

Publication Trends in *The Analysis of Verbal Behavior: 1982–1998*

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Every article published in *The Analysis of Verbal Behavior (TAVB)* from its inception as a newsletter through 1998 was rated along several dimensions. Results indicated that the journal has grown substantially over time. Most articles (overall, 73%) published in *TAVB* did not describe experiments. The experiments that were described characteristically used within-subject designs and direct measures of behavior. They were conducted mostly by researchers in academic settings, using students as participants. Several authors have recently suggested that the journal should publish more experimental articles, covering a wider range of topics. The present results show that there is indeed room for more experimental articles, although they also underscore that the Journal has played, and continues to play, a major role as an outlet for both empirical and theoretical analyses of verbal behavior.

Although experimental and theoretical articles concerned with a behavior analysis of verbal behavior appear in many journals, only *The Analysis of Verbal Behavior (TAVB)* is devoted entirely to the topic. Sundberg (1997) summarized the history of *TAVB*, and in a recent volume (Vol. 15, 1998) several authors discussed the past and future analysis of verbal behavior and the journal's role therein. Various authors (e.g., Spradlin, 1998; Sundberg, 1997) have commented on the journal's contents, but to date there has been no systematic review of *TAVB*'s influence on the study of verbal behavior.

Others have conducted excellent reviews of verbal research in general without specific attention to *TAVB* (Eshleman, 1991; McPherson, Bonem, Green, & Osborne, 1984; Oah & Dickinson, 1989). In response to Oah and Dickinson's assertion that there was a lack of research based on Skinner's conceptualization of verbal behavior, Eshleman developed an extensive database of such research, including published research in the main behavioral

journals, presentations at the Association for Behavior Analysis (ABA) meetings, and research published in the nonbehavioral journal, *Journal of Verbal Learning and Verbal Behavior*. From this extensive database, he used frequency and celeration data to analyze trends in verbal behavior research. His analysis showed an increase in verbal behavior research during the 1980s and challenged the notion that there was a paucity of this type of research in general.

In contrast to the reviews above, the present study provides a review of verbal behavior research appearing only in *TAVB*. Because others have suggested that there has been too little experimental research on verbal behavior (Catania & Shimoff, 1998; Leigland, 1998; Michael, 1984; Vargas, 1986), we were particularly interested in determining whether the number of experimental articles in *TAVB* has increased over time. We were also interested in determining the characteristics of the experimental work that has been done. To provide this information, we recorded several characteristics of every article published in *TAVB* from its inception in 1982, when it was the newsletter (*VB News*) for the Verbal Behavior Special Interest Group (VB SIG) in ABA, through Volume 15 pub-

The reported data were collected as part of the Masters thesis of the first author, who is now at The Florida State University.

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lished in 1998. For simplicity, both publications are referred to as *TAVB*.

METHOD

Two graduate students independently recorded data for the characteristics described below for every article (including editorials) published in *TAVB* during the years 1982 through 1998. Data for all characteristics were then compared, and discrepancies were discussed (with articles revisited as necessary) until an agreement was reached.

TAVB did not appear in 1984, and only one issue was published for the years 1994 and 1995 in combination. Data from the 1994–1995 issue were divided evenly between years so as not to disrupt the continuity of the graphs by excluding selected years.

Pages per year. The number of pages in each issue was determined using the page number printed on the last page of typed material.

Article type. Articles were categorized as either experimental or nonexperimental. Experimental articles reported on a research project that involved the manipulation of one or more independent variables and the observation of subsequent effects on one or more dependent variables. All other articles were categorized as nonexperimental.

Field versus laboratory. Experimental articles initially were classified according to whether the research was conducted in the participant's natural environment (field) or in a laboratory setting (laboratory). Field studies were further categorized according to whether (a) special environmental conditions were arranged (e.g., the participant was tested in isolation in a special area of a classroom), or (b) an experimental apparatus foreign to the natural environment (e.g., an operant panel) was used. If either of these conditions was met, the study was classified as a laboratory study.

Experimental design. Experimental articles were rated to determine wheth-

er a between-subjects or a within-subject design was used. Within-subject designs were those in which the same participant was exposed to multiple experimental conditions and data were analyzed by comparing the same person's performance across conditions. Between-subjects designs were those in which different participants were exposed to different experimental conditions and data were analyzed by comparing the performance of different people.

Dependent variable measure. Each experimental article was reviewed to determine the type of measurement system used for the dependent variable. The three possible categories were direct observation, self-report by the participant, or mechanical measurement.

Participants. For each study, raters determined whether participants were (a) people with developmental disabilities, (b) students, and (c) females. Age was initially included as a category, but because of the extreme variability in these data, they are not reported. Studies that reported some, but not all, of the participants' characteristics were included only in those categories for which data were reported. Because of this, different categories from the same issue may contain different numbers of participants.

In those cases in which participant categorization was ambiguous because the participants belonged to two different groups (e.g., they were both developmentally disabled and students), the reviewers assigned the participants to the category that seemed to be most pertinent to the experimental question. If, however, a study used more than two different population types, a categorization of "other" was recorded. Also, several studies used preschool children as participants. For the purposes of this review, preschool children were not considered students and were instead assigned to the "other" category. Students were defined as those participants who were identified as attending one or more classes from kindergarten through college.

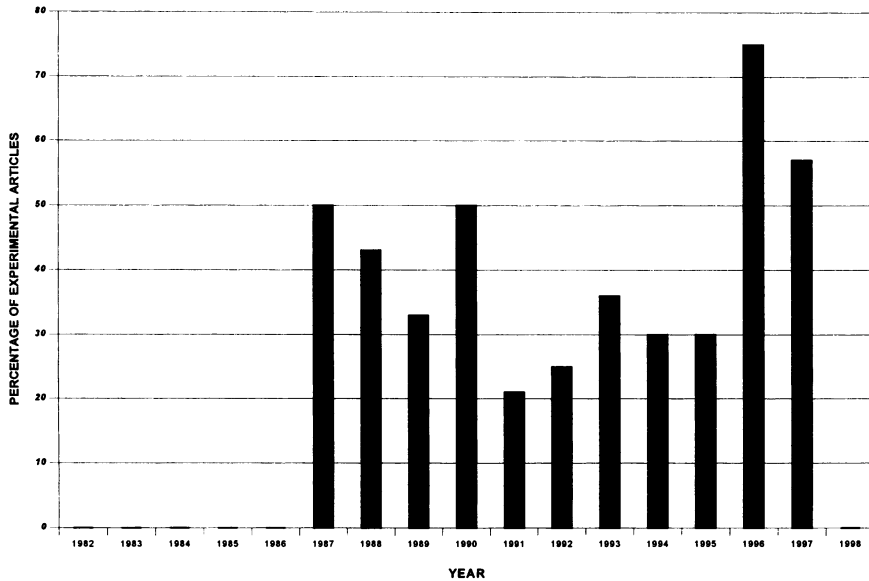


Fig. 1. Percentage of experimental articles published each year.

RESULTS

Pages per year. The number of pages printed per year generally increased since the start of TAVB as a newsletter in 1982. The two notable exceptions to this increase can be explained by lapses in publication. The first lapse occurred in 1984 when no journal was published. Therefore, a zero was recorded for that year. The second drop in pages per year, occurring in 1994 and 1995, can be explained by the fact that only one issue was published for those 2 years. The total number of pages in these issues were divided evenly between the years 1994 and 1995, yielding a low value for each year.

Article type. The number of experimental articles (41 total) published each year has increased substantially from the early years of TAVB (see Figure 1). The first experimental article appeared in 1987. In that year and in 1990, an equal number of experimental and nonexperimental articles appeared. In both 1996 and 1997, over 50% of the total articles described experiments. In 1998, however, all of the articles were nonexperimental. This reflects the fact that much of the 1998

volume was devoted to commentaries, solicited by the editor, concerning future directions of TAVB and of the analysis of verbal behavior in general.

Field versus laboratory. Each year in which an experimental article appeared, the number of laboratory studies substantially exceeded the number of field studies (see Figure 2).

Experimental design. Within-subject experimental designs were used in more studies than between-subjects designs during all years in which experimental articles appeared, with the exceptions of 1987 and 1992. In 1987, within-subject and between-subjects experimental designs were used equally often. In 1992, 60% of the experimental articles used between-subjects designs.

Dependent variable measure. Direct observation was the method most often used to quantify dependent variables in 9 of the 11 years in which experimental articles appeared (see Figure 3). In 1992, an equal number of studies used mechanical devices and direct observation to quantify dependent variables. In 1997, all experimental articles used mechanical recording. Mechanical re-

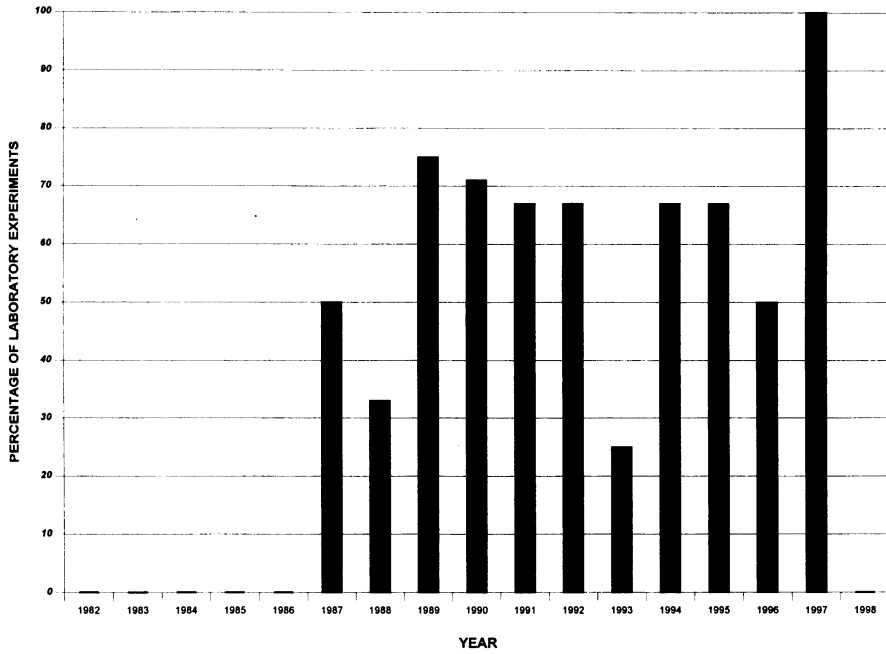


Fig. 2. Percentage of laboratory experiments published each year.

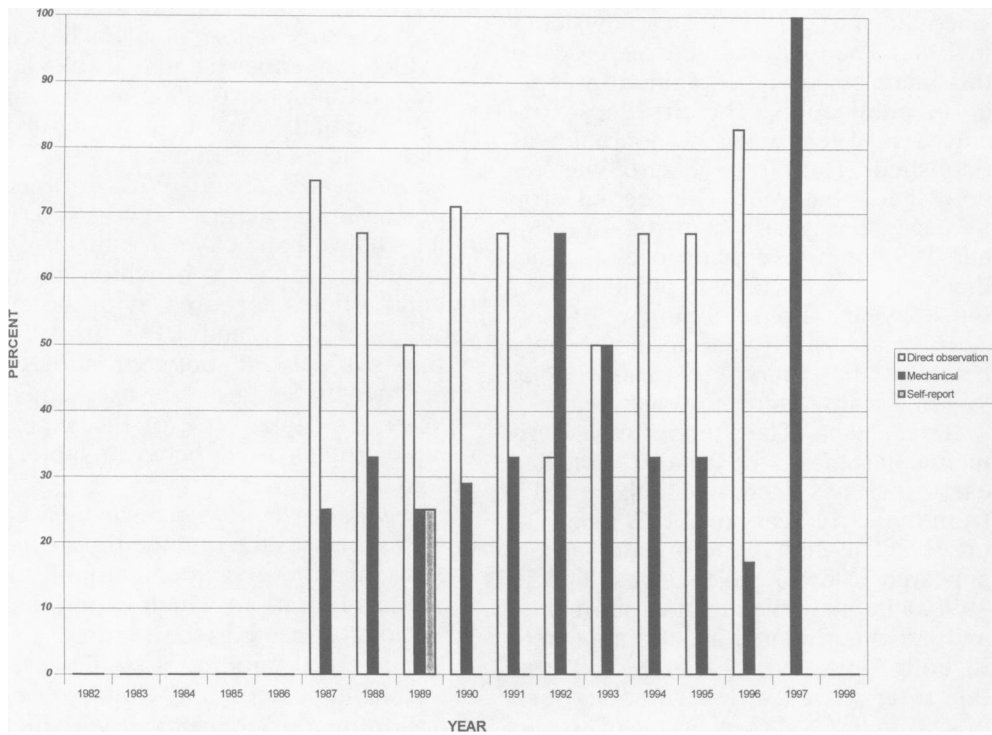


Fig. 3. Percentage of experimental articles reporting either direct observation, mechanical recording, or self-report as the dependent variable.

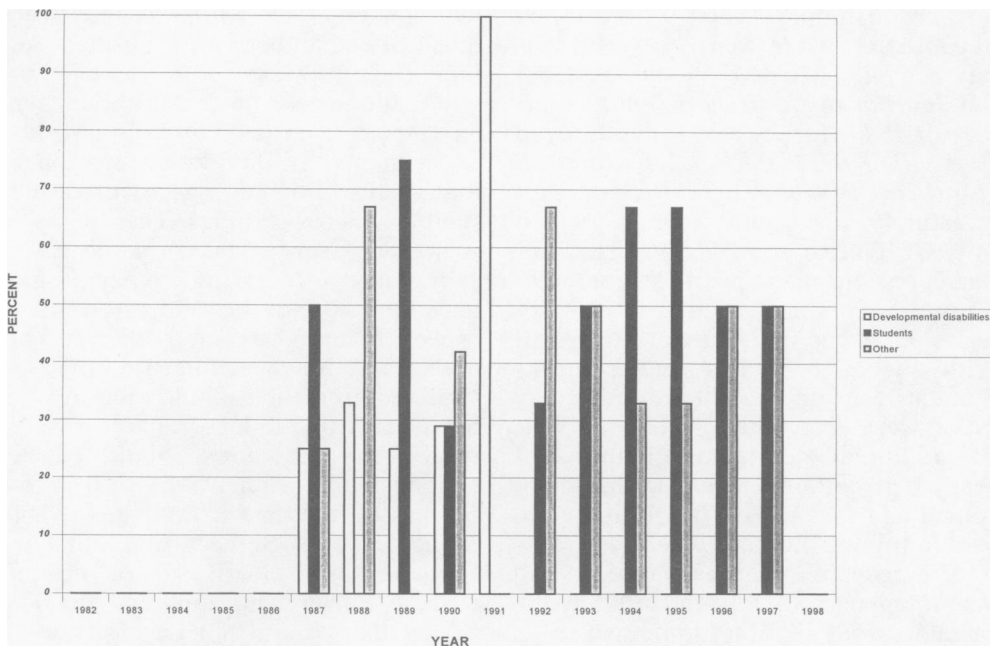


Fig. 4. Percentage of experimental articles reporting the use of people with developmental disabilities, students, or others as participants.

coding also was used rather frequently in those years when direct observation was the most-used method for collecting data. Self-reports appear in only 1 year (1989).

Participants. Participants in most studies came from the “students” and “other” categories (see Figure 4). Four of the 15 total entries in the “other” category (27%) came from studies involving preschool children. People with developmental disabilities participated in a substantial proportion of studies in 1987 through 1991, but no experiments with this population appeared in later years.

Participant gender. Thirty of the 41 experimental articles (73%) reported participant gender. Overall, and in all years, more experiments reported the use of both male and female participants than reported only male or only female participants. In total, seven of the 30 studies in this category used only male participants and two used only females. No trends are evident across time in the gender of participants in TAVB studies.

DISCUSSION

Since its inception as the *VB News*, TAVB has published a total of 1,569 pages. It has been an outlet for 150 articles (including editorials), 41 of which described experiments. Although 27% of the total articles published in TAVB describe experiments, nonempirical articles—for the most part, literature reviews and conceptual discussions—have been the mainstays of the journal. As Schlinger (1998) indicates, the preponderance of nonexperimental articles in TAVB is not necessarily problematic, insofar as conceptual articles can be important in their own right and may foster future research. However, the finding that the number of experimental articles published in TAVB has increased substantially since its inception lends support to Eshleman’s (1991) assertion that the field of verbal behavior research is growing rather than floundering.

The Analysis of Verbal Behavior is by no means the only outlet for behavior-analytic research on verbal behav-

ior. For example, a 1999 PsycINFO 1967 search using the key words verbal behavior yielded 64 entries from the *Journal of the Experimental Analysis of Behavior*, 54 from the *Journal of Applied Behavior Analysis*, and 25 from *The Psychological Record*. (Interestingly, the same search yielded only 72 entries from *TAVB*. This underscores the inadequacy of computer literature searches—each of the 150 articles published in *TAVB* appear to deal with verbal behavior—and suggests that entries from the other journals may be conservative. See Eshleman, 1991, for additional comments on this subject.) It is certainly possible that theoretical analyses in *TAVB* contributed to research published elsewhere.

The research that has appeared in *TAVB* appears to fall squarely in the behavior-analytic tradition, insofar as within-subject designs and direct measures of behavior (via human observers or mechanical recording) predominated. Although the tactics and strategies characteristic of behavior-analytic research have repeatedly proven their value, a number of authors have suggested that alternative strategies may be useful in the analysis of verbal behavior. For example, Critchfield and Epting (1998) suggested that self-reports analyzed via protocol analysis might prove to be useful. Correlational research in the vein of Hart and Rislely's book, *Meaningful Differences in the Everyday Experience of Young American Children* (1995), also appears to be worthwhile.

The Analysis of Verbal Behavior is not an applied journal, although interventions that directly benefited participants occasionally have appeared (e.g., Hall & Sundberg, 1987; Howard & Rice, 1988; Watkins, Pack-Teixeira, & Howard, 1989). Most of the experiments that have appeared are basic research designed to explore the variables that control verbal behavior and, often, to evaluate theoretical analyses. Therefore, it is not surprising that students (often college undergraduates) were the participants most often stud-

ied. Nor is it surprising that they were most often studied in controlled settings (laboratories).

No attempt was made in the present analysis to rate the quality of published experiments. It did, however, appear that methodological rigor varied substantially across articles. That this is so is not necessarily bad. In some cases, especially interesting experimental questions cannot be addressed using especially rigorous methods. This is not to say, however, that minimal design requirements should not be met for studies to produce reliable results. Moreover, procedures should be described with sufficient clarity to allow readers to evaluate and, if desired, to replicate them. Some articles that we evaluated used clearly suspect designs (e.g., A-B) with no apparent justification. Others could not be easily evaluated (or replicated), usually because important procedural details were omitted. Ensuring that experiments published in *TAVB* are not obviously flawed, and are clearly and completely described, is a reasonable goal for the future. So, too, as others have suggested, is publishing more experimental work, with a wider range of methods (Catania & Shimoff, 1998; Leigland, 1998).

Several steps could be taken to stimulate research to be submitted to *TAVB*. Recently, the VB SIG of ABA has taken steps to encourage more presentations at ABA related to verbal behavior by soliciting presentations through the VB SIG listserv and on the VB SIG Web site (psyc.csustan.edu/verbalbehavior). We hope that continuing to do so will stimulate more research and perhaps encourage those presenting their research at conferences to submit their studies for publication. This activity already has resulted in several symposia being organized for the 2000 annual convention of ABA.

A second possibility, albeit a more involved one, is to organize more conferences for the purpose of presenting and discussing verbal behavior research, the proceedings of which could

then be published. This has been done successfully in the past, with some excellent books resulting (e.g., L. J. Hayes & Chase, 1991; S. C. Hayes, Hayes, Sato, & Ono, 1994).

A third possibility for stimulating research is to incorporate some nonbehavioral techniques into the analysis of verbal behavior. One such technique that has received some attention in the behavioral community as of late is protocol analysis (Ericsson & Simon, 1984). Protocol analysis is a talk-aloud technique used to record the verbal behavior people engage in while they solve problems. Although using verbal reports as data has its limitations, such a tool could prove useful to the study of verbal behavior (see Critchfield & Epting, 1998, for a more detailed discussion). *The Analysis of Verbal Behavior* has been a good journal; following these suggestions may make it even better.

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