

Skinner's Elementary Verbal Relations: Some New Categories

Jack Michael
Western Michigan University

In *Verbal Behavior* (1957) B. F. Skinner identified and named five elementary verbal relations: mand, tact, intraverbal, textual and echoic. Because of their etymological commitment to visual and auditory stimuli respectively, the last two categories do not function well as general categories. Adding two more general categories, codic and duplic, to the first three results in a set of five mutually exclusive and collectively exhaustive groupings. Textual behavior and other relations involving point-to-point correspondence but no formal similarity fall into the codic category. Echoic behavior and other relations with formal similarity fall into the duplic category. This arrangement results in useful category names for all elementary forms and prevents potentially confusing extensions, such as referring to Braille reading as textual behavior, or sign imitation as echoic behavior.

In *Verbal Behavior* (1957) Skinner identified and named five types of functional relations between controlling variables and verbal responses. These are the mand, tact, intraverbal, textual and echoic relations. In the section on transcription (pp. 69-71) he almost named two more, which can be usefully referred to as *copying a text* and *taking dictation* (see paragraph 2 and 3 of page 70)¹. Skinner's general analysis of verbal behavior has greatly facilitated our ability to talk effectively about human behavior, and these elementary behavioral units are an essential aspect of this analysis.

In teaching from *Verbal Behavior* I have found it convenient to add two more special terms to the list of elementary relations. This addition does not identify new or previously overlooked relations, but rather provides names for implied categories, and thus a place for several forms of verbal behavior that were not previously classifiable. The suggested change also makes the basic categories more nearly collectively exhaustive. The new terms are *codic* and *duplic*, which like *echoic*, *textual*, and *intraverbal* function as adjectives preceding *behavior* or *relation*, and like these others can occur alone when *behavior* is understood. The basic arrangement is shown below in a form that is convenient for instructional purposes.

¹ The audience relation was also treated as an elementary verbal relation, but differs from the tact only in the size of the repertoire controlled, and in the fact that the nonverbal stimulus usually consists of the collection of stimuli involving the listener.

MAND

When the response form (topography) is controlled by a current unlearned or learned motivational variable (an unconditioned or conditioned establishing operation) such as deprivation or the warning stimulus in an avoidance situation, the relation is called a mand. Said another way, the response form is most closely related historically to what has previously functioned as reinforcement for responses of that form. The response can consist of speaking, writing, signing (as with the sign language of the deaf), finger spelling, sending Morse code, etc. Skinner classifies mands as requests, commands, entreaties (on the basis of how the listener is reinforced), and as mands for nonverbal action versus mands for verbal action (which the latter are called *questions*), plus some other associated types (pp. 38-41). Another way of classifying mands is to say that one can mand objects, actions, attention, and more complex events as when one asks for information or instruction, or says "Thank you" because an increase in the listener's future favorable behavior would be effective as a form of reinforcement. In common-sense terms, in the mand what is said (signed, written, etc.) is determined by what the speaker *wants*.

TACT

In the tact relation the response form is controlled primarily by an immediately prior

nonverbal stimulus (an object, action, relation, property, etc.). As with all of the elementary verbal relations except the mand, the effect of the establishing operation on the response form is minimized by the fact that the reinforcement for the tact is usually generalized conditioned reinforcement (Skinner, 1957, pp. 52-55). The response can consist of speaking, writing, signing, finger spelling, sending Morse code, etc. It might seem reasonable to substitute some term such as *naming* or *describing* for the tact relation, but as Skinner insists (1957, p. 82), there are good reasons for avoiding such a substitute. A useful contrast between mand and tact is that "... the mand permits the listener to infer something about the speaker regardless of the external circumstances, while the tact permits him to infer something about the circumstances regardless of the condition of the speaker" (Skinner, 1957, p. 83). In terms of group coordination, the mand permits the speaker to alter the environment through someone else's behavior, and the tact permits the listener to react to the behavior of others "... rather than directly to things and events" (Skinner, 1957, p. 432).

INTRAVERBAL BEHAVIOR

Here the response form is controlled by (1) a *verbal* stimulus (the product of someone's verbal behavior—but this is not a simple concept, since the same behavior may have verbal and nonverbal products) with which (2) the response does not have *point-to-point* correspondence. Point-to-point correspondence between stimulus and response (or between stimulus and response product) is in effect when subdivisions or parts of the stimulus control subdivisions or parts of the response (or response product). In intraverbal behavior the parts of the stimulus are not related in any special way to the parts of the response. An example of intraverbal behavior is a tendency to say *swamp* as a result of hearing someone say *alligator*. The response can be speaking, writing, signing, etc. and the verbal stimulus can be the result of someone's vocal, writing, signing, etc. behavior. Note that for *American Sign Language*, also called *Ameslan*, or just *Sign* (which is not equivalent to finger spelling) vocal or written responses to signs, or signing responses to vocal or written words are intraverbal behavior. There is generally no point-to-

point correspondence between signs and words (although the situation is somewhat complicated by the existence of initialized signs—signs that incorporate some aspect of finger spelling). The sign for cat, for example, consists of stroking imaginary facial vibrissae. This clearly has no point-to-point correspondence with either the spoken or the written *cat*. The finger spelled *cat*, of course, has point-to-point correspondence with both spoken and written *cat*, but not with the sign for cat.

CODIC BEHAVIOR

The codic relation is characterized by three defining features: (1) The response form is controlled by a *verbal* stimulus, (2) with which it has point-to-point correspondence, but (3) where there is NO *formal similarity* between stimulus and response product. Formal similarity is Skinner's term for the case where the controlling stimulus and the response product are (1) in the same sense mode (both are visual, or both are auditory, or both are tactile, etc.) and (2) resemble each other in the physical sense of resemblance. Note that *codic* is meant to suggest the kind of relation seen in a formal code, where one stimulus is said to stand for another stimulus that it does not resemble. *Textual behavior* and *taking dictation* are special types of codic behavior. In the textual relation the stimulus is visual (written or printed words) and the response consists of speaking. In common-sense terms textual behavior is reading out loud (without the implication that the reader understands—can react in any other way to—what is being read). In taking dictation the stimulus is auditory (the result of someone's vocal behavior) and the response consists of writing what is heard. There is at present no commonly used form of codic behavior involving signs although such a system was developed some time ago and is available in dictionary form (Stokoe, Casterline, & Croneberg, 1965). The relation between finger spelling and vocal or written stimuli may be codic (as well as intraverbal). Likewise, Braille reading out loud is codic behavior as is writing in Braille what one hears spoken.

DUPLIC BEHAVIOR

The two defining features of the duplic

relation are (1) that the response form is controlled by a *verbal* stimulus, and (2) the response product has formal similarity with the controlling stimulus. (Sometimes the necessity for point-to-point correspondence between stimulus and response is cited as a third requirement, but formal similarity between stimulus and response product always implies point-to-point correspondence between stimulus and response so this third requirement needn't be listed.) The response can be speaking, writing, signing, etc. *Duplic* implies duplicates or copies. *Echoic* behavior and *copying a text* are special types of *duplic* behavior. In the *echoic* relation (echoing what one hears) the stimulus is auditory and the response is speaking. In *copying a text* (copying what one sees in written form) the stimulus is visual and the response is writing. Imitating someone's signs is also *duplic* behavior, as is finger spelling what one sees someone finger spell. The general importance of the basic distinction between *codic* and *duplic* behavior is dealt with in *Verbal Behavior* in several places, but especially pages 67-68.

SUMMARY

With the five basic category names it now becomes possible to classify all elementary forms of verbal behavior in terms of important defining properties, as well as to immediately classify any new form that develops. The two new terms also make it unnecessary to extend existing categories to novel condi-

tions because no technical term is available, as when one refers to Braille reading as textual behavior. Braille reading is clearly a form of *codic* behavior, and would be expected to share functional properties with other members of the same category, but to call it, and all other forms of *codic* behavior involving a vocal response *textual* is potentially confusing. A similar undesirable extension occurs when sign imitation is called *echoic* behavior, but is avoided by identifying it as *duplic*, or more specifically sign *duplic* behavior. Where a special term is needed because of frequent use it is better to make one up that is more etymologically correct, such as Vargas' (1982) "mimetic."

This terminological refinement should be considered an instance of the general effort to eliminate ambiguity from technical and scientific language, an effort that is often initiated and possibly most keenly appreciated by those who spend most of their time teaching others to use that language.

REFERENCES

- Michael, J. (1982). Distinguishing between discriminative and motivational functions of stimuli. *Journal of the Experimental Analysis of Behavior*, 37, 149-155.
- Skinner, B. F. (1957). *Verbal behavior*. New York: Appleton-Century-Crofts.
- Stokoe, W. C., Casterline, D. C., & Croneberg, C. G. (1965). *A dictionary of American Sign Language on linguistic principles*. Washington: Gallaudet College Press.
- Vargas, E. A. (1982). Intraverbal behavior: The *codic*, *duplic*, and *sequelic* subtypes. *The Analysis of Verbal Behavior*, 1, 5-7.