

Up With This I Shall Not Put: 10 Reasons Why I Disagree with Branch and Vollmer on *Behavior* Used as a Count Noun

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Branch and Vollmer (2004) argue that use of the word *behavior* as a count noun is ungrammatical and, worse, mischaracterizes and ultimately degrades the concept of the operant. In this paper I argue that use of *behavior* as a count noun is a reflection of its grammatical status as a hybrid of count and mass noun. I show that such usage is widespread across colloquial, referential, and scientific documents including the writings of major figures in behavior analysis (most notably B. F. Skinner), books describing its applications, and its major journals. Finally, I argue against the assertion that such usage degrades the concept of the operant, at least in any meaningful way, and argue instead that employing eccentric definitions for ordinary words and using arcane terms to describe everyday human behavior risks diminishing the influence of behavior analysis on human affairs.

Key words: behavior, mass noun, count noun, language, behavioral grammar

In a widely distributed and possibly apocryphal anecdote, Winston Churchill, when admonished by a grammarian for using a preposition at the end of a sentence, retorted "Madam, up with this I shall not put." I, too, have been admonished for purported misuse of grammar, albeit typically behavioral grammar, but my ability to issue clever retorts has always fallen far short of Winston Churchill's. In fact, I usually say little because I regard these admonishments as unnecessary unless they occur in a context appropriate to their delivery (e.g., classroom, editorial correspondence). Moreover, I often yearn for simpler, more readily understood terms that might enhance my ability to communicate outside the field of behavior analysis. I mention this as a preface to a larger point I want to make; specifically, although precise use of technical terms is important in behavior analysis, establishing eccentric technical definitions that substantively deviate from existing definitions

for words in wide circulation may not serve the field of behavior analysis well.

The event that set the occasion for my making this point is the paper by Branch and Vollmer (2004), who argue that the word *behavior* should be used only as a mass noun. A mass noun refers to phenomena in the collective sense (e.g., *furniture*), cannot be pluralized (e.g., *furnitures*), and cannot be modified by an indefinite article (e.g., *a furniture*). The counterpart to the mass noun is the count noun (e.g., *wart*) which can be pluralized (e.g., *warts*) and can be modified by an indefinite article (e.g., *a wart*). I was a reviewer on the original submission, and although I admired the writing, logical argumentation, and intellectual sophistication of the Branch and Vollmer paper, I disagreed with its conclusions. Ever the enterprising editor, Carol Pilgrim elected to publish that paper along with this one containing an elaboration of my reviewer comments. Below I supply 10 reasons why I disagree with Branch and Vollmer.

1. No authoritative precedent. Said differently, where is an authoritative

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technical definition of behavior that specifies explicitly its mass nounness (I made that last word up)? I was unable to find a clear, unequivocal source. For that matter, I had a hard time finding unclear, equivocal sources. This does not mean one does not exist somewhere, just that my search was unsuccessful. The word *behavior* is defined in places (other than dictionaries; see Point 5) too numerous to count. I read about 20 definitions before giving up on finding one that specified its status as a mass noun. I came close, though, in two places. The first was in the fourth edition of Catania's (1998) highly influential textbook on learning. Its glossary states that *behavior* is often substituted for *response* and is pluralized or modified by an indefinite article. It goes on to say that such usage is colloquial but supplies no supportive reference. Nonetheless, I was not displeased with Catania's description. He did not dispute its grammaticality, only its technical status. I think we can do better than that, but it is a good start.

The second place I found a little definitional help with *behavior* was in the persuasively argued paper on behavioral language by Hineline (1980). He allows that both count and mass noun usages of *behavior* exist, uses the word *water* (i.e., *a water*) to raise suspicions about the grammatical status of the count noun usage (but there are more supportive examples; see Points 2 and 8), and expresses ambivalence about the trend towards such usage. I was also not displeased with this position because I preferred the openness in it to the restrictiveness found in the Branch and Vollmer paper. More generally, the upshot of this first point is that I found no authoritative reference for rejecting the grammaticality of *behavior* used as a count noun. I realize the appeal to authority is not necessarily the best way to support an argument, but the scarcity of authorities and authoritative sources to which an appeal could even be made does not inspire agreement with Branch and Vollmer's position.

2. *There is a middle term.* A major problem with intellectual debates is that the issues being debated are quickly polarized and middle terms are crowded out as debaters seek rhetorical advantage. A similar problem plagues political debates, as any Sunday political talk show reveals, and marital debates too, if my personal experience has any weight. But as dimensional approaches to measurement in psychology, probability approaches to observation in physics, and, of course, Zeno's paradox have shown, employing middle terms can increase rhetorical flexibility and intellectual productivity. Although informed parties, including Zeno himself if he were around, would probably argue that too many middle terms can actually annihilate productivity, that will not be a problem here because I will introduce only one: hybrid.

More specifically, some words can function grammatically as both count and mass nouns and thus are hybrid nouns. There are many examples (e.g., *onion, cake, salad*). "I use onion in cooking" (mass) versus "I ate three onions" (count); "I love cake" (mass) versus "I sold three cakes" (count); "I ate some salad" (mass) versus "There are six salads on the table" (count). All of these uses are grammatical, none pose a danger to clear communication, and the technical roles of each noun—to the extent they have technical roles—are not undermined by the dual uses. Hybrid nouns are perhaps better examples for assessing the grammatical status of *behavior* used as a count noun than the examples given by Branch and Vollmer (e.g., *a furniture*) and Hineline (1980, *a water*). Fortunately for this point, there are numerous hybrid nouns to choose from, several of which pertain to behavior, as we shall see in Point 8.

Relatedly, Branch and Vollmer use a single, narrow definition of behavior from Webster's and Funk and Wagnalls' dictionaries ("the manner of conducting oneself") to make their argument that *behavior* functions as a

mass noun. But most dictionaries (including Webster's cited by the authors) provide at least one other definition of behavior, usually a variation on "the actions or reactions of persons or things" (e.g., Soukhanov, 1992) and it supports my argument that *behavior* can also function as a count noun and thus is better viewed as a hybrid (more on this in Point 8).

3. *Language changes, and grammar changes with it.* Language changes with use or, as our more animistic, colloquial colleagues are wont to say, language is a living thing. I don't know if I want to go that far, but even a small sojourn into the *Oxford English Dictionary* shows that words have a connotative and denotative plasticity. For some words, that plasticity involves a shift in usage from mass noun to mass and count noun hybrid. For example, *e-mail* started out as a mass noun (e.g., "Do you have e-mail at your office?") but at some point thereafter, as e-mails began to accumulate in e-mail boxes, its status as a count noun emerged (e.g., "Did you receive the e-mails I sent?"). A similar change seems to have taken place with *behavior*. In his early writings, Skinner used *behavior* only in mass noun form, as indicated by Branch and Vollmer, but in his later writings (see Point 6), it began to emerge as a count noun too (the alert reader will note that the word *writing* is a gerund that functions grammatically as hybrid mass and count noun).

4. *The masses do it.* As indicated above, a usage test for mass nouns is that they cannot form plurals (e.g., "mass noun: a noun that does not form plurals," dictionary.com; see also hyperdictionary.com—mass noun). When *behaviors* is entered into a Google.com advanced search, more than three million references emerge. So the plural form of *behavior* is commonly used. This fact does not refute Branch and Vollmer's point that behavior used as count noun is ungrammatical (e.g., *ain't* is referenced millions of times too). But it does indicate that a lot of

people write this way (or a few people write this way a lot).

5. *Dictionaries and encyclopedias do it too.* Perhaps the millions of references with *behaviors* yielded by Google are composed of the colloquial usages to which Catania (1998) referred. So I modified my search in various ways to winnow out colloquial writing. One version involved only dictionaries and encyclopedias, and it yielded more than 50 references. One, in the *Oxford English Dictionary* (1971), was to a text published in 1538, indicating that *behaviors* has been around a long time. But then I began to simply look through the millions of references from the original search, and there, using some unsophisticated sampling methods, I found that many thousands of references with the word *behaviors* were from journals (*JABA* notably among them), technical manuals, edited books, and many more encyclopedias and dictionaries than yielded by my earlier, more narrow, search. The dike behind which use of *behavior* as a count noun is contained, so to speak, seems to have sprung a pretty big leak.

6. *Behavior analysts do it too.* Following these searches, I began to look through references I had at home, and I had to expand my estimate of the size of the leak. For example, I quickly found places where Skinner used *behavior* in plural form (e.g., Skinner, 1966, 1968). A little more searching yielded many others (e.g., Baer, 1986; Bijou & Baer, 1961, 1965, 1967; Donahoe & Palmer, 1994; Fantino, 1973; Herrnstein & Prelec, 1997; Lubinski & Thompson, 1986; Mazur, 1990; McSweeney & Swindell, 1999; Nevin, 1973; Rachlin, 1980; Reynolds, 1975; Thompson & Zeiler, 1986). These authors are among the major architects of the field of behavior analysis, and they are not the only technical contributors to the leak. *Behavior* is frequently used as a count noun in *JABA*, and I had little trouble finding examples in *JEAB* (e.g., Dews, 1970; Winokur, 1971). I also checked my 10 or so handbooks

on applied behavior analysis and behavior modification. All of them—not just some, all—employ *behavior* as a count noun. I cite only two here (Martin & Pear, 1992; Miltenberger, 2001) by way of example. Looking over the extent to which *behavior* is used as a count noun reveals that this usage has a widespread colloquial and technical acceptance. Those who hope to plug the leak in the dike are going to have to use more than a finger.

7. *If it sounds good, do it.* One, albeit occasionally unreliable, way to test for the grammatical status of a word or phrase merely involves listening. If spoken usage sounds grammatical, it usually is. There are various listening tests for the grammatical status of mass versus count nouns in addition to the pluralization test already discussed. One test involves how the nouns behave (sound) in interrogatives. Consider “How many pennies did you take?” versus “How many milks did you drink?” The ungrammatical nature of *milks* is clear to the ear. So how does *behavior* behave in interrogatives? How many behaviors did you see? Sounds right to me. Another test, alluded to previously, involves the indefinite articles. Mass nouns usually cannot be preceded by these articles, as indicated by Branch and Vollmer: “For example, to say *a furniture* or *a running . . .* is ungrammatical” (p. 96). They also describe some other listening tests. For example, “Mass nouns may also be preceded by *much* but not by *many* and by *little* but not *few*. *Many* and *few* are appropriate for countable nouns, but not for mass nouns” (p. 96). Branch and Vollmer follow this statement by asserting that *behavior* behaves like a mass noun and not a count noun when preceded by these determiners; thus, using *behavior* with the determiners is ungrammatical. My ear leads me to a different conclusion. It is entirely appropriate to my ear, and apparently to the ears of many others as well, to say *a behavior*.

Entering *a behavior* into a Google.com search yields several hundred

thousand references. Admittedly, some of these are adjectival or adverbial, but many thousands are in noun form with the indefinite article in the determiner position. Back to the ear test, compare “Spitting is a behavior I find distasteful” with “The couch is a furniture I like.” The former is common usage and comfortable to my ear, whereas the latter is not. In addition, *many* and *few* are determiners that can be used with *behavior* in its plural form—*behaviors*. For example, “Many behaviors are covert” or “Few behaviors are as gross as spitting.” The ear test is a weak one, I admit. Behavior analysts who adhere to the early Skinner tradition may readily discriminate *behavior* used as a count noun and find it aversive—as aversive as others might find statements such as “I’m going to buy a bunch of furnitures for my house” or “I’m going to put an air in my tire” (e.g., Branch & Vollmer; Himeline, 1980). Although I am tempted to argue that statements such as “I am going to target several behaviors in this program” or “I am going to put a target behavior on extinction” sound far more grammatical than the previous statements, my liberal learning history no doubt plays a functional role in these appraisals.

8. *Where is the harm?* How does using *behavior* as a count noun negate, contradict, undermine, or violate the assumptions of behavior analysis? Many behavior analysts have written on the distinct language of the field and how important maintaining its idioms is to the integrity of the behavioral worldview. Prominent among them is Himeline, who often persuasively argues that various technical idioms should be maintained because surrendering to colloquial alternatives would mean endorsing language that actually undermines fundamental assumptions (e.g., Himeline, 1980). For example, there are many common expressions that tacitly assume the actor as the determining agent of his or her own responses and neutralize, by omission, the influence of environmental vari-

ables (e.g., “she made herself quit”). Although these expressions are widely used and pass listening tests (for everyone but behavior analysts), they undermine, or at least obscure, the role environmental variables play in determining human behavior. Thus, in technical expression, at least, they are to be avoided.

But what fundamental assumption of behavior analysis is violated by using *behavior* as a count noun? True, we are to think of behavior as a stream of events, but carving the stream into units for ease of description, discussion, or analysis and using *behavior* as a count noun to discuss the carvings seems to pose no danger to the field. Branch and Vollmer address the potential danger with a two-point argument. The first part attempts to show that behavior cannot be sorted into types other than respondent and operant. Yet all of the major behavior-analytic authors I consulted (e.g., Skinner, Keller, Ferster, Azrin, Catania) discuss numerous types of behavior, including verbal, nonverbal, rule governed, contingency shaped, schedule induced, adjunctive, reinforced, unreinforced, instinctive, high rate, low rate, superstitious, target, covert, overt, and many others.

The second part of the argument asserts that using *behavior* as a count noun and discussing or sorting behavior using any terms other than functional (e.g., topographical) degrade the concept of the operant. A sobering concern to be sure, but one readily assuaged. The three major architects of applied behavior analysis used the word *behavior* in mass and count noun form and discussed behavior in both functional and topographical terms in the paper that inaugurated the field (Baer, Wolf, & Risley, 1968) and regularly in their abundant writings that followed. Whether these individuals thereby degraded the concept of the operant is a question for readers to consider. As they do so, they should note that if their answer is “yes,” then presumably they must also include as codegraders most major behavior ana-

lysts, including Skinner himself. In case it is not obvious, my answer would be “no.” Carving the stream of behavior into units described as behaviors seems to allow for ease of expression and understanding. Furthermore, there are several synonyms for, or words related to, *behavior* that have hybrid count and mass noun forms, are often used in technical description and discussion, and yet pose no apparent threat to the field.

I’ll start with an example on the first page of the Branch and Vollmer paper. It states that “words that stand for activities that are often specific instances of behavior are themselves mass nouns” (p. 95). The word *activities* in that sentence is in its plural form and thus is a count noun, but it also can be used as a mass noun (e.g., “too much activity for me”) and thus is a hybrid. *Activity* is widely used as a synonym for behavior by dictionaries, many behavioral investigators, and Skinner himself (e.g., Ferster & Skinner, 1957). The word *movement* is similar in that it has hybrid mass and count noun functions (e.g., “we saw a lot of movement along the border,” “we have been keeping track of Friman’s movements”) and is used as a synonym for behavior by many behavior analysts, again including Skinner (1953). So if *activity* and *movement* are words with grammatical hybrid status and are acceptable as synonyms for *behavior*, on what grounds is the grammatical hybrid status of *behavior* ruled out? Consider too that there are many other examples of words that have grammatical hybrid status and are used in technical accounts involving behavior (e.g., *frequency-frequencies*, *association-associations*, *observation-observations*, *sensation-sensations*, *perception-perceptions*, *emotion-emotions*, etc.). What is the crucial characteristic that distinguishes *behavior* from all of these other words in such a way that its grammatical form and function are so much narrower? Why are the other words allowed grammatical hybrid status and *behavior* is not?

From a different perspective, as indicated above, basic and applied behavior analysts have been using *behavior* as a hybrid noun for many years. Given this extended history, the credibility of a case that such usage could be harmful depends on evidence of harm that has already occurred. Has the longstanding and widespread usage of *behavior* as a hybrid noun harmed the field, slowed behavioral analysis, or dissipated behavioral influence? Branch and Vollmer supplied no evidence that it has.

9. *Why make communicating any harder than it already is?* If the field were to adopt Branch and Vollmer's position, the ease of communication that results from accepting the hybrid status of *behavior* would be lost. Consider "How much behavior did you see?" Such a question is impossible to answer. Pluralizing *behavior* and reformatting the sentence for a plural object makes the task of the listener much simpler: "How many behaviors did you see?" Obviously, further clarification is possible, but the simple act of pluralizing *behavior* transforms a question from one that cannot be answered to one that can. Allowing *behavior* to be used as a plural count noun also allows it to be employed in a form that is parallel to, or symmetrical with, other count nouns. Consider expressions pertaining to systematic replication in applied behavioral analysis. The major classes for systematic investigation are populations, settings, and behaviors. Note the symmetry. All three classes are pluralized. Grammar manuals describe this as parallel construction and recommend it because the symmetry eases the job of reading related sentences and enhances their aesthetic appeal (e.g., Johnson, 1991). If the use of *behavior* in plural form is disallowed, however, a nonparallel form has to be used when discussing systematic replication. True, this is a small point and one that may matter to few. But there are many other examples of improved or at least eased communication that

results from using *behavior* as a count noun.

A behavioral analysis of the use of *behavior* as a count noun would probably yield reduced effort and enhanced aesthetic appeal as functional variables. For example, I use *behavior* as a count noun presumably because doing so makes expressing related thoughts easier for me and sound better to me, although I confess I had not thought about it prior to reading Branch and Vollmer's thought-provoking paper. Count noun usage seems to come more naturally to me, sounds appropriate, and may reduce the risk that listeners (from outside the field) think I am obfuscating a well-understood, widely circulated term by implying that it has an eccentric but technically correct behavior-analytic denotation. I also do not believe behavior analysis would be served well by substituting *response* for *behavior* to establish *behavior* as a mass noun. Behavior analysts are still suffering from a spurious but nonetheless real and widespread association with associationism. We say "response" and the listener thinks "stimulus," which brings up Pavlov; we do not want that bell to ring every time we talk.

10. *Plain speaking please.* My final point is actually closest to my heart, which means it will probably be the most ardently and least cogently made. At the outset, let me say that I love behavior analysis, behavior analysts, and all the wonderful things I get paid to do because of the science B. F. Skinner essentially created. Having said that, however, I confess to being regularly bothered by the way behavior analysts talk. I believe the type of talking to which I refer has contributed to the diminished (and possibly diminishing; see Robins, Gosling, & Craik, 1999) influence behavior analysts have over human affairs. One question that has lingered, largely unanswered, since Skinner asked it in the early 1980s involves variations on "We happy few. But why so few?" I'd like to suggest one possible reason: We have an odd,

difficult-to-understand, and difficult-to-adopt way of speaking. Contributing to the problem is the practice of using eccentric definitions for terms in wide circulation and arcane terms for ordinary events. But the subject matter of behavior analysis does not involve some incomprehensible dimension of the material world to which few have access. It is not some mysterious aspect of life that occurs at the subatomic level, 20,000 leagues under the sea, or on Mars. The subject is human behavior, pure and simple. But when we talk about human behavior it often sounds like we are talking about some enigmatic phenomena that can only be seen with spectrometers, touched with mechanical arms, or measured in nanograms. When is the last time someone in your family used the word *autoclitic* at the dinner table? I admit *autoclitic* and its arcane companions (e.g., *ply*, *tact*, *intraverbal*) have important technical uses, but beyond a very narrow range of technical communications outside the classroom, any use is a threat to clear communication. And clear communication is central to dissemination and influence.

We behavior analysts are people talking about people and the things people do and why they do them. If the object of our interest is hitting and spitting, let's just say "hitting" and "spitting." Subsequently, when we are gathering our thoughts with a collective term, we can—with more than just impunity, with an actual gain to communication—call them *behaviors*. When and where appropriate, we can insert a caveat that although we have referred to hitting and spitting as different behaviors, they may have similar functions. In other words, we gain more than we lose by speaking more like people, plain ordinary people. The last thing behavior analysts need is yet another way to distinguish themselves from the mainstream of plain speaking and another reason to police the speaking of others.

In conclusion, although I disagree with Branch and Vollmer's conclu-

sions, I am indebted to them for taking the time to write the paper and write it so well. Reading it helped to clarify my thoughts on usage of the term most central to my chosen field, a topic to which I had given no previous thought, much to my embarrassment. The paper is explicitly directed at authors, although by going beyond concerns about the technical uses of *behavior* as a count noun, by actually impugning the grammaticality of that usage, the paper has a more general implicit target (i.e., English-speaking people). A much smaller, but nonetheless important, target involves journal reviewers and action editors, roles I often play. The paper, it seems, is exhorting me in that role to inform submitting authors that although the subject matter of behavioral analysis is behavior, there are no such entities as behaviors. True, there are emotions, perceptions, activities, associations, observations, and movements and the like, but no behaviors. More generally, I am to tell submitting authors they are not to use *behavior* as a count noun because doing so is not grammatical and, worse, degrades the subject matter of behavior analysis. The Branch and Vollmer paper, however, has left me bereft of a persuasive response should the submitting authors object by informing me that *behavior* is regularly used as a count noun by millions; is found that way in hundreds (probably thousands) of encyclopedias, dictionaries, manuals, textbooks, handbooks, and professional journals of every stripe including behavioral stripes; has been used that way by many of the most influential investigators in the history of behavior analysis, including B. F. Skinner himself; and has most likely been used regularly that way in the journal to which they have submitted their paper. Were I to insist, despite the objection, a reasonable response from submitting authors would be—up with that we shall not put.

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