

On the Organism and the Environment

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The concepts of organism and environment are reviewed. It is argued that when mind is interpreted as action or as a kind of behavior continuous with other natural behaviors, the use of these concepts implies a dependence on the criterion of extension and not on the criterion of movement. The interbehavioral approach of J. R. Kantor with respect to this issue, and the Aristotelian concepts of "material", "formal" and "final" causes are used to provide a more dynamic, but not mechanical, definition of psychological events.

Behaviorism has presented itself as the most naturalistic perspective in Psychology since its initial formulation by J. B. Watson (1913). Behaviorists (Watson, 1924) argued that it was an error to assume that the mind, as a ghost in the machine, was the subject matter of psychology. All internal entities and metaphorical ways of representing them were systematically rejected by behaviorists in their formulation of a new subject matter, namely, the behavior of organisms. In other words, Cartesian dualism was abandoned in favor of a more naturalistic conception of man and his behavior.

Despite their good intentions in this regard, the behaviorists were not entirely successful in detaching their position from its dualistic roots because even when the soul-body division was rejected, the general criterion of extension in the definition of behavior was retained. This problem will be examined in this paper. I will focus my analysis on some radical behavioral definitions of Psychology's subject-matter, especially those in which the concepts of "organism" and "environment" are based on location or extension criteria. I will offer, as well, some alternative criteria for the definition of psychological events derived from interbehavioral psychology and the concepts of causality formulated by Aristotle.

Behavioral Definitions of Psychological Events

Watson (1924) and Skinner (1938, 1953, 1969) adopted the ordinary language meaning of behavior as what **organisms do**. More

technically, behavior was defined by Skinner (1938, p.6) as "that part of the functioning of an organism which is engaged in acting upon or having commerce with the outside world." Explaining behavior was understood by Skinner (1953, p. 35) as follows: "The external variables of which behavior is a function provide for what may be called a causal or functional analysis." Verbal behavior was explained in the same way (Skinner, 1957). These definitions of behavior and how to explain it are based on the idea of location or extension. That is, it is assumed that there is an "outside world" of "external variables" and an "organism" separated and interacting with that external world.

The criterion of extension is also found in Kantor's work (1924), despite his aim of avoiding all kinds of dualistic and mentalistic explanations for behavior. That is, Kantor (1924, p.1) considers behavior to be something that takes place between two entities spatially defined: the organism itself and the objects surrounding it. In his words, "By psychological reactions we mean that responses which psychological organisms, such as human individuals and higher types of animals, perform when they adjust themselves to the various stimulating objects surrounding them."

Dualism is not only the division of man into two substances but also the conviction that only those entities which occupy a location or position in space actually exist, as Turbayne (1962) has pointed out. To speak in terms of "environmental objects" and "organisms" entails this conviction, as does the

belief that behavior can be described only if it is something based on entities which "really" exist. To speak in terms of "stimuli" and "responses" entails an acceptance of the same idea, in this case specified as a mechanical relation between the environment and the organism.

In the locational model, the environment and the organism are understood as two positional realities in an effective mechanical relation by way of proximal contact (Kantor and Smith, 1975). This position is also evident when psychological events are understood as if they were the "intelligent behavior" of a computer. More specifically, there are "inputs" which provoke a locational commutative process of the "internal" machine and subsequent "outputs."

Behavioral psychology has always tried to avoid both old and new conceptions which tend to restore mentalism. Nonetheless, the continued use of terms such as "environment" and "organism" may foster dualistic interpretations by introducing "internal" variables -- variables of, in, or from the subject. The recent trend toward cognitivism is a demonstration of the "facilities" that the behavioral model may offer to mentalistic assumptions.

Aristotelian Categories for the Interpretation of Psychological Events

Kantor (1963-69) has stressed that in the Aristotelian tradition we may find suggestions which would allow us to go forward in the resolution of contemporary psychological questions. For example, adoption of the Aristotelian criterion of movement, as qualitatively organized changes within relations, may be useful in the development of a more naturalistic interpretation of psychological events (Ribes and Lopez, 1985.) The concepts of "organism" and "environment" also take on new meaning when approached from the standpoint of the Aristotelian theory of causality. Both come to have a more dynamic character. We will examine these issues in more detail below.

Material cause

Definitions of psychological behavior as the behavior of the organism, the interaction between the organism and the environment, or the adjustment of the organism to the

environment, all assume the organism to be the material basis of psychological events. Biological behavior could also be defined as the behavior of an organism, or as the adjustment or interaction between the organism and the ecological environment, however. Consequently Watson (1924), Kantor (1924) and Skinner (1953) have all tried to distinguish these two types of behavior according to other criteria. Each has argued that in the case of psychological behavior, it is the organism as a whole, not its parts, that behaves, interacts, or adjusts.

The whole organism argument still implies a formulation of the organism as a locational entity, though. To speak in terms of the organism as a whole, and then maintain that this organism has a relationship with the environment implies an understanding of the organism as the body, while the environment is understood as something surrounding it.

To understand behavior without locating it in the organism may be achieved by considering biological behavior to be the material basis for psychological behavior. The effect is to undermine the organism-environment duality, in that both kinds of behavior are essential features of being an organism-in-the-environment. From this perspective, the concepts of "stimulus" and "response" are meaningful only as functionally related segmentations of the environment and the organism for the purposes of specific analyses.

This means of overcoming the criterion of location in the analysis of psychological behavior may be illustrated when perceiving the speed of a moving object is examined. This type of perceptual orientation emerges through the participation of different biological functions. It is possible to perceive the speed and also the course of a moving object: a) through the successive projections of a mobile object on the retina; b) through "active" displacement, as when running to catch a bus; c) through "passive" displacement, as when travelling in a car; or d) through a different performance, as when throwing a dart toward a target. In all of these cases, earlier reactive changes are consistent with later ones and the psychological act of anticipating the future position of the mobile is built up through different kinds of behavior morphologies.

These situations could be described in terms of stimuli and responses, or stimulation and passivity, or in terms of performance and activity, but none of these descriptions is relevant to the act of perceiving. This is so because in all cases -- through the retinal "stimulation", through the running or throwing "responses", or even through the "non response" of being carried in a car -- perceiving occurs. In other words, it is not useful to represent the material basis of psychological behavior in terms of environment and organism, or stimuli and responses. The relevant issue is to understand how different organic functions, in their continuous changes, become the elements of psychological behavior (Roca, in press.)

These organic functions may be described as **morphologies** in order to explain quantitative changes in psychological behavior. For example, it is not possible to perceive speed in the same way through the visual sense as through tactile sensation on the back. Reference to organic functions may also serve to distinguish different acts of adjustment: It is evident that the functioning of the smooth muscles do not participate centrally in perceptual adjustment nor are smelling reactions a central element in language behavior.

The act of perceiving, as a kind of psychological behavior obliges a reinterpretation of the categories of organism and environment because in some cases the action may be its own main stimulus condition. The act of running has this characteristic, for example. In such cases the distinction between the environment as a source of stimulation stimulus and the organism as a source of responding may be difficult to sustain.

The Form of Psychological Acts

In mentalistic tradition, association was seen as something "**taking place**" in the mind, something occurring "inside" the organism. This notion was objectionable to behaviorists. Nonetheless, the spectrum of "internal activity" does not disappear so long as the terms "environment" and "organism" continue to be conceived as independent locational concepts. This conceptualization is apparent in such expressions as "the organism becomes conditioned", "the organism acquires responses", or "perceiving is an act of the organ-

ism." Describing psychological events in these ways implies that behavior is something the organism does -- that the organism is the agent of behavior, adjustment or interaction. From this perspective, the basic facts of association are held to "take place" inside the organism.

The alternative is to suggest that association refers to a kind of interrelation between organisms and environments. From this standpoint, the organism is understandable only in terms of the interrelation.

Perception provides another example of organism-as-agent-of-action logic. Traditional interpretations of perception have articulated such events as the individual's "picking up" (Gibson, 1979) of perceptual information contained in the environment. This amounts to dividing events into the "perceiver" and the "external" reality to be perceived.

In this context, the alternative is to recognize that there is no reality to be perceived (i.e., invariants of stimulation) and someone who perceives them. Perceiving is a relation, and the invariants are in the perceiving.

The same could be said about conditioning: It is not the organism who becomes conditioned. **Nobody** becomes conditioned. Conditioning is the relation itself, and it does not take place in a location inside the organism.

The Finalities of Psychological Acts

The concept of **finality**, and of teleological explanation, have been rejected persistently by behaviorists. Skinner (1969) warned against teleologism, drawing attention to theoretical assumptions relating finalism to mental powers and, in general, to dualistic explanation.

Despite the explicit rejection of final cause and teleological explanation by behaviorists, their definitions of psychological events have always involved finality: Final cause is implicit in the concept of intention. Intention is implied in the idea of behavior serving to adapt the organism to conditions of the milieu.

The concept of **final cause** in Aristotle's work, as Kantor (1963) has pointed out, is a tool in the naturalistic interpretation of reality and helps accomplish the goal of describing natural events in their completeness. No transcendentalism is implied by their use here.

Having reformulated biological and psy-

chological behaviors as, respectively, the elements and forms of psychological acts; we may now describe the purposes for which these acts are done. This description, though, must be consistent with the principle of movement as relationship, offering an alternative to the concept of environment as something surrounding the organism.

Three basic finalities in psychological acts, all of them descriptive of environment as behavior itself, are worthy of note.

First is the ontogenic adjustment to the particular conditions of life involved in each biological function. This becomes psychological behavior adjusted to the maintenance of the individual life in his specific circumstances. In other words, it is the organization of life according to the ontogenic invariants or consistencies of each individual. Pavlov's and his followers' work -- specially Bykov (1954) -- show this type of psychological regulation: The establishment of psychological acts with the finality of biological adjustment.

Second are acts with the finality of situationally-bound adjustment. Psychological acts occur as the means of reaching a particular dimension of situational adjustment. The psychology of perception represents one of these dimensions of adjustment. Perceiving means orienting conceptualized as relations of invariants of physico-chemical dynamics and sensory activity. This universe of adjustment includes the simplest temporal pattern of invariable changes, as well as the perceiving of local movement and all perceptual constancies.

Finally, we find the adjustive acts as behavior organized in accordance with cultural events. With this finality there is a large set of adjustive acts ranging from simple motor conventional acts to linguistic conventions. This finality constitutes a specific area of adaptation which establishes the difference between mankind and the rest of animals.

These three finalities provide for a more dynamic interpretation of the concepts of organism and environment. However, final causes can make sense to behaviorists and can provide a new dimension in the description of behavior only when we understand that it is not the organism who adapts but the acts which are adaptive.

Summary and Conclusions

The definition of psychological events from the behavioristic point of view is problematic. The problem has to do with conceptualizing behavior as "taking place" in an organism, surrounded by an environment. Conceptualizing behavior in this way is apparent in our speaking of a subject who performs or behaves, and of an environment which stimulates the organism or which is changed because of his action or to which the organism is adjusted.

The problem is that when we use words of location in reference to organisms and environments, we come to believe that what is described by these words actually exists corporeally. But the organism and the environment do not exist corporeally in a psychological sense. In psychological perspective, the organism and environment exist as relation, not as independent bodies. In short, we do not rid our position of dualism merely by rejecting the duality of mind and body. We must also reject the duality of organism and environment.

I have presented an alternative formulation based on the interbehavioral concept of continuity (Kantor, 1967) in the organization of natural events and the Aristotelian concepts of material, formal and final causes. Even though the proposed alternative is only schematic, it attempts, first, to avoid thinking of psychological events as things occurring in a place, whether it be inside the subject, outside, or between entities spatially located. Secondly, it attempts to place psychological events in the context of other natural events showing their continuity with them, while at the same time stressing the specific feature or form of distinctly psychological acts. Finally, it attempts to formulate natural distinctions among psychological events in terms of morphologies and finalities, while still maintaining the functional unity of psychological behavior be it conditioning or learning, perceiving or thinking.

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