Positive Behavior Support: Expanding the Application of Applied Behavior Analysis

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Positive behavior support (PBS) is an approach to providing services to individuals who exhibit challenging behavior. Since its inception in the early 1990s, PBS has received increasing attention from the behavior-analytic community. Some behavior analysts have embraced this approach, but others have voiced questions and concerns. In this paper we describe the framework of PBS and show that it is consistent with the tenets of behavior analysis. Also, we illustrate how the framework of PBS might be used to guide practitioners and researchers in the field of applied behavior analysis. We hope to demonstrate that PBS offers useful suggestions regarding how applied behavior analysts can design and evaluate effective programs for people with developmental disabilities or behavioral challenges.

Key words: applied behavior analysis, positive behavior support, developmental disabilities, theoretical issues in behavior analysis

Perhaps no other subdiscipline of psychology has had such a dramatic impact on the types and quality of services provided to people with developmental disabilities and challenging behavior as applied behavior analysis. For example, until the 1950s, a widely held assumption was that people with severe and profound intellectual deficits were unable to benefit from teaching opportunities; that is, they were unable to learn. Using principles established through basic research conducted in the laboratory, however, behavior analysts demonstrated that the behavioral repertoires of people with developmental disabilities could be shaped and maintained by rearranging environmental contingencies (e.g., Fuller, 1949; Williams, 1959; Wolf, Risley, & Mees, 1964). These early studies resulted in a gradual shift away from providing only custodial care services to the development and implementation of active programming for people with developmental disabilities.

As evidence continued to mount that behavior patterns of individuals with developmental disabilities could be altered via technologies based on the processes of reinforcement and punishment, other behavior analysts (e.g., Carr, 1977; Iwata, Dorsey, Slifer, Bauman, & Richman, 1982/1994) began to explore the impact of social contingencies on challenging behavior. For example, in their seminal paper, Iwata et al. demonstrated functional relations between self-injury and particular contextual variables by creating analogue conditions in which predetermined antecedent and consequent variables were manipulated. This research challenged the notion that behavior patterns such as self-injury were "part of the disability." Research on functional assessment and functional analysis has ballooned in the past two decades, and the efficacy of treatments based on these pretreatment assessments is well established (e.g., Arndorfer & Miltenberger, 1993).

Amid the advances in services driven by the documented efficacy of be-

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havior-analytic technologies, there have been changes in how services are delivered at more macro levels. Fifty years ago, most people with severe or profound intellectual or physical deficits received little more than custodial care within large state-supported institutions. In recent years, there has been an increasing shift toward moving people out of institutions and into less restrictive and more integrated settings (Kennedy & Haring, 1992; Meyer, Peck, & Brown, 1991). Corresponding with the movement away from institutional care and service delivery has been increasing interest regarding methods of producing behavior change that involve nonaversive and functionally based interventions (e.g., Koegel, Koegel, & Dunlap, 1996; Meyer & Evans, 1989).

In 1990, Horner et al. described an approach called positive behavior support (PBS). This approach grew out of the increasing shift toward community services and changes in service provision that involved increased interest in nonaversive and functionally based interventions. Since its initial description, PBS has received increasing attention in the behavior-analytic community. PBS has been the focus of a number of conference presentations and workshops at recent conferences of the Association for Behavior Analysis (e.g., Albin, 1999; Freeman, Anderson, & Kincaid, 1999; Horner, 1999), and a journal devoted to empirical studies within a PBS framework now exists (*Journal of Positive Behavior Interventions*; Dunlap & Koegel, 1999). As this approach becomes more widespread, some behavior analysts have voiced questions and concerns regarding PBS. Some have asked what this approach is, and how it might be different from applied behavior analysis, whereas others have voiced concerns about the goals and implementation of PBS (e.g., Foxx, 1998). The purpose of this paper is to provide an introduction to PBS, illustrating how it might be used to inform and guide applied behavior analysis. It is our position that PBS pro-

vides a framework to guide practitioners and researchers in the field of applied behavior analysis. We hope to demonstrate that the framework of PBS offers useful suggestions regarding how applied behavior analysts can design and evaluate effective programs for people with developmental disabilities or behavioral challenges.

WHAT IS POSITIVE BEHAVIOR SUPPORT?

PBS is a framework for developing effective interventions and programs for individuals who exhibit challenging behavior. PBS uses a wide variety of procedures and strategies drawn from applied behavior analysis (Koegel et al., 1996), and as such involves the utilization of empirically tested assessments and interventions. The framework of PBS describes both (a) a set of values regarding quality of life and the rights of persons with disabilities and (b) procedures and steps to be used when working with people who exhibit challenging behavior (J. L. Anderson, Albin, Mesaros, Dunlap, & Morelli-Robbins, 1993; Horner et al., 1990).

Several authors have described the defining characteristics of PBS (e.g., Horner et al., 1990; Koegel et al., 1996, Weigle, 1997). Although there is some variation in terms of the specific dimensions, services consistent with a PBS perspective generally are characterized by three features: (a) They operate from a person-centered values base, (b) they recognize the individuality of each person, and (c) they work toward and achieve meaningful outcomes (Koegel et al., 1996). In the remainder of this paper, these three characteristics are expanded to demonstrate how PBS provides a framework that promotes best practices in working with people with developmental disabilities and challenging behavior.

Operating from a Person-Centered Values Base

The first characteristic of PBS is a commitment to person-centered values.

Services provided from a person-centered perspective are based on the expressed preferences of the individual. In other words, PBS focuses on assisting an individual to live the kind of life that he or she wants to live (e.g., where to live, with whom to live, what sort of employment to hold, what leisure activities to engage in). This emphasis on individual preferences affects the role of behavior analysts and others in making decisions about an individual's life. Traditional approaches to behavior management often emphasize the role of "experts" (i.e., service providers) in making such decisions as which behaviors to target for intervention, when and where to intervene, and the most optimal method of intervention, as well as in making other important life decisions.

Although the values base of PBS directs team members toward recognizing the importance of involving individuals who specialize in certain areas in the support process (e.g., behavior analysis, occupational therapy), these people are not the sole decision makers. Rather, providing support consistent with PBS involves encouraging individuals and their families and friends to take leading roles in making decisions regarding the focus of the services provided (C. M. Anderson, Bahl, & Kincaid, 1999; Kincaid, 1996). Under this approach, people with specialized training and experience (e.g., behavior analysts) are available to help guide and support individuals and families in their decisions, and to help them develop strategies to achieve their desired goals.

To facilitate the active involvement of individuals, their families, and friends, PBS often involves a team-based approach (J. L. Anderson et al., 1993; Weigle, 1997). Members of a team typically consist of the focus person (i.e., the person around whom the services are being designed) and relevant people in his or her life (e.g., family members, friends, social worker, speech therapist, behavior analyst). A team-based approach allows for input from individuals who know the focus person in different contexts, resulting in the gathering of more complex and detailed information than otherwise would be possible. For example, team members are able to share information about strategies that they have found to work and not to work with a certain individual, thus leading to a more comprehensive behavior support plan. Although the idea of gathering information from a variety of sources to guide decision making may be new to some applied behavior analysts, the concept is relatively common in organizational behavior management (e.g., Chase & Smith, 1994; Gilbert, 1976) and in behaviorally oriented school psychology (Shaw & Swerdik, 1995). For example, when a student is having difficulties in school, Shaw and Swerdik suggest that, rather than having the school psychologist be solely responsible for assessment and treatment, a team consisting of multiple professionals (e.g., teacher, principal, school psychologist) be formed. They suggest that the team be responsible for conducting a comprehensive assessment and developing a plan for intervention. They also note that this often results in a more accurate assessment and, thus, development of a treatment plan that is more likely to be effective.

Because an important part of PBS involves working to achieve the preferences of individuals and the people who care about them, it is important that team members clearly express their goals. One way to assist teams in developing goals is through the use of person-centered planning technology (e.g., Kincaid, 1996; Mount, 1994; Pearpoint, O'Brien, & Forrest, 1992). Although person-centered strategies do not delineate specific goals that teams should work toward, they are useful in highlighting key areas within which goals should be identified. For example, use of person-centered planning strategies places emphasis on ensuring that all people, regardless of disability, are afforded opportunities to be present and to participate in community life.

Also, through their use, teams are encouraged to develop opportunities (and the supports needed) for individuals to gain and maintain satisfying interpersonal relationships. Third, person-centered planning strategies help highlight for the team the benefits in supporting individuals in expressing preferences and making choices in their everyday lives. Finally, person-centered strategies are useful in focusing service providers and other team members on developing strategies for ensuring that people are assisted in enjoying opportunities to fulfill respected roles within society and in living with dignity.

Recognizing the Individuality of Each Person

The second characteristic of PBS involves individualizing the supports provided to people with disabilities. This contrasts with the service provision system often used to care for members of this population that involves rigid, standardized supports for everyone. For example, many group homes and other residential care facilities have regulations that require all residents to participate in preselected activities (e.g., a weekly outing to a predetermined place) at predetermined times (e.g., every Thursday afternoon). In contrast, services consistent with a PBS perspective involve determining the optimal environmental conditions under which behaviors appropriate on outings are likely to occur and be maintained. For example, suppose an individual routinely emits self-injurious behavior prior to and during Thursday outings. Further, the only day this individual's mother can visit is on Thursday afternoons and, when he emits extreme behavior, he often is not taken on the outing. Instead of developing an intervention to specifically address the self-injury (e.g., consequence manipulation), PBS might involve changing the routine such that the individual goes on community outings on a day that his mother does not visit. The individual focus of behavior

analysis, as well as the growing research base on the beneficial effects of providing choice (e.g., Bambara, Koger, Katzer, & Davenport, 1995; Dunlap et al., 1994; Dyer, Dunlap, & Winterling, 1990), has been and will continue to be useful in designing services for a specific individual.

Although PBS focuses on supporting an individual in living the life that he or she chooses, such support is constrained by the maxim that services must not be harmful or degrading to the person or to those around him or her. Take for example an individual who lives in a supported living environment who does not often clean her apartment. Up to a certain point, service providers may need to learn to tolerate her "choice" not to live an immaculate lifestyle. However, support for expressed preferences and choices stops at the point at which her behavior places herself or others at risk (e.g., when she eats meat that was left out overnight, when she is about to be evicted from her apartment due to the filthy conditions). Decisions about what behavior should and should not be supported can be difficult. Further, definitions of acceptability may differ from one person to the next. Beyond the ethical guidelines of our profession, there are no hard and fast rules regarding which choices should or should not be supported. In general, those individuals who work with and care about the individual in question are in the best position to make decisions about what should and should not be supported. This difficulty illustrates the importance of taking a team-based approach to providing services, as suggested by the framework of PBS.

Working Toward and Achieving Meaningful Outcomes

Providing services within the framework of PBS ensures that practitioners focus on multiple aspects of an individual's life—variables that are often subsumed under the label "quality of life" (J. L. Anderson, Russo, Dunlap,

& Albin, 1996; Kincaid, 1996). For example, desired outcomes of PBS include designing services that assist an individual in (a) developing and maintaining satisfying relationships, (b) participating in productive and meaningful employment or educational opportunities, (c) participating in recreational activities, and (d) developing the skills necessary to function effectively in his or her community. The overarching theme of the goals of PBS, therefore, is to design services that result in an individual's life being qualitatively different (i.e., better) than before. Further, services typically are designed to help an individual become more integrated into his or her community. The goals of PBS are achieved by using services, activities, and supports that are available to the community at large. Thus, the framework is consistent with the increasing focus on inclusion and integration for people with developmental disabilities or behavioral challenges.

Although the framework of PBS suggests designing services that result in increased community participation, simply integrating an individual into more natural settings does not, by itself, ensure that his or her life will be enhanced or that challenging behavior will dissipate (Carr, Carlson, Langdon, Magito-McLaughlin, & Yarbrough, 1998). As noted by Carr et al., a thorough preintervention assessment is needed to ensure that the services "alter various contexts in ways to make enhancement of constructive and satisfying lifestyles more probable" (p. 7). Thus, based on the PBS perspective, intervention is preceded by an assessment that is comprehensive, taking into account various contextual variables that influence multiple aspects of a person's behavior. These assessment and intervention processes are described next.

Comprehensive assessment. Pretreatment assessments generally involve at least two components: identifying contextual variables that evoke and maintain adaptive behaviors and identifying functional relations that maintain challenging behavior. Many of the strategies recommended for use during preintervention assessment are derived from behavior-analytic research on functional assessment and functional analysis.

Because the primary goal of PBS is to improve an individual's overall quality of life (Koegel et al., 1996), assessment focuses on the identification of environmental variables that might be manipulated to result in such improvements. For example, assessment might involve evaluating an individual's current living environment (e.g., number of people present, availability of and access to preferred recreational materials), social relationships (e.g., between the individual and staff, between the individual and other residents, among staff), work or academic setting (e.g., utility and value of tasks required, extent to which the individual can perform tasks independently), and degree of participation in the community. This assessment focuses on the relevance of these variables to the specific individual.

If challenging behavior is a concern, a comprehensive assessment also may involve identifying functional relations between environmental variables and challenging behavior. Specifically, a comprehensive functional assessment is used to gather information about a person's skills and communication strategies, as well as about the environmental variables that affect challenging behavior. Use of functional assessment technology traditionally has focused primarily on the identification of immediate antecedent and consequent stimuli that are functionally related to challenging behavior (e.g., Iwata et al., 1982/1994). The focus of PBS on broader lifestyle issues, however, results in the implementation of functional assessment procedures to evaluate the impact of both proximal and distal events that are functionally related to the occurrence of the challenging behavior. Thus, functional assessment strategies are used to identify not

only immediate antecedent and consequent relations but also broader variables that affect challenging behavior. Such variables include establishing operations, setting events, and consequences that occur remote from challenging behavior.

The impact of such variables on challenging behavior has received increasing attention from behavior analysts in recent years. For example, researchers have documented the effects of setting events such as pain (Carr, Reeve, & Magito-McLaughlin, 1996), the presentation of aversive events (Horner, Vaughn, Day, & Ard, 1996), and changes in staff schedule (Horner et al., 1996) on the occurrence of challenging behavior. Behavior analysts are developing methodologies to evaluate the effect of such variables on behavior (e.g., Horner, Day, & Day, 1997; Smith, Iwata, Goh, & Shore, 1995; Taylor, Sisson, McKelvey, & Trefelner, 1993) and interventions designed to reduce the impact of such variables. For example, Horner et al. demonstrated that placing a neutralizing routine (an event that reduces the value of reinforcers associated with problem behavior) between an establishing operation and a discriminative stimulus decreased the occurrence of challenging behavior emitted by 3 individuals. Other studies (e.g., Kennedy & Itkonen, 1993) have shown that eliminating establishing operations (e.g., waking up late) results in reductions in challenging behavior.

Multifaceted intervention. After completion of a comprehensive assessment, an individualized intervention is developed. Due to the multiple goals of PBS, this intervention is necessarily multifaceted. Although certain components of the intervention may be designed specifically to address challenging behavior, such strategies are rarely the primary component. Instead, PBS emphasizes the use of environmental manipulations to affect both the challenging behavior and the previously mentioned quality-of-life variables. In other words, the goal is to make environmental changes that improve an individual's quality of life, and in so doing, render challenging behavior nonfunctional.

Interventions based on a PBS framework often involve multiple strategies, many, if not most, of which are drawn directly from applied behavior analysis. Intervention may involve (a) manipulating contextual variables (e.g., discriminative stimuli, establishing operations), (b) teaching new skills that will facilitate meaningful participation in identified environments, (c) training care providers who work with the individual, and (d) altering the contingencies for both positive social and challenging behavior. Although not every component is necessarily present in all intervention plans, a comprehensive intervention will include multiple components.

Contextual interventions based on a PBS framework may be used solely to improve quality of life (e.g., assisting an individual in finding employment in the community), or they may be directed towards both improving quality of life and decreasing challenging behavior. The primary goal of these interventions is to ensure the presence of contextual variables that serve as discriminative stimuli and reinforcers for appropriate behavior while the presence of variables that support challenging behavior are minimized. For example, assessment may reveal that an individual exhibits self-injurious behavior only at the sheltered workshop. Further, self-injury is most likely to occur after the individual has been required to stuff envelopes for several hours. An intervention directed both at improving quality of life and reducing challenging behavior might involve assisting the individual in gaining employment that is meaningful and enjoyable (i.e., reinforcing) to the individual. This might be accomplished by first conducting a skills assessment and reinforcer or preference assessments to identify the individual's capabilities as well as tasks and activities that are preferred. Several authors (e.g., Carr et al.,

1998; Felce & Repp, 1992; Horner et al., 1996) have demonstrated the utility of conducting such manipulations as a means of reducing the occurrence of challenging behavior.

The second possible component of a comprehensive intervention is the teaching of new skills. One aspect of this approach, functional communication training, is quite prevalent in the behavior-analytic literature (e.g., Carr & Durand, 1985; Day, Horner, & O'Neill, 1994; Durand & Carr, 1991; Fisher et al., 1993; Lalli, Casey, & Kates, 1995). Functional communication training often is useful when an individual exhibits challenging behavior that is hypothesized (i.e., suggested by a functional assessment) to be maintained by social contingencies, but does not exhibit other, more appropriate behaviors in the same response class. For example, a functional assessment may reveal that a man's head hitting is maintained by escape or avoidance of certain tasks. The man does not exhibit other, more appropriate ways of avoiding certain tasks (e.g., signing "stop"), so functional communication training might be used to teach him to sign "stop" or touch a picture of a stop sign instead of hitting his head. In addition to functional communication training, PBS calls for other types of skills training with the goal of ensuring that the individual has the behavioral skills necessary to succeed in integrated community settings. Such skills might include general social skills, job skills, and independent living skills. Once again, applied behavior analysis provides the technology with which to teach such skills (e.g., social skills might be taught through modeling and differential reinforcement, a specific job skill might be taught via backward chaining), whereas PBS suggests the areas in which the technology should be applied.

Training staff and other relevant individuals involved with the focus person's life may be a third component of a comprehensive intervention (J. L. Anderson et al., 1993). The goal of such training is to provide those people with whom an individual interacts the skills needed to support that person in functioning as independently as possible. For example, if a student has difficulty with assignments when she is running late in the morning, her teacher might be taught to allow her 5 min of "down time" before requiring her to work. Consistent training is recommended to occur with service providers, as well as with family members and other important people who interact with a focus individual, to ensure that appropriate support strategies are implemented in all relevant settings.

A final component of a comprehensive intervention might involve altering contingency relations. The purpose of this component is to ensure that the environment is arranged in such a way that appropriate behaviors are followed by maintaining consequences whereas challenging behaviors are not. PBS emphasizes the use of methods that are effective in decreasing or eliminating the challenging behavior while still respecting the dignity of the individual (Koegel et al., 1996; Meyer & Evans, 1989). That is, interventions designed within the framework of PBS are those with demonstrated efficacy (thus drawing on the empirical basis of applied behavior analysis) that are not degrading or painful. Although the use of functionally based elimination procedures are not necessarily excluded from intervention plans, such interventions must occur in the larger context of ecological, antecedent, and consequent manipulations targeted toward building or strengthening appropriate repertoires. Thus, PBS clearly draws from the constructional or educational focus described by various behavior analysts (e.g., Goldiamond, 1974; Meyer & Evans, 1989). Goldiamond defined a constructional approach as one in which the "solution to problems is the construction of repertoires (or their reinstatement or transfer to new situations) rather than the elimination of repertoires" (p. 14). Taking such an approach places the goal of establishing appropriate behavior patterns in the

forefront of intervention efforts, rather than assuming that this will occur as an indirect effect of implementing elimination strategies.

CONCLUSION

In the current paper, we describe PBS, a framework for providing services to people with developmental disabilities or behavioral challenges. As we hope is evident from our description, PBS is an approach to providing individual support that is consistent with behavior-analytic principles. In fact, behavior analysis is the theoretical and technological foundation of PBS (Horner et al., 1990). PBS capitalizes on the best values and techniques from various perspectives, such as person-centered planning and applied behavior analysis, and provides a model of best practices. Specifically, the approach emphasizes using behavior-analytic assessment and treatment strategies to address both challenging behavior and global quality-of-life issues such as helping a person to develop meaningful friendships and participate in the community.

In addition to helping guide overall service delivery and specific clinical interventions, the tenets of PBS offer useful suggestions for applied behavior analysts who are involved in research endeavors. Specifically, implementation of services consistent with the tenets of PBS highlights the need for empirical research in several areas. These include, but are not limited to, the utility of various functional assessment methodologies (e.g., in multiple applied settings, when investigating the impact of establishing operations), the effectiveness of antecedent interventions, and the impact of making certain environmental changes (e.g., changing employment or living settings, increasing opportunities to make choices) on a person's overall quality of life. The experimental rigor and the reliance on a single-subject approach to research that are characteristic of applied behavior analysis make it the best suited area

of psychology for addressing empirical questions related to the effectiveness of services consistent with PBS.

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