THE TECHNICAL DRIFT OF APPLIED BEHAVIOR ANALYSIS

STEVEN C. HAYES, ARNOLD RINCOVER, AND JAY V. SOLNICK

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO
AND UNIVERSITY OF KANSAS

Four dimensions (applied, analytic, general, conceptual) were selected from Baer, Wolf, and Risley's (1968) seminal article on the nature of applied behavior analysis and were monitored throughout the first 10 volumes of the *Journal of Applied Behavior Analysis*. Each of the experimental articles in Volumes 1 through 6 and the first half of Volumes 7 through 10 was rated on each of these dimensions. The trends showed that applied behavior analysis is becoming a more purely technical effort, with less interest in conceptual questions. We are using simpler experimental designs and are conducting fewer analogue studies. Although concern for maintenance is increasing, other forms of generality are being measured or analyzed less often. These trends are discussed in terms of a technical drift in applied behavior analysis.

DESCRIPTORS: characteristics and trends in applied behavior analysis, use of experimental designs, generalization, behavioral principles, analogue studies

A decade ago, the young discipline of applied behavior analysis emerged as a fully recognized subarea of behavioral science with the first publication of the *Journal of Applied Behavior Analysis*. In the inaugural issue, some of the distinctive features of the field were described by Baer, Wolf, and Risley (1968) in a seminal article entitled "Some Current Dimensions of Applied Behavior Analysis." This paper became perhaps the most highly referenced and reprinted article ever published in *JABA* and each of its three authors went on to become an editor of the journal, collectively guiding the first seven volumes. In that paper the methodology, strategy, language, settings, and problems of concern for applied behavior analysis were described. With the first 10 volumes of *JABA* now published it might be profitable to reexamine the dimensions of applied behavior analysis described by Baer et al. and to trace their development over the first decade. The purpose of such an enterprise is not just historical; delineating

the trends of *JABA* over the last 10 years may help us to identify future directions of the field, and may serve as a cue for evaluating, promoting, or reshaping certain of these directions.

THE DIMENSIONS

Baer et al. pointed to seven main characteristics of applied behavior analysis research. They will be considered in turn with a description of each dimension and a rationale for its selection or exclusion from further study.

The first characteristic of applied behavior analysis research is that it should be *applied*. According to Baer et al. (1968, p. 92) applied behavior analysis should be concerned with socially significant behavior change, in problem settings, with the organisms displaying the problem behavior. Recently, however, this definition of applied, and the possible value of "applicable" and nonapplied research, have been the subject of some controversy in the field (e.g., Birnbrauer, 1979). Therefore, it seemed to us both interesting and important to document the trends in this area.

Applied behavior analysis research must also be *analytic*: There must be a demonstration of experimental control. Baer et al. (1968) de-

Reprint requests should be sent to Steven C. Hayes, Department of Psychology, University of North Carolina at Greensboro, Greensboro, North Carolina 27412. Preparation of this article was supported in part by Grant No. G007802084 from the U.S. Office of Education.

scribed several time series designs that might be used for such analysis. "Reliability analyses" are designs that ask whether or not a certain procedure is responsible for corresponding behavioral change. Component and parametric analyses respectively assess which elements of the procedure produce the change, and the relationship between the value of the independent variable and the resultant change. Interestingly, Baer *et al.* apparently expected a trend in *JABA* with regard to this dimension: "At this stage in the development of applied behavior analysis, primary concern is usually with reliability, rather than with parametric analysis or component analysis" (Baer *et al.*, 1968, p. 95), perhaps implying that component and parametric analyses would increase as the field progressed. This dimension was included for further study in order that any such trends might be uncovered.

Baer *et al.* argued that applied behavior analysis should be *conceptual*. Authors should show how their procedures relate to basic principles of behavior: "The field of applied behavior analysis will probably advance best if the published descriptions of its procedures are not only precise technologically but also strive for relevance to principle. . . . This can have the effect of making a body of technology into a discipline rather than a collection of tricks. Collections of tricks historically have been difficult to expand systematically, and when they were extensive, difficult to learn and teach" (Baer *et al.*, 1968, p. 96). Many authors, formally and in passing, have speculated about recent trends in *JABA* in regard to this dimension, and few issues have given rise to more spirited discussion (e.g., Azrin, 1977; Birnbrauer, 1979; Deitz, 1978; Hayes, 1978).

Finally, applied behavior analytic research must be concerned with the *generality* of behavioral change. Generality is assessed by examining the maintenance of behavior change over time, its generality across different settings or stimulus conditions, the degree to which it spreads to related behaviors, and the degree to which it occurs across individuals. This dimen-

sion has received considerable conceptual and experimental attention in recent years and is, in many quarters, viewed as the foremost problem of applied behavior analysis. It seems important to assess whether or not *JABA* has been responsive to this dimension.

The remaining three dimensions described by Baer *et al.* will not be assessed here either because their importance and use seem to be clear and apparent or because we could not reliably measure the dimension. There is relatively little disagreement about the *behavioral* dimension, that behaviors should be precisely and reliably measured. Kazdin (1975) reported that 79% of *JABA* articles published in Volumes 1-9 met appropriate standards of intrasubject replication and assessment of reliability. That applied behavior analysis must be *technological*, with procedures sufficiently detailed to allow replication, has also been one of the major strengths of *JABA* of has not been subject to much controversy.

Data for the final dimension, *effectiveness*, will not be presented because we were not able to measure reliably whether the behavior changes reported in *JABA* studies were large enough and/or of sufficient social significance to be of practical value. Wolf (1978) has recently anticipated our problem of measuring effectiveness with his call for social validation measures. The use of social validation measures in applied behavior analysis would seem to be an excellent aid in assessing effectiveness. Unfortunately, for purposes of this paper, we cannot evaluate post hoc the effectiveness of *JABA* studies.

METHOD

Every article in *JABA* published in Volumes 1-6 and in the first two issues of Volumes 7-10 was rated by the senior author. Only half of the latter volumes were read as they are nearly twice as long as the earlier volumes. Each article was scored on four dimensions—applied, analytic, conceptual, and generality. The scoring sys-

tem used for each is described below. Only the results for experimental articles are reported here.

Applied

The applied dimension was scored in three parts. We first recorded whether the behavior studied was an *analogue behavior*. As a guideline, we asked whether the behavior was itself the problem behavior or had been selected on the basis of convenience. Second, we recorded whether the subjects used were *analogue subjects*. That is, were these subjects having difficulty with the problem behavior? Finally, we assessed whether the setting was an *analogue setting*. Was the study conducted in the problem setting or was it selected for convenience or for a controlled laboratory situation?

Analytic

This dimension was divided into four levels of analysis. In a *reliability analysis*, a relatively straightforward design, such as an A-B-A, simple group comparison, or multiple baseline design, is used simply to determine whether or not a particular intervention has reliably produced the behavior change. A second category is *comparative analysis* which aims to compare two distinct and relatively nonoverlapping treatment approaches. These include certain group comparison, alternating treatments, and B-C-B-C designs. Third, a *component analysis* compares elements of a particular treatment package, such as an A-B-B+C-B-A design. The final type is a *parametric analysis*, in which an independent variable is varied systematically along a dimension which is thought to relate to the behavior change. For example, the intensity or frequency of a particular independent variable might be systematically altered. For each study, every analysis reported was categorized in this manner. Thus, a single study could conceivably include several distinct types of analyses.¹

¹Note that any type of experimental analysis must first be based upon a reliability analysis. One can hardly ask about the effects of components, for exam-

Generality

Four types of generality were individually scored—generality across time (maintenance), settings, behaviors, and persons. For every study, we scored whether or not *each* type of generality was experimentally assessed, independent of whether it was achieved. A study was said to be concerned with a given kind of generality if there was a method of analysis specifically designed to assess it and if measures were taken, where no intervention was planned, in a second setting, on a second behavior, for a nontargeted person, or in a time period at least 1 month removed from the termination of treatment.

Conceptual

A four-part system was developed to describe the conceptual orientation of *JABA* research.² Some research is designed to develop scientific procedures, such as observation systems, and these were categorized as *methodology* studies. Research in the applied arena that concerns the development of helpful techniques was divided into three types. Some of this work is purely *technical*. It contains no reference to principles of behavior nor does it investigate new principles. Rather, the work is oriented exclusively toward "how to" questions of applied interest. For example, research that investigated the effects of police patrols on theft reduction and that contained no reference to behavioral principles (e.g., reinforcement or stimulus control) would be considered technical. Other research may refer to known principles of behavior and test the generality of known principles, such as

ple, until the effect of the overall package is clear. For this reason reliability analyses were scored only if one part of the manuscript *explicitly* reported a purely reliability analysis. The reliability analyses which were *implicit* in other types of analyses were not scored.

²A fifth category was scored, but is not reported here due to its low frequency. Some research is oriented *solely* toward the development of scientific concepts (such as the type seen in *JEAB*). Only a few experimental studies of this sort were found in *JABA*. However, there has been a substantial increase in discussion (nonexperimental) articles of this sort.

studies that apply reinforcement principles to new behaviors, settings, or populations. These were labeled *direct applications*. Finally, some applied work shows an effort to advance our basic knowledge of some behavioral phenomena. In addition to "how to" questions, this type of research also asks "what is" questions, such as "what is the motivation for imitation in children?" or "what is a response class?" These types of studies were labeled *systematic applications*.³

Interobserver Agreement

Each article was read and scored by the senior author. Twenty randomly selected articles were also independently rated by one of the junior authors. There were three categories in the applied dimension and four in the generality dimension that were separately rated for each manuscript as well as the two single dimensions of analytic and conceptual. Thus, the reliability of nine separate categories was calculated. For each manuscript the correspondence between the ratings of the senior author and the junior authors was determined. Within each category the number of agreements and the number of disagreements were assessed. Agreements were defined as follows:

1. Applied. Agreement was scored if raters agreed that it was or was not an analogue. Agreement was calculated separately for each of the three types.

2. Analytic. An agreement was calculated if both raters indicated the presence of the particular analysis. If one rater indicated that an analysis was present while another did not, that was a disagreement.

3. Generality. Agreement was calculated sep-

arately for each of the four areas in a fashion identical to the "applied" categories above.

4. Conceptual. Each article received one of four summary labels. An agreement required that there be perfect correspondence between the raters as to the category. Reliability was calculated by dividing the number of agreements by the number of agreements and disagreements and multiplying that number by 100. Reliabilities ranged from 85% to 100% across the nine total categories.

RESULTS

Data Analysis

Each of the analyses below is expressed as the percentage of the experimentally based articles in the volumes of interest. If, for example, a given volume contained 50 experimental articles and 10 of these assessed setting generality, the resulting value would be 20%.

Applied

Subjects. Very little change has occurred over the years in the percentage of experimental manuscripts using analogue subjects. On the average, 22% of the first four volumes (range: 21% to 23%) and 24% of the last four volumes (range: 21% to 30%) used analogue subjects as is shown in Figure 1.

Settings. Figure 1 suggests a trend toward fewer analogue settings in *JABA*. Although the first four volumes averaged 21.3% (range: 11% to 27%), the latter four volumes averaged only 11.7% (range: 3% to 16%).

Behaviors. Figure 1 also shows a substantial decrease in analogue behaviors found in *JABA*. Only 4.2% (range: 0% to 10%) of the articles in the last four volumes of *JABA* have used analogue behaviors, compared to 14.3% (range: 6% to 21%) over the first four volumes.

Analytic

Reliability analyses. The form of the question in reliability analyses is simply: "Was there an effect of B?" These kinds of questions are as

³Sidman (1960) uses the terms *direct replication* and *systematic replication* to distinguish between simply repeating an experiment with new subjects and investigating the limiting conditions of an experimental manipulation. Systematic replication potentially provides more information about the generality of a behavioral phenomenon and may also uncover new phenomena. In this respect the distinction made here between *direct* and *systematic application* parallels that drawn by Sidman (1960). See also Deitz (1978).

Fig. 1. The percentage of experimental articles using analogue subjects, settings, or behaviors.

popular today as they were in the earlier volumes and represent the major thrust of experimental work in *JABA*. The upper graph in Figure 2 reveals that, with the exception of the 29% found for Volume 5, 50% to 78% (mean: 65.7%) of the articles in *JABA* volumes have used reliability analyses.

Comparative analyses. The form of the experimental question in comparative analyses is: "Is B more (or less) effective than C?" There is clearly an increasing trend in the percentage of such questions in experimental articles in *JABA* over the years, as shown in Figure 2. Whereas the initial four volumes averaged 18.8% (range: 14% to 23%), the latest four volumes have averaged 32.7% (range: 26% to 41%).

Component analyses. The form of the experimental question in component analyses is: "What is it about B that makes it effective?" Surprisingly, these questions seem to be disappearing from *JABA* (Figure 2), gradually declining from an average of 22.3% in the first four volumes (range: 11% to 43%) to an average of 5.5% (range: 4% to 7%) in the last four volumes.

Parametric analyses. The questions posed in parametric analyses are of the form, "What are the effects of different levels (degrees) of B?" These questions have never been popular in *JABA* and they are declining further. Parametric analyses averaged 10.3% in the first four volumes (range: 6% to 13%), and 4% (range: 3% to 8%) for the most recent four volumes (Figure 2).

Generality

Maintenance. The first type of generality is that across time, or maintenance. For each study we ascertained whether at least a 1-month follow-up was conducted after treatment. Figure 3 shows a slight increase in *JABA*'s concern for maintenance from an average of 19.3% in the first four volumes (range: 9% to 24%), to an average of 24.8% in the last four volumes (range: 13% to 33%).⁴

Across settings/stimuli. In stimulus generalization a systematic assessment was made of the behavior gains in a nontraining setting or with untrained task stimuli. Figure 3 shows that assessments of this type have always been substantial in *JABA* (with the exception of Volume 5). However, it is surprising to note what appears to be a decreasing trend in these studies over the past decade. These articles averaged 36.8% (range: 27% to 44%) over the first four volumes, but only 26.8% (range: 19% to 37%) over the last four volumes.

Across responses. Response generalization

⁴The increasing trend toward measuring maintenance deserves some elaboration in view of seemingly contradictory findings by Kauffman, Nussen, and McGee (1977). They reported that reports of maintenance seem to be decreasing, at least in studies conducted in educational settings. They divided their literature review (which included several journals) into two time periods, 1968-1970 and 1971-1974, and found that information regarding maintenance (they used a less rigorous criterion than that used here) was present in 32% of the articles in the former period, and only 25% of the articles in the latter period. In using the same time intervals our data show a similar result—a decrease from the earlier period (18%) to the later period (16%). However, looking at all the data from 1968 to 1978, (Figure 3) suggests a slight increasing trend.

Fig. 2. The percentage of experimental articles conducting reliability, comparative, component, or parametric analyses. (Note that the ordinate differs in parts of the figure.)

Fig. 3. The percentage of experimental articles assessing maintenance, generality across settings or stimuli, generality across responses, or generality across persons.

refers to the systematic assessment of the relationship between changes in the directly treated behaviors and changes in other, nontreated behaviors. Although the data (Figure 3) are quite variable there appears to be some decline, from 15.5% (range: 3% to 23%) in Volumes 1-4 to 11.8% (range: 0% to 21%) in the last four volumes.

Across persons. Person generalization is concerned with the relationship between behavior changes in the target individual and changes in nontargeted individuals. This type of assessment has been extremely rare in *JABA*, averaging only 2.3% for the first four volumes (range: 0% to 6%), and 4.5% for the last four volumes (range: 0% to 9%).

Conceptual

Methodological. Figure 4 reveals a clear rising trend in the proportion of *JABA* manuscripts

concerned with methodological questions. There were few methodological articles in the first four years of *JABA* (mean: 1.5%; range: 0% to 3%), but they have gradually increased over the last four volumes (mean: 8%; range: 4% to 11%).

Purely technical articles. In early volumes of *JABA* it was virtually unknown for manuscripts to be published that contained no reference to behavioral principles, perhaps because of Baer et al.'s injunction against doing so (1968, p. 96). However, Figure 4 shows a dramatic rise in such articles over the last several volumes, from only .8% (range: 0% to 3%) in Volumes 1-4 to 18% (range: 10% to 22%) in Volumes 7-10.

Direct applications. The majority of *JABA* manuscripts have always been, and continue to be, simple applications, testing the applicability of known behavioral principles (Figure 4). Of

Fig. 4. The percentage of experimental articles which are methodological, purely technical, direct applications, or systematic applications. (Note that the ordinate differs in parts of the figure.)

the first four volumes, 62% (range: 57% to 66%) and of the last four volumes, 64% (range: 47% to 74%) were of this type.

Systematic applications. Conversely, whereas early issues of *JABA* were heavily devoted to the development and extension of behavioral principles in applied studies, this type of research is fast disappearing from *JABA* (Figure 4). In Volumes 1-4 these articles comprised 35.5% of the journal (range: 31% to 43%). They have gradually but systematically decreased and over the last four volumes represent 10.5% of the articles published in *JABA* (range: 4% to 21%).

DISCUSSION

Overall the data show that applied behavior analysis is becoming a more purely technical ef-

fort, with less and less interest in conceptual questions. To answer these technical questions we are using relatively simple experimental designs which determine if the technique had a reliable effect, or if it is better than another technique, with little interest in the components producing the effect or the parametric boundaries of the techniques. Our research is occurring less often in nonapplied situations and is using fewer analogue behaviors. Finally, we are a bit more careful to collect some maintenance data but our concern for the stimulus and response generality of behavior change seems to be lessening. Each of these trends deserves some elaboration.

The Applied Nature of Applied Behavior Analysis

The data show that applied behavior analysis is increasingly following Baer et al.'s recommendation that applied studies directly manipulate the problem behaviors, in natural settings, and with the troubled populations. However, this definition of applied has been labeled a "structural" one because it is based strictly upon the nature of the subjects, settings, and behavioral topography being studied. Alternatively, it is possible to define an applied study "functionally," as any study that increases the applied workers' ability to predict, understand, and control socially important behavior in the settings and with the clients they serve. Functionally speaking, then, basic or analogue studies may be very "applied" when they lead to widespread technological improvement.

The applied impact of a study cannot be known until we have tested the applicability of results in the social arena. It is by no means clear, however, that applied impact is necessarily or always enhanced by relying upon a structural definition of applied behavior analysis. Birnbrauer (1979) has argued that an insistence upon the structural trappings of applied work may at times be fundamentally at odds with the stated functionalism of applied behavior analysis and may be limiting the actual applied im-

pact of our research. If, for example, one is interested in the control of academic behaviors in a classroom, it is often felt that applied impact is assured merely by doing the research in a classroom setting. Classrooms, however, are often relatively uncontrolled environments and may differ in important ways across schools, teachers, peer groups, and over time. What is important is not the *appearance* of similarity between the research setting and the setting in which the results are put to use but the *functional* similarity between the two.

To continue the example, if classrooms A and B differ in important ways, then research that is done in any environment that contains the set of functionally important variables characteristic of classroom A will be applicable to that classroom, regardless of the appearance of similarity. Conversely, research done in classroom B may not be applicable to classroom A despite the fact that they seem similar.

It seems to us that we do not yet know what type of research will yield the largest long-term benefit. While there seems to be obvious value in much work conducted in applied settings, there is also applied value in some analogue work. For example, discovering "stimulus overselectivity" in autistic children (Lovaas, Schreibman, Koegel, & Rehm, 1971) has led to the design of new, more effective teaching procedures (Rincover, 1978; Schreibman, 1975). It is too soon to know which approach will be more fruitful, and the decision is complicated by the fact that many of the people conducting structurally applied, outcome-oriented research, have had principles-oriented, conceptual training (e.g., Azrin, Risley, Wolf). We need to be aware of the drift toward cure-oriented research because it is too early, in our view, to drift too far. Whether a structural or analogue approach to applied behavior analysis is most functional remains to be seen. Probably, both approaches are useful, with their relative usefulness to a given case depending on factors such as the present state of knowledge of the determinants of the behavior under investigation, the current level

of effectiveness, efficiency, and generality and public acceptance of existing treatments. If so, the present data may reveal a danger that the field is becoming too rigidly "applied," concentrating on what Birnbrauer (1979) called "cure-oriented demonstrations."

The Analytic Nature of Applied Behavior Analysis

Once one has adopted the view that the immediate and primary aim of applied behavior analysis is client cure, it follows that there is less need for component and parametric analyses. If one has an effective treatment program, the pressure to refine it may be quite low, and one need only compare it to others periodically (cf. Azrin, 1977). It is interesting to note that, although Baer et al. clearly expected more complicated analyses to be done as applied behavior analysis matured, the exact opposite has occurred.

As described by Baer et al. the term "analytic" means the clear demonstration of an effect: "An experimenter has achieved an analysis of a behavior when he can exercise control over it" (Baer et al., 1968, p. 94). The importance of component analyses, parametric analyses, and other more sophisticated analytic attempts are often to be found less in "control" (in an immediately applied sense) and more in "understanding" (in a scientific sense). One may easily control, say, aggressive behavior through the use of punishment without having contributed significantly to an understanding of aggression. Perhaps for this reason parametric and component analyses are seldom seen in the pages of *JABA*. Their immediate applied value is often not especially clear, although their ultimate applied and scientific value may be profound. For example, if one has a package program that is effective, there may be little obvious value in doing a component analysis. But these more complicated analyses may increase our knowledge of the actual functional variables and subsequently increase our ability to generate more efficient and general behavioral programs. Per-

haps, we have gone too far in our attempt to be *immediately* applied at the expense of being *ultimately* more effective, in failing to encourage more analogue and analytical studies that have treatment implications.

Generalization and Maintenance

One might argue that generality is not so much an essential aspect of applied behavior analysis as it is one of the foremost challenges to it. Much of the early work in *JABA* was understandably devoted to demonstrating that operant methods could be effectively used with clinical problems, leaving the generality of those effects to future studies. Unfortunately, much of the current research continues to focus to an even greater degree on demonstrating effects without attending to their generality (Figure 3). Only in maintenance have we become somewhat more careful to assess it at least (this does not imply that we are better at producing it, however). There are hopeful signs, such as Stokes and Baer's (1977) review of the setting generality literature, yet setting generality remains a critical problem for the field.

It is also noteworthy that the large majority of generalization research has been concerned with generalization across settings and with maintenance, with relatively little attention given to response generalization or generalization across persons. Some clinical populations, such as autistic and retarded children, display behavioral deficits (and excesses) which are so extensive that one behavior at a time applications of behavior modification have not proven very fruitful (Lovaas, Koegel, Simmons, & Long, 1973). For such populations it would seem that we *must* investigate strategies that produce multiple or widespread behavior change—that is, a technology for promoting response generalization—if we are ever to socialize or normalize these clients (e.g., Rincover & Koegel, 1977). Similarly, if our parent or teacher training programs are ever to find homes and schools, it would seem that we must investigate dissemination procedures for promoting generalization

across persons. In short, response and person generalization seem to be important, though as yet ignored, directions for applied behavior analysis.

Conceptual Systems

Baer et al. argue that the field will advance most rapidly if the description of procedures are not only precise and complete but demonstrate their relevance to principles of behavior. But there is another sense in which applied research may bear upon conceptual issues. It may frequently be the case that significant theoretical issues may be raised most clearly in the context of applied work. For example, the nature of response classes is an issue necessarily raised by a behavioral analysis of imitation, generative language, and other applied phenomena. The nature of response classes may be of less immediate concern in basic research, where less complex behaviors are selected on the basis of research convenience, and filling behavioral deficits is not the goal of the research. In the effort to distinguish between the experimental analysis of behavior and applied behavior analysis, Baer et al. may have overstated the case: "In application, the theoretical importance of a variable is usually not at issue" (Baer et al., 1968, p. 96).

The data reveal what might be termed a technical drift in *JABA*. We are becoming less concerned with basic principles of behavior, and more concerned with techniques per se. It may be, as some have stated, that additional principles are needed beyond those developed in basic operant psychology. The present data, however, not only show that the old concepts are being increasingly ignored but also that no new concepts are emerging. This decrease in conceptual analyses has been defended as indicating the proper use of inductive methodology in behavior analyses (e.g., Risley, Note 1). But it may have several undesirable effects. Technology can be, and often is, successfully developed without any particular conceptual interest. Applied behavior analysts often seem to generate their interventions by intuition, trial and error, informal ob-

servations, or common sense, rather than theoretical concepts and analysis. This approach *can* generate solutions or partial solutions relatively quickly. However, the speed of development in purely technical efforts may be illusory and may rely partly on the fact that many prominent behavior analysts doing technical research have had extensive theoretical training. Such an approach by persons not trained in behavior theory might actually slow progress of the field, since little attention might be paid to the functional variables which can be carried to different settings, subjects, and target behaviors. At this point, we do not know which approach will be more productive in the long run (Deitz, 1978).

Current Dimensions in Applied Behavior Analysis

The empirical data support the view that applied behavior analysis as reflected in *JABA* has shown a consistent relationship to the major criteria described by Baer *et al.* However, the trends are somewhat disturbing in several areas: the formalization of the meaning of the term "applied" to be limited to structural and topographical appearances and not necessarily to the functional realities; the lack of balance in the types of analyses we are conducting and a resultant loss of information; and the lack of concern for different types of generalization. Overall, we are seeing an increasing technical drift in applied behavior analysis.

It is not clear whether the trends documented here are due to changes in *JABA* editorial policies, promoted by the four editors represented here, to types of research conducted (and funded) in the field, or the types of manuscripts submitted to *JABA*. It may be that it is often easier simply to show that techniques work than to simultaneously make important conceptual contributions. Whatever their determinants, these trends may indicate a developing polarization in applied behavior analysis between its purely technical and more conceptual aspects. This would seem unfortunate because both types of endeavors seem clearly to have applied value.

Perhaps what is needed are separate outlets for work of applied but not theoretical interest (such as a *Journal of Behavioral Technology*) and studies of applied plus theoretical interest. Alternately, perhaps recognition of this issue may contribute to a greater balance between the two approaches in *JABA*.

REFERENCE NOTE

1. Risley, T. R. In S. C. Hayes (Chair), *Some current dimensions of applied behavior analysis: Ten years later*. Symposium presented at the meeting of the Midwestern Association of Behavior Analysis, Chicago, May 1978.

REFERENCES

- Azrin, N. H. A strategy for applied research: Learning based but outcome oriented. *American Psychologist*, 1977, **32**, 140-149.
- Baer, D. M., Wolf, M., & Risley, T. R. Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1968, **1**, 91-97.
- Birnbrauer, J. S. Applied behavior analysis, service, and the acquisition of knowledge. *The Behavior Analyst*, 1979, **2**, 15-21.
- Deitz, S. M. Current status of applied behavior analysis: Science versus technology. *American Psychologist*, 1978, **33**, 805-814.
- Hayes, S. C. Theory and technology in behavior analysis. *The Behavior Analyst*, 1978, **1**, 35-41.
- Kauffman, J. M., Nussen, J. L., & McGee, C. S. Follow-up in classroom behavior modification: Survey and discussion. *Journal of School Psychology*, 1977, **15**, 343-348.
- Kazdin, A. E. Characteristics and trends in applied behavior analysis. *Journal of Applied Behavior Analysis*, 1975, **8**, 332.
- Lovaas, O. I., Koegel, R., Simmons, J. O., & Long, J. S. Some generalizations and follow-up measures on autistic children in behavior therapy. *Journal of Applied Behavior Analysis*, 1973, **6**, 131-164.
- Lovaas, O. I., Schreibman, L. E., Koegel, R. L., & Rehm, R. Selective responding by autistic children to multiple sensory input. *Journal of Abnormal Psychology*, 1971, **77**, 211-222.
- Rincover, A. Variables affecting stimulus fading and discriminative responding in psychotic children. *Journal of Abnormal Psychology*, 1978, **87**, 541-553.
- Rincover, A., & Koegel, R. L. Research on the education of autistic children: Recent advances and

- future directions. In B. Lahey & A. Kazdin (Eds.), *Advances in clinical child psychology*. New York: Plenum Press, 1977.
- Schreibman, L. E. Effects of within-stimulus and extra-stimulus prompting on discrimination learning in autistic children. *Journal of Applied Behavior Analysis*, 1975, 8, 91-112.
- Sidman, M. *Tactics of scientific research*. New York: Basic Books, 1960.
- Stokes, T. F., & Baer, D. M. An implicit technology of generalization. *Journal of Applied Behavior Analysis*, 1977, 10, 349-367.
- Wolf, M. M. Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis*, 1978, 11, 203-214.

Received December 5, 1978

Final acceptance September 21, 1979