

# On Verbal Behavior: The First of Four Parts

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**Editor's note:** Interest in the behaviorological analysis of verbal behavior continues to grow. For example, after this editor presented, in June 2002 at universities in Beijing and Xi'an, China, a lecture that surveyed verbal behavior analysis and applications (Ledoux, Michael, & Miguel, 2002), university administrators there successfully asked administrators at my campus (SUNY-Canton) to arrange for me to teach our verbal behavior-related courses, including our prerequisite "introductory behaviorology" course, regularly and asynchronously to their students. (Those courses are equivalent to these TIBI courses: BEHG 101-Introduction to Behaviorology I, BEHG 355-Verbal Behavior I, and BEHG 475-Verbal Behavior II. The syllabi for these courses [will] appear, respectively, in these issues of *Behaviorology Today*: volume 7, number 2 [two courses], and volume 8, number 1.)

To help support this and all kinds of interest in verbal behavior, *Behaviorology Today* presents the first part in a four-part series on verbal behavior. The remaining three parts will appear in the next three issues. All four parts derive from a chapter of the author's book *General Behaviorology: The Natural Science of Human Behavior*. (See [www.behaviorology.org](http://www.behaviorology.org) for more detail on this book.)

For each part, the headings hint at the contents:

✂ Some interesting headings in *Part 1* are: Terminological Issues, The Antecedent Control of Verbal Behavior, How Instances of Verbal Behavior are Classified, and The Mand.

✂ In *Part 2* some interesting headings are: Verbal Behavior Under the Control of Verbal Stimuli, The Tact, Abstraction, Private Events, Reality, and Temporal Relations.

✂ Some interesting headings in *Part 3* are: Autoclitic Verbal Behavior, Descriptive Autoclitics, Autoclitics that Function as Mands, Qualifying Autoclitics, Quantifying Autoclitics, Grammar and Syntax as Autoclitic Processes, and The Nature and Occurrence of Composition.

✂ In *Part 4* some interesting headings are: The Private Verbal Behavior of Thinking, The Productivity of Thought, The Utility of Thought, Issues of Privacy and Antiquity, The Absence of Thinking, and Nonverbal Consciousness.

Here is Part 1.—Ed.\*

## Part 1

### Introduction

Verbal behavior is a class of operant behavior that is defined in terms of its special conditioning history. B.F. Skinner developed the conceptual scheme of analysis by which we now identify verbal behavior and distinguish among its various subclasses. Skinner's seminal classic, upon which he had worked for a quarter of a century, was published in book form in 1957 under the title *Verbal Behavior*.

### Definition

Skinner later commented on the progress in the field of verbal behavior in an article entitled "The Evolution of Verbal Behavior" (1986, *Journal of the Experimental Analysis of Behavior*, 45, 115-122), in which he presented his current definition of verbal behavior: "...behavior that is reinforced through the mediation of other people, but only when the other people are behaving in ways that have been shaped and maintained by a verbal environment or language" (p. 121).

The functions that are involved in the conditioning of verbal behavior are definitive of the general class denoted as social behavior. Just as most lifting behavior (but not all) is exhibited by arms and hands, much verbal behavior is exhibited publicly by the vocally-related musculature. However, in a community of deaf people, the hands exhibit verbal behavior when the community members are signing to one another. Another large subclass of verbal behavior is private and occurs to special parts of the nervous system.

Verbal behavior is defined functionally rather than formally. That is, verbal behavior, as a whole, is defined as such in terms of *how* it is conditioned, shaped, and maintained—that is, by how it is affected postcedently. However, as will be revealed later in this chapter, subclasses of verbal behavior can be distinguished in terms of how instances of each class are subsequently being evoked.

Although verbal behavior often manifests in familiar forms, its form is irrelevant to its qualification as verbal behavior per se. For example, while some verbal behavior manifests vocally, and some manifests as movements of arms, hands, and fingers, other more private varieties are lumped together under the popular general term *thinking*—a kind of behavior that occurs to nerves. Various kinds of such private verbal behavior are respectively implicit in terms such as *being aware*, *perceiving*, *visualizing*, and *problem solving*, although not all behavior in these categories is verbal.

\*The author's footnotes are at the end of the paper.

## ***The Conditioning and Control of Verbal Functions***

While verbal behavior is reinforced only through the mediation of another person, its mere exhibition does not require the participation of such a person. Verbal behavior is commonly evoked in the absence of another listener, but such instances go unreinforced socially. The person who contacts a hat may say, audibly, *That is a stylish hat*, but in the absence of a listener who can provide reinforcers, that statement goes without extrinsic social consequence. However, because a verbal response is heard by its speaker, it may in a sense reinforce itself (a type of automatic reinforcement). The evidence is the repetition, on similar occasions, of that behavior by lone speakers, who, in common parlance cast in agential terms, may be described as persons who like to listen to themselves talk. After all, an intrinsically reinforcing aural stimulus impinging in the form of sound waves is not stripped of its intrinsic reinforcing qualities when it impinges on the ear of the speaker from whom it originated. Speech that fails to reinforce its own production behavior is subject to a kind of intrinsic extinction. It can be sustained only on the basis of reinforcers that are supplied from extrinsic sources, which requires one or more other listeners.

The more effective reinforcement of verbal behavior is supplied by members of a remote audience. Therefore, after repeated reinforcement in the presence, and extinction in the absence, of a listener, a particular verbal behavior will tend to occur only in the presence of a listener. Such a listener must share salient characteristics with the listeners who have played a role in the conditioning history of that behavior. That is why, if previously on city streets one has been successful in asking for directions only from the uniformed police officers among all types who have been asked, one eventually tends not to ask directions of other kinds of people on city streets. However, as the aversiveness called *desperation* intensifies, the asking behavior may come increasingly under stimulus control of the more common features of passersby, and the range of persons to whom inquiries are directed expands accordingly.

Being operant in nature, verbal behavior is evoked by events in the environment. Its rate or its relative frequency is subject to change as a result of its consequating stimuli, which audience members must mediate. That is, verbal behavior, however evoked, may then be reinforced, punished, or extinguished—a characteristic that identifies verbal behavior as operant behavior. Thus, to survive in a person's verbal repertoire, a specific verbal behavior must be selected for that survival by its consequences—meaning, of course, that, if it is to continue reliably to occur on such occasions, it must be reinforced. During the conditioning

of a verbal behavior, the consequences are mediated by other members of the individual's verbal community.

## ***Verbal Communities***

A *verbal community* is a set of people who “talk” to each other—that is, who communicate among themselves through language, or more technically, whose linguistic behaviors are maintained by mutual reinforcement. We may speak broadly of the English-speaking verbal community or, more narrowly, of any of its many subcommunities. A verbal subcommunity may consist of the people living in an isolated region whose speech has evolved to manifest a unique dialect. The personal verbal community of *an individual* consists of just those other people with whom that individual interacts linguistically.

An established language (e.g., English, Japanese, Russian, etc.) represents a relatively stable pattern of verbal behavior that is maintained by the special sets of contingencies that are in place within that given verbal community. For example, on the occasion of confronting a drinking vessel appropriate for coffee, a speaker may be reinforced within an Italian verbal community upon an utterance of “tazza,” but similar reinforcement of that utterance would not occur in an English verbal community. There, the utterance of “cup” would garner similar reinforcers. “Tazza” and “cup” are merely vocal noises until a verbal community reliably reinforces their production only on specific kinds of occasions. Through that process, the production of those noises becomes verbal behavior, and those sounds become words in their respective languages. Thereafter, in those respective verbal communities, those terms are produced discriminatively in the presence of an appropriate kind of drinking vessel.

When one's behavior is being conditioned, for that behavior to be verbal requires that the consequences not only have to be provided by members of one's verbal community, but those community members have to be providing those consequences in ways that have been shaped and maintained by those persons' own verbal community. For example, when a student is given an unfamiliar object and put under contingencies to call it a *drassit*, the way in which the teacher then consequates the student's doing so must have been shaped and maintained by the teacher's own verbal community.

## ***Private Verbal Behavior***

Perhaps the most challenging aspect of verbal behavior is that, once it has been conditioned, much of it thereafter occurs privately, and only the person in whom it occurs is privy to it. That is because, in addition to audible, visible, or tactile verbal behaviors, which *are* readily detectable by other observers, verbal behavior can also occur in the form of private thoughts and visions, including those that we denote as comprehending, problem

solving, and daydreaming, which normally other people are unable to detect. For such privately occurring verbal behavior, the “speakers” serve as their own listeners.

Verbal behavior in the form of audible speaking involves a coordinated set of muscle-driven motor behaviors. Those vocalizations may be exhibited with decreasing intensity until so little sound is being produced that it cannot be heard. However, even more private forms of verbal behavior are executed entirely by specialized parts of the nervous system—forms of verbal behavior that may involve only molecular scale movements of neural body parts. This class of neural activity occurs among nerve cells. Such events involve the release or transformation of so little energy that they remain undetectable by outside observers unless those observers are specially equipped to conduct sensitive probing for such slight and often well insulated physiological activity. Thus, a person’s subvocal statement, “*It is going to rain soon,*” manifesting as a private thought, goes generally undetected in any direct way by other people (although neural physiologists, using special instrumentation, may be able to detect and measure some properties of the involved neural activity).

To the extent that it remains private, no opportunity is created for other members of the verbal community to supply consequences directly to that mini-scaled behavioral manifestation. Two points are relevant: First, the elements of that private subvocal speech were originally conditioned under public circumstances. That is, when the thinker was being conditioned originally to respond in that particular linguistic way to stimuli that typically precede rain, the speech was audible to members of the verbal community. They could then consequence it appropriately and with precision thus conditioning the person to exhibit that verbal behavior in a form that is common to that verbal community. When manifestations of that form of speaking recede to the private subvocal level of mere thought, those thoughts, which are manifesting only as neural activity, reflect the common language of the verbal community. As often noted, people think linguistically only in a language that previously they have learned.

Second, the current private thought may in turn share in evoking some publicly detectable behavior that can be consequted by the social community, such as reaching for an umbrella to be carried along on an outing. If that public gesture is then punished or reinforced by community members, those consequences affect not only the proximal publicly visible gesture but, to a lesser yet often significant extent, the preceding private verbal behavior that shared in evoking that public response. Much private verbal behavior is consequted indirectly in that way.

### ***Implications for Training***

Verbal behavior is both complex and important. As a phenomenal class, verbal behavior commands promi-

nence in behaviorological training curricula. Currently, within graduate degree programs in behaviorology, beyond the treatment of verbal behavior in introductory courses, from six to nine additional semester hours of advanced academic credit is deemed necessary.

The behaviorological approach to verbal behavior provides a new and different analytical scheme by which to teach native and foreign languages. The memorization of rules would be largely replaced by descriptions of functions and the pursuit of their implications. The study of grammar would move from surveys of contexts and corresponding forms to surveys of contexts and corresponding effects on audience members—and to feedback loops through which audience reactions would in turn affect the speakers’ verbal behaviors. That is, within language training programs, in general, importance would tend to shift from form to function, a more powerful analytical approach to linguistics that is made possible by the emergence of the necessary basic science.

### **Terminological Issues**

Traditional terms that are adopted from common language have the advantage of being readily comprehensible, but peoples’ responses to a traditional term tend to differ, and terms that are adopted from common language will often imply more than is appropriate in the technical contexts to which those terms should pertain. Furthermore, those extra implications are often precisely the implications that an appropriate technical term should exclude. That dilemma has often resulted in authors of scientific manuscripts coining new terms that they can then define with the necessary precision.

That is especially true of the new and different behaviorological analysis of verbal behavior—a familiar phenomenal class that since antiquity has been addressed from the fuzzy perspectives of common lore. B.F. Skinner found it necessary to coin several new terms when writing *Verbal Behavior*, as have various other behavior scientists when tinkering with Skinner’s analysis or extending it.

Let us consider a typical kind of example, pertinent to the analysis of a verbal episode, that often arises in the teaching context: From the behaviorological perspective, a speaker, in response to certain antecedent stimuli, exhibits a verbal utterance. A listener then responds in some way that provides consequences of that utterance. That consequence, which the speaker contacts as a result of the listener’s response, alters the controlling function between the speaker’s verbal behavior and the antecedent stimuli that originally evoked it—a change that tends to be revealed on future occasions of the speaker’s encounter with those stimuli. These events collectively exemplify the familiar operant conditioning process. Most students

in behaviorology courses, who must master these functional intricacies, have no difficulty with the common terms *speaker* and *listener* when following descriptions of these functional events and sorting out the roles respectively played by the two involved parties.

However, throughout the last part of the twentieth century most behaviorology courses had to be taught in psychology departments to superstitious students who were long committed to the assumption that bodies behaved in response to the will of implicit spirits called *selves* in secular contexts and *souls* in more spiritual contexts. According to the prevailing secularized presumption, the selves, in some proactive way, initiatively cranked the physiologically based “mental cogs” to produce decisions that, through the will of that self-agent, were compelled to manifest behaviorally. Behaviorological instructors, in attempting to supplant such mysticism with concepts of scientific naturalism, were often frustrated by the intransigence of those resident spirits, especially when they were cast in their religiously inspired *soul* personae.

Upon encountering the term *speaker*, typically, the mystical student at once assumed the presence of an internal but often incorporeal mental agent that initiatively generated whatever vocal behavior was exhibited. From that mystical perspective, the speaker was more than the body that spoke; the *speaker* was the mysterious agent within who made decisions about what that body would say. In a similar way, the term *listener* was often interpreted as an internal agent that, in a more or less autonomous way, considered a speaker’s statement and initiatively decided upon an appropriate reaction, the behavioral orders for which were then communicated to the movable body parts for behavioral execution. Not surprisingly, teachers of the natural science alternatives to such common superstitious indulgences tended to prefer new technical terms that would not as readily evoke such superstitious miscarries.

Professor Ernest Vargas, who in the late 1900s taught courses in verbal behavior at West Virginia University, adopted the terms *verbalizer* and *mediator* in place of *speaker* and *listener*. The verbalizer is simply the body that exhibits the verbal behavior that is under consideration, and the mediator is the body that behaves in response to the verbalizer’s statement and does so in ways that consequte the verbalizer’s statement. Importantly, by definition, neither of them is anything more.

While a number of advantages are gained by adopting these terms, doing so seldom insures that the analytical thought of superstitious students will indefinitely retain the naturalistic perspective. Technical terms can help maintain a naturalistic focus on the subject matter, and that is why they are coined and employed. However, expectations that precisely defined technical terms will keep a student separated from the implications of that

student’s own mystical basic assumptions imply a challenge that exceeds the capacity of mere terms.

Such a superstitious student already knows, with a certainty born of faith, that a verbalizer would have to be the same mental agent that a speaker is understood to be. The instructor who insists that a verbalizer is only a body that exhibits verbal behavior is making that pitch to a student who knows, with comfortable certainty, more about it than that instructor is prepared to concede. As far as that student is concerned, that instructor is constrained by some narrowing rules of scientific logic from moving conceptually into a wonderful and awesome domain where that unfettered student is free to roam.

While a natural scientist may view that student’s mystical thinking as forays into a fool’s paradise along paths of self deception, the fundamentally superstitious student has a different view. Such students interpret their own frequent reversions to superstitious interpretations as their way of keeping a finger on the pulse of reality during their temporary detours into the sadly limited world of natural science, which they are undertaking to gain insights into the often appalling limitations with which natural scientists burden themselves in order to do their necessary if somewhat dehumanizing kind of work.

While superstitiously indoctrinated students theoretically can be purged of their superstitious behavior, the necessary programs of reconditioning are typically so intense and so time consuming that the arrangements for them are more characteristic of protracted therapy than of academic instructional programs. As a matter of economy, science instruction, if it is to be effective and efficient within the constraints imposed by traditional instructional operations, must be directed to students who have been kept relatively free of superstitious indoctrination. However, the selection of superstition-free students for programs designed to produce effective scientists is difficult within a superstitious culture.

With students who are receptive to science, the introduction of new technical terms can sometimes prove effective. For instance, the term *verbalizer* in place of *speaker* better incorporates the non-vocal yet public forms of verbal behavior, such as the manipulative behaviors of a person who is exhibiting sign language. The term *mediator* in place of *listener* better suggests the important functional role played by that party in the conditioning of a verbal operant. That is, *mediator* stresses that party’s contingent provision of the behavior-changing consequences of the *verbalizer’s* verbal behavior. Insofar as the consequences of the *verbalizer’s* verbal behavior are mediated by the *mediator*, those terms closely fit the functional reality of a verbal episode. Nevertheless, the terms *speaker* and *listener* continue to appear frequently in the scientific literature of verbal behavior, and readers should

remain prepared to interpret them interchangeably with *verbalizer* and *mediator* in most contexts.

## The Antecedent Control of Verbal Behavior

Verbal behavior, being operant, is evoked by stimuli in the environment of the behaving organism. Consider two aspects of an instance of operant conditioning: (a) the momentary structure of the body that is being conditioned—a structure that, at any given moment, is determined by the prior operant conditioning of that body along with a variety of other physiological factors, and (b) the structure of the environment of that body, structured as it is at that same moment. Whatever verbal behavior then occurs to that body is simply the natural and inevitable reaction of that bodily structure to that environmental structure as energy from the latter impinges on the former.

Failure to predict accurately an impending behavior is not evidence that nature is capricious, but rather that the sets of variables that respectively define the body and its environment at that moment have not been subject to a full accounting. Failure to render accurate predictions measures the ineffectiveness of the behavior of the person who predicts, not lapses in the functional aspect of nature.

Given an instance of verbal behavior, we can always ask meaningfully what controlled it. The question pertains to its antecedent (i.e., evocative) environmental stimuli. If our inquiry is informed by a philosophy of naturalism, we anticipate that a valid and reliable answer is possible in terms of measurable variables, and we tend to look for those behavior-controlling antecedent stimuli. In the past, under similar search conditions, we have so often discovered functional antecedent controls in proportion to the effort expended to discover them that our behavior to reveal such environmental evocatives for a specified behavior now tends to continue unabated (or, as it may be stated in terms of popular fictional constructs, our current expectation that precise controls exist to be discovered is much strengthened).

Here we describe a philosophical contribution to scientific activity (i.e., the proposition that measurable functional antecedents of a detectable event always exist to be identified). In this case the relevant philosophy informs a typical kind of analytical activity in the field of verbal behavior—namely, the search for functional antecedent variables. That scientific activity has potentially important technological implications pertinent to verbal behavior: Once those antecedent controls on some verbal behavior are identified and their functions have been delineated precisely, we can then manipulate those antecedent variables to gain control of the kind of verbal behavior that is dependent upon them.

In the context of this discussion, the important relation is between (a) the nature of the prevailing philosophy and (b) the ultimate realization of the useful technological capacities (i.e., the capacity to *control* the kind of verbal behavior in question). In general, the basic assumptions with which one begins one's efforts to cope will indirectly determine the ultimate quality of life that is realized as a benefit of the scientific activity that those assumptions have informed. Better philosophy informs more effective science, which, in turn, yields more effective technology (i.e., environment-controlling arrangements). Those qualitative implications that inhere in these general relations remain valid when verbal behavior happens to be the kind of environmental event upon which the science is focused.

When we are under general contingencies to account for a statement in its totality, we may inquire about the nature of the controls on that particular sample of verbal behavior, as when we ask why a given person would have just said that "*a car will soon arrive at that intersection.*" Was that statement controlled by a visual contact with an approaching car? Has the person perhaps only heard the sound of a distant car? Was it merely a probability statement based on the distribution pattern of passing cars during a preceding interval?

We may also ask such questions about the *elements* of the statement: Why did the person say "*a car,*" and why a *car* instead of another kind of vehicle? Why was the word *soon* included? Why say *that* intersection instead of *this* intersection, or *the* intersection? Not only does the statement in general have its environmental controls, each formal linguistic nuance of its structure also results from controlling factors that can be identified.

An old piece of wisdom asserts that there is a reason for everything, and that is certainly true when applied to verbal behavior and its elements. An important implication is that grammar or syntax should be taught in terms of the functional controls on linguistic forms rather than in terms of rules that prescriptively describe but cannot account for acceptable forms.

## How Instances of Verbal Behavior are Classified

Verbal behavior in general is defined functionally, and so are the various subclasses of verbal behavior. We distinguish among various subclasses of verbal behavior on the basis of the kinds of contingencies in which those verbal behaviors occur. In preparing to classify an instance of verbal behavior, we typically ask *why* it has occurred—that is, we attempt to identify the stimuli that have evoked it. To classify a verbal response, we may also look at how the response was consequated. For all subclasses of verbal behav-

ior, the survival of an evoked form of the behavior depends on the subsequent reliability of its reinforcement.

Recognized classes of verbal behavior include mands, tacts, and autoclitics as well as verbal behavior that is evoked by verbal stimuli. Within each such larger class, various subclasses may exist. In the following subsections of this introductory chapter we will review some of the major classes of verbal behavior and the respective kinds of controlling functions by which they occur.

## The Mand

Within a given verbal community, certain verbal operants, such as *Help!*, *Duck!*, or *Scalpel!* are characteristically followed by certain consequences. *Help!* is followed by assistance behaviors on the part of others who are close enough to hear it. *Duck!* is followed by behaviors that lower the height of the mediator's body. *Scalpel!* is typically followed by an attendant passing a scalpel to the speaker.

We note that such outcomes are usually reinforcing to the vocalizer, and that the main reinforcement is the negative kind. That is, those utterances tend to occur under an aversive state that is alleviated by the consequence that is implicit in the mediator's response. The aversiveness may be of any kind, including the kind called *deprivation* or the kind called *threat*. For instance, a surgeon, with no scalpel in hand, who comes under contingencies to make a cut, is thereby put in a state of deprivation with respect to a cutting instrument. A scalpel can then be made to manifest in the surgeon's extended hand if the surgeon says *Scalpel!* Its appearance in the surgeon's hand relieves the deprivation thus completing the episode of negative reinforcement.

While the surgeon experiences private aversive stimulation prior to contact with the scalpel and thus may be satisfied with an account that features the termination of such privately appreciated aversion, we can trace the chain of events backward in time to get outside of the surgeon's body where the relevant stimuli are publicly evident. For example, we can regard the uncut patch of flesh as an "aversive stimulus" for the surgeon, and regard the same patch of flesh with a cut in it as a non-aversive stimulus. We then note that the surgeon's cutting behavior changes the publicly evident aversive stimulus into a publicly evident non-aversive stimulus. Thus, a trace of functionally related events from the private internal domain to the publicly detectable external domain retains the important quality of functionality while making possible an account in terms of variables to which all parties have access.

Emotionally, the surgeon may have felt relieved when the transition from aversive to non-aversive stimulus occurred, but those attendant feelings are not essential to our classifying the process as negative reinforcement. The nega-

tively reinforced behaviors were (a) the extension of the hand, and (b) the verbal mand (i.e., *Scalpel!*). The function-altering stimuli (a.k.a. establishing operations) were the presence of a scalpel that could be passed and a nurse who was available to do that. Note again that this externalized account features only stimuli that are publicly evident and can thus be satisfying to observers who cannot be privy to private events that may occur within the surgeon.

Any consequence of the surgeon's mand may have an operant conditioning effect on that vocalizer. If the mand *Scalpel!* reliably results in the surgeon's contact with a scalpel, with each such reinforcement, the utterance of that sound is incrementally put under stimulus control of the environmental circumstances that prevailed when it was uttered. With each reinforced instance of the utterance, those environmental circumstances may be said to gain an increment of capacity to evoke that utterance, although the changes that occur during such operant conditioning take place within the body of the vocalizer. With each reiteration, those particular environmental circumstances (in this example, the presence of something that would be reinforcing to cut) become more likely to evoke the utterance of *Scalpel!* As that kind of operant conditioning approaches sufficiency, an observer would note that the absence of a scalpel in a kind of situation in which cuts have previously solved a problem is reliably followed by a particular mand (*Scalpel!*) that, in turn, is reliably followed by audience behavior that affords relief in the form of a passed scalpel.

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A mand is a verbal operant in which the response is reinforced by a characteristic consequence and is therefore under the functional control of relevant conditions of deprivation or aversive stimulation. (B. F. Skinner, *Verbal Behavior*, pp. 35-36.)

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Such an utterance is called a *mand* (plural, *mands*; infinitive, *to mand*; gerund, *manding*; agent, *mander*). The term *mand* was coined for its mnemonic advantage based on peoples' familiarity with terms like *demand* and *command*. A mand may take the form of a single term (e.g., *Move!*)—sometimes called a raw mand, or a mand may be expressed in a more complete sentence (e.g., *Please move all the way to the back of the bus*).

Note that terms such as *deprivation* and *aversive stimulation* allude to private events in the class commonly called *feelings*, the inaccessibility of which poses problems for external analysts of behavior. We have reviewed how such problems of access can be circumvented by relating the mand to the externally evident operations that were functionally responsible for those internal states. For instance, we cannot be sure that the person who requests a drink of water is responding to the aversive private

stimuli that arise within the body from water deprivation, because we cannot share that person's private feelings. However, we can observe the publicly evident activities of that person. We can also count instances of water consumption by that person and measure the quantity of water consumed. On the basis of such records in general, we may assert that bouts of hard work in conditions of excessive heat tend to evoke mands for potable water, and in such particular cases we may then treat the occurrence of the person's mand for water as a function of having worked hard in excessive heat.<sup>1</sup>

Likewise, a scream for pain-relieving medication, which is a mand evoked by private stimulation of the kind called pain, may be linked functionally to a publicly evident behavioral operation such as sticking a finger into a bed of hot coals. That mand may then be said to be evoked by the publicly detectable behavioral operation of poking a finger into the hot coals. Analytically, beginning with the putative private event to which we have no convenient access, we merely work backward in time along a chain of hypothetical functionally related events until we reach the external domain in which we can confirm events in general. If there, in the external domain, we have noted the person's finger going into hot coals, we can describe the evocation of the mand for medication in terms of that finger poke (which we have observed) rather than in terms of some private pain that we cannot detect. The reliability in the temporal relation of fingers in hot coals and mands for relief is the basis of our assertion of a functional relation between them.

Obviously, a mand works to the benefit of the vocalizer. The mand specifies either (a) its own reinforcer, (b) the action of the mediator that will provide such a reinforcer, or (c) both. When a thirsty person vocally begs *Water!*, that utterance is presumably evoked directly by the aversive stimulation that accompanies water deprivation, while at the same time the utterance per se specifies the particular negative reinforcer that will reduce the verbalizer's state of deprivation (viz., water). If the mand occurs in the expanded form *Hand that glass of water to me*, it also specifies an *action* by the mediator that will result in the vocalizer contacting the specified negative reinforcer.

On the other hand, suppose that a person perceives something in the environment that threatens a companion, and that threat to the person's companion is aversive to that observer. If that aversiveness can be reduced by the companion running away, the observer may then shout "Run!" to that companion. Note, in this case, that the vocalizer is specifying a behavior that, if executed by the companion, will negatively reinforce the vocalizer by reducing a threat to the companion that to the vocalizer functions as aversive stimulation. The negatively reinforcing stimulus is the companion's proximal relation to the threatening event (in this case, the verbalizer's mand did not

specify that aversive stimulus). Instead, the mand merely prescribed a behavior for the companion, the execution of which would reduce the aversiveness of the negative reinforcer for the vocalizer. That is, the farther from the threatening event the companion gets, the more the vocalizer is relieved. A common class of examples feature parents' manding their children to escape from potential danger (e.g., *Get away from that lawnmower blade!*).

If a vocalizer says "Give your money to me," the vocalizer is both specifying the ultimate reinforcer of that mand (*money*) and the behavior to be executed by the mediator (*give... to me*) that will bring the vocalizer and the specified reinforcer together. Note that, in this case, the vocalizer's receipt of the money is likely to reinforce in both a negative and a positive way. The impecuniosity of the vocalizer may be a conditioned aversive state and, if so, the vocalizer's statement simply mands the mediator to behave in a way that will afford negatively reinforcing relief. At the same time, to the extent that money is, in general, an effective conditioned positive reinforcer for any behavior by the vocalizer, the vocalizer's statement is also positively reinforced when it results in the vocalizer's contact with money.

Other people' doing what one tells them to do can become a generalized positive reinforcer for the verbalizer. While compliance with the mands of such people provides them with negatively reinforcing relief from aversive stimulation, that compliance can also be positively reinforcing if those verbalizers have been conditioned such that their manding per se is positively reinforced by the compliance of others with their mands. In those rather familiar cases, such obedience on the part of others has become an abstracted (i.e., generalized) positive reinforcer per se. It may be said of such manders in everyday language that "they take pleasure in the fact that others tend to comply with their requests."

To complete the account of an episode of manding, we must extend our analysis to the person or persons to whom the mand is directed—that is, to the vocalizer's audience. At issue is why a member of that audience would behave precisely in a way that reinforces the mand of the vocalizer?

People are generally conditioned to behave in ways that reduce what to them is aversive stimulation. A typically conditioned individual will probably retreat from a source of excessive heat, scratch an aversive itch, or request that an obnoxious visitor leave the premises. Whatever punishment the current conditions are inflicting on a person, that aversiveness may continue unless that person behaves so as to bring it to an end. That is, absent a retreat from the hot spot, the person continues to get burned; absent the scratching, the itch persists; and absent the issuance of an effective departure order, contact with the obnoxious guest will continue.

Note that, in the latter case, the escape is effected via a mand, whereas in the first two cases, verbal behavior

plays no role in effecting the specified escapes. In those cases of escape, other forms of escape were possible, and they may have involved mands. For example, the person who suffers an itch could ask another person to scratch that itch, and one who is being burned by a fire could ask another person to douse the flames. Within a verbal community, for many kinds of aversive relations, manding may represent a worthwhile means of escape.

If a mand is not followed by audience behavior that provides access to the specified or implicit reinforcer, the alternative behaviors of members of the audience are generally punished by the vocalizer. The aversive stimulation inherent in that punishment procedure can then be ended by the audience member's finally complying with the vocalizer's mand. That is, the aversive stimulation that is inflicted by the vocalizer when the behavior of the mediator is not compliant can be withheld by the vocalizer whenever the mediator begins to comply with the mand.

In general, the members of a verbal community thus become conditioned to treat *any* mand as implicitly threatening, even before any punishment for noncompliance is initiated. Audience behavior that complies with a vocalizer's mand is thus negatively reinforced in the sense that the compliance removes that threat, whether it has been made explicit or is only implicit in the manding form of the vocalizer's statement. It is generally deemed imprudent always to delay one's compliance with mands until a vocalizer actually inflicts punishment, although children will typically probe those limits as a somewhat natural aspect of the socialization process.

As an aspect of conditioning peoples' general compliance with mands, mands are followed reliably with punishment of the alternative behavior as long as compliant behavior is not being exhibited. During this conditioning, mands are thus paired with the punishment that ensues until compliance behavior occurs. Through that kind of pairing, mands themselves will begin to take on an aversive capacity through a generalization process. That is, all mands are initially unsatisfied and remain so until the mediator exhibits compliance behavior—an interval during which the mediator's interim behavior is subject to punishment, because it is noncompliant. An unfulfilled mand thus comes to define the kind of aversive state that we call *threat*. Through such a general conditioning procedure, the members of a verbal community are conditioned to behave in ways that bring verbalizers into contact with whatever they mand.

In some cases, the vocalizer is incapable of punishing the noncompliant behavior of a person to whom a mand has been directed. The mander may instead withdraw from the presence of that person thus precluding any further occasions to mand that individual's behavior and suffer subsequent instances of noncompliance. If the presence of the mander is reinforcing to that individual for other

reasons, the departure of the mander can function as negative punishment of that individual's noncompliance with the person's mands. The mander may describe such episodes in common agential terms: "When individuals are inappropriately unresponsive to certain of my needs, I opt to deprive them of my further company."

Compliance with mands is further strengthened when, throughout the community, compliance, in general, is regarded as the socially polite way to behave, especially if compliance is relatively harmless to the mediator. Compliance with mands, if deemed proper in general, is thus divorced from concern about the specific action that is mandated. Mands per se are to be obeyed as the proper thing to do regardless of what behavior is required for the compliance. Through this social device, the attention of the entire community is brought to bear simply on the matter of the compliance per se. To the extent that the entire community thus takes a hand in the conditioning of the general politeness of each citizen, compliance behavior with respect to mands, in general, can then be reinforced positively by members of the community at large without particular regard for the mander's problem or the specific compliance behavior that follows the mand. The abstract advice often given to children, "do whatever you're told to do," is treated as valid in general without reference to the particular behavior that would be required to do that in any given instance. Conversely, the punishment of noncompliant behavior becomes a similar community obligation. Such an extension (of the conditioning program for mediators) to the community level is of help to manders who lack the capacity to inflict effective punishment on occasions of noncompliance.

The community enforcement of such general politeness is limited to compliance behaviors that portend no adverse implications for others (e.g., passing an out-of-reach tool to a coworker who has asked for that tool). Compliance behaviors that, directly or indirectly, would probably damage the integrity of the community are not deemed polite and are excluded from such general community sanctions. For instance, robbery victims who resist surrendering their money are not subject to aversive treatment by the general public for a failure to yield politely to the demands of such criminals.

Advanced social training provides analytical practices by which the motives of the mander (i.e., the contingencies under which the mand occurs) as well as the implications of potential compliance behavior are taken into account in ways that may cancel the effect of a mand. The person who is mandated to walk out onto thin ice that covers a deep lake probably should not exhibit compliance behavior. If the potential mediator does not provide that mandated reinforcer, the mediator may be said to be demonstrating good *judgment*. However, the walk on thin ice is not being restrained by some fictional causal trait called judgment

a supply of which is putatively possessed by the hesitant mediator. Instead, certain verbal practices of the mediator that are evoked by certain features of the unfolding episode result in the establishment of contingencies that counter-control those being arranged by the mander.

Note that the cultural conventions of politeness, although often touted as being endowed with intrinsic virtue, actually have functional origins that are subject to analysis. As some have astutely observed, "people are polite for a reason," or "it pays to be polite." One aspect of politeness, compliance with mands, originates in specific instances of negative reinforcement insofar as such behavior reduces threats or terminates actual on-going punishment. On the other hand, polite patterns of behavior, having come to be regarded as "good" in an abstract way, are generally subject to positive reinforcement. Polite behavior is said, in that sense, to garner respect. Thus, when Lido opens the door for a delivery person who arrives carrying a heavy box, Lido avoids the potential wrath of the delivery person who would have had to drop the box to open the door, and Lido may also contact some positive reinforcers of that behavior, because it falls in the class called politeness. Polite behavior, in general, contributes to the benefit of all members of the social community who therefore stand ready to reinforce any polite behavior, including the kinds that comply with mands.

The general kind of conditioning for compliance with mands is typically conducted using mild rather than severe stimulation. For example, a parent who is teaching a child to maintain an orderly play area, may tell the child to "put away those toy building blocks that are scattered on the rug." If the child does not quickly exhibit the pick-up-and-put-away behaviors, the parent may simply pause and look blankly in the child's direction. That parental gesture can function as a mild punisher if previously the child has been conditioned to find aversive any such small sign of parental displeasure. In an adult version, a carpenter may say to a helper, "give me that hammer," while looking intently at the helper and holding out a hand to receive the hammer. A properly conditioned helper would experience increasingly aversive stimulation from the continuation of any personal behavior that does not involve passing that hammer. In the externalized version, we could say instead that the carpenter's extended and empty hand becomes increasingly aversive to the helper as long it remains separated from that hammer.

In such cases, the punitive nature of both (a) the mand per se and (b) a normally brief sequence of events prior to the mediator's compliance are so mild that neither party takes special notice of it nor attaches social significance to it. The controls on behavior within a social episode that begins with a mand can, indeed, often manifest with low intensity; they need only be sufficient to establish functionality. Our compliance with many of the

mands that we encounter during normal social intercourse feature aversive stimulation that, although functional as such in the on-going verbal episode, remains below the threshold for evoking the kind of behavior that we describe as taking notice of its aversive nature. Typically, the mediator is only mildly threatened by the mand. Although the contingency may be quite weak, the well socialized mediator complies under what is technically a contingency of aversive control (i.e., negative reinforcement). Such a typical episode passes as a normal and insignificant social interaction.

Weak but adequate aversive control can also be found in common nonverbal examples. Recall that, when walking, something as routine as the extension of a leg, which initiates the next step, occurs primarily under what is normally mild aversive control. Whether the behavior is verbal or nonverbal, it is the *severity* of the aversive control that evokes our unfavorable attention, not the mere fact that the controls are of the aversive kind.

When a mediator has complied with a vocalizer's mand, the vocalizer may utter a concluding response such as the typical "Thank you." That utterance, which is said to represent *polite* social behavior, functions to make more clear that the threat implicit in the preceding mand has been lifted. The "thank you" also provides a mild positive reinforcer of the mediator's behavior of compliance, which supplements its negatively reinforcing effect. Thus, for those two kinds of reasons, such compliance behavior is rendered even more probable on future occasions.

The implicit threat to the mediator in a single mand may be ended most expeditiously by compliance behavior. However, frequent manding by a vocalizer, especially with mands that imply stronger threats, tends to increase both the rate and severity of such aversive contacts. That aversive pattern may be avoided either by the mediator's permanent escape from the mander, which precludes the aversive threats in the mands, or by a more aggressive kind of revolt that reduces the frequency of the manding. Examples of the former feature the child running away from home or the carpenter's helper quitting his job. Examples of revolt by a mediator include the excessively manded child setting the house on fire, the pressured helper throwing the hammer at the carpenter. An overly pestered listener may also simply reply with hostile rhetoric (e.g., *Shut up, you pompous, demanding, loud-mouth!*).

Such revolts, to the extent that they pose real counter-controlling threats to the mander, condition manders to temper in various ways the inherent implicit threats of their own mands. Thus, the threat in a mand may be disguised. For instance, note how the form "*Would you pass that ruler to me?*" makes the mand seem more like a neutral question, as if to imply that the mediator is free to do something else but would earn the appreciation of the vocalizer were that mediator to com-

ply. “*Please pass that hammer to me*” implies a diminished threat for noncompliance and emphasizes that the mediator’s compliance may even earn some unspecified form of reinforcing gratitude from the vocalizer. Manders may also be made to seem less threatening by loading them with some reinforcing praise: “*Pick up your toys, sweetie*” or “*Pass the salt and pepper, my dear lady.*”

If a mand prescribes behavior that is implicitly positively reinforcing to the mediator as well as negatively reinforcing to the vocalizer, the compliance behavior, in general, becomes more likely to occur. Such a mand is likely to be described by the mediator as *good advice*. For example, the mander may say “*Look on the backsides of those can labels to see if you are a contest winner.*” If the mediator does so and finds a reinforcing notice of a win on one of the labels, that mediator will be more likely to comply with that vocalizer’s similar manders on future occasions. In this example, the well-being of the mediator may be reinforcing to the verbalizer, and the mediator’s neglect of a potential contest win is therefore aversive to the verbalizer. That aversiveness is relieved when the mediator examines the backs of the can labels. The unfulfilled mand is also aversive to the mediator, who gains relief upon complying with the mand. However, if the manded behavior has led to positive reinforcers of the mediator’s response, the *future* frequency of the mediator’s compliance with similar manders will be a function of the history of both the negative and positive reinforcement.

Manders function to control the behavior of the mediator, and traditional descriptions and interpretations of manding episodes are cast in terms of the *intentions* of the vocalizer. However, in a behaviorological consideration, intentions are fictional constructs. From the invalid traditional perspective, a typical analytical question is “What does the vocalizer want the mediator to do?” However, in a natural accounting there is no agent within the vocalizer to operate on the basis of fictitious constructs called *intentions* or *wants*.

In a natural science of behavior, the concept of intention is replaced by the concept of the prevailing contingencies that are controlling the behavior of the body in question. We ask instead, “Under what contingencies is the vocalizer exhibiting a mand?” In that way the focus is kept on the behavior-controlling environment instead of being sidetracked on a futile search for a fictitious internal behavior-compelling source called an *intention*. A body is merely behaving verbally in functional response to certain aspects of its environment, and behavior that is exhibited in the form of a mand is not really the work of a body-driving self-spirit that is motivated by *intentions*.

The broad field of *motivation* is concerned with the nature of the controls on behavior and how best to manipulate those controls. Traditionally, the featured approach has centered on the construct of *mind* and how to

“change it,” because, in the traditional view, behavior has been construed as a subsequent implication of the cognitive and emotional activity of a proactive and always at least somewhat mysterious mind. Internal constructs such as *wants, needs, desires, and wishes*, cast as various kinds of mental activities, have been invented or conjured as required to provide the presumed internal origins of behaviors that, in fact, do not originate through internal spontaneity. Analytical progress is improved when the analysis of motivation turns more productively to behavior-environment functional relations. The functional analysis of the mand then becomes one aspect of a broader and more valid kind of analysis of motivation.

The behavior of manding tends to be strongly conditioned because it so often proves to be effective. However, a given mand may be futile for two general kinds of reasons. First, there may be no person present who can mediate the reinforcing consequences. For instance, when a person who is stranded alone on an island shouts “*Just give me a boat!*,” the mand fails for lack of another person whose compliance behavior may produce a boat. Even if a listener is present, that listener may be without the means to function as a mediator for such a mand.<sup>2</sup> The second reason that a mand could be futile is that the listeners who are present may represent classes of people who have *never* provided the specified consequences. Thus, they may lack the kinds of behavioral conditioning that would be necessary for them to do so. It is commonly said that such a person does not know how to comply. Manders that are futile for either kind of reason are called *magical manders*.

Consider first the former class of magical manders: If, in the past, a particular kind of mand has been successful in certain kinds of situations, a similar situation may evoke that form of mand even in the absence of a listener. The evocative situational stimuli are so strong that they force the mand even in the absence of a listener who could hear it and consequate it. The vocalizer merely describes the reinforcement that is appropriate for alleviating the vocalizer’s current state of deprivation, as when a person, who is alone and freezing for lack of a fire, exclaims “I need some matches!” Given a sufficiently severe state of deprivation, the relative contribution of a mediator to the evocative function is diminished until the circumstances that define the aversive deprivation are alone sufficient to evoke the mand, futile though it may be. We could say that as the aversiveness increases a potential listener loses the capacity to serve as a function-altering stimulus, and the utterance is exhibited in both the presence *and* the absence of a mediator.

In the second class of magical manders, listeners may be present, but listeners of that kind have *never* provided the specified reinforcers. A wounded person may scream *Get the bullet out!* when the only potential mediator is clearly an individual with no medical experience who

lacks the skill to remove a deeply embedded bullet. If that incapable listener shares obvious properties with others who do have the skill to comply with that mand, the mander may later explain the futile mand by insisting that “*the person looked like he (or she) could help.*”

A *wish* is classified as a magical mand if the specified consequence has *never* been produced as a functional result of such verbal behavior (e.g., *I wish that this mud would change into ice cream*). Another common example of a magical mand is *I wish that I could sprout wings and fly*. The statement *I wish that she would lose her wealth* is a magical mand if such statements by that verbalizer have never resulted in that kind of financial loss.

If, however, the same statement is uttered by a powerful leader who knows that certain loyal followers will reliably contrive to fulfill that leader’s uttered wishes, the mand is only disguised linguistically to sound magical. Functionally, such a mand is a practical and effective statement, because others insure that the leader’s wishes come true. Thus, it is not necessarily the form of the statements, but their functional futility, that shifts some mands into the magical class.

[Part 2 continues in the next issue.—Ed.]✻

## Footnotes

- <sup>1</sup> (p. 16) Note that functions are asserted on the basis of events from one class reliably following events from another class. We do not observe a *function*. We see only the sequential manifestation of events. If one kind of event is reliably followed by another kind of event, an observer reacts to such repetitions with a decrease in behaviors that comport with coincidence and an increase in behaviors that comport with function—including the eventual assertion of a functional relation between those kinds of events. We say that the repetitions of the sequence are *observed*, while the functional relation between its elemental events is *inferred*.
- <sup>2</sup> Note that *listener* and *mediator* are not always synonymous. In this sentence (p. 19) they are not interchangeable.

## References

- Ledoux, S.F., Michael, J., & Miguel, C. (2002). *An Introduction to the Elementary Verbal Operant Relations in the Verbal Behavior Analysis Component of Behaviorology Plus Some Initial Implications and Applications for Foreign Language Teaching*. Canton, NY: Stephen F. Ledoux. [Contact TIBI for options on obtaining this booklet. For more verbal behavior resources, see the “Contributions to Verbal Behavior Analysis” page on the *Complete Behaviorology Community Resources* page at TIBI’s [www.behaviorology.org](http://www.behaviorology.org) web site.]
- Skinner, B.F. (1957). *Verbal Behavior*. New York: Appleton-Century-Crofts. Reprinted, 1992, Cambridge, MA: The B.F. Skinner Foundation.✻