

## On Terms

### Two Suggestions for the Verbal Behavior(s) of Organisms (i.e., Authors)

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A little-appreciated, or at least little-discussed, variation in terminology among behavior analysts (and other behavioral scientists, for that matter) is in the use of the expressions *a behavior* and *behaviors* (instead of just *behavior*). In fact, even between the two primary empirical behavior-analysis journals there are differences in usage, presumably as a function of editorial and publication practices. Such usage (*a behavior*; *behaviors*) is almost never to be found in the *Journal of the Experimental Analysis of Behavior (JEAB)*, but it occurs frequently in the *Journal of Applied Behavior Analysis (JABA)* (and many other publications, as well).

In terms of English usage, it appears that *JABA* at times treats *behavior* as if it were a countable (or count) noun, whereas *JEAB* almost always treats it as a mass noun. Both types fall under the more general heading of collective nouns, which usually take a singular verb. Thus, *furniture is* and *a team is*. There are many mass nouns in the English language (e.g., *water*, *luggage*, *honesty*), and, interestingly, most gerunds are mass nouns (e.g., *looking*, *listening*, *running*, *talking*, *pressing*, *moving*, etc.). That is, words that stand for activities that are often specific instances of behavior are themselves mass nouns. Thus, even the constituents of a behavioral repertoire are mass

nouns. That view is supported by the fact that dictionary definitions of *behavior* are generally that it describes “the manner of conducting oneself” (e.g., *Funk & Wagnalls Standard College Dictionary*, 1968; *Merriam-Webster’s Collegiate Dictionary*, 2003), and thus include a gerund. The issue raised by the difference in publication practices between *JEAB* and *JABA* is whether the word *behavior* should be treated as a mass noun. Interestingly, it is possible to find instances in which expressions like *problem behavior* and *problem behaviors* occur only a few lines apart in the same publication, attesting either to the ambivalence of authors or to the making of an esoteric point. We find it notable that Skinner’s three major books all treat *behavior* as a mass noun. The titles *The Behavior of Organisms*, *Science and Human Behavior*, and *Verbal Behavior* make reference to a multiplicity of activities under a wide variety of circumstances, yet the nonplural word *behavior* is used to encompass those ranges. The main purpose of this paper is to argue that *behavior* is best considered a mass noun, and it therefore should be treated as such grammatically. The purpose is not to chastise authors who have failed to use *behavior* as a mass noun; even the second author pleads guilty to past indiscretions as a *JABA* author. But, the term *behavior*, after all, represents our primary subject matter, so our hope is to promote a grammatically consistent and precise usage among behavior analysts.

One characteristic of mass nouns is that they cannot be preceded by the in-

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definite article as a determiner. For example, to say *a furniture*, or *a running*, or *an anticipating* is ungrammatical. To employ the indefinite article before a mass noun, additional words are necessary. For example, one may speak of a piece of furniture or an episode of running. Mass nouns also can be identified by ascertaining which other determiners are appropriate for use. Specifically, mass nouns may be preceded by *much* but not *many*, by *little* but not *few*. *Many* and *few* are appropriate for countable nouns, but not for mass nouns. *Behavior* passes these tests based on which determiners are appropriate, and it therefore is readily identified as a mass noun.

The first suggestion from the foregoing analysis is that the expression *a behavior* be avoided because of its lack of conventional grammaticality. A second suggestion concerns the use of the word *behaviors*. Because *behavior* is a collective noun (of the mass type), it, like other collective nouns (e.g., *committee*, *orchestra*, *oxygen*), refers to an aggregate, although, because it is a mass noun too, not a countable total (cf. the mass noun *sand*). It therefore already refers to a constellation of activities that might lead one to speak of *behaviors*. Thus, our second suggestion is to avoid using *behaviors* because *behavior* already encompasses the idea of a collection.

Mass nouns are a special case of collective nouns because the plural (e.g., *waters*, *sands*, *meats*), if allowable at all (cf. the nonwords *courages* or *knowledges*), implies different types or sorts. That is, many mass nouns do permit a plural, but when they do the plural generally has a special quality. For example, when one speaks of *sands* the reference is not to the individual grains, but to different sets of collectives. When people speak of *behaviors*, however, it is frequently the case that they are speaking of individual instances or classes. Thus, *behaviors* might be appropriate when speaking of different sorts or types, but it is not always clear what it means to sort

behavior into different types. With *meats*, we can speak of pork, chicken, beef, and others because of their fundamental differences in structure. We could also sort meats into different categories based on any number of arbitrary characteristics like weight, fat content, and so on. We usually do not do so, however, because those do not represent any fundamental differences. Can we differentiate behavior into types as we do meat? Our view is that that it would be difficult, at best. Distinctions, like *aggressive* versus *socialable*, are problematic because they are based more on topographical or potentially superficial distinctions (cf. T-bone and sirloin). That these behavioral distinctions are dissimilar from those that can be made for meats is supported by the fact that one is unlikely to say *beef meat*, whereas speaking of *aggressive behavior* is perfectly appropriate, and common. Beef is a type of meat, but aggressive is not a fundamental type of behavior. Interestingly, as behavior analysts we usually speak of two major types of behavior, operant and respondent, which might be presumed to be analogous to the different types of meat just mentioned. *Behaviors*, therefore, might refer to a constellation that includes operant and respondent as types, but such use seems rare, at best.

In defending the use of *a behavior* and *behaviors* as technical terms, one might refer to the fact that there are many students of behavior (certainly numbering at least in the thousands) who have used them, but widespread use of any locution is not necessarily an adequate defense of a way of speaking (e.g., "A mental executive function was responsible for the behavior," or "The sun travels around the earth"), especially when one is speaking scientifically. At issue is a point of clarity and precision. If the word *behavior* is a mass noun that can take a plural (as *sands*, *waters*), then it is important that everyone understand what the plural implies. In the case of a word like *salads*, there is not very much to recom-

mend using only the mass form, because little by way of confusion can arise. (Salad is occasionally a mass noun in that one can speak of salad as a collective as in, "Salad is good for you." One could, of course, also say, "Salads are good for you.") Can we say the same about *behaviors*? Our view is that we cannot.

Consider the problem of three reinforced lever presses by a rat. Is that three *behaviors*? Each one will be topographically distinguishable (Skinner, 1935), so in that sense we might be tempted to speak of three *behaviors*. We think most behavior analysts would at least pause before claiming that the three lever presses are three *behaviors* or that each one is *a behavior*. More likely, they would be considered three instances of a single type of behavior because they are part of a single response class. The issue becomes more critical, one would think, in the applied realm, where grossly different topographies might have the same function (see Iwata, Dorsey, Slifer, Bauman, & Richman, 1982/1994). Is it wise to call each different topography *a behavior* when the point of the analysis is to show that from a functional perspective the activities are not different? One point of potential conceptual confusion, therefore, when using *behaviors* to refer to different topographies that have the same function, is that the concept of the operant is degraded. Given that the operant is one of the most important theoretical concepts of modern behaviorism, it seems unwise to use locutions that can undermine it.

One might agree that it is not judicious to use *behaviors* when referring to instances within an operant class (something that occurs with considerable frequency in the current literature), but that it should be acceptable when referring to different operants. We see that as a defensible point, but it is not without its practical problems. In many cases, it is not known if different forms of behavior (or even more complexly, similar forms of behavior) are instances of the same operant. Us-

ing *behaviors* to describe such an array prejudices whether the activities ought to be considered functionally different, thus opening the speaker or writer to the same criticism behaviorists have raised for decades about classifying behavior before conducting a functional analysis. The entire issue is very easily avoided by consistently using *behavior* as a mass noun.

One might also argue that particular instances of behavior often are easily discriminable from one another, so it is sensible to count them as separate *behaviors*. That is not sufficient reason to pluralize a mass noun. Consider, for example, the mass noun *honesty*. It is easy to differentiate diverse instances of honesty. For example, one can be honest about money, about playing a game by the rules, or by confessing a lie, yet the fact that we could easily sort these different instances does not mean that we should refer to *honesties* or speak of each type as *an honesty*.

It is useful to note, too, that when differentiating instances of behavior based on their topography (e.g., contrasting walking with running), the names of the activities themselves are mass nouns. One would likely not speak of *a running*, *a walking*, *runnings*, or *walkings*. If one would not say *a running* when referring to that activity, why would one say *a behavior* when referring to it?

To sum up, we offer two suggestions for authors to consider. One, avoid use of *behaviors*, and, two, avoid the expression *a behavior*, at least when writing for a technical audience. The first of our two recommendations is easily implemented. One simply can use *behavior* when describing several kinds of activity. For example, the sentence, "The behavior studied included interpersonal aggression, property damage, and cursing," is just as clear as using *behaviors* in the second position, and it has the advantage of being clearly grammatical and not implying anything about different types. Using *behaviors* could imply that the activities are of a different sort or type, which

might be exactly the opposite of what one is trying to show.

Following the second recommendation is a bit more difficult. If one should not say *a behavior*, what can one substitute? In many cases the problem is simply circumvented by pointing to the actual operant or respondent. *A lever press*, or *a vocalization*, or *an eye-blink* are all crystal clear, specific, and grammatical. When speaking more generically, the words *activity* or *action* are often good, and grammatical, substitutes. Note that all the substitutes are countable nouns. If an author wishes to stick with *behavior*, an expression like *an instance of behavior* or words to that effect can suffice. Locutions like, "Kissing is a behavior that I like," are easily rephrased as "Kissing is behavior that I like," with no loss of clarity, and as an added bonus it has better parallel construction because kissing is a mass noun.

There are other reasons why behavioral scientists should care about this issue. One might well argue that even though *a behavior* is formally not grammatical, it is nevertheless not particularly ambiguous in everyday use. Most people assume it refers to some class of activity, and sometimes the specific activity is even provided, as in *drinking behavior* (which is interestingly redundant—if drinking is not behavior, what is it?). That argument, we believe, is not compelling for a few reasons. First, it leads to the view that

one should ignore any violation of grammatical or orthographical regularity that does not obviously diminish the effectiveness of the communication. Spoken verbal behavior already contains a multitude of such violations. One important function of written language, however, is to slow the evolution of oral practices so that talk retains its meaning. Second, the absence of mathematical formalisms to characterize the principles of behavior means that words must suffice. The words chosen, therefore, if the science is to advance most expeditiously, need to be as precise as possible, and as noted earlier, *a behavior* and *behaviors* open the door to ambiguity about type. Third, it seems appropriate that behavioral scientists in general and behavior analysts in particular should come to an agreement on the grammatical usage of the term that represents their primary subject matter.

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