

Studying the Effects of the Audience on Verbal Behavior

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Skinner's book, *Verbal Behavior* (1957), has not generated a body of research on the variables controlling verbal behavior. Yet when research has been conducted on topics relevant to verbal behavior, that research has often confirmed Skinner's analysis of verbal behavior regardless of the orientations of the researchers. For example, child language studies (Bates, 1976), chimpanzee training studies (Savage-Rumbaugh, 1984), and human training studies (Lamarre & Holland, 1985; Sundberg, 1980) have all indicated that mand and tact are initially separate repertoires. Studies in these same areas have also demonstrated independence of listener and speaker repertoires when verbal behavior is first acquired (Guess, 1969; Guess & Baer, 1973; Savage-Rumbaugh, 1984).

Verbal Behavior has not proven the stimulant for research that one might have predicted. However, in the 28 years since the book was published, there has been a large amount of research that bears rather directly upon the assertions made by Skinner. Much of this research has been conducted by language researchers who would not acknowledge any effect *Verbal Behavior* had on their research. Yet that research is often quite relevant to Skinner's analysis. Indeed, the fact that observations of researchers (who are so vehemently opposed to Skinner) often support his analysis lends even greater credence to that analysis.

In many cases Skinner's casual observations and interpretations were so clear and plausible that it is easy to accept them as self-evident in the absence of the systematic observations of research. For example, Skinner's statements about audience control seem so plausible that research demonstrating the truth of his statements seem almost superfluous. Yet there have been many

studies which bear directly on the statements in Skinner's discussion of audience control and these systematic studies provide compelling evidence for the plausibility of Skinner's analysis of audience control.

Typically the methodologies used to study the effects of listeners on the behavior of speakers have involved two-person assemblies. Sometimes the verbal behavior of the speaker is evaluated in the presence of different listeners with different verbal repertoires and/or different physical characteristics. In other studies, only a single listener is used but that listener's responses (contingencies applied to speaker behavior) are varied systematically over brief periods of time. In other studies, the listener is taught specific behaviors which are thought to be the behaviors of a good listener. In still other studies, a speaker is taught different repertoires by different listeners and then the conditions which control generalization of these repertoires to still other listeners is studied. These studies not only may confirm the assertions made in *Verbal Behavior*, but they may clarify some of the principles of audience control.

Speakers and listeners may have highly similar repertoires, or very different repertoires. One might predict that when the repertoires are similar, rate of verbal behavior would be higher, and when their repertoires are quite different, communication would be more difficult. But would this prediction hold for assemblies in which the repertoires of two persons with very restricted repertoires were compared with assemblies in which one of the participants had a more elaborate repertoire and the other participant had a more restricted repertoire? In this case, isn't it possible that there would be a higher rate of verbal behavior by the person with the

restricted repertoire in the presence of an audience with a less restricted repertoire?

Rosenberg, Spradlin and Mabel (1961) conducted an experiment related to this question. The participants of this study were retarded male adolescents who were classified into high-verbal and low-verbal subjects on the basis of their performance on the Parsons Language Sample—a structured sample of verbal behavior (Spradlin, 1963). After the subjects were classified, they were assembled into pairs involving two high-verbal subjects, two low-verbal subjects, and one high- and one low-verbal subject. These pairs were observed over several 20-minute sessions to determine their rates of vocal responses and gestural responses. When two high-verbal subjects were assembled, the rates of vocal responses and gestures stabilized at a high level. When one high- and one low-verbal subject were assembled, the rates stabilized at nearly zero responses for both gestures and vocal responses. Somewhat less expected was the finding that when two low-verbal subjects were assembled, their rates of vocal responses and gestures stabilized at approximately the same high level as occurred when two high-verbal subjects were assembled. In this case, rates of verbal behavior are higher among pairs consisting of speakers and audiences with similar repertoires than discrepant repertoires, even when the repertoires of both members of some of the pairs are quite restricted.

In a second series of studies of the effect audiences with different levels of repertoires had on the behavior of speakers, high-verbal and low-verbal retarded adolescents were assembled with junior college students (Siegel, 1963; Siegel & Harkins, 1963; Spradlin & Rosenberg, 1964). In the Spradlin and Rosenberg study, the junior college students were instructed to interview the retarded students and to obtain as much information as possible from them. The junior college students interviewed high- and low-verbal retarded students for approximately 30 minutes each. They were told that they did not need to keep notes because the interview was being recorded. The interviews were recorded and the college students' responses were analyzed for the number of different words over the total number of words (type-token ratio) and the length of

utterance (Siegel, 1963). The type-token ratio and the length of response were consistently greater when the junior college students were assembled with high-verbal retarded students than when they were with low-verbal retarded students. In other studies (Siegel, 1963; Siegel & Harkins, 1963), these differences were apparent across a variety of two-person situations and occurred within the first five minutes of a session.

In an unpublished study (Spradlin, unpublished), an attempt was made to manipulate the college students' verbal behavior simply by labeling the person being interviewed as having high or low skills. This attempt to influence the verbal behavior of the college students by labelling the audience had no effect on complexity or length of the verbal response. The rapidity with which college students adjusted to the verbal level of their audience and the ineffectiveness of verbal labelling suggests that the normal speaker quickly comes under the control of the audience. It is likely that a speaker is extremely sensitive to the contingencies of the audience. Very likely the initial effects of these contingencies are more discriminative than reinforcing.

While behavior analysts have conducted few of these assembly studies on the effects of audiences on speakers, psycholinguists have used essentially the same procedures to study the verbal behavior of mothers speaking to normal and retarded children (Marshall, Hegrenes, & Goldstein, 1973; Rondal, 1978), mothers speaking to younger and older children (Broen, 1972), and 4-year-old children speaking to 2- and 4-year-old children (Shatz & Gelman, 1973). All of these studies have the sensitivity of a speaker to gross audience variables.

In the above studies, the effect of different kinds of audiences on verbal behavior was studied within a two-person assembly. Yoder (1970) conducted a study to determine whether a specific type of audience (an attractive young lady on a television screen) would be reinforcing for retarded male adolescents. In this study, the retarded adolescent was taken into a room with a few magazines, a table, a chair and a television directly across from the chair. As soon as the subject was seated in the chair, a picture of a young lady came on the screen and a female voice called the subject's name and

briefly engaged him in conversation. The procedure was very effective in establishing the young lady as an audience. After this session, additional sessions were conducted in which the young lady said nothing, just simply nodded and smiled at a high rate. During this condition, two of four subjects developed very high verbalization rates. Observations made during this condition gave rather clear indications of the effects of accidental contingencies. For example, the boy might say, "Do you like me? I like you. Do you like me?" At about this time the young lady would smile and nod, then the boy might say, "Is your name Jane? Is your name Mary? Is your name Dorothy?" At that point, the young lady might smile and nod again. From that point on during the experiment, the young lady on the screen would be addressed as Dorothy. Later manipulations in which the television was turned on or off (contingent upon subject's verbalizations) clearly established that the young lady on television was a positive reinforcer for all four subjects. Yoder's work suggests that with some people the audience doesn't have to understand what is being said to maintain conversation. There are numerous questions which could have been asked. Were these effects a function of the audience being an attractive young lady? Would the same results have been obtained with a child, a young man, or an older person? How similar was the verbal behavior of the young men to that which occurred in the presence of a real audience? The data from the previous discussed studies suggest that there would be real differences.

In a sense, the previous studies demonstrate the obvious—that audiences control behavior, that an audience can be a reinforcer, and that different audiences control different repertoires.

They give no indication as to why different audiences control different repertoires. Skinner suggests that physical similarity among audiences will contribute to generalization across audiences (Skinner, 1957, p. 176). Indeed, there is evidence that the similarities in physical characteristics of an audience can affect generalization. Ervin-Tripp (1964) found that when Japanese women were interviewed in English by a Japanese-American interviewer, there were more intrusions of Japanese words and disruption

in English syntax than when they were interviewed by a Caucasian-American interviewer. But physical characteristics may play a minor role in generalization. It is likely that audience-provided contingencies are more effective in determining the form and content of the speaker's verbal behavior. Skinner has noted that an audience tends to strengthen not just a response but a whole repertoire or subrepertoire of responses. For example, a French audience may strengthen the whole French subrepertoire of a bilingual French speaker.

Silverman, Anderson, Marshall, and Baer (in press) conducted a study which bears directly upon the development and generalization of repertoires according to the contingencies occurring with different audiences. Silverman et al., taught a retarded child to give one of two sets of opposite responses to a set of questions involving the phrase, "What is the opposite of _____?" After the subject had learned to respond with members of one repertoire to one audience and with members of the second repertoire with the second audience, the subject was taught to respond with two members of repertoire one with a new audience. When probed with the remainder of the questions, the subject reliably gave members of repertoire one to the new audience. This study suggests that if an audience imposes similar contingencies on part of the repertoire, the total repertoire is available in the presence of that audience.

Additional studies involving similarities of contingencies and similarities of appearances among audiences should cast light on the interaction of appearance and contingencies on availability of repertoires in the presence of different audiences.

Studies aimed at teaching populations with limited conversational skills how to maintain conversations should also add to our understanding of precisely what listener behaviors serve to strengthen the behavior of speakers. Most of these studies have involved teaching a person to do such things as make eye contact (Maloney, Harter, Braukmann, Fixsen, Phillips, & Wolf, 1976), ask questions (Minkin, Braukmann, Minkin, Timbers, Timbers, Fixsen, Phillips, & Wolf, 1976), and make general remarks of approval (Bayes, 1972). To date, most of the studies have involved placing the person in a conver-

sational setting and then asking judges to rate the people on conversation variables. However, there is no reason why the actual verbal behavior of the other participant could not be analyzed with regard to rate and diversity of verbal responses. This type of research would provide information on precisely what audience behaviors affect speaker behaviors.

Some of the research presented above seems simply to confirm the obvious. The rate, length and complexity of the verbal behavior of speakers is affected by audiences. An audience serves both a discriminative and reinforcing function for speakers' verbal behavior. The repertoire which an audience controls depends on both the physical similarities of the audience to previous audiences and the similarities of contingencies which the audience shares with previous audiences. And, finally, people can be taught behaviors which are likely to make them into audiences which control higher rates of verbal behavior and more complex verbal behavior by speakers.

Yet not all of the findings are obvious. It is not obvious that two people with very restricted repertoires would talk more when assembled together than two people with different repertoire levels (one limited and the other a more elaborate repertoire). Analysis of how much the verbal repertoire of two persons must overlap to produce high rates of verbal behavior could have theoretical as well as practical value. The fact is not obvious that a retarded child who is taught two separate repertoires controlled by two different audiences can generalize one total repertoire to a third audience who reinforces a portion of that repertoire. The issue of how much of a repertoire must be reinforced before the total repertoire is available is also an important question. Finally, a study of what aspects of the behavior of an audience suppress the behavior of a speaker would provide important practical information.

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