Much Ado About Nothing? Some Comments on B. F. Skinner's Definition of Verbal Behavior

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Some have suggested that the definition of verbal behavior offered by B. F. Skinner (1957) fails to capture the essence of language insofar as it is too broad and not functional. In this paper, I argue that the ambiguities of Skinner's definition are not an indictment of it, and that suggestions to the contrary are problematic because they suffer a critical error of scientific reasoning. Specifically, I argue that (a) no clear definition of verbal behavior is possible because there is no natural distinction between verbal and nonverbal behavior; (b) attempts at an immutable definition are essentialistic; and (c) Skinner's functional taxonomy of language is in no way affected by the particulars of any definition of verbal behavior.

Key words: essentialism, functional analysis, language, verbal behavior

In his seminal treatise, *Verbal Behavior*, B. F. Skinner (1957) suggested that verbal behavior is distinguishable from nonverbal behavior because "it is reinforced through the mediation of other persons" (p. 2). He further refined this definition by suggesting that "Verbal behavior is shaped and sustained by a verbal environment—by people who respond to behavior in certain ways because of the practices of the group of which they are members" (p. 226). That is, the verbal community must establish the mediating behavior in the context of verbal episodes.

Skinner actually struggled to arrive at what he considered a useful definition that captured the essential features of a class of behavior reasonably subsumed under the category of *language* (Palmer, 2008). Some think he missed the mark (cf. Leigland, 1997; Palmer) and have argued that his definition fails to capture the essential features of language insofar as it is too broad and not functional in the standard behavior-analytic sense. The following scenario cleverly illustrates some key points of contention:

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Imagine two rats, each in its own chamber with its own feeding apparatus. In the first chamber, the apparatus is set by an experimenter to release a food pellet on a VR 5 schedule. In this case, the rat's pressing of the bar is considered verbal, because the listener or experimenter has been conditioned by a social/verbal (scientific) community to mediate reinforcement of the bar press with the delivery of a food pellet. ... In the second chamber, imagine that a feedbag is leaning against the manipulandum. The bag has a small hole in it and about every five bar presses a food pellet is jarred loose and is knocked into the chamber food dish. ... We could switch the two rats from one chamber to another and it would be impossible for the rat to detect any difference whatsoever in the contingencies. If the behavior of both rats is identical and the contingencies contacted are identical, the functional category should be identical, yet in one case, the behavior is verbal according to Skinner's definition and in another it is not. (Hayes, Blackledge, & Barnes-Holmes, 2001, p. 12)

More generally, the argument can be stated as follows: Skinner's definition of verbal behavior is inadequate because it captures trivial behavioral episodes that do not reasonably qualify as verbal, and the definition is notably odd because it relies on the behavior (and corresponding reinforcement history) of one organism (the "listener") to define the behavior of another (the "speaker").

In contrast, defenders of Skinner's definition of verbal behavior are typically consistent in their emphasis on the critical defining characteristics

thereof. The indirect manner of reinforcer procurement via mediation of members of the verbal community is emphasized (e.g., Moore, 2008; Salzinger, 1970, 2003; Sundberg, 2007; Sundberg & Michael, 2001), as is the particular learning history that gives rise to such mediation (e.g., Moore; Salzinger; Sundberg). These characteristics, one might argue, render the definition far from all encompassing and effectively capture that which should be the provenance of language. If the behavior of nonhumans is thereby included, then it is reasonable to consider such behavior verbal. Indeed, Skinner considered the behavior of nonhumans to be perfectly appropriate for the subject and offered an example of a rider turning a horse via the use of reins as an example of a verbal episode (1957, p. 225).

In the remainder of this paper, I argue that the fuzzy borderlands of Skinner's (1957) definition are not an indictment of it, and suggestions to the contrary are problematic because they suffer a critical error of scientific reasoning. In addition, invoking the behavior of one organism as a defining feature of the behavior of another is not unique in behavior analysis. Specifically, I propose that (a) no clear definition of verbal behavior is possible because there is no natural distinction between verbal and nonverbal behavior; (b) attempts at an immutable definition are essentialistic; and (c) Skinner's functional taxonomy of language is in no way affected by the particulars of any definition of verbal behavior.

DISTINGUISHING VERBAL FROM NONVERBAL BEHAVIOR

Hayes and Barnes-Holmes (2004)¹ offered a particularly succinct statement about what they, and others,

¹ Much of the discussion that prompted this paper has occurred in the context of conference presentations, conversation, Listserv correspondence, and so on. It proved difficult to

see as the shortcomings of Skinner's (1957) definition of verbal behavior. They state,

The definition is (a) not a functional one in a behavior analytic sense, because it is not based on specific aspects of an individual organism's history but on aspects of some other organism's history (namely that of the audience trained to mediate reinforcement to the speaker); (b) it is so broad as to include virtually all animal operant behavior in traditional behavior analytic research; and thus (c) any attempt to apply the analytic categories described in the book [*Verbal Behavior*] leads basic behavior analysts inexorably back to what they were already doing in the [animal] laboratory. (p. 218)

It is difficult to quibble with this statement. The foundation of Skinner's (1957) analysis of language is his assertion that it is behavior and nothing more. As such, he conceptualized language as verbal behavior, thereby permitting a scientific interpretation of the elementary components of language in terms of stimulus control over behavioral units rather than in terms of grammatical and syntactical regularities. No special principles or analyses were invoked. Distinguishing verbal from non-verbal behavior, then, is not an exercise in determining a clear line of fracture for two distinct natural phenomena. That Skinner's definition would "lead basic behavior analysts inexorably back to what they were already doing" is exactly the point, not the problem (see also Leigland, 1997; Palmer, 2008).

The ambiguity resulting from Skinner's (1957) broad definition of verbal behavior is not unique in behavior analysis, nor is it especially problematic. Consider an analogous example using aggression. In applied

find much committed to print on the topic, except for the frequently cited and eloquently stated criticisms published by some relational frame theory researchers. It is for this reason, and this reason only, that many of the examples cited herein originate in this literature. No broader criticism of this approach should be construed.

research and practice, *aggression* often is defined topographically according to subtypes. For example, it might be defined as hitting, kicking, biting, or throwing objects at another person (e.g., Vollmer et al., 1998). These subtypes could be further refined by defining hitting as the forceful contact of one person's hand with any part of another person's body, biting as the contact of one person's teeth with another person's body, and so on. In basic research, aggression has been defined as a response resulting in the delivery of aversive stimulation to another person (e.g., Buss, 1961). With any of these definitions, we must deal with fuzzy boundaries. One person might strike another as a result of quickly turning around while gesturing, being unaware of the other person standing so close, or a doctor might administer a painful or uncomfortable medical procedure to a patient. It is unlikely that anyone would categorize such incidents as aggressive.

We could further analyze the situation and identify maintaining variables for the aggressive response (e.g., attention, access to preferred items or activities, or escape from demands or otherwise aversive situations), or we could demonstrate that the occurrence of certain aggressive response topographies covary with certain environmental conditions, such as the difficulty of academic tasks presented or the presence of certain individuals, sounds, smells, and so on. But such functional analyses would not necessarily distinguish aggression from other types of behavior (e.g., crying) because all could be maintained by the same variables and, hence, be members of the same response class. In terms of unambiguously defining aggression, either topographically or functionally, we are at a loss. However, this does not prevent careful analysis of behavior that we might ultimately call aggression, in research or in practice.

It also should be noted that many definitions of behavior appeal to the state of another organism in a manner similar to the way in which Skinner's (1957) definition of verbal behavior invokes the behavior and reinforcement history of a listener. The behavior of one organism serves as part of the context in which the behavior of another organism is emitted. That the behavior of one organism might be invoked as a defining feature of the behavior of another organism is therefore not out of place in a behavioral analysis. To define *compliance*, for example, we must consider the behavior of one organism in the context of the behavior of another organism (the instructor). Implicitly, the behavior of the instructor must be dependent on a very specific type of reinforcement history that gives rise to language in general and instruction giving in particular. It would be impossible to define compliance otherwise.

Social behavior raises the same issues. To deal with social behavior one would necessarily have to invoke a definition analogous to Skinner's (1957) definition of verbal behavior. The behavior of one organism would be considered social only if the effects observed on the behavior of a second organism occurred because of some specific reinforcement history of that second organism. If we teach a young child social skills, we are teaching him or her to behave in ways that produce certain characteristic behaviors on the part of other members of the social community because of the reinforcement practices common to that community. Of course, one could quibble about the appropriate dividing line between social and nonsocial behavior, just as some quibble about the dividing line between verbal and nonverbal behavior.

None of the above examples results in unambiguous definitions of a type of behavior, even when the functional

aspects of the response class are considered. At issue is the distinction between a functional definition and a categorical definition of behavior, with the aforementioned examples illustrative of the latter. A functional definition does not distinguish aggression from crying any more than it distinguishes verbal from nonverbal behavior. These are categorical definitions that can encompass both functional and topographical aspects of behavior and lead us to sometimes walk the fuzzy borderlands of the categories. The degree to which a categorical definition is useful is most probably proportional to the number of cases that reside in the center of the category compared to those that occupy the boundaries. Skinner's (1957) definition of verbal behavior is an example of a categorical definition, whereas his taxonomy of verbal operants is an example of a functional analysis of behavioral units, whether they are unanimously judged to be verbal or not. The utility of Skinner's definition lies in the great many cases of behavior typically categorized as language that are captured by the definition, with relatively few, and arguably trivial, instances (e.g., the rats in the example above) occupying the borderlands.

THE PROBLEM OF ESSENTIALISM

An essentialist explanation is one that treats categorical phenomena (e.g., the race of a person, a species of plant, or a type of behavior) as somehow reflective of various underlying immutable properties that characterize the members of those categories (Mayr, 1988; Palmer & Donahoe, 1992). Examples of essentialism in both scientific and lay discussions of the natural world abound. Much time and effort are spent classifying organisms as one race or another or one type of dog or another, to say nothing of more complex dichotomies such as good

and evil. In so doing, we behave as though there is some underlying immutable essence that makes one person black and another person white, one dog a pug and another a chihuahua, or one person good and another person evil. Certainly, such distinctions serve a purpose insofar as they facilitate discussion (both scientific and casual), foster research, and so on. In the final analysis, however, we must remember that these are convenient categorical distinctions only and do not reveal any deep and immutable characteristics of the organism or the behavior under consideration.

Elegant descriptions of and arguments against essentialistic thinking in the natural sciences have been provided elsewhere (e.g., Mayr, 1988), and they will not be repeated here, but a brief discussion of the relations to behavioral science is warranted. Behavior analysis is a selectionist science, like biology, insofar as it explains behavior largely as a product of operant contingencies of selection (reinforcement) that operate on populations of behavior during the lifetime of the organism. Behavior cannot be considered independent of the contingencies of which it is a product, and these contingencies are subject to change over time. This means that the populations of behavior are not static; aggression at one point in time might look quite different from aggression at a later point in time. There is no underlying characteristic or essence that defines a class of behavior. Palmer and Donahoe (1992) elegantly contrast the essentialist and selectionist perspective as follows:

Contingencies of selection do not yield rigid, static, or idealized species, nor do they select rigid, static, or idealized properties of species. The selected property, be it a morphological feature or a behavior, can vary in any arbitrary characteristic that is incidental to the contingency, but, more fundamentally, it can even vary along the dimensions that are defined by the contingency. A selection

contingency merely sets minimum standards for a property; it does not provide a blueprint. Variation within the boundaries of the selection contingencies will be constrained only by those mechanisms that generate variability in the property. The critical difference between essentialism and selectionism, then, is that selectionism regards variability within classes of phenomena as fundamental, whereas essentialism regards it as a misleading irrelevance. (p. 1346)

To call for an unequivocal definition of verbal behavior is to commit the essentialist error insofar as such a definition is predicated on the existence of some underlying characteristic of verbal behavior that distinguishes it from nonverbal behavior (cf. Leigland, 1997; Schlinger, 2008). The central thesis of Skinner's *Verbal Behavior* (1957) is that verbal behavior is not special in any fundamental way, and his definition should be considered accordingly.

THE IMPLICATIONS FOR SKINNER'S TAXONOMY

Practically, behavior analysts are most concerned with understanding the function of a particular class of behavior and speak of functional response classes rather than specific topographies or general categories. For example, we deal with escape-maintained behavior, no matter the topography, more effectively than we can deal with aggression, no matter the function. The heart of Skinner's (1957) analysis of language, his functional taxonomy of behavioral units, is rooted in this tradition, even if his categorical definition of verbal behavior is not.

At this point, the issue of *function* in behavior analysis merits some attention. Typically, the term is used in one of two ways. First, it is used to denote the effect that behavior has on the environment. For example, a pigeon might peck a key because doing so has reliably produced grain, or a child might display aggression because doing so has characteristically resulted in the lessening or removal

of task demands. That is, the function of the key peck is access to grain and the function of the aggression is escape from task demands. Second, the term can describe a relation between two variables in which one varies given the presence or absence of the other. For example, locomotion in the wood louse varies as a function of ambient humidity. When the humidity is low, its legs move. When humidity reaches a sufficient level, the legs stop. There is, then, a functional relation between humidity and locomotion. The same could be demonstrated for, say, task difficulty and aggression in a young child or a shy adult biting his nails in the presence of strangers but not in their absence.

In *Verbal Behavior*, Skinner (1957) offers a comprehensive analysis of elementary behavioral units that comprise a language repertoire. In so doing, a number of basic verbal operants are defined in terms of the characteristic antecedent control exerted over particular response forms. A mand, for example, is described as a behavioral unit for which the response form is controlled by some currently effective motivating operation and for which a history of reinforcement specific to that motivating operation—and mediated by a member of the verbal community—serves to establish and maintain that response form. This definition of a behavioral unit is indeed functional, in that it specifies the conditions with which the response form will covary as well as the characteristic reinforcement that follows. It also is in no way constrained by any general definition of verbal behavior. The taxonomy stands on its own because it is simply a detailed analysis of the types of stimulus control that can develop over responding, verbal or otherwise. Arguably, it is this functional taxonomy that is the essence of Skinner's analysis and the greatest contribution thereto, his definition of verbal behavior notwithstanding.

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The preceding arguments are not meant to prove or disprove Skinner's (1957) analysis of verbal behavior. Rather, they are intended to show that a behavioral analysis of language is not dependent on Skinner's definition of verbal behavior or any other. Examples from notable proponents of relational frame theory (e.g., Hayes & Barnes-Holmes, 2004; Hayes et al., 2001) have been used throughout the paper, not to provide a critique of relational frame theory, but only because they provide the clearest criticisms of Skinner's definition from within the behavior-analytic community. An analysis of relational frame theory is beyond the scope of this paper (but see Palmer, 2004a, 2004b). It does seem that too much is made of the inadequacies of Skinner's definition by some relational frame theorists, however, even though their analysis of language is no more dependent on such a definition than is Skinner's. If it all is just behavior, then it seems odd to make so much fuss over the definition of verbal behavior when no such fuss is made about other behavioral categories. In essence, we could forego altogether any general definition of verbal behavior and proceed unimpeded into a functional analysis of language. Perhaps we should.

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