

Beyond the Illusion of a Mechanistic Psychology

Vicki L. Lee

Monash University, Australia

Edward Morris reviews some usages of the term *mechanistic* and concludes that behavior analysis is not mechanistic. However, as he notes, many psychologists categorize behavior analysis as mechanistic. Morris suggests that this mistake would not be made “if behavior analysts explained themselves and their science differently” (Morris, 1993, p. 38). This statement implies that we should reconsider how we talk about behavior analysis. We might sometimes talk in ways that imply a tacit acceptance of a mechanistic worldview that contradicts our explicit rejection of this worldview. If so, then the way we talk about our subject matter might exacerbate other psychologists’ misconceptions about behavior analysis.

Morris’s argument includes much that invites discussion. I will address his comment that “the structure of our language influences how we think about behavior in ways that are incompatible with the nature of behavior” (Morris, 1993, p. 31). The author means ordinary language rather than the technical language of behavior analysis. He cites Himeline’s (1980) comment that “English grammar and syntax are fundamentally mismatched with the phenomena that constitute psychology” (p. 80). These comments are similar to Walker’s (1942) comment that psychology’s problem is to develop ways of picturing organism and environment as an undifferentiated whole. Contrary to these three writers, I suggest that the language of action that is found in English identifies the subject matter of behavior analysis, and, further, that this language often implies events with both organismic

and environmental constituents (e.g., Bentley, 1941). I suggest that our practice of partitioning actions into behavioral and environmental parts obscures the conceptual power of the language of action and gives behavior analysis the appearance of a mechanistic psychology.

The language of action consists of sentences (e.g., “John climbed the tree and rescued the cat”) that imply that someone does something with some end result (e.g., Mulholland, 1991, p. 13; also see Linton, 1978, pp. 14–18). The verb phrases contained in such sentences (e.g., “climbed the tree”) imply that the activities of an organism bring about a change (Givón, 1984, pp. 96–100); for example, a change in the organism’s location. The language of action designates changes brought about by the activities of organisms (e.g., a change in John’s location to “up the tree”) and about the results (e.g., “climbed the tree to rescue the cat”), circumstances (e.g., “turned on the fan when the humidity was high”), and properties (e.g., “asked the question loudly”) of actions. The changes that define actions are *internal to the actions* that they define even if the changes are events that occur *outside the organism*. For example, depression of the lever is internal to the action of lever pressing, even if depression of the lever is an event that occurs outside the organism.

When we talk about actions, we assume the existence of an organism whose activities bring about the changes that define the actions and whose body is the location of some of these changes (e.g., “brushed his hair”). The language of action therefore tacitly accepts the principle of levels (e.g., Engel, 1980; Novikoff, 1945), which permits the physical and physiological activities of an organism to be distinguished from the actions in which an organism is a participant (e.g., Pronko, 1988). The language of action lets us talk about actions without also having to

Correspondence concerning this article should be sent to Vicki L. Lee, School of Graduate Studies, Faculty of Education, Monash University, Clayton 3168, Australia.

provide details about either the physical and physiological activities (e.g., movements of body segments) of organisms or the physical environment (e.g., trees), cultural systems (e.g., banking systems), and artifacts (e.g., dollar bills) that are also constituents of many actions. Leaving the physical, biological, and cultural constituents of actions to other disciplines is consistent with our practice of collecting data from the changes brought about by organisms (e.g., depressions of a lever). Indeed, few of us in behavior analysis have mastered the languages of physics and biology that would permit the accurate description and measurement of the activities of organisms. Talking about actions *as* actions and leaving the analysis of their physical, biological, and cultural constituents to other disciplines is also consistent with the assumption held by behavior analysts (e.g., Skinner, 1938, p. 429, p. 438) that behavior (read, "action") is a subject matter in its own right.

In behavior analysis, we use the language of action to identify the single cases (e.g., pressing levers, crossing roads, answering questions) from which we collect data. We collect data from actions, but we do not follow through the conceptual implications of this implicit identification of actions as the single cases in our science. Instead, we tacitly accept individualism, the assumption that the organism is the only psychological reality (e.g., Pepitone, 1981). We cannot consider the implications of accepting actions as single cases without also questioning our tacit acceptance of individualism. (For critiques of individualism, see, e.g., Llewelyn & Kelly, 1980; Sampson, 1988.) Further, until we reject individualism, we will continue to assume that to partition actions into behavioral (or organismic) and environmental parts is inevitable and beyond question. To grasp the conceptual power of the language of action, we must abandon both the assumption of individualism and the language of behavior (or organism) and environment.

Given that we collect data from actions, we should partition the events rep-

resented by our data into (a) the changes brought about by organisms that are identified by the language of action and (b) the activities of the organism that bring about these changes. For example, the action of lever pressing partitions into the depression of a lever that is brought about by an organism and the activities of the organism that bring about the depression of the lever. All events designated by the language of action can be partitioned into the changes brought about by organisms and the activities (and, sometimes, other changes) that bring about the changes that define the particular action. This partitioning applies to self-directed actions such as blowing one's nose and scratching one's arm, perceptual actions such as looking out a window and finding an article in a library (where activities of the organism can bring about changes in what is available for the organism to see, hear, or otherwise observe), and higher order actions such as getting food by lever pressing and earning course credit by participating in an experiment. Many higher order actions (e.g., getting food by lever pressing) are characterized more accurately as comprising an organism's activities, the change that defines the action (e.g., getting food), and other changes brought about by the activities of the organism (e.g., depression of the lever) that are also internal to the action.

As these examples imply, some, but not all, actions have both behavioral and environmental constituents. The changes (e.g., depression of the lever) internal to some actions (e.g., lever pressing) occur *outside the organism*, but the changes (e.g., displacement of the skin on one's arm) internal to other actions (e.g., scratching one's own arm) occur *at the organism*. Speaking of the changes brought about by organisms as environmental variables is therefore always imprecise and sometimes inaccurate. In consequence, partitioning actions into behavioral and environmental parts is always imprecise and sometimes inaccurate. This partitioning sometimes approximates the partitioning of actions implicit in the language of action (e.g., getting food by lever pressing is partitioned into behavioral and envi-

ronmental parts), but it also produces some internal inconsistencies. For example, lever pressing is categorized as a behavioral event, but the action of lever pressing is defined by a change brought about outside an organism and therefore also includes an environmental event among its constituents. Partitioning actions into behavioral and environmental parts makes automatic reinforcement (e.g., Vaughan & Michael, 1982) seem anomalous, and it makes us unwilling to admit certain actions (such as getting course credit by participating in an experiment) *as* actions (i.e., as events at their own level of organization).

The present comments are not inconsistent with Morris's remark (1993, p. 31) that the language adopted by Skinner early in his career (i.e., the language of behavior and environment) invited the characterization of behavior analysis as mechanistic. In using the language of behavior and environment, we tie ourselves to the origins of our discipline conceptually, though not empirically, in stimulus-response psychology. We then sound like stimulus-response psychologists, despite our criticisms of stimulus-response psychology and despite our claims that we are not stimulus-response psychologists. We sound like mechanists.

I recommend that we rid our discipline of the language of behavior and environment. I know that this recommendation will seem preposterous. But the recommendation is consistent with the spirit of radical behaviorism, even if it asks radical behaviorists to abandon their practice of partitioning actions into behavioral and environmental parts. At the heart of radical behaviorism is a commitment to the data collected in the experimental analysis of behavior and, thus, both to the single cases that the data represent and to the domain of these single cases (i.e., the subject matter of our empirical work). If the language of behavior and environment misrepresents the subject matter from which we collect our data, then we should feel free to rid ourselves of this language.

Our data represent events that are designated most directly by the language of

action. We use the language of action in identifying and talking directly about the events from which we collect data. There is no shame in admitting that the foundations of our science lie in ordinary language (e.g., Lee, 1988, pp. 18–22, 37–39). At issue is whether we in behavior analysis should continue to obscure and misrepresent our subject matter by using the language of behavior and environment. The language of behavior and environment reflects more the historical borrowing by psychologists of the language of the reflex than the events that occasion the collection of data by behavior analysts. Our data (at least in the experimental analysis of behavior and, perhaps [Barrett, Johnston, & Pennypacker, 1986], optimally in the applied analysis of behavior as well) represent the changes brought about by organisms at operanda (i.e., places where organisms can bring about changes). These data are therefore consistent both with the assertion that our subject matter consists of actions (e.g., Lee, 1988) and with conceptual analyses of the language of action as designating events that are defined by the changes brought about by organisms (e.g., Givón, 1984, pp. 96–100).

Basic research in our discipline addresses a level of organization at which the activities of organisms are constituents of the events of interest and at which it can be assumed that organisms act on the world (i.e., bring about changes in it). Basic research investigates the relations that the changes brought about by organisms enter into with the results (e.g., reinforcers) of the changes and with the conditions under which the changes have their results (e.g., as in a conditional discrimination). We can talk about these relations directly without talking about the physical and biological activities of organisms. Further, we can talk about these relations directly without using the language of behavior and environment. We do not need that language if our single cases are actions rather than organisms. We can say that we are interested in how acting (i.e., bringing about changes) with (and sometimes without) results affects subsequent acting. If we spoke directly

about these relations in a way that is consistent with the language of action, then perhaps fewer psychologists would categorize behavior analysis as mechanistic. Moreover, perhaps we, too, would have less reason sometimes to wonder if other psychologists are right.

REFERENCES

- Barrett, B. H., Johnston, J. M., & Pennypacker, H. S. (1986). Behavior: Its units, dimensions, and measurement. In R. O. Nelson & S. C. Hayes (Eds.), *Conceptual foundations of behavioral assessment* (pp. 156–200). New York: Guilford.
- Bentley, A. F. (1941). The behavioral superface. *Psychological Review*, *48*, 39–59.
- Engel, G. L. (1980). The clinical application of the biopsychosocial model. *American Journal of Psychiatry*, *137*, 535–544.
- Givón, T. (1984). *Syntax: A functional typological introduction*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Hineline, P. N. (1980). The language of behavior analysis: Its community, its functions, and its limitations. *Behaviorism*, *8*, 67–86.
- Lee, V. L. (1988). *Beyond behaviorism*. Hillsdale, NJ: Erlbaum.
- Linton, C. D. (1978). *Writing with style*. Toronto, Ontario: Coles Publishing Company.
- Llewelyn, S., & Kelly, J. (1980). Individualism in psychology: A case for a new paradigm? *Bulletin of the British Psychological Society*, *33*, 407–411.
- Morris, E. K. (1993). Behavior analysis and mechanism: One is not the other. *The Behavior Analyst*, *16*, 25–43.
- Mulholland, J. (1991). *The language of negotiation*. London: Routledge.
- Novikoff, A. B. (1945). The concept of integrative levels and biology. *Science*, *101*, 209–215.
- Pepitone, A. (1981). Lessons from the history of social psychology. *American Psychologist*, *36*, 972–985.
- Pronko, N. H. (1988). *From AI to Zeitgeist: A philosophical guide for the skeptical psychologist*. New York: Greenwood Press.
- Sampson, E. E. (1988). The debate on individualism: Indigenous psychologies of the individual and their role in personal and societal functioning. *American Psychologist*, *43*, 15–22.
- Skinner, B. F. (1938). *The behavior of organisms*. New York: Appleton-Century-Crofts.
- Vaughan, M. E., & Michael, J. L. (1982). Automatic reinforcement: An important but ignored concept. *Behaviorism*, *10*, 217–227.
- Walker, K. F. (1942). The nature and explanation of behavior. *Psychological Review*, *49*, 569–585.