

Personal Paradigm Shifts in PBS Experts:

Perceptions of Treatment Acceptability of Decelerative Consequence-Based Behavioral Procedures



Craig A. Michaels
Fredda Brown
Niki Mirabella
*Queens College
City University of New York*

Abstract: Positive Behavior Supports (PBS) experts were surveyed to examine their perceptions of the treatment acceptability of commonly used decelerative consequence-based behavioral procedures. Findings illuminate the paradigm shifts that have occurred over the course of the careers of PBS experts and the factors that have contributed to these personal paradigm shifts. Many of the decelerative consequence-based procedures once used by respondents are no longer perceived by them to be acceptable. A small percentage of experts indicated that they still might use the full range of decelerative techniques under certain circumstances. The need for more training and ideological change were perceived to be the greatest challenges currently facing the field. Experts also indicated that involvement in PBS has broadened their understanding of applied behavior analysis, the function of behavior, antecedents, quality of life, and self-determination issues facing people with disabilities. The implications of the findings for current and future PBS researchers and practitioners are discussed.

Positive behavior supports (PBS) emerged from the science of behavioral technologies or applied behavior analysis (ABA) as a response to what some practitioners perceived to be a misuse of power and control (Horner et al., 1990). PBS asks us to let our ethical beliefs guide how we use the behavioral technologies of ABA. As an ideological set of beliefs (operating paradigm), “positive behavior support has grown beyond an emphasis on avoiding certain procedures into a clear approach that embraces the technical contributions of applied behavior analysis, demands results that are of lifestyle importance, and requires the procedures be practical for use in homes, schools, communities, and workplaces” (Horner, Albin, Sprague, & Todd, 2000, p. 207).

PBS is based on good science but also grounded in a set of personal values focused on respect and value of all people (Scotti & Kennedy, 2000). In the field’s continual striving to achieve this symbiotic balance between ideology and the science of behavior change, “PBS philosophy embraces the idea that while humanistic values should not replace empiricism, these values should inform empiricism. . . . science can tell us how we can bring about change, but it is our person-centered values that tell us what changes are most worth bringing about” (Knoster, Anderson, Carr, Dunlap, & Horner, 2003, p. 184).

The increasing acceptance of PBS represents a paradigm shift in the application of behavioral technology—away from coercive and decelerative consequence-based strategies to more proactive antecedent approaches and away from measurement of simple dependent variables to more comprehensive measures of quality of life. Many researchers and service providers have formally embraced the use of PBS, including associations for persons with disabilities (e.g., TASH, AAMR, ARC) issuing policy statements against aversive treatments, the federal government in law (e.g., the Individuals with Disabilities Act as amended in 1997), and many state educational policy directives (e.g., various state directors of education). However, all members of the behavioral community have not embraced this paradigm shift. There continues to be an ongoing debate centered on the use of those behavioral procedures that cause pain or discomfort to the individual (Butterfield, 1990; Guess, Helmstetter, Turnbull, & Knowlton, 1987; Horner et al., 1990; Luiselli & Cameron, 1998; Spreat & Walsh, 1994).

As can be seen in the research and literature, it is evident that even though many professionals have ascribed to the use of PBS, articles continue to be published that include the use of aversive or coercive strategies. Kahng, Iwata, and Lewin (2002), for example, found that although

the use of reinforcement-based interventions for self-injury has increased during the past decade, the use of punishment-based interventions has decreased only slightly. Of interest is why some professionals embrace PBS, while others still advocate for the “right” to use more restrictive decelerative consequence-based procedures. Further, it is not clear that those professionals who identify themselves with the PBS paradigm necessarily agree on the parameters of this paradigm (i.e., What types of behavioral interventions are acceptable and unacceptable?).

Treatment acceptability has focused largely on those variables that contribute to an individual’s determination that a particular treatment is acceptable or unacceptable. Lennox and Miltenberger (1990) pointed out that when behavioral procedures were first introduced, the primary criterion for consideration of acceptability was the effectiveness of the intervention. But as the field evolved, many additional factors emerged as critical to the concept of treatment acceptability, including secondary (unintended) effects, social/legal implications, and practical considerations (Lennox & Miltenberger, 1990). Much of the treatment acceptability research focuses on the use of decelerative strategies to reduce severe behavior problems. Target groups of this research have included teachers and parents (Pickering & Morgan, 1985), psychologists and other members of a national organization (Keyes, Creekmore, Karst, Crow, & Dayan, 1988; Spreat & Walsh, 1994), direct-care staff (Tarnowski, Mulick, & Rasnake, 1990), supported employment supervisors and job coaches (Helms & Moore, 1993), and undergraduate and graduate students (Kazdin, 1980; Smith & Linscheid, 1994).

A number of additional factors have been identified as mediating the perception of treatment acceptability. Strategies that increase appropriate behaviors have been found to be more acceptable than reductive treatments (Tarnowski, Rasnake, Mulick, & Kelly, 1989), and acceptability of treatments have been found to vary as a function of the severity of the problem behavior (Kazdin, 1980; Tarnowski, Rasnake, Mulick, & Kelly, 1989), the restrictiveness of the procedure (Miltenberger, Lennox, & Erfanian, 1989), and treatment effectiveness (Reimers & Wacker, 1988). Smith and Linscheid (1994) suggested that treatment acceptability is inversely related to a treatment’s perceived aversiveness and restrictiveness, but acceptability increases when those decelerative or restrictive procedures are proposed for more severe or frequent behavior problems. These researchers also found that parental perception of acceptability influenced the ratings of undergraduate and graduate students’ judgments on the acceptability of the use of contingent electric shock. Interestingly, Tarnowski, Mulick, and Rasnake (1990) found that acceptability ratings were not significantly influenced by the severity of self-injurious behavior when staff working in a residential facility that followed a behavioral methodology rated them. Miltenberger et al., however, found no difference in

treatment acceptability ratings between institutional and community-based staff.

In a survey of members of a regional American Association on Mental Retardation (AAMR), Spreat and Walsh (1994) found that the strongest predictor of treatment acceptability was the respondents’ estimates of probable treatment success, or efficacy. Secondary to the efficacy, was the restrictiveness of the procedure and whether other less restrictive procedures had been attempted. They also concluded that the members of the psychology division tended to be more accepting of behavioral treatments than were members of other divisions of the organization. Similarly, Keyes et al. (1988) found that psychologists were less likely to support the AAMD Position Statement on Aversive Therapy (1987), which called for the immediate elimination of such aversive procedures.

Little research has been reported that describes the process of change for those professionals who once used, or found acceptable, restrictive procedures and now identify themselves as proponents of PBS; that is, how both professional practices and perceptions of practice (i.e., treatment acceptability) have changed across time for professionals. *Ideology* is used here to describe our internal paradigms or belief systems. Within an educational context, *ideologies* have been defined as the “belief systems that provide the value premises from which decisions about practical educational matters are made” (Eisner, 1992, p. 302). Within special education, our ideologies about curriculum, instruction, and even where students should be educated have historically been directly linked to the beliefs held by society and educators about people with disabilities (Ferguson, 1987, 1995). Wolfensberger’s seminal writings on normalization, or reducing the marginalizing of people with disabilities, suggested that more often than not, professionals are not even aware of the ideologies that shape their behaviors (Wolfensberger, Nirje, Olshansky, Perske, & Roos, 1972).

Personal accounts of change in ideology across time are beginning to surface. Evans, Scotti, and Hawkins (1999) provided an interesting look at how the field of behavior analysis has developed since the mid-1960s. They describe the influence that human rights considerations and a new focus on ethics of treatment has had on the development of policy and regulations, such as in the development of human rights and behavior review committees. Yet, according to Evans et al., the use of aversive strategies persists:

Intemperate usage led to increasing regulation and prohibition of certain procedures by many states and mandated reviews of all behavior interventions by both human rights and behavior management committees. Even when reviewed and approved, extreme procedures still found their way into intervention plans, often based on the false assertion that all other alternatives had been tried. . . . Many

behavior analysts resisted attempts to restrict the use of behavioral techniques. (p. 5)

Evans and colleagues (1999) provide us with glimpses of their personal evolutions, from the use of a variety of restrictive and aversive procedures to the use of strategies more commonly associated with PBS. They have attributed their own changes in assumptions (personal paradigm shift) about behavioral technologies to a variety of variables, including some empirical influences (e.g., research on the communicative function of behavior [Carr & Durand, 1985; Durand, 1990]), but they have noted that most of their changes came from nonempirical sources, such as reflections on the ethics of using procedures that were harmful or demeaning, and having a broader and more values-based criteria for evaluating behavior change.

This supports the notion that treatment acceptability is likely not a static perception but rather a dynamic concept that is likely influenced by a variety of empirical and nonempirical variables (or values) that shift across time. Evans et al. (1999) suggested that their changing philosophies “illustrate the rapidly changing assumptions of a deceptively nonstatic applied behavior analysis” (p. 15). This study explores PBS experts’ perceptions of treatment acceptability now and in the past, as well as what factors contributed to changes in their ideology, or their personal paradigm shift. This study also explores these experts’ perceptions concerning the larger ideological challenges facing the field of PBS and how involvement in PBS has influenced the conceptualization of ABA and, ultimately, our perceptions of people with disabilities.

Four research questions guided this descriptive study:

1. What are the current practices and perceptions of decelerative consequence-based behavioral intervention strategies among PBS leaders?
2. What are the current challenges facing the field of PBS?
3. How has involvement in PBS mediated or influenced (a) our understanding of ABA and (b) our understanding of people with disabilities?
4. How have practices and perceptions of decelerative consequence-based behavioral interventions (i.e., treatment acceptability) shifted across time?

Method

PARTICIPANTS

A nonrandom criterion sampling strategy was employed to select participants who met our predetermined criteria of “experts within the field of positive behavior supports.” The use of a criterion sampling approach, which has also been referred to as *dimensional sampling* (Johnson, 1990), was chosen for quality assurance purposes to select well-

informed or highly knowledgeable informants (i.e., “people who are more knowledgeable, reliable, and accurate in reporting events that are usual, frequent, or patterned” [Miles & Huberman, 1994, p. 29]). *Expert within the field of positive behavior supports* was operationally defined based on two primary attributes: (a) leadership within the field of PBS (i.e., public policy and advocacy work) and (b) scholarship within the field of PBS (i.e., publication record and editorial board work).

The total sample ($N = 134$) was drawn from four sources: (a) selected state contacts to the Rehabilitation Research and Training Center on Positive Behavior Supports (RRTC-PBS, $n = 27$), (b) members of the editorial board of the *Journal of Positive Behavior Interventions* (JPBI, $n = 59$), (c) members of TASH’s subcommittee on Positive Behavior Supports ($n = 21$), and (d) members of the editorial board of *Research and Practice for Persons with Severe Disabilities* (RPSD, $n = 27$) who have identified themselves as having expertise and interest in PBS. These were not mutually exclusive categories, so potential participants often appeared on multiple source lists (e.g., JPBI, TASH, RPSD). These lists were also compared to recent edited books on PBS to see if chapter authors were found on the four lists. We believe that appearance in multiple sources further validates our criteria for sample selection by establishing the expertise of our sample participants. For sake of parsimony, participants were identified only with the first source list in which they appeared. So, for example, while the number of potential participants drawn from the editorial board of JPBI ($n = 59$) may appear larger than those drawn from RPSD ($n = 27$), these numbers would have been different had the list of editorial board members for RPSD been reviewed prior to the list of editorial board members for JPBI.

INSTRUMENTATION

The Survey on Treatment Acceptability was developed by the first two authors specifically for the purposes of this study to collect both qualitative and quantitative data regarding the four research questions. The survey instrument consists of three sections. The first section was designed to gather demographic information about respondents. The second section asked respondents to reflect on some of the broader issues associated with PBS. Specifically, respondents were asked to describe (a) three challenges associated with PBS (Research Question 2) and (b) three ways that involvement with PBS has influenced or shaped their conceptualization of ABA and their understanding of people with disabilities (Research Question 3). The final survey section asked respondents to reflect on their perceptions of treatment acceptability for each of nine categories of decelerative consequence-based behavioral strategies, specifically in relation to individuals who engage in dangerous behaviors (i.e., behaviors likely to

cause physical harm to self or others; Research Question 1). The nine categories of decelerative consequence-based behavioral strategies were as follows:

1. differential reinforcement procedures (with extinction or redirection of disruptive behavior);
2. differential reinforcement procedures (with mild reprimand or response cost for disruptive behavior);
3. extinction (i.e., withholding reinforcement for a previously reinforced behavior);
4. response cost (i.e., withdrawal of a reinforcer or reinforcing event contingent on the behavior's occurrence);
5. overcorrection (i.e., forced engagement in behavior that more than corrects the effects of the inappropriate behavior);
6. seclusion timeout (i.e., removing the individual from the setting to an area of total social isolation);
7. application of sensory punishment (e.g., ammonia vapor, foul tasting substances, loud or harsh sounds);
8. application of physical punishment (e.g., spanking, pinches, restraint as punishment); and
9. contingent electric shock (i.e., application of electrical stimulation for engagement in targeted behavior).

These strategies were presented in the survey in what the authors perceived as least to most intrusive order. For each strategy, respondents were first asked to check either (a) "I would not use this procedure now" or (b) "I would use this procedure under certain circumstances or conditions" (Research Question 4). Within each behavioral strategy, depending on whether respondents initially selected "a" or "b," they were then directed to answer a series of forced-choice and open-ended follow-up probes.

Respondents who initially selected "a" were asked to check all the reasons as to why they would not use the procedure and to then rank order the top three reasons for not using the procedure. Nine reasons were provided on the survey, with an option of "other." These respondents were then directed to either answer an additional group of items (i.e., if they had ever used the procedure during the course of their careers) or go to the last two items. Respondents who indicated that they had used the procedure at some point during the course of their careers were asked to indicate all the decades during which they had used the procedure and to describe the reasons that they stopped using the procedure. These respondents were then directed to describe any additional thoughts, comments, or information they might want to share regarding the use of that behavioral strategy.

Respondents who initially selected "b" were directed to check the reasons why they would use the procedure and

then rank order their top three reasons. Nine reasons were provided on the survey, with an option of "other." They were then directed to select from a list of circumstances, all those under which they might use the procedure. Finally, like the first group of respondents, they, too, were asked to share any additional thoughts, comments, or information regarding the use of the selected behavioral strategy.

The technical merits of the survey instrument (i.e., social validity, content validity, and face validity) are grounded in its careful design and construction (American Psychological Association, 1985; Nevo, 1985; Pedhazur & Schmelkin, 1991). Six individuals who met our initial criterion for selection as potential participants (i.e., six experts in the field of PBS) were asked to review drafts of the instrument and to make suggestions on (a) *the content*—behavioral intervention strategies sampled by the items in the survey, (b) *the clarity*—the wording of individual survey items and the survey directions for the intended audience, (c) *the appropriateness*—use of the instrument for gathering data regarding the research questions of interest, and (d) *the appearance*—actual physical design and layout of the survey.

Guidance to each reviewer further stipulated that we were also interested in their review of the ethical dimensions of the survey instrument and the survey items, based on their knowledge of the major philosophical and quality-of-life issues currently facing the field and people with the most severe behavioral challenges. In each case, the selected reviewer first examined the draft of the survey instrument, then responded to each survey item, and finally, provided feedback to the researchers (either in person, on the phone, or via e-mail). Following feedback from each reviewer, we refined and changed the survey instrument so that the sixth reviewer, for example, was reviewing a draft of the survey that had already incorporated the changes and modifications from the first five reviewers.

PROCEDURE

A survey packet was sent out to each participant who met our initial sampling criterion ($N = 134$). The survey packet consisted of a personalized cover letter, the survey, and a postage-paid return addressed envelope. The cover letter described the purpose of the study, assured potential respondents that all responses would be confidential and that data would be analyzed and reported in aggregate form only. All return envelopes were coded to track returns; however, once returns were recorded, completed surveys were immediately separated from the envelopes and put anonymously into a file box for data entry.

Approximately 2 to 3 weeks after the return date specified in the cover letter, a second mailing was sent out to participants who had not yet responded ($N = 79$). This second mailing included a reminder letter, a second copy of the survey, and a second postage-paid envelope. Again, return envelopes were coded to track returns. Finally, about a

month after the second mailing, personalized e-mails were sent out to all nonrespondents for whom valid e-mail addresses existed. The e-mail urged nonrespondents to consider completing the survey and offered an option for completing an electronic version of the survey, which could be returned via e-mail.

QUANTITATIVE DATA ANALYSIS

All returned surveys were entered into a SPSS version 10 database (SPSS, Inc., 2000) by the third author, a graduate student in special education. Percentages were computed for all respondents based on their initial response to each of the nine behavioral intervention strategies (i.e., whether respondents would or would not use the strategy). Additional item percentages were subsequently calculated for the remaining items within each behavioral strategy based on the sample size of the initial responses to that strategy. So, for example, all subsequent percentages calculated on responses to follow-up probes related to “*I would not use this procedure now*” were calculated on 100% equaling whatever subset of respondents initially checked “*I would not use this procedure now*” for that behavioral strategy.

QUALITATIVE DATA ANALYSIS

The focus of the qualitative analysis was on developing an understanding of (a) the current issues facing the field, (b) the experiences and ideological shifts among experts within the field of PBS, and (c) how involvement in PBS has influenced or mediated participants’ conceptualization of ABA and their perceptions of people with disabilities. Qualitative data was gathered through survey responses to the second section of the survey that asked respondents to reflect on the broader ideological and policy issues associated with PBS, ABA, and people with disabilities. Open-ended responses to these items were sorted within each item (e.g., issues facing PBS, how involvement in PBS has shaped understanding of ABA, how involvement in PBS has shaped respondents’ understanding of people with disabilities) and categorized following Tesch’s (1990) three-step process for qualitative analysis of text. In implementing Tesch’s three-step process, we began by first developing a coding system (i.e., an organization system), so that we could break down larger response statements in the smallest semantically meaningful units, or chunks, of information. Often, for example, a complex sentence given by a respondent might contain multiple discrete, although linguistically connected, ideas. In other words, these discrete ideas were first cut up into chunks or decontextualized semantically meaningful segments of data. As part of the second phase of Tesch’s model we explored potential similarities, differences, and connections among these decontextualized chunks. The second phase of analysis within each open-ended survey item concluded with the

resorting of the discrete semantically meaningful chunks into themes or descriptive categories as part of the recontextualizing process. This recontextualizing process allowed the researchers to make connections and inferences about systemic-functional meaning.

During the final step in the process of recontextualizing the data, themes that occurred with some regularity across respondents and sorters were named to capture the gestalt of that theme and subsume all the individual decontextualized chunks or responses within that theme (Miles & Huberman, 1994). A similar procedure was followed within each open-ended probe for each of the nine behavioral strategies. Responses to these open-ended prompts were first decontextualized and reassembled by themes *within* each of the nine behavioral strategies for each specific prompt. Following the sorting of responses within each behavioral strategy, when it made sense conceptually, responses were decontextualized and reassembled *across* behavioral strategies as well.

Results

RESPONDENTS

Seventy-three completed surveys were returned and entered into the SPSS database, representing an overall response rate of 54%. However, a number of surveys were returned unopened for invalid addresses (e.g., “no longer at this university”; $n = 11$). Some potential respondents also excused themselves from completing the survey instrument (e.g., “Dr. So-and-So is on an extended medical leave” or “I know how important this survey is, but I am unfortunately overextended at this time”; $n = 12$). Finally, a few potential respondents indicated that they were uncomfortable being identified as an expert or leader within PBS (e.g., “I am only a lawyer,” “I am only a parent”; $n = 3$). When these three groups of nonrespondents ($n = 26$) are subtracted from the total number of potential respondents, the 73 valid returns represent an adjusted return rate of approximately 68% (67.59%).

Complete demographic information for survey respondents is presented in Table 1. Slightly more than half of the respondents were men (58%) and were primarily middle-age ($M = 50.38$ years, $SD = 7.49$) and highly educated (88% with a doctorate-level degree). The majority of respondents identified themselves as White (94%) and as not having any disability (94%). On average, respondents had been in the field of disabilities for 27 years ($M = 26.70$, $SD = 5.90$) and in their current jobs for approximately 14 years ($M = 13.58$, $SD = 8.91$).

CURRENT PRACTICES AND PERCEPTIONS OF TREATMENT ACCEPTABILITY

The first research question focused on capturing data to build an understanding of current practices and percep-

Table 1. Demographic Information About Survey Respondents

Characteristic	Respondents (%) ^a
Gender	
Male	57.5
Female	42.5
Ethnicity	
White	94.4
African American	1.4
Asian	1.4
Other	2.8
Age	
M	50.38
SD	7.49
Disability	
Yes	5.6
No	94.6
Education level & field of study	
Undergraduate	2.8
Master's degree	8.3
Special education	2.8
Psychology	1.4
Other	2.8
Doctorate	88.9
Special education	47.9
Psychology	23.9
Other	5.6
Areas of expertise	
Mild disabilities	38.4
Severe disabilities	89.0
Profound & multiple disabilities	72.6
Autism	75.3
Emotional disabilities	38.4
Young children	54.8
Adolescents	71.2
Adults	54.8
Years in field	
M	26.70
SD	5.90
Years in current position	
M	13.58
SD	8.91

Note. Number of respondents = 73.

^aUnless otherwise specified.

tions of treatment acceptability regarding the decelerative consequence-based behavioral strategies. Figure 1 graphically displays the differences in perceived treatment acceptability based upon respondents' willingness to use the various behavioral strategies at this point in time. Figure 1 indicates that there was a wide range in perceptions of treatment acceptability across the nine strategies. *Differential reinforcement procedures (with extinction or redirection of disruptive behavior)* was perceived to be acceptable to most respondents (95.7%), but the application of sensory punishment (Procedure 7), physical punishment (Proce-

dures 8), and contingent electrical shock (Procedure 9) were perceived to be unacceptable by most respondents (i.e., 7% of respondents would use sensory punishment, 4.3% would use procedure physical punishment, and 9.7% would use contingent electric shock).

Table 2 presents the reasons given as to why PBS experts would no longer use decelerative consequence-based behavioral procedures, and Table 3 presents the reasons given as to why PBS experts would consider using the procedures under certain circumstances or conditions. Respondents were able to select as many reasons from among the 10 choices (9 specified reasons and an "other" category) following their initial response to each behavioral strategy. The three most frequently selected reasons (across behavioral strategies) as to why respondents *would not use* the behavioral strategies were (a) the literature or research provides alternative ideas ($M = 76.7\%$, $SD = 5.8\%$), (b) it is ineffective in producing long-term behavioral change ($M = 72.3\%$, $SD = 7.1\%$), and (c) ethical reasons ($M = 71.5\%$, $SD = 28.8\%$). The three most frequently selected reasons for why respondents *would use* the decelerative consequence-based behavioral strategies (across behavioral strategies) were (a) it is effective in producing behavior change ($M = 89.3\%$, $SD = 10.0\%$), (b) the literature or research supports this approach ($M = 77.8\%$, $SD = 8.4\%$), and (c) past success using the techniques ($M = 62.5\%$, $SD = 31.2\%$).

CURRENT CHALLENGES IN THE FIELD OF PBS

The second research question focused on identifying the major challenges currently facing the field of PBS. Specifically, respondents were asked to identify the three greatest challenges facing the field of PBS, as they perceive them. Narrative responses from the SPSS database were separated into individual statements ($N = 199$) and then sorted into themes or categories independently by each of the three researchers. It should be noted that these themes or categories were created primarily to capture the depth and breadth of responses. The themes and categories, however, should not be perceived to be mutually exclusive or exhaustive factors. In other words, the categories or themes are interdependent and interrelated. The researchers then compared and discussed their findings and came to consensus on seven categories: (a) systemic changes (i.e., changes required at the administrative and organizational levels); (b) ideological changes (i.e., changes related to philosophy, attitudes, and understanding); (c) training (i.e., training in PBS, functional behavior assessment, and ABA); (d) collaboration (i.e., outreach to families and shared responsibilities among team members); (e) treatment fidelity (i.e., efforts to focus on long-term change, consistency, maintenance, and generalization); (f) assessing outcomes (i.e., measuring and evaluating effectiveness); and (g) resources (i.e., time and money requirements).

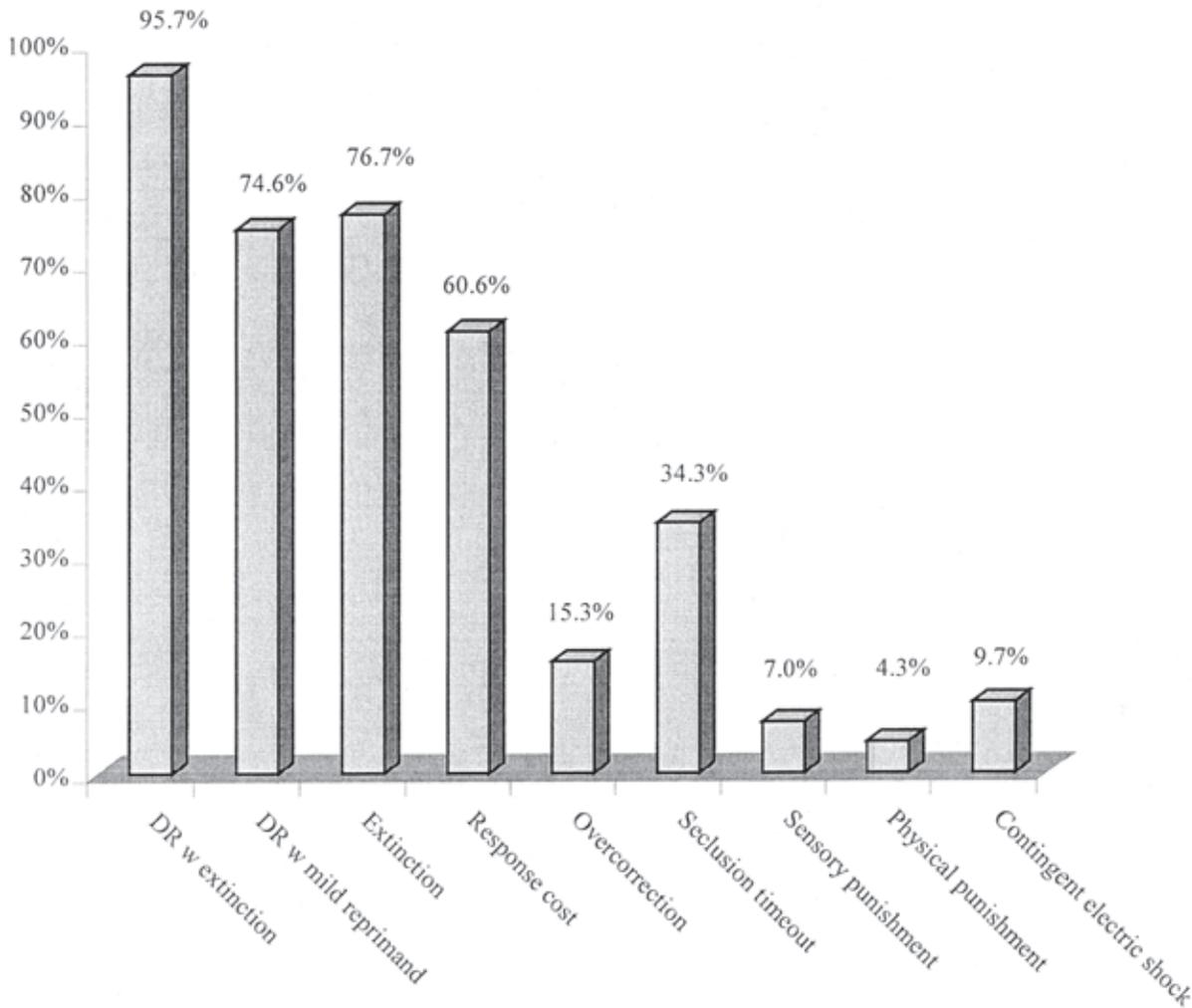


Figure 1. Perceived treatment acceptability of various decelerative consequence-based behavioral strategies based on experts' indication that they would use the procedure under certain circumstances or conditions.

Following the process of building consensus on the seven categories, the items or individual responses were again resorted until consensus was reached on which items best fit each category. Table 4 presents the seven themes or categories of perceived PBS challenges and representative statements from respondents associated with each of the seven categories of PBS challenge. Figure 2 graphically depicts the percentages of perceived PBS challenges (items) associated with each category (item $N = 199$). The three largest categories of PBS challenges include training (26.1%), ideological changes (23.6%), and treatment fidelity (19.6%).

PERCEPTIONS OF APPLIED BEHAVIOR ANALYSIS AND PEOPLE WITH DISABILITIES

The third research question was designed to gather data about our experts' perceptions of how their involvement in PBS has shaped their perception of applied behavior analysis and their understanding of people with disabilities. Re-

sponses to the open-ended probe about how involvement in PBS has shaped or influenced conceptualization of ABA were cut up into individual statements and sorted into categories by each researcher. Consensus among the categories or themes was again reached and all responses were then resorted into one of the seven agreed upon categories. Again, the themes and categories should not be perceived to be mutually exclusive or exhaustive factors. Table 5 presents the seven categories that emerged related to changes in perception of ABA among PBS experts. The bar chart in the top portion of Figure 3 depicts the percentages of statements about how PBS has influenced perceptions of ABA associated with each category (item $N = 166$). The three largest categories include broadened perspective and practices (28.3%), antecedents and function of behavior (18.7%), and reconciling and blending (16.3%).

Experts were also asked to describe the ways in which their involvement in PBS has shaped or influenced their understanding of people with disabilities. Table 5 presents

Table 2. Reasons PBS Experts Would Not Use Decelerative Consequence-Based Behavioral Procedures

Reasons I would not use this procedure now	Procedure ^a								
	1	2	3	4	5	6	7	8	9
Ineffective in producing long-term behavior change	66.7	70.6	68.8	85.7	75.0	80.4	70.8	70.8	62.3
Literature or research provides alternative ideas	66.7	76.5	81.3	82.1	75.0	84.4	80.0	72.3	71.7
Influence of a mentor	—	29.4	12.5	21.4	16.7	17.8	23.1	27.7	20.7
Personal experiences with people with disabilities	66.7	70.6	62.5	57.1	60.0	64.4	56.9	49.2	41.5
Ethical reasons	—	76.5	62.5	67.9	78.3	84.4	92.3	89.2	92.5
Administrative or regulatory restrictions	33.3	—	12.5	10.7	20.0	24.4	35.4	30.8	35.8
Family or advocate preferences	33.3	23.5	18.8	14.3	25.0	24.4	32.3	26.2	32.1
Influences of an organization or group	—	23.5	31.3	25.0	23.3	22.2	36.9	35.4	37.7
Knowledge or skills learned in conferences or presentations	—	35.3	37.5	35.7	20.0	22.2	24.6	23.1	24.5
Other	—	—	6.7	—	—	2.3	1.5	1.6	2.0

Note. Dashes indicate that no respondents selected that particular reason as to why they would not use the procedure.

^aBased on percentages.

Table 3. Reasons PBS Experts Would Use Decelerative Consequence-Based Behavioral Procedures

Reasons I would consider using this procedure	Procedure ^a								
	1	2	3	4	5	6	7	8	9
Effective in producing behavior change	98.65	92.7	89.3	90.5	81.8	70.8	80.0	100	100
Literature or research supports this approach	90.0	76.4	78.6	81.0	81.8	62.5	80.0	66.7	83.3
Influence of a mentor	24.3	20.0	16.1	11.9	9.1	20.8	—	—	—
Past success using this technique	90.0	81.8	78.6	85.7	72.7	66.7	20.0	66.7	—
Ethical reasons	57.1	40.0	41.1	31.0	27.3	45.8	40.0	33.3	33.3
Administrative or regulatory pressure	4.3	7.3	5.4	—	9.1	12.5	—	—	—
Family or advocate preferences	27.1	29.1	26.7	21.4	9.1	25.0	40.0	33.3	33.3
Influences of an organization or group	11.4	5.5	5.4	2.4	9.1	8.3	—	—	—
Knowledge or skills learned in conferences or presentations	28.6	16.4	19.6	14.3	—	12.5	—	—	—
Other	6.2	6.0	7.4	2.5	—	21.7	—	—	—

Note. Dashes indicate that no respondents selected that particular reason as to why they would not use the procedure.

^aBased on percentages.

the seven interdependent and interrelated themes or categories related to understanding of people with disabilities that emerged following the consensus-building validation process among the three researchers. Exemplars of statements from respondents about ways that involvement with PBS has shaped their understanding of people with disabilities are included in Table 4. The bar chart in the bottom portion of Figure 3 reflects the percentages of statements about people with disabilities associated with each of the seven categories (item $N = 130$). The three largest categories include function and context of behavior (24.6%),

quality-of-life and self-determination (20.0%), and respect and “just people” (18.5%).

SHIFTS IN TREATMENT ACCEPTABILITY ACROSS TIME

The final research question focused on trying to understand the personal paradigm shifts among PBS experts over the span of their careers as they strive to balance empiricism and humanistic values. To address this question, we gathered data from both the PBS experts who initially indicated that they would not now use the decelerative

Table 4. Current Perceived Challenges Facing the Field of Positive Behavior Supports

Category	Exemplars ^a
Systemic changes	<ul style="list-style-type: none"> • Willingness of systems to change • Interventions of PBS within schoolwide prevention initiatives • Getting administrators on board and “buy-in” in typical school settings
Ideological changes	<ul style="list-style-type: none"> • Shifting thinking regarding the utility of punishment and “selling” PBS to a punishment-oriented society • Ingrained attitude that punishment is necessary (e.g., consequences) • Belief that whatever “works” is an acceptable intervention
Training	<ul style="list-style-type: none"> • Skills at conducting functional behavioral assessments • Helping people to plan and use prevention strategies • Pre-service and in-service training
Collaboration	<ul style="list-style-type: none"> • Forming and maintaining cohesive teams • Building relationships with everyone involved • Development of teams with expertise and motivation
Treatment fidelity	<ul style="list-style-type: none"> • Effective implementation of positive behavior intervention plans (don’t stick them on the shelf) • Promoting long-term generalization and maintenance • Consistent application across people, settings, and times
Assessing outcomes	<ul style="list-style-type: none"> • Accurate data collection for evaluation of interventions • Getting people to collect and analyze data • Difficulties in effectively evaluating outcomes in community settings
Resources	<ul style="list-style-type: none"> • Resources and dollars to implement • Time for assessment and support plan development • Time and commitment of staff and resources

Note. Respondents = 199.

^aExemplars within all tables are reproduced directly as written by the respondent; in some instances, words or phrases have been omitted for the sake of parsimony or added for sake of clarity. However, in all cases, care has been taken to preserve the integrity of the original.

consequence-based procedures and those who indicated that they would under certain conditions. From those respondents who stated that they would not now use a given decelerative consequence-based behavioral procedures, but who did so in the past, we gathered data on (a) the decades during which they used the procedures, (b) the reasons why they initially stopped using the various decelerative consequence-based procedures (i.e., what prompted a personal paradigm shift), (c) why they thought others still continued to use them, and (d) what specific types of sensory and physical punishments they had administered in the past (if they indicated they once did use such procedures). Last, for those respondents who indicated that they are still using decelerative consequence-based behavioral procedures, we asked that these experts indicate the conditions or circumstances under which they might use these procedures. We were particularly interested in gathering data about the last three decelerative consequence-based behavioral procedures (i.e., sensory punishment, physical punishment, and contingent electric shock).

Table 6 presents percentage means for the decades during which respondents who indicated that they no longer used an decelerative consequence-based behavioral strategy might have used that strategy (across the span of their career). Across most behavioral strategies (other than

the two differential reinforcement strategies and extinction), for those experts who once used these decelerative consequence-based strategies and now no longer used them, the largest drop off in usage (i.e., shift in the perceived treatment acceptability) seemed to occur between the 1980s and 1990s. In other words, although 37% of respondents indicated that they were using overcorrection and 35.2% were using seclusion timeout in the 1980s, only 5.5% indicated that they were still using overcorrection and 4.2% were using seclusion timeout in the 1990s. Similarly, although 19.2% of the PBS experts who once used the behavioral strategies indicated that they were still using sensory punishment and 21.1% indicated that they were using physical punishment in the 1980s, only 1.4% were still using sensory punishment and 2.8% were still using physical punishment in the 1990s. In the 2000s, a small number of experts still might use overcorrection or application of physical punishment under certain conditions.

Respondents were asked to respond to an open-ended question about the reasons that contributed to their personal paradigm shift (i.e., why they initially stopped using each of the decelerative consequence-based behavioral strategies). After reviewing the responses within each of the nine decelerative consequence-based behavioral strategies, the researchers agreed that it would be substantively

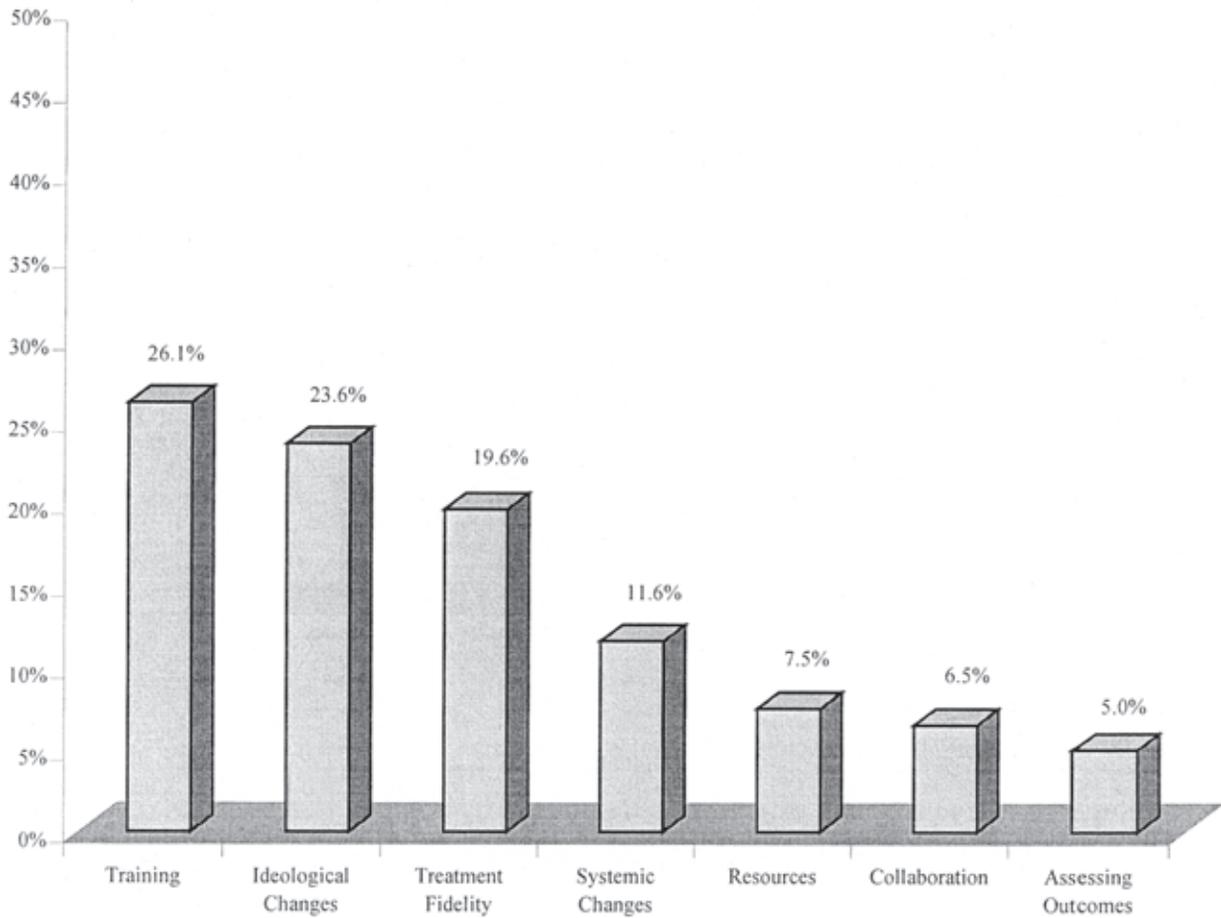


Figure 2. Percentages of perceived challenges currently facing the field of positive behavior supports (PBS) by PBS challenge categories (Item $N = 199$).

more meaningful to collapse responses to this question across the nine behavioral strategies rather than analyzing these responses within each of the nine procedures (as there was so much response redundancy across strategies). Table 7 presents the three categories of reasons given by PBS experts for initially stopping the use of decelerative consequence-based procedures. These categories were derived using the same consensus-building validation process described earlier for the other open-ended questions. Table 7 also presents the percentages of reasons why experts initially stopped using the decelerative consequence-based behavioral strategies associated with each of the three categories (item $N = 180$). The largest category of reasons for stopping was ethical reasons (42.8%), followed by the strategies being seen as ineffective (30.0%).

Within the context of the open-ended questions associated with Decelerative Consequence-Based Behavioral Procedures 7 (sensory punishment) and 8 (physical punishment), respondents who no longer used these two procedures were asked about the types of sensory and physical punishments that they might have used in the past. Al-

though not every respondent who once used these procedures responded to this question, Table 8 presents the types of punishments once administered by PBS experts who would no longer use these punishments. The use of foul tasting substances and mist to face were the most frequently cited forms of sensory punishment (25% and 22%, respectively), and the use of restraint was the most frequently cited form of physical punishment (67%).

As a way of better understanding the personal paradigm shifts that had occurred among so many of our PBS experts, we gathered contrast (comparison) data from those PBS experts who would still use the decelerative consequence-based behavioral procedures. Those respondents who indicated that they would use one of the decelerative consequence-based behavioral strategies under certain circumstances or conditions were asked to check all of the circumstances under which they might use that procedure. These respondents were given four choices for each of the behavioral procedures: (a) frequency or intensity of behavior interferes with learning; (b) other procedures were ineffective; (c) person or others are at risk for harm;

Table 5. How Involvement With PBS Influenced Perceptions of ABA^a and People With Disabilities^b

Perceptions of ABA	
Category	Exemplar
Broadened perspective and practices	<ul style="list-style-type: none"> • PBS is a broader approach that takes into consideration multiple approaches • Involvement with PBS has assisted me to be more comprehensive and eclectic • I now realize that ABA tends to be narrowly focused on maladaptive behavior
Antecedents and function of behavior	<ul style="list-style-type: none"> • I now have a greater understanding of the influences of setting events and antecedents on behavior • Interpreting all inappropriate behavior as the expression of some “valued message” • Greater focus on understanding the causes and functions of behavior problems
Quality of life and person-centered values	<ul style="list-style-type: none"> • Greater focus on broad quality-of-life issues • It is not about the individual’s behavior, it’s about the individual’s life • The focus of both the goals and the interventions needs to be much more person-centered
Reconciling and blending	<ul style="list-style-type: none"> • It’s OK to be a behaviorist AND a “bonder” • PBS is an extension of good behavior analysis—ABA is the science and PBS is the practice • Both PBS and ABA need to be grounded in principles—the two need not be at odds with each other
Ideological changes	<ul style="list-style-type: none"> • More of an emphasis on interdependence rather than independence is needed • ABA has become more humanistic • More appreciation for values-based decision making
Methodology	<ul style="list-style-type: none"> • We need to emphasize longitudinal studies and evidence-based practices • Underscores the need for systematic, data-based procedures • Underscores the need to have a scientific approach
No impact	<ul style="list-style-type: none"> • My involvement with PBS hasn’t influenced my perception of ABA, it fits perfectly with what I was trained to do • Hasn’t changed—I’ve always had a functional, nonaversive, people-first approach • No influence
<i>Perceptions (Understanding) of People with Disabilities</i>	
Quality of life and self-determination	<ul style="list-style-type: none"> • People with disabilities are often stuck in poor quality environments • People with disabilities need to have a voice in the research • We need to focus on an individual’s quality of life
Inclusion and belonging	<ul style="list-style-type: none"> • No one “needs” to be institutionalized • Involvement in PBS has strengthened my commitment to inclusion • All people can be productive participants in society
Function and context of behavior	<ul style="list-style-type: none"> • Problem behavior of people with disabilities results from dysfunctional contexts • Problem behavior has meaning and purpose, and there is value in recognizing and hearing the deeper meaning of the purpose • Involvement with PBS has solidified the belief that behavior is communication
Strengths and gifts	<ul style="list-style-type: none"> • It has strengthened my belief in human potential • People with disabilities have preferences and talents that are often untapped • I now focus on abilities rather than disabilities
Respect and “just people”	<ul style="list-style-type: none"> • I don’t think you can respect and control people at the same time • People with disabilities deserve to be treated with dignity and respect, like any person • Interventions need to consider stakeholders’ dignity and visions
Skills and support needs	<ul style="list-style-type: none"> • I have an awareness of the abilities of individuals with disabilities and their need for support by trained personnel as well as natural supports • People with disabilities are capable of learning—we need to find the best ways to teach • We don’t change people with disabilities, we change how we support them
No effect	<ul style="list-style-type: none"> • No influence—my perceptions of people influenced my views on treatment, not the other way around • ABA is consistent with PBS and consistent with my perceptions of people with disabilities

Note. PBS = positive behavior supports; ABA = applied behavior analysis.

^aN = 166. ^bN = 130.

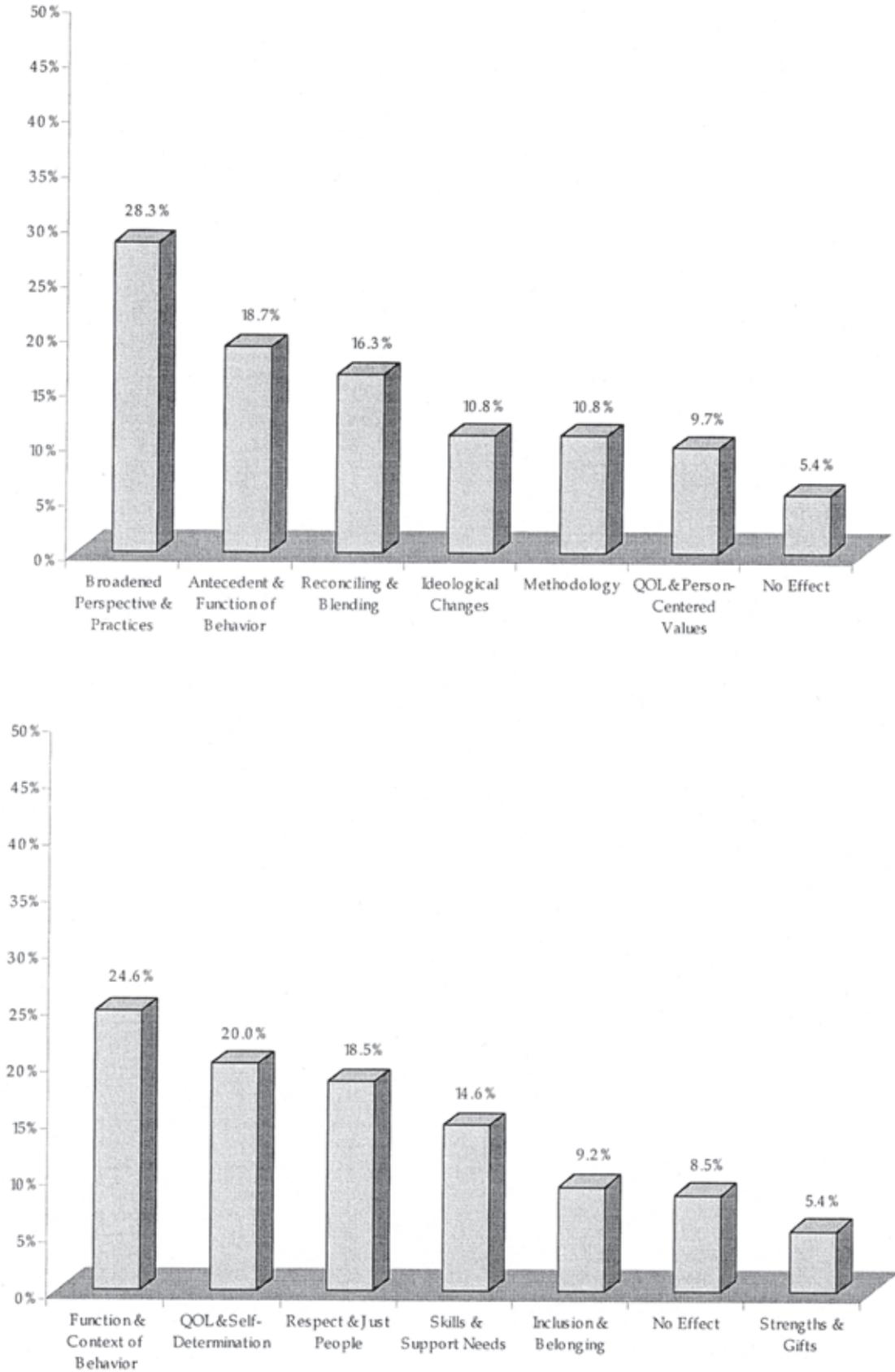


Figure 3. Percentages of perceptions of applied behavior analysis (top figure) and persons with disabilities (bottom figure), as influenced by involvement with positive behavior supports and applied behavior analysis perception categories. *Note.* QOL = quality of life.

Table 6. Behavioral Strategy Use by Decade

Behavioral strategy	Decade during which procedure was still used				
	60s (%)	70s (%)	80s (%)	90s (%)	00s (%)
Differential reinforcement with extinction or redirection	7.0	18.3	22.5	22.5	21.1
Differential reinforcement or response cost	5.6	21.1	25.4	14.1	9.9
Extinction	5.6	12.5	16.7	12.5	9.7
Response cost	2.8	18.1	20.8	9.7	5.6
Overcorrection	6.9	41.1	37.0	5.5	1.4
Seclusion timeout	7.0	29.6	35.2	4.2	—
Application of sensory punishment	4.1	23.3	19.2	1.4	—
Application of physical punishment	8.5	23.9	21.1	2.8	1.4
Contingent electric shock	4.2	4.2	1.4	—	—

Table 7. Reasons Experts Initially Stopped Using Decelerative Consequence-Based Behavioral Procedures^a

Category (% of responses)	Exemplar
Ethical reasons (42.8)	<ul style="list-style-type: none"> • The procedure is demeaning • It was horrifying to do this to another person • Ethical reasons, these procedures obviously were quite distressing to the individuals to whom they were applied, as well as to those who applied them
Ineffective (30.0)	<ul style="list-style-type: none"> • Too often these procedures led to problematic or dangerous physical interactions • The behavioral issues only increased, often to a dangerous and/or socially isolating level • Ineffective for long-term change
More positive alternatives (27.2)	<ul style="list-style-type: none"> • I found other effective alternatives that are responsive to individual's unique needs • Other alternative strategies are more effective and fit my style better • Alternative techniques provide quicker and more permanent changes in behavior with less risk to the individual and others

^aN = 180.

and (d) behavior is socially stigmatizing, preventing inclusion. While the sample size of responding PBS experts who would still use one of the last three of the behavioral procedures was relatively small (i.e., would use sensory punishment, $n = 5$; would use physical punishment, $n = 3$; would use contingent electric shock, $n = 7$), Figure 4 graphically depicts these results. In reviewing Figure 4, it can be seen that for the most part, all four of the circumstances under which the procedure might be use were checked fairly consistently for both sensory and physical punishments, though the primary reason indicated for the use of contingent electric shock was that the person or others are at risk for harm.

Discussion

This study explored PBS experts' perceptions of treatment acceptability of a variety of decelerative consequence-based strategies. An effort was made to study how these experts' perceptions of treatment acceptability changed

across time and to ascertain the variables that contributed to this change. In interpreting the meaning of these results, it is important to note the limitations associated with self-reported data. We asked respondents only about their perceptions (i.e., to indicate only which behavioral procedures they thought they would use or not use), but we did not directly measure their actual practice. Respondents' self-report therefore may overrepresent or underrepresent their actual use of these decelerative consequence-based behavioral procedures and the actual conditions under which these procedures may be employed. With this caveat in mind, our data reveal that most decelerative consequence-based procedures were used in the 1970s and 1980s. By the 1990s, most of the experts indicated that they were no longer using these decelerative strategies.

Such shifts in personal paradigms are consistent with the evolution of applied behavior analysis noted by Evans et al. (1999). Interestingly, a small number of the PBS experts indicated that they would still use the full range of decelerative procedures (sensory punishment, physical pun-

Table 8. Examples of Sensory and Physical Punishments Previously Used But No Longer Perceived as Acceptable

Sensory punishment ^a	%	Physical punishment ^b	%
• Vapors	9	• Restraint	67
• Screaming	11	• Spanking	14
• Mist to face	22	• Slaps	10
• Visual screening	7	• Pinching	5
• Foul tasting substance	25	• Forced to stand in the cold	5
• Alarm on hand	2		

^aN = 21. ^bN = 45.

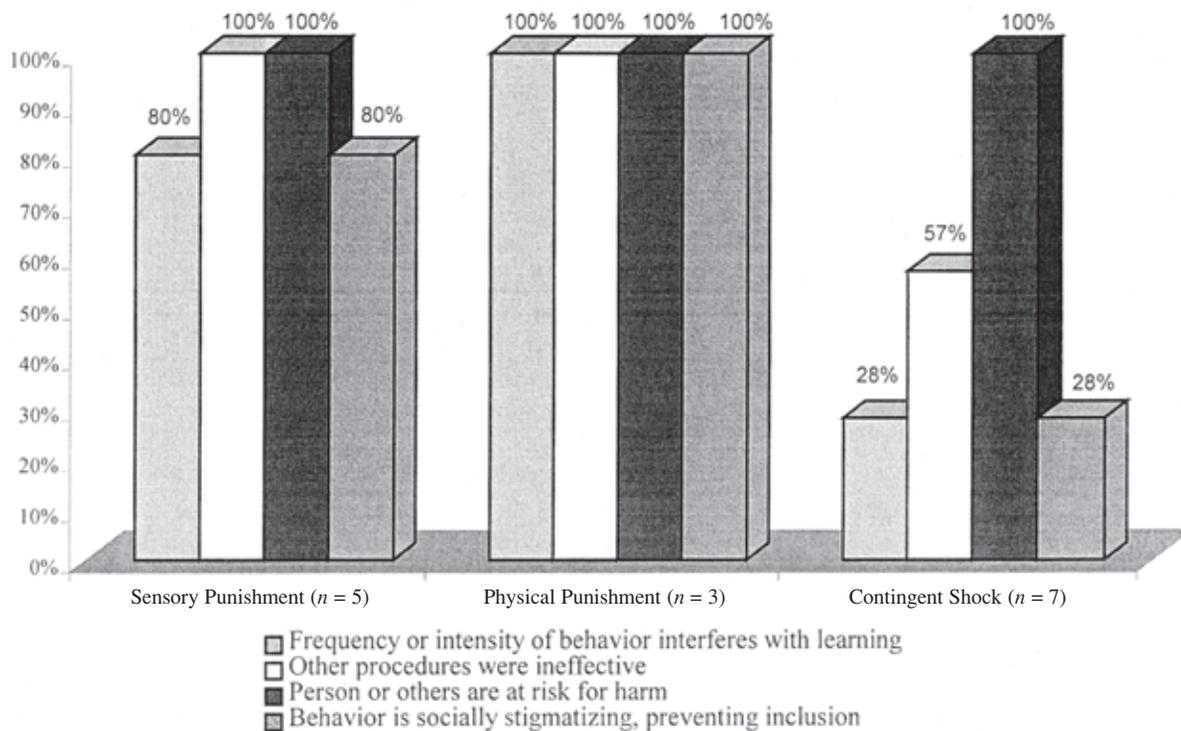


Figure 4. Circumstances under which respondents who would use punishment and/or contingent electric shock might use these procedures.

ishment, and contingent shock) under certain conditions. This range of treatment acceptability among PBS experts was somewhat surprising to us and likely is a result of a variety of factors, including training, background, and current and past clinical experiences. Both Keyes et al. (1988) and Spreat and Walsh (1994) found differences in treatment acceptability according to discipline (i.e., psychologists were more likely to support certain behavioral procedures and less likely to support position statements against the use of decelerative strategies), and much of the research in treatment acceptability acknowledges the influence of the severity of problem behavior on perception of

acceptability. This may be pertinent to the experts, who, as a function of their expertise, have worked and continue to work with individuals who have the most severe and complex problem behaviors.

The reasons given as to why PBS experts would or would not use certain decelerative consequence-based strategies were quite similar. That is, experts indicated that they would use a procedure because research and literature support it; conversely, they indicated that the reason they would *not* use a procedure is because the literature provides alternatives. This was true for effectiveness as well—the experts indicated that they would use a procedure

because it was effective (immediately) or that they would not use a procedure because it was ineffective (in the long-term). An interesting distinction in this area is that ethical reasons were frequently cited as the reason for not using a strategy but were not selected as frequently as a reason for using a strategy. As the literature base reveals, there is supportive literature demonstrating the effectiveness of the full range of decelerative consequence-based procedures (e.g., Ricketts, Goza, & Matese, 1992; Williams, Kirkpatrick-Sanchez, & Iwata, 1993), and literature that supports the use of alternative procedures (e.g., Horner et al., 1990; Jackson & Panyan, 2002; Kincaid, Knoster, Harrower, Shannon, & Bustamante, 2002; Koegel, Koegel, & Dunlap, 1996). If the literature is available to support any position, then likely other factors contribute to professionals' decisions concerning the use of the procedures. Our data suggest that ethics may be a major contributor to notions of treatment acceptability, as well as personal paradigm shifts. Not only was ethics a major reason why professionals would not use a procedure but it was also the primary reason selected for why experts stopped using certain strategies. This supports the notions of Evans, Scotti, and Hawkins (1999), who revealed that although empirical influences shaped their changes, most of their changes were a result of nonempirical sources, or more values-based reasons.

This study also explored experts' perceptions of the larger ideological challenges facing the field of PBS and how involvement in PBS has influenced their conceptualization of ABA and perceptions of people with disabilities. Although some categories of responses focused on practical issues (e.g., training, treatment fidelity, methodology), most responses had to do with various types of quality-of-life and values-based issues. Further, in addition to the clearly designated values-based responses (e.g., ideological changes, quality of life and person-centered values, self-determination), many responses in the categories of PBS strategies (e.g., a greater focus on antecedents and functions of behavior, broadened perspectives) were also related to life quality.

Our data reveal that many PBS experts have at some time in the past engaged in the use of a wide range of decelerative consequence-based and restrictive procedures, including a variety of sensory and physical punishments. It should be noted that the mean number of years in the field of our survey population was 27. This places many of the experts in the field either prior to the passage of the Education for All Handicapped Children Act of 1975 or shortly after its implementation. Furthermore, these experts were likely to have been employed in large institutions at some point in their careers. Experts and other practitioners entering the field more recently may not be as likely to have engaged in such practices or to have had experiences in large institutions (and the institutional culture that exists in congregate-care environments). For our PBS experts, these prior experiences may have been the foundation for subsequent personal paradigm shifts. We are hopeful

that most newer professionals, however, are training with "shifted" mentors (or at least mentors in the process of shifting), reading research and literature that provides alternatives and values-based reflections, and having clinical experiences in more integrated and community-based environments. One has to wonder how this will impact them. These future professionals will certainly experience personal paradigm shifts of their own across the span of their careers but not necessarily in the same areas or for the same reasons as their mentors. Just how ideological changes influence professional commitment, advocacy, and continued growth in the field of PBS remains to be seen.

As professionals in the position of preparing others to participate in the field, we must be responsible for imparting not only the skills (e.g., conducting functional behavioral assessments, maintaining treatment fidelity, using strategies to ensure generalization and maintenance) that are needed to effectively work with individuals with severe problem behaviors but also for imparting the importance of self-reflection on ideological and ethical issues. Our data indicate that values do change across time and that different professionals attribute their changes mostly to nonempirical factors (i.e., ethical factors). Implications of these data underscore the importance of preprofessional preparation. These data also suggest that this preparation present ethics as a component of study and that it not simply be tied to the current technology. Our field will continue to change, and professionals must be prepared with those dispositions that will allow continued ethical reflection as they face new paradigms and technology. Further, coursework and clinical experiences in our training programs should purposely include a focus on individuals with the most severe problem behaviors so that there is ample opportunity to apply such ethical and values-based challenges to these situations, as they are most likely to challenge commitment to the use of positive behavior supports.

With the acknowledgment that ideologies, or personal paradigms, will necessarily shift as our field continues to evolve, we must be sure that as professionals, and as trainers for the next generation of professionals, we consider treatment acceptability as a dynamic and shifting phenomenon and not a static notion of what is or was correct or proper at any one point in time. How such generalized notions of ethics can be taught is a challenge that will be important for our field to consider.

ABOUT THE AUTHORS

Craig A. Michaels, PhD, is an associate professor of special education with the Department of Educational and Community Programs, Queens College, City University of New York. His areas of interests include positive behavior supports, person-centered planning, transition from school to adult life, and assistive technology. Freda Brown, PhD, is a professor

of special education with the Department of Educational and Community Programs, Queens College, City University of New York. Her areas of interest include positive behavior supports and self-determination. **Niki Mirabella, MS**, is completing a second master's degree in early childhood special education at Queens College. She is the parent of a child with severe disabilities and is interested in behavioral strategies to promote inclusion and participation. Address: Craig A. Michaels, Department of Educational and Community Programs, Queens College, City University of New York, 65-30 Kissena Boulevard, Flushing, NY 11367; e-mail: drcmichaels@aol.com

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