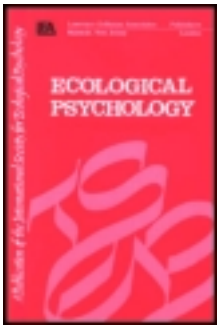

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Where Is the Information for Affordances?

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Two questions have priority for a perception psychologist: What is perceived, and what is the information for it? What we perceive are the affordances of the world. Because perception is prospective and goes on over time, the information for affordances is in events, both external and within the perceiver. Hence, we must study perception of events if we would understand how affordances are perceived.

Stoffregen (target article, this issue) asks why an ecological psychologist who believes that we perceive affordances should study the perception of events. Given that affordances and events differ qualitatively (as he says), why study perception of events? I believe that as psychologists concerned with perception, we should. There are undoubtedly a number of reasons why. I review a little history before giving mine.

During World War II, James J. Gibson was assigned by the Army Air Force to produce tests that would predict the performance of members of an air crew—pilots, navigators, and gunners. It was assumed that the perception of these crewmen must be keen, especially depth and distance perception. They had to land planes and locate and hit targets, among other things. Psychologists knew all about the cues for depth, so they could administer tests for retinal disparity, convergence, and perspective cues, for example. It apparently never occurred to anyone, not even to the great perception psychologists of the time such as Boring, that these cues might not operate usefully for someone moving at a rapid speed in an airplane, possibly aiming at a moving target. Gibson became acutely aware of this problem, a practical one as well as one to pose to psychologists, and by the end of the war he was deeply concerned to discover the nature of the information for perceiving the

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layout (his term) in motion and events occurring over time. Few people read the report he wrote for the Army Air Force (J. J. Gibson, 1947), but in 1950, he published *Perception of the Visual World,* in which he made it very clear to his fellow psychologists that it was time to study events and the information for them. (Interestingly, Johansson's, 1950, book, *Configurations in Event Perception,* was published in the same year.)

When Gibson moved to Cornell in 1949, it was his urgent agenda to perform experiments on events with the aim of discovering the invariant information that specifies properties of the layout such as surfaces like the ground and objects at various distances from the observer. The first experiment to be published in this program was called "Does motion perspective independently produce the impression of a receding surface?" (J. J. Gibson & Carel, 1952). This was the first of many experiments addressed to the problem. The findings are now featured in every textbook on perception, including *The Ecological Approach to Visual Perception* (1979/1986). These experiments have to do with a moving observer seeking to detect the location or speed or distance of a surface such as the ground, a still or moving target, or an obstacle. The experiments on potential collision referred to by Stoffregen (target article, this issue) are examples. Discovering the invariant information that specified the event was the goal. Gibson's interest in the case of a moving observer finding a safe path and avoiding obstacles was not entirely new—witness his 1938 article on automobile driving (J. J. Gibson & Crooks, 1938)—and neither was his deep concern with discovering the information that specifies what is perceived. That is the age-old problem of a perception psychologist, fully recognized by Gibson in his prewar experiments on adaptation to curvature and tilt.

The concept of affordance came to Gibson gradually as he was working on *The Senses Considered as Perceptual Systems* (1966). It is foreshadowed in earlier articles, such as the one on locomotion in animals and people (J. J. Gibson, 1958). He was trying then to understand the relation between perception and behavior, for a perceptual system entails behaviors (such as moving the head for looking and the fingers for touching), and it is used to guide actions such as locomotion or aiming at a target. Furthermore, the action has consequences that give the perceiver additional information. The reciprocal relation between perceiving and acting is inherent in the relation between an animal and its environment. The environment provides (affords) resources or supports that an animal may (or may not) attend to and use. The notion of affordance now seems obvious, but it in no way relieves the perception psychologist from doing the job that he or she is needed and trained to do—that is, finding the information for what is perceived, which includes invariant relations in events that go on over time.

The answer to Stoffregen's (target article, this issue) question seems apparent. The information for an affordance is to be found in events that include the relevant environmental features, the activity of the organism, and the consequences that ensue as well as the relations among these. Studying this complex of events is the means of finding the information for perceiving an affordance. There is no such

thing as perceiving an affordance without perceiving events. The events themselves, in addition to the relations among them, are perceived, and we need to know the information for both. In *The Senses Considered,* James Gibson (1966) said

> The simplest affordances, as food, for example, or as a predatory enemy, may well be detected without learning by the young of some animals, but in general learning is all important for this kind of perception. The child learns what things are manipulable and how they can be manipulated, what things are hurtful, what things are edible, what things can be put together with other things or put inside other things—and so on without limit. He also learns what objects can be used as the means to obtain a goal, or to make other desirable objects, or to make people do what he wants them to do. In short, the human observer learns to detect what have been called the values or meanings of things, perceiving their distinctive features, putting them into categories and subcategories, noticing their similarities and difference, and even studying them for their own sakes, apart from learning what to do about them. (p. 285)

Children learn affordances. Nature has provided babies with minimal exploratory behaviors, such as sucking and looking, that enable them to begin their education. As new action systems emerge, babies begin to attend to objects and explore them (Eppler, 1993) and learn about their own abilities to control events and outcomes—all of this being the stuff of the affordances that they are learning to perceive. There are by now many developmental studies of learning to perceive affordances during the 1st year (see Adolph, 1997; Adolph, Eppler, & Gibson, 1993; E. J. Gibson, Adolph, & Eppler, 1999; E. J. Gibson & Pick, in press).

To conclude, the task of the perception psychologist is to uncover the information that specifies what we perceive. When we perceive the affordance of anything—the layout, objects, other people—we are perceiving the relation between some feature of the layout and its use or value to ourselves. Perceiving this relation entails perceiving events. Stoffregen (target article, this issue) suggests that we need only the information for the relation between a property of the animal and a property of the environment. I am reminded of the "grin without a cat".[1] The concept of affordance brings meaning and value into ecological psychology. Let us have full value.

REFERENCES

Adolph, K. E. (1997). Learning in the development of infant locomotion. *Monographs of the Society for Research in Child Development, 62*(3, Serial No. 251).

Adolph, K. E., Eppler, M. A., & Gibson, E. J. (1993). Development of perception of affordances. In C. Rovee-Collier & L. P. Lipsitt (Eds.), *Advances in infancy research* (Vol. 8, pp. 51–98). Norwood, NJ: Ablex.

[1]"'I've often seen a cat without a grin,' thought Alice, 'but a grin without a cat! It's the most curious thing I ever saw in all my life!'" (Lewis Carroll, *Alice in Wonderland*)

Eppler, M. A. (1993). Development of manipulatory skills and the deployment of attention. *Infant Behavior and Development, 18,* 391–405.

Gibson, E. J., Adolph, K. E., & Eppler, M. A. (1999). Affordances. *MIT encyclopedia of the cognitive sciences* (pp. 4–6). Cambridge, MA: MIT Press.

Gibson, E. J., & Pick, A. D. (in press). *The ecological approach to perceptual learning and development*. New York: Oxford University Press.

Gibson, J. J. (1947). *Motion picture testing and research* (Aviation psychology research, Rep. No. 7). Washington, DC: U.S. Government Printing Office.

Gibson, J. J. (1958). Visually controlled locomotion and visual orientation in animals and man. *British Journal of Psychology, 49,* 182–194.

Gibson, J. J. (1966). *The senses considered as perceptual systems*. Boston: Houghton Mifflin.

Gibson, J. J. (1986). *The ecological approach to visual perception*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc. (Original work published 1979)

Gibson, J. J., & Carel, W. (1952). Does motion perspective independently produce the impression of a receding surface? *Journal of Experimental Psychology, 44,* 16–18.

Gibson, J. J., & Crooks, L. E. (1938). A theoretical field analysis of automobile-driving. *American Journal of Psychology, 51,* 453–471.

Johansson, G. (1950). *Configurations in event perception*. Uppsala, Sweden: Almquist & Wiksell.