness); in addition to information pick-up, there must take place, in the nervous system, extraction of informational features (invariants and variants) of the stimulus energy flux. (Natsoulas, 1993, p. 248)

However, it would not be consistent with the purposes of the present article for me to repeat the arguments I have previously made in favor of the above interpretation of Gibson's theory. Those arguments are readily available in two articles (Natsoulas, 1993, 1998b). A substantial portion of each of them is directed against other views that pertain to the activity/awareness distinction, and especially *contra* the claim that perceptual awareness, the stream of perceptual experience, does not proceed, as I propose, at the heart of the perceptual-system activity of perceiving (e.g., Lombardo, 1987).

It is through the lens of my activity/awareness distinction that I shall consider the main topic of the present article. This distinction is not entirely my own. It certainly derives from my close study of Gibson's writings. And, I believe that the distinction is implicitly at work in Gibson's theory, although I do not seek to demonstrate the truth of the latter proposition here. At the same time, I expect that the following discussion of the visual activity of viewing and of the awareness kind that is a product and an occurrent part of that activity, will serve to show that the lens I am using can assist us in

making progress with respect to our emerging understanding of Gibson's concept of viewing.

### **Some Relevant Kinds of Awareness and the Activities of Which They Are Products and Proper Occurrent Parts**

Whether an observer is viewing or seeing the room in which he or she sits, the awareness that is involved in the respective activity is describable, rightly and non-redundantly, as being both "visual" and "perceptual." As will soon be seen, a particular instance of awareness can be (a) both visual and perceptual, (b) of a kind that is neither visual nor perceptual, (c) of the perceptual kind while not being of the visual kind, or (d) of the visual kind without also being perceptual. I comment next on the visual, perceptual awareness of the environment that is involved essentially in viewing and in seeing, first on this awareness's being visual, then on its being perceptual.

1. The awareness is suitably described as visual because it is a product and an occurrent part of an activity of the visual system, of the activity of viewing in the one case and the activity of seeing in the other case. Of course, not all kinds of awareness are visual; not all of them are constituents of an activity of the visual system; activities of the other perceptual systems, for one, also involve streams of awareness. Nor are all kinds of awareness products and occurrent parts of an activity of a perceptual system.

Thus, when Gibson states that "kinds of cognitive awareness occur that are not strictly perceptual" (p. 256), he is referring to awareness-producing activities of a living observer that extend beyond a perceptual system's capabilities on its own. For example, Gibson mentions the use of instruments that are devised for the purpose of "mediating apprehension" (i.e., achieving non-immediate awareness) of certain physical events, states, or processes (p. 260). These instruments require complex inferential chains if the scientific observer who puts them to use is to arrive at cognitive awareness of the physical properties in which he or she is interested.

Similarly, Gibson (1977/1982) elsewhere lists several types of "indirect apprehension." His list includes a use of instruments that requires the observer to engage in interpretation if there is to be awareness of what the picked-up invariants specify in the environment. The observer has perceptual awareness in making use of the instrument but must make interpretations of what he or she sees in order to achieve the sought-for awareness of the environment. Being the product of another, distinct activity, this latter awareness does not qualify as visual. The non-perceptual activity responsible produces indirect awareness of which the visual system is not capable on its own, although this non-perceptual activity must draw, in its premises, from the visual system's deliverances of visual perceptual awareness.

In contrast, one's viewing the apparatus, like one's seeing it, includes a stream of awareness that has surfaces of the apparatus for its immediate objects and qualifies as being visual, that is, direct apprehension of the visual type. The visual system picks up stimulus information that specifies properties of those surfaces, and yields direct apprehension of those properties, that is, without the involvement of any mediation by inferential or interpretational processes.

2. A perceptual/nonperceptual distinction with respect to awareness plays a role in Gibson's theory. Accordingly, visual awareness, for example, can be of either the perceptual kind or the nonperceptual kind. The awareness of the environment that is involved in viewing and seeing is justifiably considered not only visual, but perceptual as well. Gibson (pp. 255–256) speaks too of "nonperceptual awareness," which is not to be assimilated to the cognitive awareness mentioned above that depends on inference from or interpretation of what is seen. Indeed, in his summary for the chapter, Gibson adverts to the types of nonperceptual awareness that he has discussed as being "nongognitive kinds of awareness — fictions, fantasies, dreams, and hallucinations" (p. 263).

Visual nonperceptual awareness, too, is a product and an occurrent part of an activity of the visual system. That is, the visual system can produce awareness of surfaces that no longer exist, have not yet come into existence, or lie outside the limits of possibility. These are the three types of visual nonperceptual awareness that Gibson identifies. To say that these three nongognitive kinds of visual awareness are cases of nonperceptual awareness is to say that these kinds are not products and occurrent parts of the visual-system activity that Gibson calls "visual perceiving" (or just "perceiving" with the *visual* understood), nor are they products or parts of viewing. In contrast to the three types of nonperceptual awareness, the environmental awareness involved in viewing or seeing the room occurs consequent upon the pick-up of stimulus information from reflected light structured by surfaces of the room. This awareness is clearly qualified as perceptual; it is a kind of perceptual awareness in Gibson's view.

The visual system has various modes of functioning, not all of which are suitably described as perceiving. Thus, Gibson would tend to explain as follows the three mentioned kinds of nonperceptual visual awareness, of surfaces existing no longer, not yet, or not possibly:

A perceptual system that has become sensitized to certain invariants and can extract them from the stimulus flux can also operate without the constraints of the stimulus flux. Information becomes further detached from stimulation. The adjustment loops for looking around, looking at, scanning, and focusing are then inoperative. The visual system visualizes. But this is still an activity of the system, not an appearance in the theater of consciousness. (p. 256)

Visualizing is an activity of the visual system but it differs, in ways that Gibson indicates in the above passage, from visual perceiving. The visual system is visualizing, it is not perceiving, when it produces the mentioned kinds of visual nonperceptual awareness. We can thereby have imaginal awareness of a fire-breathing dragon, for example. This awareness — but, of course, not the dragon — is an occurrent part of a real, although nonperceptual, visual-system activity. The dragon is not real, has no existence whether inside or outside the perceptual system. The question of whether in some sense the dragon exists would never even be raised were it not for the nonperceptual awareness that can make it seem as though it does.

It is consistent with Gibson's explicit comments about viewing, to conceive of viewing too as an activity of the visual system, like visualizing and perceiving. Indeed, giving some attention to how awareness figures in perceiving itself helps the effort to understand Gibson's concept of viewing. Recall that Gibson referred to viewing as well as seeing as kinds of awareness. And in a subsequent chapter, he described perceiving as its being "an experiencing of things" and as its involving "awareness-of": that is, awareness of something of the observer or of the environment or something of each at the same time. I take it that Gibson is acknowledging the awareness that is involved in any instance of perceiving, and it seems natural and consistent to locate perceptual awareness at the heart of perceiving, to consider it to be a product and an occurrent proper part of that activity of the perceptual system itself.

So, I think that Gibson was implicitly proposing much the same concerning viewing. For him, moreover, viewing is not only an activity of the visual system that, as does the activity of (say) visualizing, includes a kind of awareness as part and product of it. Also, like perceiving, viewing is an experiencing of things and involves awareness of the environment and of oneself. Thus, the question to be answered becomes: If viewing does differ from visualizing and its stream of nonperceptual awareness, how then does viewing nevertheless fall short of being perceiving? If visual perceptual awareness, the kind of awareness that is not involved in the activity of visualizing, is involved in the activity of viewing, what is it that makes viewing, anyway, less than a case of perceiving?

### The Here-and-Now Surfaces

Viewing differs from visualizing. (a) In any instance of viewing, the environmental surfaces of which the observer has awareness are projecting (i.e., radiating or reflecting) light to his or her present point of observation; these surfaces are making possible the visual perceptual awareness, here and now, that is essentially involved in viewing. (b) But, in any instance of visualizing, the surfaces of which one then seems to be having awareness, being nonexis-

tent surfaces, cannot do anything of that kind, although some such have done so in the past, and others may do so in the future, if they ever come into existence.<sup>2</sup> Indeed, Gibson describes viewing to be an actual seeing, a visual perceiving, of certain surfaces, albeit a seeing of a certain limited kind.

Viewing is a psychosomatic, visual-system activity that is limited with respect to how much environmental awareness it produces and involves. It is in this regard a lesser activity than is the ordinary, straightforward, "full" seeing. The latter visual-system activity is not only capable of much more awareness than viewing, but in fact it always delivers more awareness than viewing in the same situations. Naturally, this quantitative notion of more awareness requires comment.

Between the two activities, viewing and visual perceiving, the similarity is such as to lead Gibson to describe the environmental surfaces of which an episode of viewing gives awareness as surfaces then seen. For example, the following sentence constitutes the title of the section in which Gibson introduces viewing: "What is seen at this moment from this position does not comprise what is seen" (p. 195). In this sentence, the initial use of the phrase *what is seen* is to refer to the surfaces of which an episode of viewing gives awareness. The phrase is then again used, the second time with reference to seeing, specifically to those surfaces of which awareness occurs as a product and an occurrent part of an episode of full seeing. Thus, this section title of Gibson's asserts that, in any case of full seeing, more is seen than is seen in a comparable case of viewing, although in both cases there are environmental surfaces that are seen.

My discussion of "the here-and-now surfaces" — this is what Gibson calls the surfaces seen in viewing — focuses upon the two statements of Gibson's (p. 195) with which he introduces the activity of viewing. I discuss each of these statements in turn.

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<sup>2</sup>I follow in the text Gibson's (pp. 255–256) restriction of the activity of visualizing to surfaces that do not exist. However, let me acknowledge that a revision may well be necessary that would extend the activity of visualizing to include the apprehension of some of the surfaces that exist now but are not projecting light to one's observation point. Since visualizing is a visual-system activity no less so than the visual perceiving of occluded surfaces of the visual world, the difficult problem would have to be faced: where visual perceiving ends and visualizing begins. Gibson claims, in effect, that this distinction cannot be clearly drawn and, therefore, he draws the line between visually perceiving a real surface and visualizing it, where the still apprehended surface no longer exists. See the next to final section of the present article.

1. *The environment seen at this moment from here — that is, from the point of observation that one's visual system now occupies — does not constitute the environment that is seen.*

Gibson is not only saying that there is more to one's environment than what one sees at this moment from here; he is not only saying that one then sees only a subset of the environment's entirety of surfaces; his statement also means one's surfaces seen-now-from-here are a subset of all the environmental surfaces that would be the objects of a visual perceiving which might have occurred instead at this time and place. Thus, Gibson is distinguishing viewing the environment from seeing, in his full sense, the same environment.

The character of the stream of visual experience that proceeds at the core of one's activity of full seeing can be indicated as follows, that is, in terms of what one is therein having awareness-of, by reference to the kind of awareness-of that visual perceiving of the environment essentially involves:

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. This is the experience of what I once called the visual world (Gibson, 1950, Ch. 3). It has vistas that are connected and places that adjoin, with a continuous ground beneath everything, below the clutter, receding into the distance, out to the horizon. (p. 195)

I want to emphasize: Gibson is here calling his readers' attention to a very familiar kind of visual experiencing, which every one of us who is sighted undergoes whenever we are engaging in visual perceiving, whenever we engage in what I am calling "full seeing" to distinguish it from the activity of viewing (which is also a kind of seeing). Because the present article inquires into Gibson's concept of viewing, his descriptions of visual-world experience (as above) are highly pertinent; they allow contrasts to be drawn with the activity of viewing and help in bringing out what viewing is and involves. As I proceed, it will be necessary to return repeatedly to experiencing the visual world.

Gibson presents the above characterization of visual-world seeing as a contrast, immediately upon his characterization of viewing in terms of surfaces that are objects of the stream of awareness-of involved in that activity. He states that, at any time, the set of surfaces seen in viewing

is a very restricted sample of the surfaces of the world, limited to those inside the boundaries of the field of view at that 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 less than half of the world and perhaps only a detail of that. (p. 195)

Again, Gibson is calling attention to the characteristics of the experiencing that proceeds as one is engaged in the respective visual activity, this time as product and occurrent part of the activity of viewing. And he is using the



visual-world kind of experience to distinguish, in relation to it, the kind of visual experience involved in viewing.

Not only the surfaces that comprise the part of the environment being viewed, but so too the surfaces of the visual world itself are a restricted sample of the totality of surfaces now extant on earth, within the earth, and beyond earth. Which ones of all of these surfaces are components of the observer's visual world — understood, with Gibson, as being all the objects of the observer's visual experience involved in visual perceiving — depends upon the observer's visual perceptual abilities, comings and goings, interests, perceptual learning, and so on. The surfaces that are the objects of the stream of visual experiencing that is a product and an occurrent part of an instance of viewing — the here-and-now surfaces — are an even more restricted sample of all the existing environmental surfaces.

Every here-and-now surface falls within the boundaries of the observer's present "field of view," which Gibson defined for the case of a fixed point of observation as "the solid angle of the ambient light that can be registered by [the observer's] ocular system" (p. 111). A field of view may also consist of light radiating to the point of observation, along with the ambient light that is reflected to that point. The here-and-now surfaces are not to be considered as literal parts of the respective field of view, within which they fall, because they do not themselves consist of light and any field of view is made up entirely of photic energy. The here-and-now surfaces are objects of the awareness-of that is involved in viewing, they are surfaces seen, whereas the solid angle of light within which they fall is not itself visible (pp. 54–55). According to Gibson, we do not see the light by which we see; at any moment, our field of view is as totally invisible as is the activity taking place in our optic nerve when our visual system is registering the light of our field of view.

Elsewhere, I discuss Gibson's concept of field of view in some detail (Natsoulas, 1998a). I have argued there that, according to Gibson's consistent understanding, no constituent of a field of view is other than photic. This means no surface or object said to protrude into, appear in, or enter a field of view is an actual part of a field of view, although any such items are determinants of properties of the respective field of view. Thus, the here-and-now surfaces are not themselves among the parts of the field of view that makes it possible to see them, nor are they parts of any field of view. Each such surface is a smaller or larger portion of a substance (a) that is exposed to air, to water or, rarely, to another medium, (b) that radiates or absorbs and reflects light, and (c) that typically gives structure to the solid angle of light that it projects (i.e., emits or reflects) to a point of observation.

The here-and-now surfaces are well identified as being "the optically uncovered surfaces of the world [in relation to] 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). Again, there is reference to surfaces of environmental objects in relation to the light by which we see them. The surfaces that Gibson specifies are those optically uncovered in relation to a particular point of observation. Owing to their environmental location, they give structure to the light arriving at the mentioned point of observation.

2. *The here-and-now surfaces specify the self, not the environment.*

This second statement of Gibson's in introducing the activity of viewing, may elicit surprise. (a) A part of one's own body that would correctly be said (assuming the idiom) to protrude into, appear in, or enter one's field of view, would thus provide here-and-now surfaces to see; these surfaces are actual parts of the self, in Gibson's use of the term. (b) The here-and-now-surfaces that do not belong to the body belong to substances or objects that are environmental parts. And (c) the structured light which the here-and-now surfaces project to the observation point can be rightly said to contain informational invariants that are nomically specific to the environment or the self, thus to specify properties of either one or both of these. What, then, could Gibson mean by the here-and-now surfaces' specifying the self and not the environment? Has he, perhaps, an implicit distinction at work between kinds of specification: that is, specification by properties of the structured light versus specification by a surface or array of surfaces?

Some such distinction does emerge in Gibson's (1977/1982, 1979/1986) brief accounts of the indirect apprehensions that are achieved using certain instruments. These instruments provide optical information, that is, they structure the light by which one sees them. But, to apprehend what their visible outputs are "specifying," it is necessary not simply to perceive a certain part of the apparatus; one must also "read" it. Thus, such instruments appear in fields of view that have internal structures specifying<sub>1</sub> properties of the instruments' to-be-read surface; also, this surface, in the form of what it provides to be read, specifies<sub>2</sub> environmental properties that lie beyond the instrument. In the first kind of specification, the registered yet themselves unperceivable photic informational invariants result in a seeing of what is specified<sub>1</sub> (e.g., a dial position or displayed number). In the second kind of specification, that which is seen (e.g., dial position or number) must be interpreted for one to apprehend, in thought, what the seen item specifies<sub>2</sub>. In an earlier book, Gibson (1966) wrote of symbols as their being "surrogates for other things;" in this role, they "must specify<sub>1|2</sub> by the relation of convention" (p. 235).

Gibson evidently has in mind the first kind of specification when he speaks of the here-and-now surfaces as specifying the self. That is, notwithstanding how Gibson expresses his point, it is properties of the light, not perceived properties of the here-and-now surfaces, that do actually specify the self. This is not the kind of specification on which inferences can be based, because it

is specification by light not by surfaces; the observer is perceptually aware only of the latter. As will be seen, justification for my interpretation is to be found in Gibson's comments on the experiencing of one's here-and-now surfaces.

In the same section, Gibson asserts, "One can become aware of the seen-now and the seen-from-here if one takes the attitude of introspection" (p. 195). This means that such an attitude, when directed on the psychosomatic activity of the visual system, has the effect of supplanting temporarily the straightforward, visual-system activity of seeing with the reflective, visual-system activity of viewing the environment. Owing to the change in attitude, the visual system begins to function, as it were, in a different mode; now for a while the *visual system views* (cf. "the visual system visualizes" [p. 256]).

Also pertinent is something stated later in the book, in a section titled "The Consciousness of the Visual Field." Gibson tells us what transpires in his stream of awareness-of when, as a result of a change in attitude, he now views a portion of the environment: "I notice the surfaces that face me and that I face, and thus where I am. The attitude might be called introspective or subjective, but it is actually a reciprocal two-way attitude, not a looking inward" (p. 286).

Accordingly, having adopted an introspective attitude with respect to my activity of looking at an environmental part, (a) my visual system picks up informational invariants from the light that specify certain surfaces, namely, my here-and-now surfaces, (b) I undergo visual perceptual awareness consequently of those surfaces, and (c) this stream of awareness includes awareness of where I am located in the immediate environment. This all is direct visual apprehension, not a matter of "reading" my here-and-now surfaces for signs, of making some sort of interpretation of what I see there, of drawing inferences based on awareness of my here-and-now surfaces.

Which environmental surfaces are included internally to the boundaries of my present field of view, and where these surfaces are located, and how they are oriented within it, all depend not only on the surfaces' locations and orientations in relation to the immediate environment but also on my own location and orientation. Thus, the informational invariants that are instantiated by the solid angle of light that is my present field of view specify properties belonging to my here-and-now surfaces and, also, they specify properties belonging to myself, especially where I am in relation to those surfaces. I can see where I am, in this sense, just by looking at the surfaces that are now before me.

Gibson speaks of adopting a certain attitude; the activity of viewing supplants the activity of visual perceiving (seeing) through a change in attitude from what might be called an objective, straightforward attitude, in which one is interested in having visual perceptual awareness of the properties of the environment, to a subjective, reflective attitude, in which one is con-

cerned with the visual activity in which one is engaged and the stream of awareness that is an essential part of that activity. Gibson suggests that, although the visual activity itself may be the object of one's interest, one does not thereby, by engaging in that activity, succeed in "looking inward." That is, shifting from an activity of full seeing to one of viewing does not mean that introspection, rather than perception, is now taking place. Viewing is a kind of seeing and its objects are, all of them, external to the visual system; thus excluded is the stream of experience (awareness-of), which is a non-visible part and product of the psychosomatic activity of viewing.

### The Visual Experience at the Heart of Viewing

Although one does not apprehend one's visual experience in viewing, one manages to be aware of the here-and-now surfaces and of oneself in relation to them (p. 195). Evidently, Gibson proposes that a change in experience does occur in the switch to the activity of viewing; experiencing that requires a different description supplants the visual perceptual experience that is essential to full seeing. However, no longer acceptable to Gibson is his own description in past publications of the experiential change that occurs with the adoption of an introspective attitude. According to that description, the change in experience would be from experiencing the visual world to experiencing the visual field.

By examining the abandoned description, we can get some idea of Gibson's proposal regarding the true character of the experiential change that takes place with the shift to viewing. What of his past description does he now find wanting? What parts of that description does he still hold to be valid? Proceeding in this way is quite consistent with Gibson's own exposition, for he considers it to be germane that he remind us in some detail of his earlier claims about visual-field experience as it contrasts to visual-world experience. Indeed, he does not give the same amount of explicit attention to the difference between visual-world experience and the experiencing of here-and-now surfaces in viewing. This is probably because what is seen in any instance of either activity are actual surfaces in the environment; whereas the visual field, if it existed, would be something else, something that is not a part of the environment.

#### *1. Surfaces at a Slant to Each Other*

In contrast to the alleged components of the visual field, the here-and-now surfaces are not experienced as though each of them is a depthless patch of color and as though they make up together a depthless patchwork of colors. A here-and-now surface is typically experienced to have a rigid shape, to be a

component of a surface layout and, often, to be at a slant in relation to the other surfaces of the layout. Gibson speaks in this connection of the here-and-now surfaces as having "the quality of slant" (p. 196). But he does not mean, as one might think, slant from the perpendicular to the line of sight. Such a notion leads to assigning to each patch of color a single slant value and the assumption that a surface layout is made up of the slants of its constituent surfaces (p. 166). What is experienced, rather, are actual surfaces in the environment in relation to each other (cf. Gibson, 1970/1982, pp. 95–96).

## 2. *An Ambient Array of Surfaces*

Experiencing the here-and-now surfaces differs from the purported having of visual-field experiences in another way: the array of surfaces is not flat nor experienced as flat, while the visual field is traditionally conceived of not only as depthless but also as flat. Gibson (p. 196) characterizes the array of surfaces seen in viewing as "ambient," meaning that they encircle the observer. They only partially surround him or her because (a) the angular scope of one's field of view is, horizontally, about 180 degrees and (b) the continuation of surfaces around one is not seen in viewing (as it is in straightforward visual perceiving; see later) unless one turns one's head or body, which has the effect of causing one's field of view to encompass within its boundary a different set of surfaces or surface parts.

## 3. *Non-Occluded Surfaces Only*

Contrasting the mythical visual field with what is experienced in visual perceiving, Gibson writes in part as follows:

When I distinguished years ago, between the visual field as one kind of experience and the visual world as a radically different kind (Gibson, 1950, Ch. 3), I was elaborating on Koffka [1935, p. 322]. The visual field, I suggested, consists of a patchwork of colors something like a picture, whereas the visual world consists of familiar surfaces and objects one behind another. The *visual field* has boundaries, roughly oval in shape, and it extends about 180° from side to side and about 140° up and down. The boundaries are not sharp, but they are easily observed when attended to. The *visual world*, however, has no such boundaries; it is unbounded, like the surfaces of a sphere extending all the way around me. (p. 206)

How is the visual experiencing involved in viewing the same as or different from the two kinds of experience described above? I answer by reference to two more specific questions.

Gibson claims that the here-and-now surfaces are not experienced as picture-like. Are they, then, experienced just as the surfaces of the visual world are? In Gibson's view, the here-and-now surfaces make up together an array

of surfaces, at various angles to each other. But, they do not include the surfaces or parts of surfaces that they are entirely hiding from view. In visual perceiving, in contrast, although the latter surfaces and surface parts cannot now project light to the observer's point of observation, they are parts of the observer's visual world nevertheless. For Gibson, this means that when the observer engages in visual perceiving, the now occluded surfaces can be among the surfaces that the observer sees. However, for as long as the observer is engaged in the activity of viewing, they are not seen — unless, of course, in the meantime, they get to join the here-and-now surfaces. Their inclusion in the latter array may take place with certain changes in the point of observation or with certain changes in the positions of the occluding or occluded surfaces. That is, sufficient light projected by a surface must be coming to the point of observation in order that the surface be in view, for the respective observer to view it.

#### 4. *A Single, Bounded Layout of Surfaces*

The here-and-now surfaces are a very restricted sample of all the surfaces that, at the same time and place, would constitute the observer's unbounded visual world. The here-and-now surfaces are limited to those lying inside the boundaries of the observer's present field of view. Would we be right to say, in addition, that the observer experiences his or her here-and-now surfaces as a single, bounded surface layout, that is, a bounded unit like that which had been proposed for the depthless patchwork of color sensations claimed to be the experience of the visual field? It would seem that, according to Gibson, the here-and-now surfaces are indeed experienced in viewing as making up a single, bounded whole. Some of Gibson's comments on the corresponding field of view provide reason to think so, being better understood as actually about the unitary layout of the here-and-now surfaces experienced in viewing.

Gibson sometimes speaks of the field of view as he previously spoke of the visual field. But his intention is to keep them mutually distinct, especially now that he considers the visual field to be a myth as previously described. Thus, he insists, the field of view is, in contrast, "a fact of ecological optics" (p. 114). A field of view does not consist of sensations — nor, for that matter, is it any actual kind of experience. As I have brought out, a field of view is the total solid angle of light that arrives at a point of observation and is registered by the visual system that occupies that point of observation. When Gibson seems to imply that one can have experience of properties of one's field of view, he means that something that "lies within" the field of view is directly apprehended, something that has to do with the here-and-now surfaces.

This can be seen in his section titled "The Specifying of the Self by the Field of View" (pp. 111–120). Gibson's first drawing, by which he seeks to

illustrate a field of view, shows the here-and-now surfaces of a man sitting in a room and looking at the room with his left eye and a single head posture. The drawing is a depiction of surfaces that belong to parts of the man's body, arm, legs, nose, lips, and cheek, as well as surfaces belonging to the room's ceiling, walls, floor, furniture, and the like. The drawing is such that if one places one's left eye close to the page, one can have an experience approximating the visual experience that the man is portrayed to be having. Here is part of what Gibson has to say in this context regarding fields of view:

The important fact about a field of view is its boundaries, vague and indefinite boundaries, to be sure, but still boundaries. They are in some way like occluding edges, the occluding edges of a window. The edges of the field of view hide the environment behind them, as those of a window do, and when the field moves there is an accretion of optical structure at the leading edge with deletion of structure at the trailing edge. (p. 112)

Together with the drawing and its description, these comments regarding the field of view will seem to suggest that the boundaries of the field of view are visible. But, according to Gibson's own theory, this is not possible because fields of view consist only of light, the light by which we are visually experiencing the respective here-and-now surfaces. One is aware of those surfaces by means of visual-system activity that picks up and resonates to photic informational invariants. These invariants specify properties of the here-and-now surfaces; the visual system's resonance to the picked-up invariants takes the form, within that system, of a stream of visual awareness of the surfaces.

Now, if the field of view is invisible, what is the "boundary" to which Gibson refers in the above passage? What are the "edges" that are said to hide the environment behind them, and the "leading edge" that, with movement of the observer, reveals new parts of the environment. The boundary must actually be the limits in all directions of the here-and-now surfaces experienced as a single unit. These apprehended surfaces, or the substances or objects to which they belong, are what is hiding the environment behind them. And, as one moves, it is at their leading edge as a unit that new here-and-now surfaces or new parts of old such surfaces come into view. At the same time, at the rear boundary (relative to movement direction) of the here-and-now surfaces, a portion of the unit goes out of view progressively.

##### *5. Here-and-Now Surfaces During Locomotion*

If indeed the field of view, contrary to some of Gibson's statements, cannot be experienced because it consists only of light, then some of his attempted phenomenological descriptions of the field of view must be rephrased in terms of how here-and-now surfaces are being experienced. After all, as we

have seen, we no longer can have recourse to the visual field/visual world distinction; according to Gibson, we never do experience visual fields in the sense that he defined. The item right before this one is such a necessary case of rephrasing. Let me add here another such case that also reveals something about experiencing here-and-now surfaces. The following is Gibson's first paragraph of a section titled "The Specifying of Locomotion," in his chapter on the optic information for self-perception:

At a moving point of observation no less than a stationary point of observation, the ambient array is sampled by the observer, who can look around the world while moving as well as while stationary. The edges of the observer's field of view will sweep over the flowing ambient array in the same way that they sweep over the frozen ambient array. 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)

It is clear that Gibson is referring to something that can be directly apprehended, something we can have awareness-of simply by means of our visual system. He seems to be speaking of the field of view or optic array, which consists of light and is not visible. An alternative construal is that it is the visual world that is being experienced in an illusory way (as though moving) when in fact it may remain, in all of its parts, completely stationary during the locomotor conditions described for the experience said to be of the flowing optic array. However, Gibson is quite explicit: the flow experience (outward or inward) is not a visual-world experience. "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). Notice that Gibson — although he does bring out that the flowing array specifies the moving self, thereby veridically perceived to be moving (whether actively or passively) — does not choose to qualify his statement in the quoted passage that something else can appear to us to move, something that is other than ourselves. The rephrasing I mentioned as being necessary in this case too, must be, it would seem, in terms of viewing one's here-and-now surfaces as the locomotion proceeds. That is, to use Gibson's phrase, when we view the world in perspective, when we are noticing the perspectives of things, in those cases where we are also locomoting, we suffer a visual illusion of our here-and-now surfaces undergoing change in the familiar ways that Gibson describes in terms of the flowing array. And what he says regarding the visual field during locomotion, expressing his old view, applies instead to how here-and-now surfaces appear to the observer during locomotor viewing. For example: "The patchwork of the visual field deforms as I move and, in particular, flows outward from the center when I move in the direction of that center" (p. 207). Rather than (a) just abandoning the visual-field descriptions that he had earlier provided



or (b) trying to describe fields of view or optic arrays in analogous terms, that is, as though they are experienced, Gibson would have done better to address more fully how here-and-now surfaces appear under a variety of conditions.

#### 6. *The Control of Locomotion Visually*

Gibson's illustration of an observer viewing, in contrast to seeing, the room in which he or she sits, has the observer continuing to occupy a fixed point of observation, that is, looking straight ahead with one eye closed and head and body quite still. His or her field of view is monocular, not the combined field of view of the two eyes that Gibson usually means by *field of view*. Later in the book, Gibson explicitly refers for a second time to viewing and again he draws contrast between viewing and the experiencing of the visual field that, in his past theorizing, he proposed does occur:

What one becomes aware of by holding still, closing one eye, and observing a frozen scene are not visual sensations but only *the surfaces of the world that are viewed now from here*. They are not flat or depthless but simply unhidden. One's attention is called by the fact of occlusion. (p. 286)

I come in the next section to Gibson's latter phenomenological point, but let me say here the following by way of comment on the above.

Occupying a fixed point of observation makes it more probable that one will be viewing the frozen scene rather than visually perceiving it, that one will have visual experience of only the here-and-now surfaces. Perhaps Gibson does not mean to be understood as suggesting that the viewing activity requires a monocular and unchanging field of view. That he does not want so to propose would seem to be implied by his "justly" calling the visual activity "viewing the world in perspective, noticing the perspectives of things" (p. 196). Can one not notice the perspectives of things while locomoting? However, Gibson answers this question fairly directly. He asserts that a moving observer, "strictly speaking," cannot notice the perspectives of things, because he or she is not perceiving the world at any point of observation (p. 197). In effect, he is suggesting that the perspectives of things are undergoing such rapid change as one moves along a path of observation that one cannot be noticing them at the time; one then does not view here-and-now surfaces, not even as changing.

For one very large reason among others, Gibson could not consistently maintain that viewing is not possible while locomoting. According to Gibson's own theory, the visual control of locomotor behavior requires noticing the perspectives of things. Examining his chapter on locomotion and manipulation, one finds there an account of the visual control of locomotion

as depending on "seeing oneself in the world." Gibson argues that the latter visual activity, wherein one takes notice constantly of where one is now in relation to the immediate environment, involves visual kinesthesia necessarily. Here are two paragraphs from Gibson's summary of his account:

Active locomotor behavior, as contrasted with passive transportation, is under the continuous control of the observer. The dominant level of such control is visual. But this could not occur without what I have called visual kinesthesia, the awareness of movement or stasis, of starting or stopping, of approaching or retreating, of going in one direction or another, and of the imminence of an encounter. Such awarenesses are essential for control.

Also necessary is awareness of the affordances of the encounter that will terminate the locomotor act and of the affordances of openings and obstacles, the brinks and barriers, and the corners on the way (actually the occluding edges). [p. 236]

In the chapter thus partially summarized, Gibson attributes the control of locomotor behavior to the animal in its world. Compare: "Consistent with his view of acts as achievements, Gibson emphasized [in his last seminar] that the behavior of going from place to place is a kind of purposeful action, comprised of animate movements" (Reed, 1988, p. 300). Active locomotion is something the animal does, by exercising on a visual basis control over itself all along the way. Thus, the animal is not under the control of photic stimulus information, on which it does depend. Rather, it puts to use, in effect, the stimulus information that it picks up. The animal is able to exercise suitable control of its behavior by virtue of possessing a perceptual system that includes as product and occurrent part a stream of visual awareness of the animal itself in its environment, enabling it to coordinate its behavior to the environment.

An animal engaged in visually-guided active locomotor behavior purposely and selectively behaves in such a way as alters the stimulation at its receptors in specific ways, concomitantly maneuvering thereby in and through the environment. The animal has previously learned what to do to achieve its locomotor goals; it has learned to alter behaviorally its visual experience of here-and-now surfaces. For the animal has no experience of the stimulus energy flux at its visual receptors and must guide itself based of what it is able to see.

Gibson makes no references to here-and-now surfaces as such in this context, and comes closest to doing so at the end of the above quoted summary, where he brings in occluding edges. He expresses the "rules" of locomotion that the animal must apply in terms of awareness of the optic array; he expresses them in a way that assumes a direct apprehension of properties of the light. For example, in order for the animal to turn, to locomote in a certain different direction from the direction in which it is now locomoting, the animal must behaviorally cause its visual experience to be modified in a certain specific way: the center of outflow must be shifted from one to another

patch in the optic array (p. 233). Gibson speaks in this connection, of transposing the flow of the ambient array, which consists of nested solid angles. In fact, it is true that the animal's behavior does not affect the flow of light. Light does not flow or transform or change with the animal's movement. It remains constant and ambient around each point of observation, a different array at each possible point of observation. With locomotion, what does change is (a) the stimulus energy flux at the animal's visual receptors, (b) the stimulus information it picks up, and, in consequence, (c) its experiencing of environment and self. Thus, what must change in the animal's visual experience is that a different here-and-now surface, not a patch in the optic array, must become the center of the illusory outflow.

### “Viewing the World in Perspective, Noticing the Perspective of Things”

Gibson explains the above characterization of viewing (the title of this section) by reference to

- (a) the here-and-now surfaces — for they are the part of the world one views, they are the things one notices in viewing, they are what, in viewing, one has visual, perceptual awareness-of — and
- (b) “the natural perspective of ancient optics, not the artificial perspective of the Renaissance” (pp. 196–197).

And later on in the book, when explaining how to understand seeing in (natural) perspective, Gibson states, “One can learn to view an object in perspective, or a whole vista . . . . All one does is *separate* the hidden from the unhidden surfaces and observe the occluding edges” (pp. 286–287). He is clearly addressing here, once more, the visual-system activity of viewing, including that which one thereby and therein views. As we know, according to Gibson, one views the here-and-now surfaces; however, quite obviously, when one is engaged in straightforward visual perceiving, one does not then fail to visually apprehend the here-and-now surfaces (plus others). Therefore, the present question becomes: how viewing one's here-and-now surfaces is different from one's seeing the same surfaces in perceiving. What is it, instead, to see in perspective, to notice the perspectives of things?

Gibson states that viewing in perspective means noticing the edges belonging to the layout of surfaces confronting one, including the occluding edges included (p. 287). Although he speaks loosely of edges as being among the “invariants” that are “picked-up” in viewing, he clearly has in mind, as well as stimulus information, the actual visual experience that proceeds in viewing. Stating that one can see edge perspective but not patchwork perspective, Gibson is identifying what one can and cannot experience in viewing.

Gibson states, as I have quoted, that the fact of occlusion comes to the observer's attention in viewing. Thus, the emphasis on occluding edges may

hold the key. An occluding edge is understood not to be “simply the junction of two surfaces”; it is said to be “an edge that causes one surface to hide another” (p. 80). But, in what sense is our attention proposed to be drawn to such edges in the activity of viewing — as, presumably, our attention is not drawn, in that sense, when we are straightforwardly seeing the visual world?

To answer this question, let us consider a phenomenological description of Gibson’s of an ordinary case of seeing a cat on the mat. Let us consider how the edges, or the occluding edges, or the fact of occlusion, might be receiving less attention in this case of straightforward seeing than if the observer were, instead, engaged in viewing. Gibson lists some of the many “wordless facts” that the straightforward observer of the cat on the mat “plainly sees”:

the mat extending without interruption behind the cat, the far side of the cat, the cat hiding part of the mat, the edges of the cat, the cat being supported by the mat, or resting on it, the horizontal rigidity of the floor under the mat, and so on. (p. 261)

In this phenomenological description, the emphasis is placed on seen surfaces that, in part or whole, are not here-and-now surfaces. If the observer were, instead, viewing the cat on the mat, the list of surfaces seen would not include the part of the mat that the cat is occluding from view in relation to the point of observation occupied by the perceiver. Unmentioned would also be those parts of the cat’s own surface that are not now projecting light to that point of observation. Although among the items seen in viewing would be, of course, a part of the floor and its rigidity, the floor’s supporting the cat and mat would not be an item viewed, because the part of the floor on which the cat and the mat rest is out of sight; only what is in sight can be viewed.

It might be suggested, therefore, that experiencing the visual world, which occurs in visual perceiving, as in the cat example, involves attention to edges of objects, including attention to their occluding edges. This suggestion would go on:

Indeed, occluding edges must be seen as such; for, in straightforward seeing, some of the surfaces that the occluding edges are said to be occluding belong to totality of surfaces that one has awareness-of; they are parts of one’s visual world. Some occluded surfaces will be among the visual-world surfaces that are currently being straightforwardly seen whereas occluded surfaces cannot be here-and-now surfaces (there is no X-ray vision), not until one occupies a point of observation to which they are projecting light, that is, not until here-and-now surfaces are no longer completely occluding them relative to the point of observation that one is occupying.

However, as has been noted, Gibson is emphatic that viewing in perspective is a matter of *separating* the hidden from the unhidden surfaces and observing the occluding edges. How should this be understood? I take it that Gibson is stating in this way what he believes viewing involves as a percep-

tual process. That is, the activity of viewing is being said to be an activity in which a selection occurs from among the surfaces that would make up the visual world if it was straightforward seeing that was taking place instead. Viewing is a kind of truncated variety of the activity of visual perceiving. Whereas in the latter activity, hidden and unhidden surfaces of the visual world may not be mutually distinguished as such, the contrasting process of viewing, for its duration, causes the hidden surfaces not to be seen; they are not among the surfaces that are objects of awareness during viewing. A dimension of the ordinary perceptual process of seeing the visual world is somehow prevented from taking place; the truncated process that does occur is such that the immediate optic stimulation exercises a much greater constraint on the process than occurs in full seeing. One might put it that viewing is a kind of seeing that does not go beyond the immediate surfaces of things, not beyond the surfaces that are exposed to the quite still observer's fixed point of observation or, from instant to instant, to the moving observer's path of observation.

Yet Gibson seems to hold that the occluding edges stand out in viewing, that these edges are then especially noticed: in viewing, "one's attention is called by the fact of occlusion" (p. 286). This might be taken to imply a greater interest in the occluded surfaces as such, more attention to what is out of sight as being occluded, more than there is in straightforward visual perceiving — when, the observer has, according to Gibson, perceptual awareness of a part of the visual world that includes both surfaces that are and surfaces that are not, at the moment, projecting light to his or her point of observation. According to Gibson (1977/1982), in straightforward seeing, both occluded and unoccluded surfaces are the objects of "direct perception at first hand"; and thus "direct perceiving includes one form of so-called remembering" (p. 289).

Early in the present article, it was noted that Gibson's concept of visualizing includes a form of remembering: namely, the present visualizing of surfaces previously seen but not any longer in existence. This is not the "so-called remembering" of the quotation from Gibson just above. For he did not consider to be a kind of visualizing the visual-system activity whereby one has awareness of still existing surfaces that are not projecting light to one's point of observation at this time (cf. footnote 2 in present article). According to Gibson, straightforward seeing involves awareness of occluded surfaces, among them surfaces that have been occluded from sight for a very long time. With the passage of time, the continued awareness of surfaces seen earlier does not become converted into memory experiences. Gibson states,

The simple fact [is] that there is no dividing line between the present and the past, between remembering and perceiving. A special sense impression clearly ceases when

the sensory excitation ends, but a perception does not. It does not become a memory after a certain length of time. A perception in fact, does not *have* an end. Perceiving goes on. (p. 253)

This does not mean, of course, that, having visually perceived a particular surface, one continues to see it every time one engages in visual perceiving. Rather, even after a very long time, if and when visual awareness of the surface does take place in the surface's absence, this awareness is a product and an occurrent part of the present activity of visual perceiving. The visual system has been modified by past visual perceiving so that stimulus information picked up earlier can be resonated to again in the absence of the surface specified by that information. Gibson speaks of "my continuing awareness of you, whether you are in sight or out of sight" (p. 254), meaning by *awareness* the visual perceptual awareness-of that is essentially involved in visual perceiving.

When one is engaged in viewing, there does not occur this kind of visual perceiving at a temporal distance, of surfaces now long gone from view. The same applies to surfaces that were recently directly apprehended in their stimulatory presence but are not now projecting light into one's eyes. In their stimulatory absence, these surfaces too can be visually perceivable but they cannot be viewed. The visual system does not work that way in the viewing mode. Thus, one might want to say that the fact of occlusion makes a larger difference to viewing than to seeing straightforwardly; that is, in viewing, occluding edges limit what is seen-now-from-here, as they do not limit what is straightforwardly seen.

### A Final Comment: The Importance of Viewing

In the sixth subsection of "The Visual Experience at the Heart of Viewing," we have already seen how important the activity of viewing must be from a consistent Gibsonian theoretical perspective, specifically with respect to the observer's control of active locomotor behavior. In conclusion, let me express briefly that point again, and then add a further point that also supports the importance of viewing.

1. Gibson holds that engaging in visually controlled locomotor behavior requires that one purposely and selectively behave in specific ways that alter the obtained visual stimulation. That is, one must actively "regulate" the stimulus information that one's visual system is picking up (p. 226). Behavior that changes the visual stimulation received must proceed in accordance with certain "rules," and this will have the effect of changing one's location in the environment as one desires. To achieve a certain particular locomotor goal, one must choose to behave consistently with the corresponding "rule." This behavior has as a consequence a pattern of effects in the obtained stim-

ulation and, also, comprises the desired maneuver through the environment (pp. 323–324). The “rules” of visually controlled locomotion are stated by Gibson in terms of the array of photic energy — of which one has no direct awareness and, therefore, this array cannot be, I suggest, what one is seeking to modify by means of one’s rule-based behaviors. Instead, Gibson’s rules require rephrasing in terms of the direct apprehension of here-and-now surfaces and their properties. That is, if Gibson’s account of the visual control of locomotor behavior is on the right track, then the regulation of obtained stimulation that is claimed to be crucially involved therein, is accomplished through experiencing one’s here-and-now surfaces and where one is in relation to them. It is to these objects of visual perceptual awareness that Gibson’s “rules” have their actual reference. It will be recalled that such awareness is a product and occurrent part of the visual-system activity of viewing.

2. Being oriented within your environment requires your visually perceiving surfaces that are now out of view, as well as surfaces that you have in view:

When the vistas have been put in order by exploratory locomotion, the invariant structure of the house [in which one sits], the town, or the whole habitat will be apprehended [by straightforward seeing]. The hidden and the unhidden become one environment [i.e., the visual world]. One can then [visually] perceive the ground below the clutter out to the horizon, and at the same time perceive the clutter. One is oriented to the environment. It is not so much having a bird’s eye view of the terrain as it is being everywhere at once . . . . To the extent that one has moved from place to place, from vista to vista, one can stand still in one place and see where one is, which means where one is relative to where one might be. (pp. 198–200)

Your being oriented to the environment must involve not only (a) your experiencing the visual world, including surfaces that are hidden in relation to your present point of observation, but also (b) experiencing your here-and-now surfaces. Thus, Gibson’s following statement that is quoted earlier in the present article should be recalled: the here-and-now surfaces specify the self, not the environment. This statement’s explication can now be taken somewhat further: in viewing these surfaces, you have direct awareness of where you are in relation to them. In straightforward seeing of the same surfaces, you have direct awareness of their relation to hidden surfaces that along with the here-and-now surfaces make up your visual world. Seeing where you are relative to where you might be requires, of course, that you see where you are. That is, if you apprehend yourself as being everywhere at once, you cannot be oriented to the environment. Indeed, even small errors in your awareness of where you specifically are can have, under certain conditions, the most dire consequences. Asked to point in the direction of each of the other rooms of the building in which you are now sitting and to point to where other buildings are located in the same town, you must, if you are to be accurate, have awareness of the surfaces of the world that you are viewing

now from here, you must notice the surfaces that face you and what you face and thus where you are (p. 286).

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