

**APPLIED BEHAVIOR ANALYSIS AND BEHAVIORAL SERVICES IN
INSTITUTIONS FOR MENTALLY RETARDED PERSONS:
DIVERGING PATHS?**

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ABSTRACT: Diverging paths of applied behavior analysis and behavioral services for the developmentally disabled (DD) clients are examined empirically. While 75% of research articles on DD in the *Journal of Applied Behavior Analysis* (1968-1993, Summer issue) focus on behavior acquisition, professionals designated as "behavior specialists" report focusing primarily on deceleration objectives. Institutional administrators consider behavior analysts to be relevant to meeting both acquisition and deceleration objectives, although more relevant to deceleration objectives. Reasons for the focus of behavioral specialists on deceleration objectives lie in three areas: contingencies establishing educational priorities in academic training programs which have resulted in a scarcity of trained behavior analysts to design and implement habilitative programs; institutional contingencies generating the separation of deceleration technology from habilitative activities; and counter-habilitative contingencies established by guidelines and regulations under which institutions operate.

Although behavioral principles have been applied to bring about socially desired results in fields from banking to elementary education, there has probably been no area whose growth and development has been so closely tied to behavioral applications as has been the field of mental retardation (MR). Even the most trenchant detractors of a science of behavior often admit that "behavior modification works" with persons with developmental disability (DD).¹

In the 1960s and 1970s, pioneers in the field of applied behavior analysis demonstrated the power of methods derived in the experimental laboratory to expand the repertoires of people with mental retardation (e.g., Birnbrauer, 1976; Ulrich, Stachnik, & Mabry, 1970, pp. 120-155). The influence of behaviorists on active habilitation and treatment for persons with developmental disabilities can still be seen in today's prevalent requirements for treatment objectives that are observable and measurable and in the insistence on quantitative data. Although some of the characteristics of a behavioral approach are thoroughly institutionalized, there is reason to believe that much of the best that behavior analysis has to offer is infrequently or unsystematically used in habilitating people with developmental disabilities. In this paper we provide data supporting the suggestion that institutions are making limited use of behavior analytic science or technology. We suggest some reasons for this state of affairs.

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Divergence of Behavioral Services from Research in Applied Behavior Analysis

The worlds of applied behavior analysis and behavioral services in MR settings may be diverging. What brought our attention to this issue was the curious verbal repertoires of employees working in DD settings. For example, a staff person declared enthusiastically that he accompanied a resident on a 1-hour trip to the mall and the resident "didn't have any behaviors." A shift supervisor frequently admonished his staff to "write it down if any behaviors occur." An administrator reported that "no behavior programs" were needed at her institution but that active treatment needed to be increased. And a program monitor patiently explained that staff can't use extinction on a resident's spitting because staff are obligated to "do something about the behavior."

Such examples appear to suggest that *behavior* in these settings was implicitly defined as activities that *constituted problems* rather than activities that *solved* or *prevented* problems. The term "behaviors" seemed to refer only to undesired activities, and seemed to apply to service recipients, not to activities of employees, professionals and administrators. "Behavioral techniques" seemed to be procedures designed to permit staff to do something that stopped current, ongoing activity of a client. One objective, then, was to ascertain whether behavioral programming in institutions for persons with developmental disabilities was viewed by administrators and behavioral specialists as having to do primarily with unwanted behavior (deceleration objectives).

A related objective was to ascertain whether research in applied behavior analysis implicitly supports such a focus. If a preponderance of applied research in behavior analysis has focused on deceleration of problem behavior, any proclivity for equating "behavioral programming" with deceleration of problem behavior would be entirely reasonable. If, on the other hand, applied research has focused primarily on behavior acquisition, or more or less equally on acquisition and deceleration, then equating "behavioral programming" with deceleration of problem behavior could be detrimental—both to clients served and to the field of behavior analysis.

To determine the thrust of applied behavior analytic research on interventions with DD populations, we examined articles published in the *Journal of Applied Behavior Analysis* (JABA). To ascertain the views of service providers in institutions serving persons with developmental disabilities, we surveyed administrators and directors of behavioral services at institutions from all 50 states. The survey focused on the role these providers saw for trained behavior analysts in meeting acquisition and deceleration objectives for persons with DD.

Research in JABA

Initially, we reviewed all articles published in JABA from 1968 (Volume 1) through 1989. Reading the abstracts, we selected those articles describing empirical research conducted with subjects with DD. Next, we determined whether the research was conducted to *produce* and *maintain* behavior that was not currently in the repertoire of the subjects or to *eliminate* or *decelerate* behavior that was currently in the subjects' repertoires. In cases where measures were taken on both acquisition

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and deceleration dependent variables but the methodology was focused on one or the other, we marked the study as having an objective consistent with the methodology. When the methodology involved both deceleration and acquisition techniques, we marked the study as research on both acquisition and deceleration objectives.

Two of the authors independently identified a total of 245 JABA articles published between 1968 and 1989 reporting experimental research involving persons with DD. Next, the authors randomly divided these 245 articles into two groups of 122 and 123 articles, respectively. The authors then independently checked each article in their group [122 or 123] to determine whether the objectives in each article were primarily acceleration of behavior, deceleration, or both. Then each author randomly selected 40 articles from among their total of 122 [123] and exchanged these 40 articles. So, author A functioned as secondary observer on author B's 40 articles and author B was secondary observer on author A's 40 articles. Thus, reliability measures were obtained on 80 of the 245 articles (32%); reliability was calculated by dividing the number of agreements by the number of observations (agreements plus disagreements). Reliability was 90% (72 of 80 observations were in agreement).

We found that 77% of JABA research with DD populations from 1968-1989 involved research with methods designed to produce and/or maintain behavior that was apparently deemed desirable; 23% of these studies over the 21-year period with DD populations involved research methods designed to decelerate or eliminate behavior that was apparently deemed undesirable.

A third author did a follow-up on JABA articles published from 1990 through the Summer, 1993 issue (Volume 26, #2). Examination of those JABA issues revealed that researchers had maintained their emphasis: 66 research articles focused on DD populations, with 46 (70%) detailing methodology dealing with acquisition behavior. No reliability measures were obtained on these data. The combined data (1968-1993/Summer) are presented graphically in Figure 1.

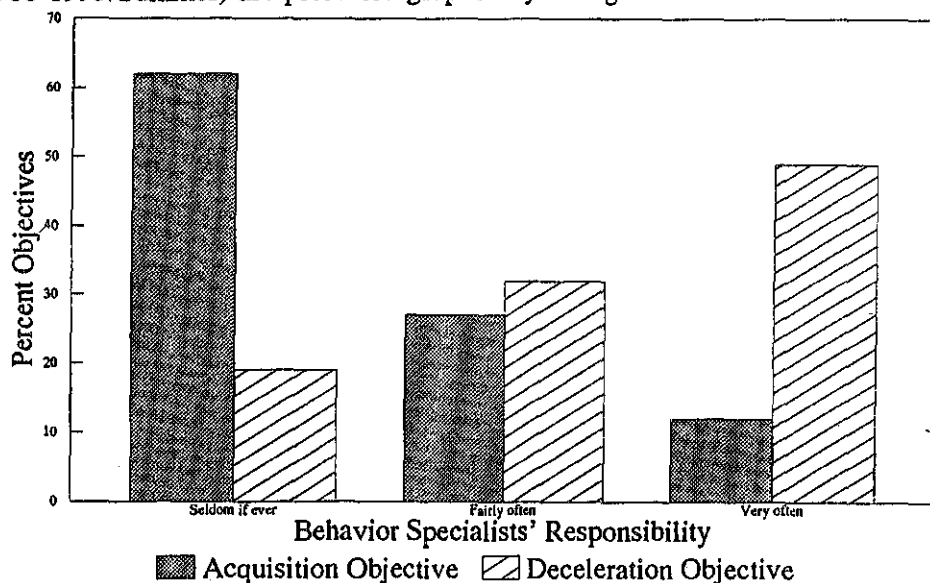


Figure 1. Research objectives with DD subjects: JABA 1968-1993.

Survey Data from the Field

Institutions listed in the 1988 *Directory of Public Residential Facilities for the Mentally Retarded* (N = 276) were surveyed to obtain answers to two questions: 1) what administrators stated regarding the relevance of services of a trained behavior analyst to accomplishing treatment/educational objectives of the institution and 2) what directors of behavioral services said regarding current activities of individuals considered to be "behavioral specialists."

Two comparable survey instruments were developed—one for administrators and one for directors of behavioral services. Each of the surveys listed 57 treatment objectives, all of which had been dependent variables in the JABA research discussed above (1968-1989). There were 41 acquisition and 16 deceleration objectives. We sent only one questionnaire to each institution listed in the Directory, either to the assistant superintendent or to the director of behavioral services of the institution.

We sent the questionnaires to administrators of 1/2 of the institutions listed in each state. If there were an odd number of institutions, one more than 1/2 of the administrators were surveyed. If a state listed only one institution, then only an administrator in that state received the survey. We asked these 163 administrators to rate how relevant the services of a trained behavior analyst would be in meeting each of the objectives listed on the survey. For each objective, administrators placed a check in one of three columns headed "definitely not relevant", "possibly relevant" or "definitely relevant". In our cover letter we explained that it was important that the administrator (i.e., assistant superintendent or superintendent) him or herself fill out the questionnaire. The survey appears in Table 1.

Table 1

Survey sent to Assistant Superintendents/Administrators

Questionnaire

If it were important at your facility for clients to do the following things, how relevant would you consider the services of a trained behavior analyst to be in meeting these objectives?

1	2	3
Definitely not relevant	Possibly relevant	Definitely relevant

Please respond by putting a check in the appropriate column for each objective.

	Objective	1	2	3
1	To improve following instructions			
2	To improve peer interaction			
3	To improve speech skills			
4	To reduce self-stimulation			
5	To improve attention to task			
6	To improve menstrual care			
7	To reduce bizarre gestures			
8	To reduce tantrumming			
9	To improve job interview skills			

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Survey Sent to Assistant Superintendents/Administrators (Continued)

1	2	3
Definitely not relevant	Possibly relevant	Definitely relevant

Please respond by putting a check in the appropriate column for each objective.

	Objective	1	2	3
10	To improve public transportation use			
11	To reduce bruxism			
12	To reduce stealing			
13	To improve clothing selection			
14	To improve naming things			
15	To improve vending machine use			
16	To reduce rapid eating			
17	To improve janitorial skills			
18	To improve smiling			
19	To improve social skills			
20	To improve banking skills			
21	To improve pedestrian skills			
22	To reduce aggression			
23	To reduce rumination			
24	To improve eye contact			
25	To improve leisure skills			
26	To improve tooth brushing			
27	To reduce self-injurious behavior			
28	To improve dancing			
29	To improve sign language			
30	To reduce crawling			
31	To reduce non-compliance			
32	To improve greeting others			
33	To improve laundry skills			
34	To improve visual-motor skills			
35	To reduce vomiting			
36	To improve apartment upkeep			
37	To improve self-advocacy skills			
38	To improve work skills			
39	To improve asking questions			
40	To improve play skills			
41	To reduce disruptive behavior			
42	To improve initiation			
43	To improve mealtime skills			
44	To improve time management on job skills			
45	To improve answering questions			
46	To improve sheltered workshop skills			
47	To improve walking skills			
48	To improve coin summation			
49	To improve mending skills			

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Survey Sent to Assistant Superintendents/Administrators (Continued)

		1	2	3
		Definitely not relevant	Possibly relevant	Definitely relevant
	Objective	1	2	3
50	To reduce elopement			
51	To improve use of crutches			
52	To improve restaurant skills			
53	To improve language skills			
54	To improve toileting skills			
55	To reduce echolalia			
56	To reduce pica			
57	To improve eating skills			

We sent a similar survey instrument to 133 Directors of Behavioral Services at the remaining institutions listed in the Directory. The survey differed from that sent to administrators only in the instructions, which asked how often "behavioral specialists" at their facility were likely to develop programs designed to meet each of the objectives listed. The respondents checked one of the following: "seldom if ever," "fairly often," "very often." The objectives were the same as those in the survey sent to administrators.

The overall return rate was 53% (158 returned out of the total 296 forms mailed): assistant superintendents/directors returned 52% and directors of behavioral services sent back 55%. Data obtained from directors of behavioral services are summarized in Figure 2 and those from administrators in Figure 3. In general, both groups strongly associated behavioral professionals with deceleration objectives. And although the administrators viewed behavior analysts as being possibly relevant or

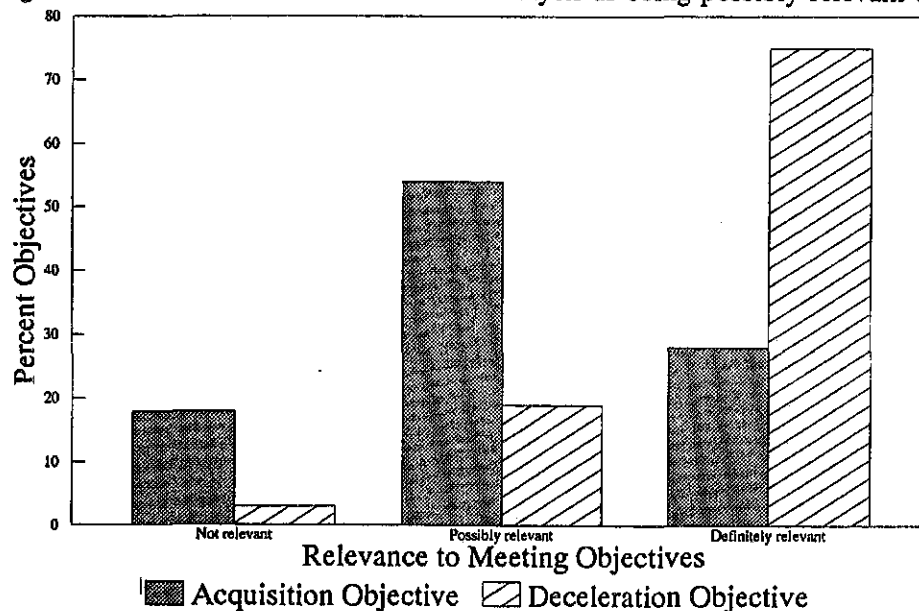


Figure 2. Behavioral Specialists' Responsibilities for Acquisition and Deceleration Objectives for DD Clients.

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definitely relevant to achieving habilitative objectives, directors of behavioral services reported that behavioral specialists rarely had anything to do with developing programs to meet the habilitation objectives the authors found to be researched in JABA.

Specifically, 49% of elimination objectives researched in JABA were "very often" the purview of "behavioral specialists"; whereas, only 12% of the acquisition objectives researched in JABA were "very often" the purview of "behavior specialists." Conversely, 62% of the acquisition objectives we found researched in JABA were "seldom if ever" addressed by behavioral specialists; whereas, 19% of the deceleration objectives researched in JABA were "seldom if ever" addressed by "behavioral specialists."

It should be noted we asked these respondents to report what behavior specialists actually did. The answers given probably depended to some extent on the nature of the objectives set by the institutional interdisciplinary teams (IDTs). For example, a respondent may have reported that behavior specialists "seldom if ever" developed programs to "reduce pica" because pica was seldom identified as a problem occurring in that institution.

As may be seen in Figure 3, administrators consider behavior analysts "definitely relevant" to meeting 75% of the deceleration objectives listed and 28% of the acquisition objectives. Further, they consider behavior analysts "possibly relevant" to meeting 54% of the acquisition objectives. Finally, the administrators view behavior analysts as "definitely not relevant" to only 3% of the deceleration objectives and 18% of the acquisition objectives.

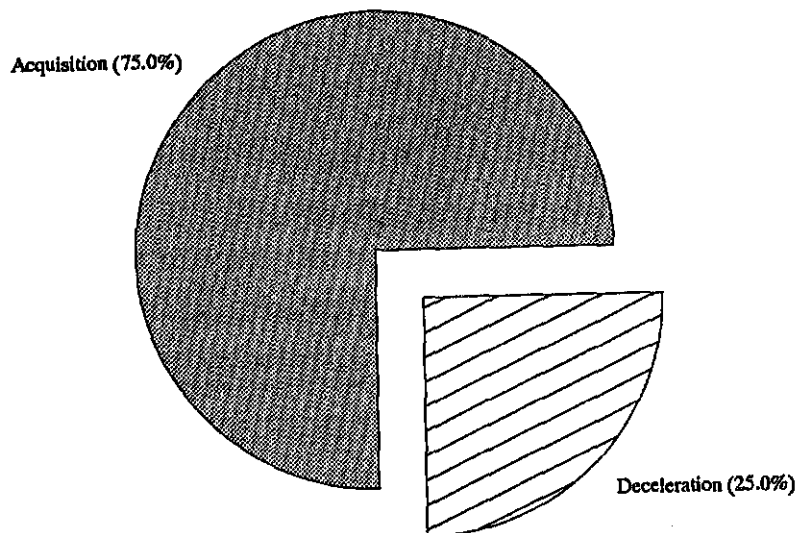


Figure 3. Administrator's Views Regarding Relevance of Behavior Analysts to Meeting Acquisition and Deceleration Objectives for DD Clients.

Taken together these data suggest that the informal ways in which employees speak of "behavior" and "behavioral programs" accurately reflect the activities of professionals designated as "behavioral specialists." However, administrators would appear willing to assign many more responsibilities to behavior analysts than

employees currently designated as "behavioral specialists" actually have. If this is the case, why have such assignments not been made? In a later section we discuss some of the legislative and regulatory contingencies that could account for this discrepancy.

The data in Table 1 suggest that there is indeed a divergence of the activities of professionals designated as behavioral specialists from the areas most frequently researched by applied behavior analysts. Such divergence would appear to be detrimental for all concerned. First, institutional effectiveness is unnecessarily limited; second, professional opportunities for trained behavior analysts are drastically truncated; and third, persons with developmental disabilities are deprived of receiving highly researched habilitative programming.

It is difficult to imagine benefits that would offset the costs of such a state of affairs. Costs and benefits come in many forms, however, and they can occur at both the level of individual behaviors (as long-term and short-term reinforcers and punishers) and at the level of cultural entities like institutions and their departments, government agencies, and accrediting bodies. Such costs and benefits enter into the contingencies and metacontingencies that maintain the behavior of individuals and the practices of cultural entities.

Possible Contingencies Accounting for the Association of Behavior Specialists with Problem Behavior

Interacting educational, institutional, legislative and regulatory contingencies may be supporting the use of "behavioral specialists" as "deceleration professionals." In this section, we discuss some of the events involved in each of these kinds of contingencies. We begin with a discussion of the day-to-day behavioral contingencies that seem to shape the behavior of individuals working with persons with DD. We then look at educational, institutional, and socio-political (legislative and regulatory) contingencies and the effect these have had on the activities of "behavioral specialists."

Behavioral contingencies

Although from the outset, applied behavior analysts researched methods of generating and maintaining repertoires, perhaps it was highly probable that those who could "modify behavior" would be called upon to do something about the more obvious "problems." George's failure to dress himself was certainly less likely to spur those who worked with him to ask for help than was Sarah's spitting at the other residents. And Mark, who smeared his feces, was more obviously in need of "behavior modification" than was Jock, who sat quietly and stared into space. Clients' problem behavior seems likely to have provided aversive conditions that motivated staff to seek help from a professional designated as "behavior specialist." So began the de facto separation of behavior specialists from the design and implementation of acquisition programs. Whatever the range of interests and training of those behavior specialists, their skill in devising techniques to reduce problem behavior is likely to be in high demand whenever and wherever problem behavior occurs.

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But who are these specialists who have been designated to "modify behavior"? In answering this question, we approach the topic of educational and institutional contingencies that have defined the function of these specialists and that have fostered the narrowing of the role of behavioral specialists to the task of eliminating undesirable behavior. The educational contingencies to be outlined pertain to the emergence and evolution of the field of psychology and the concomitant effect on the availability of trained behavior analysts.

Educational contingencies

From its inception, psychology has been a "quilt of many patches." Pioneers in academic psychology patched together departments of psychology by hiring the best scholars they could find from a variety of disparate approaches to investigate behavioral phenomena. The scholarly interests assembled included intelligence and personality testing (based on a variety of theories and philosophical assumptions), organizational management, psychophysics, and animal learning and behavior (cf. Buckley, 1989).

After the second world war, the patch that was clinical psychology began to dominate the pattern of the quilt. With its focus on emotional problems and "abnormal behavior," a developing clinical psychology gravitated toward the concepts of the great "personality theorists." Also, the philosophical heritage of psychology reasserted itself in humanistic and phenomenological approaches to therapy.

This was the context in which the scientist-practitioner model for clinical psychology was adopted. The Boulder model was designed to integrate research and clinical practice in the training of clinicians. Much of ongoing basic psychological research at the time of the Boulder Conference was in the field of animal learning.

The behavior modification movement emerged, consistent with the Boulder model, from the repertoires of psychologists well versed in "learning theory" (mostly, but not altogether, from Skinner's experimental analysis of behavior). Two groups of people often collaboratively contributed to the early work: *experimental psychologists* who ventured out of the lab to tackle some of the problems for which there were then no solutions and some *applied* (or clinical) psychologists who based their behavior-change technology on the principles and procedures of the experimental analysis of behavior (e.g., Ayllon & Azrin, 1968; Foxx & Azrin, 1973; Graziano 1971; Krasner & Ullmann, 1965; Lovaas, 1969; Thompson & Grabowski, 1972; Ullmann & Krasner, 1965; Ulrich, Stachnik, & Mabry, 1966). Such scientist-practitioners repeatedly demonstrated that retarded people could learn and mentally ill people could behave more "normally" if procedures based on behavioral principles were systematically implemented.

During the late 1960s and the 1970s, many psychology departments offered several courses in behavior theory and practice. Consonant with the Boulder model, students often conducted behavior-change projects under supervision of faculty actively engaged in single-subject experimental research methodology. Then two major changes occurred in psychology.

First, academic psychology recanted on its definition of itself as the "science of behavior." With the "cognitive revolution" psychology once again became the science of mental life. Within a very short time, experimental psychology as practiced by the majority of academic psychologists became "cognitive psychology," or even "cognitive science" (and the purview of academicians other than psychologists). At least in its early stages, there were no immediately apparent applications to be based on this new cognitive scientific approach.

The second change occurred during approximately the same time period. Clinical psychology itself became "professionalized" and broke from most or all experimental moorings. The research in the "research-practitioner" model began to focus more on comparing treatments that may or may not have derived from basic research; the result was almost a complete independence of clinical research and research on behavioral processes.

The training of clinical psychologists became increasingly more eclectic and unrelated to experimental findings (with the possible exception of the findings of physiological psychologists). Academic departments offered an increasingly diverse range of course topics. Every content area had to be studied separately because there was no unifying conceptual framework that related those content areas to one another. The one constant in the evolution of clinical psychology seemed to be its focus on "abnormal behavior."

Currently, few recipients of graduate degrees in psychology have worked in an operant laboratory. Few clinical practica include the supervised implementation of behavior technology, and the overcrowded curriculum rarely allows for more than one course in "learning principles," or "behavioral techniques." Only in the most trenchantly behavioral psychology departments (or programs) are graduate students likely to acquire the type of repertoire that allows them to make use of an ever-growing behavioral technology, to say nothing of making creative use of the expanding knowledge base emerging from the laboratory. The lack of opportunity to acquire behavioral clinical training results in psychology graduates with an eclectic (often wholly inadequate) repertoire for work with DD clients.

This absence of behavioral training from the curricula of many (perhaps most) psychologists is strangely paradoxical when considered in the context of institutional contingencies within the field of developmental disabilities. A professional work force with little or no behavioral training creates problems for MR institutions because current institutional contingencies mandate the need for competently trained behavioral specialists (behavior analysts). It is to these institutional contingencies that we now turn.

Socio-political contingencies

Foremost among the cultural contingencies contributing to the need for and focus of "behavioral specialists" on deceleration programs are the various regulations restricting deceleration technology. The institutional contingencies associated with these regulations will be discussed below. At present, we focus on the effects of these regulations on institutional practices—specifically, their role in fostering a

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"special status" for deceleration programs, which segregates them from the bulk of acquisition (or habilitative) programming.

The regulations surrounding deceleration technologies require numerous "oversight" committees to review and approve programs designed to decelerate or eliminate problem behavior. These programs are regulated in other ways also—for example, in the specific training requirements for staff to carry them out. Such programs are, as a result, very costly, involving numerous personnel, staggering amounts of paperwork, and multiple layers of internal monitoring. These conditions work together to isolate deceleration objectives from habilitative objectives. The separation of "deceleration specialists" from "habilitation staff" provides institutional protection for habilitation programs, preventing them from being dragged into the paperwork morass in which deceleration programs are invariably mired. Further, because "certified" professionals are deemed critical to meet the regulations for deceleration technology, costs can be kept down by making acceleration objectives the purview of different personnel, most of whom usually have considerably less professional training than behavior analysts.

This strategy, planned or not, is understandable; the effect, however, of institutionally isolating problem behavior is the implicit treatment of clients as having "bad parts." The "bad part" is considered the responsibility of behavioral specialists, and it is assumed that behavior specialists should be able to repair that part with "behavioral techniques." This state of affairs is entirely at odds with current behavior analytic understanding of persons as being the locus of highly complex and integrated behavioral repertoires (e.g., Lubinski & Thompson, 1986).

External forces, then, pressure institutions to protect themselves by delegating highly monitored activities to certified professionals. Both the nature of the problems and the historical origins of behavior technology make psychologists the likely candidates to handle these problems. Unfortunately, fewer and fewer psychology programs offer extensive training in behavioral technology—deceleration or habilitative.

Factors leading to regulation

As Skinner (1972) pointed out, people who are unable to exert effective countercontrol are likely candidates for mistreatment by those who are responsible for their care. Because behavior technology is effective in modifying behavior, deceleration techniques were quickly appropriated by untrained staff to suppress unwanted behavior. Such persons were not bound by the ethical standards of any particular profession and society at large was left to provide the necessary counter-controls.²

As behavior analysts grappled with the problems posed by highly publicized abuses administered in the name of behavior modification (Martin, 1975), state and federal agencies began to act to protect persons within institutions from misapplication of behavioral technology. Regulations such as those developed by intermediate care facilities for the mentally retarded (ICF-MR) restricted the use of extended isolation, restraint, and the use of behavior-altering drugs, none of which

were techniques developed by behavior analysts but which were sometimes implemented under the rubric of "behavior modification."

A research advisory committee of the National Association of Retarded Citizens (NARC) developed guidelines regulating use of behavioral procedures in state programs (May, et al., 1975). Experts in behavior analysis collaborated on these guidelines with advocates for persons with DD and others interested in protecting client rights. These guidelines appear to have influenced the evolution of subsequent state and federal regulations.

Prominent among regulations for providers of services to DD clients are the ICF-MR mandatory regulations for participation in the Title XIX Medicaid program (Federal Register Medicaid Programs, 1988) and the voluntary *Standards for Services for People with Developmental Disabilities* (SSPDD) as well as the ACDD National Quality Assurance Program (1990). These regulations call for active treatment and training directed toward achieving independence for persons with DD in their activities of daily living.

These standards require training programs that 1) specify measurable objectives, and 2) provide evidence of service delivery through data collection to allow for adjustment of methods to achieve observable progress toward objectives. The guidelines do not prescribe training methodology but clearly assume the use of behavioral technology in response reduction programming. These guidelines appear to have had at least three important effects on deceleration technologies: 1) they have helped prevent misuse of behavior technology in attempts to suppress unwanted behavior; 2) they may also have precluded humane use of some deceleration technologies; and 3) most important to the present discussion, they appear to have been less effective in ensuring good *habilitative* programming.

Unintended effects of regulation

Although regulation of deceleration technology is designed to protect the individuals served, such regulation may be contributing significantly to the paucity of behavioral technology in habilitative programming. Providing an environment that meets regulatory standards apparently does not require or ensure extensive focus on habilitative training programs.

For example, Bible and Sneed (1976) found that a facility may be approved as meeting *Joint Commission on the Accreditation of Hospitals* (JCAH) and ACDD standards but offer no more educational opportunities to clients than a facility that is not accredited as meeting standards. Further, these authors found that staff increased training offered to residents by 276% during the days that a JCAH team was inspecting the facility. Repp and Barton (1980) observed residents and staff in licensed and unlicensed facilities serving DD clients and found that licensed units were just as derelict as unlicensed units in providing habilitative programming for their clients. Maladaptive behavior occurred as frequently as task-related behavior in both units. Repp and Barton concluded that 1) facilities can be licensed and still fail to provide habilitative training for their clients; 2) despite the technology available for teaching adaptive and reducing maladaptive behavior, many client

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repertoires remain unaffected; and 3) habilitative opportunities are still not provided for all retarded citizens despite judicial decisions and governmental regulations.

Meinhold and Mulick (1990) charge that MR institutions fail to maximize the adaptive potential of their residents, because interaction between regulations and individual needs of institutional residents create contingencies that actually mitigate *against* habilitation. They describe some of these counter-habilitative contingencies generated by regulatory contingencies. For example, state and federally regulated institutions are reimbursed for the care they offer their residents. Meinhold and Mulick point out that such funding patterns reflect an assumption that residents requiring full staff assistance are more costly to care for than residents who are partially independent. In fact, the institutional reimbursement rate is based on a combination of level of care provided and estimated average amount of time required to provide the service/client/day. Meinhold and Mulick offer as a worst case example an institutionalized resident who refuses to eat and who reaches a state of nutritional risk, requiring a program to reinstate eating behavior. Under these conditions a gastrostomy tube offers one possible solution. Under current conditions, reimbursement to the institution for using this procedure is greater than reimbursement for training the resident to self-feed. Clearly there is great risk here of counter-habilitative programming. Such contingencies virtually ensure that behavioral technology for habilitative programming will remain unaffordable.

So, why have administrators not supported more actively habilitative programming, thus making more full use of their behavioral staff? The implicit funding contingencies contained in legislative and regulatory guidelines, the threat of lawsuits if problem behavior is not satisfactorily controlled, and the lack of authority vested in service delivery departments in institutions for the mentally retarded are part of the answer.

Many of the problems that are not obviated by these multiple guidelines, regulations, and laws under which service providers operate were predicted by Stolz (1977) and by Sajwaj (1977). Although aware of the positive potential in guidelines such as those of NARC, Sajwaj cautioned against several counter-productive possibilities.

1. Because the demand for facts far exceeds the supply, guidelines (then and now) typically reflect "considered opinion" of "experts." Unsophisticated interpreters may fail to distinguish between fact and opinion (especially "expert" opinion).

2. Guidelines that fail to acknowledge the impact of administrative decisions on service delivery can result in professionals being held responsible for outcomes that they cannot feasibly deliver.

3. In the process of curbing misuse of behavior technology, guidelines may curb and retard the development of desirable and innovative practices. Stolz (1977) argued against the adoption of guidelines for behavior modification, especially when they are legislatively and administratively enacted. Because both law and science are evolving, guidelines developed in the context of the current legal and scientific environment may be rapidly outdated. Stolz predicted that such guidelines would likely have a stultifying effect on behavioral services and technologies.

Consistent with the caution voiced by Sajwaj and Stolz, we are concerned about interpretations of guidelines for behavioral treatment by monitors representing multiple agencies, each with its own guidelines. The "facts" and the "considered opinions" underlying these guidelines cannot easily be distinguished without extensive education in behavior analysis. If the short supply of behavior analysts are employed to monitor consistency of treatment with guidelines, who is going to design the habilitation and treatment programs? If the modest supply of behavior analysts design and supervise treatment, how are they to do good work when their efforts are constantly being compared to monitors' interpretations of guidelines based on a few facts and much "considered opinion"?

Even if there were enough well-trained behavior analysts to develop and supervise both habilitation and deceleration programs, are they likely to continue developing innovative technology based on new laboratory work if oversight committees insist that they show "it has worked" somewhere else? Behavioral techniques may now be entrapped in a mold built in the 1970's.

Aggregate Outcomes of Current Practices

Our failure, as a society, to use behavior technology to develop the repertoires of institutionalized DD persons may be viewed as a dysfunctional cultural practice. The outcomes of our current practices constitute problems for a variety of individuals, institutions, and for society as a whole.

First, there is the harm done to the population served when their caregivers do not deliver the best services available given the amount of resources available for that delivery. That is, even if cost of services were held constant, benefits could be improved. Specifically, the behavioral environments could be better managed at approximately the same cost if we *as a society* used currently available knowledge effectively.

Second, professionals are harmed when they are required to provide services which they have not been adequately trained to provide. The typical one or two courses on behavioral principles and perhaps one practicum assignment where a "behavioral technique" or two are used (usually as a last resort to decelerate some problem behavior) are an inadequate preparation for the complex interventions required. To complicate matters further, people with such woefully inadequate training are then required to "train" others. Often they themselves have never systematically manipulated contingencies to produce a change in behavior so they can pass on only a smattering of "book knowledge" obtained in a college classroom. These professionals have been victimized by academic and institutional requirements that fail both to prepare them to be "behavior specialists" and to provide appropriate opportunities to observe and participate in effective behavioral programs once they are in the work setting.

Third, properly trained behavior analysts are harmed when their main, or sole, function is to develop and monitor programs designed to decelerate problem behavior. When neither they nor other well-trained behavior analysts are directly involved in the development of habilitative programs, they will constantly be put in the position of "repairing a part" when the problem behavior can be properly

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addressed only in the context of an integrated habilitative program. No matter how many times an IDT meets to set up a training program for the person with DD, or for how long, no integrated program will emerge if "behavioral techniques" are clearly "prescribed" only for dealing with problem behavior.

The heart of the problem as we see it is reflected in the data presented above. It is the divergence of institutional practices from the primary thrust of research in applied behavior analysis. Having delineated the problem, we suggest that part of any solution will involve an analysis of the behavioral contingencies sustaining the repertoires of individuals working in institutional settings. Another part of the solution will entail analysis of the relation between institutions as cultural entities and the outcomes they are required to produce by societal regulations. Also, it may be important to analyze the behavioral repertoires (and the educational contingencies necessary to train such behavior) critical for the behavior analyst's survival in MR institutional settings. Yet another part of the solution to this multifaceted situation may require focusing on how to maintain the behavior of the institutional staff responsible for implementing acquisition programs should these once more come under purview of the behavior analyst.

We agree with Baer (1987) and Hopkins (1987) that behavior analysts need to understand the contingencies operating to support the behavior of persons working in the field. We would also suggest that behavior analysts consider the possibility that alteration of behavioral contingencies will not maintain unless and until the outcomes of cultural practices in which they are embedded are consistent with survival requirements for the cultural entity (Glenn, 1988; 1991). *New* behavioral contingencies cannot be maintained in cultural practices that must produce outcomes consistent with the *current* behavioral contingencies in order for the cultural entity to survive.

REFERENCES

- Accreditation Council on Services for People with Developmental Disabilities: National Quality Assurance Program. (1990). *Standards for services for people with developmental disabilities*. Boston, MA: Author.
- Ayllon, T., & Azrin, N. H. (1968). *The token economy: A motivational system for therapy and rehabilitation*. New York: Appleton-Century-Crofts.
- Baer, D. M. (1987). Weak contingencies, strong contingencies, and many behaviors to change. *Journal of Applied Behavior Analysis*, 20, 335-337.
- Bible, G. H., & Sneed, T. J. (1976). Some effects of an accreditation survey survey on program completion at a state institution. *Mental Retardation*, 14, 14-15.
- Birnbrauer, J. S. (1976). Mental retardation. In H. Leitenberg (Ed.), *Handbook of behavior modification and behavior therapy*, (pp. 361-404). Englewood Cliffs, NJ: Prentice-Hall.
- Buckley, K. (1989). *Mechanical man: John Broadus Watson and the beginnings of behaviorism*. New York: Guilford Press.
- Federal Register Medicaid Programs: 42CFR, Part 483 on Conditions for Participation of Intermediate Care Facilities for the Mentally Retarded* (October 3, 1988).
- Florida Department of Health and Rehabilitative Services (1989). *Behavioral Programming Manual*. Tallahassee, FL: Author.
- Foxx, R. M., & Azrin, N. H. (1973). *Rapid toilet training of the retarded*. Champaign, IL: Research Press.
- Glenn, S. S. (1988). Contingencies and metacontingencies: Toward a synthesis of behavior analysis and cultural materialism. *The Behavior Analyst*, 11, 161-179.

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- Glenn, S. S. (1991). Contingencies and metacontingencies: Relations among behavioral, cultural, and biological evolution. In P. A. Lamal (Ed.), *Behavioral analysis of societies and cultural practices* (pp. 39-73). New York: Hemisphere.
- Graziano, A. M. (Ed.). (1971). *Behavior therapy with children*. Chicago: Aldine-Atherton.
- Hopkins, B. L. (1987). Comments on the future of applied behavior analysis. *Journal of Applied Behavior Analysis*, 20, 339-346.
- Krasner, L., & Ullmann, L. P. (Eds.). (1965). *Research in behavior modification: New developments and implications*. New York: Holt, Rinehart & Winston.
- Lovaas, O. I. (Producer). (1969). *Behavior modification: Teaching language to psychotic children* [Film]. New York: Appleton-Century-Crofts.
- Lubinski, D., & Thompson, T. (1986). Functional units of human behavior and their integration: A dispositional analysis. In T. Thompson & M. D. Zeiler (Eds.), *Analysis and integration of behavioral units* (pp. 275-314). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Martin, R. (1975). *Legal challenges to behavior modification: Trends in schools, corrections and mental health*. Champaign, IL: Research Press.
- May, J. G., Risley, T. R., Twardosz, S., Friedman, P., Bijou, S. W., Wexler, D., et al. (1975). Guidelines for the use of behavioral procedures in state programs for retarded persons. *M.R. Research, NARC Research & Demonstration Institute*, 1 (1), 1-73.
- Meinhold, P. M., & Mulick, J. A. (1990). Counter-habilitative contingencies in institutions for mentally retarded people: Ecological and regulatory influences. *Mental Retardation*, 28, 67-75.
- National Association of Superintendents of Public Residential Facilities for the Mentally Retarded (1988). *Directory of public residential facilities for the mentally retarded*. Centralia, IL: Galen Goode.
- Repp, A. C., & Barton, L. E. (1980). Naturalistic observations of institutionalized retarded persons: A comparison of licensure decisions and behavior observations. *Journal of Applied Behavior Analysis*, 13, 333-341.
- Sajwaj, T. (1977). Issues and implications of establishing guidelines for the use of behavioral techniques. *Journal of Applied Behavior Analysis*, 10, 531-540.
- Skinner, B. F. (1972). Compassion and ethics in the care of the retardate. In *Cumulative Record*, (pp. 283-291). New York: Appleton-Century-Crofts.
- Stolz, S. B. (1977). Why no guidelines for behavior modification? *Journal of Applied Behavior Analysis*, 10, 541-547.
- Thompson, T. & Grabowski, J. (Eds.). (1972). *Behavior modification of the mentally retarded*. New York: Oxford University Press.
- Ullmann, L. P., & Krasner, L. (Eds.). (1965). *Case studies in behavior modification*. New York: Holt, Rinehart & Winston.
- Ulrich, R., Stachnik, T., & Mabry, J. (Eds.). (1970). *Control of human behavior*. (Vol. 2). Glenview, IL: Scott, Foresman.
- Ulrich, R., Stachnik, T., & Mabry, J. (Eds.). (1966). *Control of human behavior*. Glenview, IL: Scott, Foresman.
- Wood, W. S. (1974). *Issues in evaluating behavior modification: Proceedings of the First Drake Conference on Professional Issues in Behavior Analysis 1974*. Champaign, IL: Research Press.

NOTES

1. Throughout this paper the terms *mental retardation* (MR) and *developmental disability* (DD) are used interchangeably.
2. The regulatory mechanism of certification of behavior modifiers was debated and even attempted in the early 1970s (Wood, 1974) but was abandoned. Some states, however, did establish paraprofessional certification in applied behavior analysis—most notably Florida (*Behavioral Programming and Management Manual*, 1989).