

FUNCTIONAL ASSESSMENT: CONTRIBUTIONS AND FUTURE DIRECTIONS

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Functional assessment is at once redefining the standards for clinical interventions and reemphasizing the importance of studying basic behavioral mechanisms. This commentary describes one perception of what we are learning from current research on functional assessment and suggests directions for the future.

DESCRIPTORS: functional analysis

The purpose of functional assessment is to improve the effectiveness and efficiency of behavioral treatment. This issue of *JABA* offers an opportunity to review the advances in functional assessment technology over the past decade and to reexamine the challenges we face today. In many ways the recent attention given to assessment has taken us back to the foundations of applied behavior analysis and has improved the link between our understanding of behavioral mechanisms and the quality of behavioral interventions. We owe a significant debt to those who have led this effort. For the purpose of this commentary, functional assessment refers to the full range of strategies used to identify the antecedents and consequences that control problem behavior. The term *functional analysis* is reserved for the manipulation of environmental events under experimental conditions with systematic observation of behavior. Functional analysis is one approach to functional assessment. I see the following as important messages from recent efforts to build a practical technology of functional assessment.

What We Are Learning

Complex patterns of control. Initial functional analyses demonstrated the importance of under-

standing the behavioral mechanisms controlling a problem response (Carr, 1977; Iwata, Dorsey, Sliker, Bauman, & Richman, 1982; Repp, Felce, & Barton, 1988). More recent analyses emphasize the complex interactions among controlling variables. First, individual problem behaviors may be maintained by more than one mechanism (positive reinforcement and negative reinforcement) (Durand & Carr, 1992; Haring & Kennedy, 1990; Smith, Iwata, Vollmer, & Zarcone, 1993). Second, a group of problem behaviors may be members of a single response class (Cataldo, Ward, Russo, Riordan, & Bennett, 1986; Parrish, Cataldo, Kolko, Neef, & Egel, 1986; Sprague & Horner, 1992). Finally, establishing operations interact with antecedent stimuli to alter the stimulus-response relationships that operate at any given time (Kennedy & Ikonen, 1993; Michael, 1993; Vollmer & Iwata, 1991). The basic picture is that conducting a functional assessment of problem behaviors may require the consideration of a wide array of antecedent and consequent variables. Initial efforts to identify the variables that control a target behavior have led us to look at more complex classes of behavior, interacting antecedent events, and a wider array of maintaining contingencies.

Functional assessment is an ongoing process. Functional assessment is both an important part of constructing an initial clinical program and an important part of the continuing changes in clinical interventions. An exciting theme from the 1993 Association for Behavior Analysis conference came from the numerous presentations reporting functional assessments that were conducted throughout

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the course of an intervention. In some cases, continued assessment was needed to understand an undifferentiated pattern of responding. In other cases, continued assessment was needed to fine-tune an intervention that was not producing acceptable results. In yet other cases, the ongoing assessment was needed to understand changes in the target response.

The important message is that functional assessment should not be viewed as a one-time event. In fact, treatment plans often change over time, and these changes should be influenced by assessment data in the same way as the original intervention plan (Lerman, Iwata, Smith, Zarcone, & Vollmer, 1994).

Attention to antecedent variables. A central goal of functional assessment is to identify reinforcers that maintain a target response. Behavior is a function of its consequences, and it is useful to understand the consequences maintaining a response if we are to build effective behavioral interventions. At the same time, recent publications are emphasizing the value of understanding antecedent events (Carr & Carlson, 1993; Dunlap, Kern-Dunlap, Clarke, & Robbins, 1991). If the only information we have about a problem behavior is related to the consequences that maintain it, we are limited in suggesting changes in the antecedent events within an environment. Clearly, assumptions about the antecedent events can be inferred from an understanding of the reinforcement functions, but a comprehensive intervention plan often requires a more detailed understanding of the specific stimulus features that control a problem response (Carr, in press; Durand, 1990).

For the Future

Balancing precision and efficiency. There are a number of different strategies for attempting to understand the variables that control a problem response. These different approaches to functional assessment each have strengths and weaknesses. It is likely that each is a brilliant approach under certain conditions and a disappointing one under others. The major difficulty comes from trying to identify a procedure that both delivers very precise,

usable, valid information about the problem behavior, yet does so with minimal time, effort, and expectations about the skills of the implementors. I do not believe that we should search for the one "true" functional assessment procedure; instead, we should encourage the development, improvement, and systematic comparison of multiple procedures.

It is very likely that different functional assessment procedures will be recommended in different situations. Within published research, the expectation will remain that a rigorous functional analysis (e.g., Iwata et al., 1982; Mace, Lalli, Pinter-Lalli, & Shea, 1993; Wacker et al., 1990) is conducted. In clinical applications, however, efficiency issues may be of greater importance, and a wider range of options may be acceptable (Carr, in press; Cooper & Harding, 1993; Durand, 1990; O'Neill, Horner, Albin, Storey, & Sprague, 1990). We need to encourage innovation in functional assessment technology while simultaneously holding each innovation to high professional standards. Our recommendation is that a clinical standard for conducting a functional assessment include the following four requirements: (a) Problem behaviors are operationally defined, (b) antecedent events that predict occurrence and nonoccurrence of the problem behaviors are identified, (c) hypotheses are developed concerning the consequent variables that maintain problem behaviors, and (d) direct observation data are collected to provide at least correlational confirmation of hypotheses associated with antecedent and consequent events (Horner, O'Neill, & Flannery, 1993).

Getting more specific. To date, efforts to design functional assessment procedures have often focused on a four-part taxonomy of the variables that maintain problem behaviors (tangible, attention, escape, automatic). In the future, I believe we will need to be more specific about the stimuli that control problem behaviors. It may not be enough to indicate that a problem behavior is escape motivated without providing specific information about the aversive stimuli that set the occasion for escape. It is important, for example, to define what it is about "difficult tasks" that makes them aversive. Are they physically demanding, boring, linked with

correction procedures that are punitive, and so forth? As we strive to improve the technology of functional assessment, a major focus should be on improving the precision with which we identify the variables controlling problem behaviors in a specific context.

Moving from functional assessment to clinical intervention. At present, I believe we are better able to describe how to conduct a functional assessment than we are at describing how to use the resulting information to construct a clinical intervention. An important step for the future will be to examine how best to assist school personnel, families, residential personnel, and employment specialists in the use of functional assessment information (Tuesday-Heathfield, 1992). This will mean learning more about how functional assessment information affects the behavior of clinicians.

Effective use of functional assessment information may require information about the behavior of those who will implement the interventions (McClannahan & Krantz, 1993). I believe Albin, Lucyshyn, and Flannery (1993) provide wise guidance with their emphasis on designing clinical programs that are both "technically accurate" and a good "contextual fit." They make the assumption that in any specific situation, many clinical interventions can result in behavior change. The goal is not to find the one true intervention, but to find an intervention that is effective *and* will be implemented by the people in the setting. An intervention is contextually appropriate if it fits with the skills, schedules, resources, and values of the people who must implement the plan. A "good" clinical intervention will need to meet a dual standard. It must be technically sound (i.e., consistent with the functional assessment and our understanding of the laws of human behavior), and it must be a contextually sound (i.e., consistent with the values, skills, and resources in the setting). Only when both criteria are met would we expect the intervention to be implemented with fidelity, and result in behavior change. The hypotheses formed by Albin et al. (1993) provide a potentially fruitful direction for future research.

Focusing on the outcomes. As the technology of functional assessment continues to be refined, care

must be taken to remain accountable to practical outcomes. It will continue to be important to evaluate the accuracy with which our procedures identify the variables that control a problem behavior. This is the evaluation most commonly conducted in formal research studies. However, we also need to determine whether the intervention based on the functional assessment resulted in real change in the life of the target person. Did the functional assessment improve the effectiveness and efficiency of the clinical intervention, and did the intervention result in the kind of socially important outcomes Baer, Wolf, and Risley (1968) used to define the field of applied behavior analysis?

Functional assessment is a technology for identifying the variables that control target behaviors. The value of a functional assessment is that it provides information that improves the effectiveness and efficiency of our clinical interventions for people with problem behaviors. As such, we should evaluate our technology of functional assessment both by how accurate we are at identifying controlling variables and by how effective we are at producing substantive change in the lives of people with problem behavior. By holding ourselves accountable for the terminal outcome, we will be most likely to develop an assessment technology that meets the applied challenges in our field.

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