

THE CLASH OF THE GIANTS GOES BEYOND TERMINOLOGICAL DIFFERENCES: A Reply to Moerk

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ABSTRACT: Moerk's (1992) article, "The Clash of Giants Over Terminological Differences," disregards substantive differences between Skinner's and Chomsky's accounts of verbal behavior. Moerk's choice of the term "language" instead of "verbal behavior" exemplifies his neglect of distinctions important to behaviorists. His reconciliation of the roles of phylogenetic factors in Skinner's and Chomsky's accounts ignores a fundamental difference between the possibility and the probability of a response. Moerk's contention that behaviorists are uninterested in the fine-grained structures of behavior ignores the behavioral distinction between the structure and function of a behavior.

Efforts to synthesize philosophies, research findings, and interpretations across different disciplines can be valuable so long as they do not homogenize two or more perspectives on the basis of some similar features without recognizing irreconcilable distinctions between the two. At its heart, Moerk's paper suggests that two camps, the behavioral camp and the rationalist/cognitive camp, have studied verbal behavior, labeled it differently, and thus come to assume that their views are different when really they are the same. I disagree with his assumption that the giants have clashed over terminological differences. Instead, I view the differences as substantive and the distinctions as valuable in the pursuit of an understanding of the causes of human behavior.

It is not at all uncommon in a science for two individuals who examine the same phenomenon to select different labels for it. Their labels derive from their own histories within the science and differ largely as a result of that history. Inherent in one's history is a stylized way of looking at the phenomenon; these perspectives influence what is seen, how what is seen is described, and how what is seen is labeled. Skinner and those who are persuaded by his descriptions come from a very different philosophy of science than Chomsky and those who are persuaded by his descriptions. Further, I am convinced that Moerk's analysis turns on misunderstandings of several behavioral beliefs. It is these misunderstandings that I have chosen to address.

First, Moerk chooses the terms "language" and "language acquisition" instead of the term "verbal behavior" to describe the topic about which the giants clash. Skinner (1974) has noted the importance of maintaining a view of verbal behavior

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as behavior. He says:

The very difference between "language" and "verbal behavior" is an example. Language has the character of a thing, something a person acquires and possesses. Psychologists speak of the "acquisition of language" in the child. The words and sentences of which a language is composed are said to be tools used to express meanings, thoughts, ideas, propositions, emotions, needs, desires, and many other things in or on the speaker's mind. A much more productive view is that verbal behavior is behavior. It has a special character only because it is reinforced by its effects on people -- at first other people, but eventually the speaker himself (p. 88-89).

The concept of verbal behavior as behavior that has interesting and unique topographies but that is, none-the-less, behavior and responsive to environmental stimuli in the same way as other behavior is central to the behavioral perspective. Skinner further suggests:

A child does seem to acquire a verbal repertoire at an amazing speed, but we should not overestimate the accomplishment or attribute it to invented linguistic capacities. A child may "learn to use a new word" as the effect of a single reinforcement, but it learns to do nonverbal things with comparable speed. The verbal behavior is impressive in part because the topography is conspicuous and easily identified and in part because it suggests hidden meanings (p. 100).

My reading of Moerk suggests that he has missed this pivotal distinction.

Second, Moerk draws a parallel between Skinner's view of the phylogenetic influences on emitted responses and Chomsky's view of the innate syntactic deep structure of language. I fail to see a parallel. Skinner describes the phylogenetic influences that make particular behaviors *possible* while he maintains that ontogenetic influences make particular behaviors *probable*. Chomsky, on the other hand, refers to phylogenetic influences in making particular behaviors *probable*. The difference is a substantive one. Let me illustrate.

Skinner might have said, for example, that phylogenetic effects have not worked to the advantage of dogs as speakers just as he might have said that phylogenetic effects have not worked to the advantage of humans in their efforts to fly without mechanical assistance. Selection by contingencies of survival has made vocal verbal behavior possible for most humans. Those for whom it is not possible are typically individuals who have suffered disease or injury to their central nervous system or to the organs directly implicated in speech. Efforts to teach vocal verbal behavior to an individual affected in certain ways by cerebral palsy will be unsuccessful because the vocal responses are impossible. Probability cannot be influenced unless possibility exists. This same individual may, however, learn another form of verbal behavior using a signed repertoire or an augmented communication repertoire. (I speak here of a system that allows textual behavior, not the systems that use pointing to stimuli as a substitute for verbal behavior.) Because the individual is physiologically and structurally capable of the response, i.e., the verbal response is possible, environmental circumstances can make the

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verbal response more probable. It is in this sense that Skinner talks about phylogenetic or physiological preparation.

Chomsky, on the other hand, describes the realization of a syntactic structure as an innate or phylogenetically determined process. There is little interest here in the *physiological or phylogenetic preparation* of the organism to be a speaker; rather, Chomsky's interest is in a kind of *mental or cognitive preparedness*. Experience, according to Chomsky, triggers a particular grammar. The grammar itself is part of the genotype. He imbues verbal behavior in this way with a special property that does not extend to any other behavior. It is in this distinction that Skinner and Chomsky are, I believe, fundamentally different and this fundamental difference has little, if anything, to do with the terminology they select.

Moerk contends that behaviorists are uninterested in the fine-grained structures of behavior. Further, he says it is well known that the response itself was uninteresting to Skinner. Later, he describes this disinterest as a major shortcoming of the behavioral approach. Specifically, he contends: "A focus on response classes only is completely unsatisfactory in the realm of verbal behavior, where the structure and the form of the utterance, whether it is a primitive cry or an elegant *bon mot*, is of primary interest" (p. 6). I believe his discussion suggests a misunderstanding of Skinner's position. Skinner held that the topography of a behavior might be thought of as a matter of convention, i.e., the *structure* of the behavior is arbitrary. Some other forms could just as easily have been selected by contingencies of reinforcement. He suggests that the topography of any given behavior varies in a number of visible ways within and across individuals and, yet, produces the same effect on the environment. This is not to say that topography is trivial; only that it holds no special place in understanding how the behavior has been established. A knock on the door and a ring of the doorbell are distinctly different topographically but may be functionally identical. Saying "quit it" or "stop it" may both produce a cessation of an ongoing activity and as a result may be uttered under similar circumstances and with equal frequency. Skinner would say, however, that both topographies are acquired because the contingencies of reinforcement are the same for both. A topography may change subtly, as in the clear differences that can be noted when the same word is said several times by the same person but each instance produces a completely different spectrograph. Or it may change in a much more dramatic way as might be seen in shifts in vernacular depending on the group one is talking to. The critical determinant of which of these topographical variations will be maintained is, according to Skinner, a function of the contingencies of reinforcement.

Moerk contends that Skinner's disinterest in the topography of behavior has resulted in his and other behaviorists failure to differentiate various layers of language performance unlike the linguists who "have finely differentiated various layers of language performance. These are the phonemes, morphemes, sentence constituents, paragraphs, etc. They have, thereby, performed molecular analysis, as

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contrasted to the behaviorists' molar analyses" (p. 6-7). It is true that Skinner has avoided a finely grained structural analysis, but he has done so in favor of a finely grained functional analysis. This distinction between structure and function has escaped Moerk's notice. Further, Moerk seems not to have noticed that Skinner explicitly addresses the role of grammatical rules. Skinner, I believe, would contend that phonemes, morphemes, sentence constituents, and paragraphs themselves evolve because of their function for the speaker. Enhanced phonemic or morphemic usages are taught directly and indirectly. Sentence structure conforms to conventional rules if the structure is enforced by consequences. However, phonemes, morphemes, sentence constituents, and paragraphs are not the basic functional units of verbal behavior. They are by-products of it. Skinner (1974) says:

In verbal behavior, as in all operant behavior, original forms of response are evoked by situations to which a person has not previously been exposed. The origin of behavior is not unlike the origin of species. New combinations of stimuli appear in new settings, and responses which describe them may never have been made by the speaker before, or heard or read by him in the speech of others. There are many behavioral processes generating "mutations," which are then subject to the selective action of contingencies of reinforcement.... A great deal has been made of the fact that a child will "invent" a weak past tense for a strong verb, as in saying "he goed" instead of "he went." If he has never heard the form "goed" (that is, if he has associated only with adults), he must have created a new form. But we do not speak of "creation" if, having acquired a list of color words and a list of object words, he for the first time says "purple automobile." The fact that the terminal "-ed" suggests "grammar" is unnecessarily exciting (pp. 100-101).

Further, with respect to the rules of grammar, Skinner points out that

The transformational rules which generate sentences acceptable to a listener may be of interest, but even so it is a mistake to suppose that verbal behavior is generated by them. Thus, we may analyze the behavior of small children and discover that, for example, part of their speech consists of a small class of "modifiers" and a larger class of "nouns."...It does not follow that the child "forms a noun phrase of a given type" by "selecting first one word from the small class of modifiers and selecting a second word from the large class of nouns." This is a linguist's reconstruction after the fact (p. 99).

Skinner, I believe, would contend that conventional grammar is acquired when a) it has a natural function, i.e., changes the behavior of the listener in a way that does not occur with incorrect grammar; or b) when it comes under the control of generalized reinforcers, e.g., parents or teachers enforcing correct grammar through the use of grades, points, social reinforcers, and the like. Correct grammar may be the most likely first response as a result of the models in an individual's environment; likewise, incorrect grammar may be the most likely first response for other individuals who come in contact with grammatically incorrect models. Support for these assertions can be derived from dialects, e.g., "Black vernacular", where children learn the grammar that is correct for their community although it may be viewed as incorrect in the larger community. For these children, their

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grammar is functional so long as they remain in their restricted community and, further, more conventional grammar might prove to be non-functional.

Further, sentence topography with respect to grammar changes across different languages. An excellent example can be found in the traditions and conventions of American Sign Language (ASL) where the subject may sign "I happy I." instead of "I am happy." or "I go work finish." instead of "I went to work." In the latter example, time is referenced because of its influence on the behavior of the listener with respect to what is heard. However, unlike the grammar in spoken English, once the past tense has been established, further discussion of the topic is presented in the present tense. So, for example, the individual might sign "I go to work finish. I have (instead of had) lunch at work."

Moerk does a credible job describing the way that verbal behavior is learned in the same way other skills are learned and, in so doing supports Skinner's contention that verbal behavior is, in the end, just behavior. Chomsky's camp does not and will not support this position. Verbal behavior, language in their terminology, holds a special place that is consistent with and representative of higher cognitive function. Skinner, I believe, would contend that some individuals can and do acquire more sophisticated verbal behavior than others, that some experience severe deficits in verbal behavior that are not successfully remedied by the best programs derived from the principles of behavior analysis. However, he consistently sees these verbal behavior facilities and disabilities as a function of response possibility that derives from the combined phylogenetic and physiological features of the organism and the response probability that derives from the ontogenetic features of the organism. His analysis does not acknowledge the influence of a mind or grammatically loaded genotype for verbal behavior anymore than it does for hand waving, flag raising, or leg crossing.

REFERENCES

Skinner, B. F. (1974). *About behaviorism*. New York: Alfred A. Knopf.