Twenty Years of Applied Behavior Analysis in Treating the Most Severe Problem Behavior: Lessons Learned

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This paper reviews some of the author's experiences during the past 20 years of treating severe problem behavior. Factors that represent barriers to success are identified and discussed, as are factors that contribute to the development of successful treatment programs. Barriers to success include the inherent reactive nature of human services and educational systems, expertise problems, systems problems, information gaps, programming problems, characteristics of problem behavior, and maintenance problems. Some new programmatic directions are suggested for overcoming the various treatment barriers. The paper concludes with strategies and factors to consider that will ensure long-term success in the treatment of severe problem behavior.

Key words: severe problem behavior, expertise, maintenance, follow-up, programming issues

After 20-odd years of treating severe problem behavior (e.g., Foxx, 1976a, 1976b, 1990, 1991; Foxx & Azrin, 1972; Foxx, Bechtel, Bird, Livesay, & Bittle, 1986; Foxx, Bittle, & Faw, 1989; Foxx & Dufrense, 1984; Foxx, Foxx, Jones, & Kiely, 1980; Foxx & Livesay, 1984; Foxx & Martin, 1975; Foxx, McMorro, Bittle, & Bechtel, 1986; Foxx, McMorro, Fenlon, & Bittle, 1986; Foxx, McMorro, Rendleman, & Bittle, 1986; Foxx, Snyder, & Schroeder, 1979; Foxx, Zukotynski, & Williams, 1994; Martin & Foxx, 1973), one gains a number of insights and observations. Many relate to why behavioral programs are ineffective or fail in some settings. Early in my career I believed that any well-designed procedure or program would be successful. I later learned that a number of nonprogrammatic and procedural factors can significantly hinder the process and maintenance of behavior change (Foxx, 1985). Historically, these barriers to success have been un-

deremphasized, underdiscussed, and underresearched (Foxx, 1992).

SOME REASONS WHY PROGRAMS FAIL AND SUGGESTED SOLUTIONS

The Reactive Treatment Model

Most human services and special educational systems have followed a reactive rather than a proactive intervention model. In the reactive model, nothing was implemented until after the problem behavior had occurred. The programmatic thrust was to wait for individuals to do something wrong rather than teaching them to do something right. This was especially true in institutions in which the staff were often perched in their chairs like big hawks waiting to swoop down and intervene should someone act out seriously.

Systems theory (Bertalanffy, 1968) explains why systems are inherently reactive and most concerned about their extremely problematic clients. Every system seeks to maintain a state of equilibrium and eliminate any noise within the system. Human services or educational systems seek to eliminate severe problem behavior because they represent threats (i.e., noise) due to their potential to produce lawsuits, negative publicity, and disgruntled ad-

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vocates and parents. A reactive system has little incentive to be proactive and concern itself with positive behavior because they do not create noise.

Systems theory also states that (a) the older the system, the more resistant it is to change; (b) the more closed the system, the more resistant it is to change; and (c) closed systems die. This helps to explain the decline and demise of the institutional model and the emergence of the community-based services model. Severe behavior problems are best treated in young, proactive systems.

Proactive programming focuses on antecedents rather than consequences. It is a bit like playing chess. The more moves you plan ahead, the more likely you are to be successful in changing a client's severe problem behavior. Good behavior-change agents think like chess masters. They also always take what the client gives them. In other words, they change their behavior as the client changes his or hers. It is like a pas de deux in ballet. They behave in response to the client's behavior. In this behavioral therapeutic dance, the client always leads. Furthermore, as success is achieved, the dance steps will keep changing.

The System Does Not See the Behavioral Approach as Relevant

The system may not understand how behavior analysis fits or will be used. In an article on dissemination and adoption of innovative psychosocial interventions, Backer, Liberman, and Kuehnel (1986) stated that the intervention must be viewed as relevant to the system's needs and must be readily translatable into tangible action that is appropriate to its environment. Another factor critical to adoption is the ease with which the system understands the innovation and its implementation. For adoption to occur, the intervention needs to be packaged in a format that enables potential consumers to readily acquire skills required for faithful utilization.

Every Place Can't Provide Treatment

There is the misconception that very difficult problems can be treated in every setting by every caregiver, as long as everyone has received sufficient training. Yet, the environments in which clinical interventions are conducted with difficult problems rarely provide the necessary support. Indeed, just as every hospital is not equipped and staffed to do high-risk neurosurgery, every location and behavior analyst are not necessarily suitable to treat every severe problem behavior.

Thus, attempting to use a difficult, elegant, or controversial procedure with a difficult behavior in a nonsupportive environment is analogous to a neurosurgeon attempting to operate on and maintain the health of a brain surgery patient in an unsterile environment. In such a case, would any subsequent deleterious effects be attributed to the surgical technique or procedure or to the contaminating effects of the environment? Clearly, the answer is the environmental effects. Similarly, should we consider a behavioral program to have failed if the necessary environmental support was never provided? Many clients who display extreme forms of aberrant behavior, especially self-injurious and aggressive behavior, represent the neurosurgery patients of behavioral intervention and thus require a highly supportive environment.

If this support cannot be achieved, then the rationale for attempting the program must be questioned. Difficult or controversial programming for very difficult behavior problems should be limited to those settings in which the necessary expertise and environmental support are available (Foxx, 1982a).

In Many Systems Reinforcement is an Unnatural Act

High-quality reinforcement programs are crucial to successful intervention with severe problem behavior. Yet, invariably the most obvious missing ingredient in most systems is positive reinforcement. Moreover, few

systems pay attention to the quality, variety, density, frequency, and subtlety of reinforcement.

Why do so many people do such a poor job of reinforcing? Clearly, it is not because the importance or need to reinforce has not been stressed, spoken of, written about, and modeled. I believe that reinforcement is an unnatural act for many people (Foxx, 1985, 1993). The majority of people entrusted to carry out reinforcement programs don't do so because they don't believe in the process. Simply put, their lives are not very reinforcing, and hence they don't view reinforcement as something particularly desirable or necessary. This point, of course, raises the interesting question of how very sophisticated applications of reinforcement (e.g., LaVigna & Donnellan, 1986) can be implemented successfully on any systematic basis.

We must continue to search for ways of teaching and motivating people to reinforce. To that end, we perhaps should cease concentrating on trying to convince people to reinforce because this approach has been associated with over 30 years of futility. Instead, we could have them practice reinforcing until it becomes so natural that they do not think about whether to reinforce but simply do it. Ultimately, the programmatic benefits of their use of reinforcement may become apparent to them. In effect, we should be less concerned that people know *why* they are reinforcing than that they *are* reinforcing. I would like to see change agents think of themselves as bees and their clients as a field of flowers.

I also think we have not always explained reinforcement well. People who have children or who are supervisors know that individuals differ in how they respond to reinforcement. For example, some people become very uncomfortable being praised or delivering praise, whereas others thrive on it and may even be overzealous when delivering it. These differences even extend to cultures. One of the major differences I have noticed between

citizens of the British Commonwealth and Americans is how they praise and react to praise (Foxx, 1985). The typical American tends to praise effusively: "What a great job. Outstanding effort! You're doing a fantastic job!" A behavior analyst from a country of the British Commonwealth might regard such praise as superficial and question its sincerity. A high form of praise from them might simply consist of "Good show."

No Behavioral Expertise is Available

The successful treatment of serious problem behavior requires behavioral expertise. When no one is available in a system with the necessary expertise, the typical result is a series of treatment failures followed by nontherapeutic "treatments" such as drugs and restraint. The solution is to hire an expert or send the client to a setting that has expertise. Are special repertoires necessary for one to be a good behavior-change agent (Foxx, 1996)? Identifying such repertoires would help to explain why some individuals have more programmatic successes than others.

Sharpe (1994) describes six stages in the development of expertise based on his emerging work in teacher preparation with Rob Hawkins. These six stages ranged from beginner to virtuoso. The description of the top level, virtuoso, bears quoting:

Appears to have an intuitive grasp of many different professional situations and a nondeliberative sense of the appropriate response to be made. Performance is fluid, coherent, and of a consistently high behavioral velocity. The virtuoso is marked by not spending response time in the conscious or deliberate choosing of how to behave at particular points in a lesson. Behaviors are clearly contingently managed; however, professionals in this category are not easily described as deductive or analytic in their efforts. Virtuosos may be best characterized as always doing things that facilitate desirable behaviors, with a behavioral schema in place which has already been subject to repeated experiential analysis and has been well internalized for appropriate context-specific implementation. (Sharpe, 1994, p. 14)

We need to study what comprises ex-

expertise, what learning histories facilitate its acquisition and then, if possible, how to train it.

*Exceeding the Systems Skill Level:
The Most Difficult Behavior Is
Treated First*

Even if they have access to behavioral expertise, many systems simply are not prepared to conduct and maintain a program for individuals with extreme behavior problems. Their programs fail because they have no track record of success with less problematic behavior. As noted earlier, a reactive system is rarely concerned with providing treatment until the client's behavior has escalated to a point at which its disruptive effects on the system cannot be tolerated. Yet, when there is a sense of urgency about a behavior problem, there is a very good chance of something going wrong programmatically. This is because there is a tendency to rush in and treat without taking the time to do the necessary planning and functional analyses.

To avoid this pitfall the behavioral expert should select (a) a client to treat whose severe behavior can be changed easily (e.g., with only minor environmental manipulations; Martin & Foxx, 1973) or (b) clients to treat who have milder problem behavior (Foxx & Shapiro, 1978). Selecting these strategies will ensure that the system has some success while also preparing it to treat more difficult behavior problems when its level of expertise is sufficient to do so. One key to being a successful consultant or resident expert is the ability to recognize and select severe problem behavior that is easy to modify (Foxx, 1985).

A good program designer is like a journalist or detective. All three ask the W questions: who, what, when, where, why, and then how. What I suggested over 10 years ago remains topical. "We need to teach staff to consider why clients misbehave, what circumstances or situations produce misbe-

havior and why programs fail" (Foxx, 1985, p. 191).

*The Expert Does Not Conduct the
Treatment or Is Used
As a Circuit Rider*

Another source of failure is when the behavioral expert does not conduct the treatment. Many systems fail to use expertise properly. Their resident behavioral experts often function as circuit riders who spend most of their time traveling between sites rather than treating clients or teaching staff. Because these experts spend little time directly and actively participating in the behavior-change process, their ability to have an impact on the system is diluted, and little actual change takes place. This model guarantees that individuals with very difficult kinds of behavior will receive very little direct intervention from the persons in the system with the most expertise.

Many programs are evaluated in terms of what is written rather than what is being done because the people who evaluate them (e.g., surveyors) often have little, if any, programming background. The net effect is that programmers with expertise have been shaped to write programs rather than to conduct them. Imagine the mortality rate that would exist if thoracic or brain surgeons spent most of their time developing written plans for operations and only occasionally conducted one. What is needed is less talking and more doing.

The solution to these problems is to jettison the circuit rider model and free the expert from those duties and responsibilities (e.g., excessive paperwork and meeting attendance) that are incompatible with conducting treatment (Foxx, Bechtel, Bird, Livesay, & Bittle, 1986). In this way, the individual with the most expertise can spend the necessary time with the client's program and personnel training to ensure success (Foxx, 1990). The expert can train and shape staff to solve problems as they arise and give frequent

corrective and positive feedback. The expert would not move to the next case until the client's program was stabilized and everyone had reached a desired level of programmatic competence. Although it could conceivably require a fairly lengthy period to implement such an approach successfully in some settings, the end product—successfully treated clients and a high standard of uniform and sustained staff competence—would be well worth the effort.

The Recipe Approach

A program may not work for a severe problem behavior when it is created by a technologist rather than an analyst. A behavioral technologist is often someone who has learned a set of strategies, methods, and procedures and then applies them, often without much regard as to why. Conversely, a behavior analyst sees each application of the behavioral model as a unique and individualized combination of events. The behavioral technologist is like a cook following a recipe, whereas the behavior analyst is a chef developing novel culinary concoctions. Apparently, too many cooks can spoil the broth.

The Basic and Applied Worlds Are Different

Clinical interventions are rarely conducted in settings that permit the degree of control that is found in experimental environments (Foxx, 1993). As a result, the extrapolation of basic research findings to applied problems must be approached cautiously. For example, although it is widely believed that punishment produces complete suppression and immediate, enduring, irreversible effects (Azrin & Holz, 1966), applied behavior analysts know that all but immediate effects are difficult to achieve.

Why should we expect to obtain the same punishment effects with humans that were found with nonhuman animals? In applied research, we often do

not know the schedule or reinforcers that maintain the problem behavior, whereas in basic research both of these variables are controlled. In effect, applied researchers simply have less information and control than their counterparts in basic research. This, of course, is why functional analysis is so important.

Journal Articles May Lack Critical Clinical Information

Sometimes important clinical information may have been left out of an article that is used as the model for providing treatment. For example, a number of years ago I submitted an article for publication in which I described being seriously attacked by the client during an overcorrection procedure (Foxx, 1976a). Although the article was accepted, the editor made his final acceptance contingent on deletion of the description of the attack episode from the final version. His request was made because of space limitations. Being a young researcher, I complied with the editor's request. Were this situation to occur today, I would not publish the paper unless such a critical piece of information was included.

Pay special attention to how long each day the treatment program was conducted. Some studies describe impressive reductions in severe behavior, but a close reading reveals that the effects were achieved during two 20-min sessions a day in a specific room. The question becomes, What happens to the individual the other 23 hr and 20 min of the day?

Similarly, just how severe was the problem? It would be helpful if the authors of articles were required to have a videotape on file at some central repository that contained a few vignettes of the treatment sessions. In this way we could ascertain some of the subtleties in the treatment that are difficult or impossible to present in an article. This might facilitate replication and would provide a much clearer idea of what the subjects or clients were truly like.

Once in a while I read an article that lacks what I call a clinical feel; there is doubt that the author actually worked with the subject. The subjects do not seem real, and procedures sound artificial and contrived. In my experience, behavior that serious does not treat quite so easily. Everything is a bit too pat. Although I don't suggest that the research was dry labbed, I would say that it goes counter to my clinical experiences.

Failure to Prepare the Treatment Environment

Programs fail if the environment has not been behaviorally prepared. Consider the following surgical analogy. No surgical operation is performed unless the environment is sterile, well-trained scrub nurses are present, and an emergency generator is available in case the power should fail. We first need to prepare the environment before attempting to change a severe problem behavior. Such preparation includes ensuring the availability of behavioral expertise, having a high density and variety of reinforcement available, and programming the reinforcement of alternative, incompatible kinds of behavior. When this preparation is complete, the behavior-change operation can begin (Foxx, 1980).

Programming: 10% Is Knowing What to Do; 90% Is Getting People to Do It

If a program is going to be successful, it must have the necessary administrative backing or clout. Ideally, the behavior analyst also has supervisory powers and hence can simply mandate programmatic compliance (Foxx, Bechtel, Bird, Livesay, & Bittle, 1986). However, if the program designer is a consultant or nonsupervisor, the program may not last because its success will become dependent on the designer convincing people that they should carry out the program. This may be why successful consultants and program de-

signers often have persuasive personalities.

I spend 10% of my time developing programs and 90% figuring out how to ensure that people will implement them. Many programs are unsuccessful because these percentages have been reversed. The issue is often not whether we know what program to design, but rather how do we ensure that it will be delivered.

One way to increase accountability is to train and certify staff in all the interventions prior to beginning the program. Such certification can be accomplished via videotaping practice sessions, role playing, and written and oral examinations. Grafting behavioral programming onto existing successful models is also useful. For example, in medical settings arrange for behavioral programs to be conducted like the dispensing of medication. With medication, someone is assigned to dispense it and must attest (record) that it was dispensed, and there are severe consequences if it was not done or was done incorrectly. The same concerns are relevant to behavioral programming and recording.

There is a tendency for some professionals in education and human services to believe, once they have been hired and certified, that there is nothing new for them to learn. These individuals seem to be dismayed and sometimes threatened when they must learn a new set of skills. This, in turn, can lead to both active and passive resistance towards the introduction of new job-related skills or material. This is very unfortunate, because many of these professionals were ill prepared during their schooling for what they are now doing, or their skills are no longer very useful. An example most familiar to many of us is the resistance to learning behavioral skills. Over the years, my approach to this resistance has changed. Initially, I thought it was simply a matter of ensuring that people understood that a knowledge of behavioral skills would make their jobs easier. This tact was not terribly success-

ful. Of late I have tried a different strategy.

Rather than suggest that behavioral skills will make their lives easier, I emphasize that these skills are needed to meet the requirements of one's job. The task is to get people to recognize and agree that in virtually every other type of work, employees expect to be required to develop and learn the skills necessary to perform the job. In fact, in the business world often all that a degree provides is qualification for the job. After that, the company trains people to fit its needs. No one carps about having to be trained, because it was expected when they were hired. Later, if their job requirements change because of technological advancements, people easily accept and, indeed, hope for retraining. Once people understand why behavioral training or retraining is important, they generally are not threatened by it.

Programming: No One Conducts It for Long If It Is Not Working

No one conducts ineffective programs for very long. Most individuals' dedication and enthusiasm will quickly wane, and they will give up on a procedure or technique if no positive programmatic outcomes are apparent within a week or so. We actually program for failure when we say we are going to give a program 2 to 3 months in order to determine if it is effective and then make a decision to continue or discontinue it. We must identify additional ways to assist change agents in seeing that they are having success. In the case of high-frequency severe problem behavior, such assistance is often found in examining and evaluating response latencies and interresponse times. Another strategy is having the expert present during the first few treatment days to identify why the program is working even though it may not appear to be. Other strategies include showing pretreatment videos and data, identifying conspicuous collateral

improvements, and obtaining input from significant others.

Severe Problem Behavior: It Typically Worsens First

When we attempt to decrease severe problem behavior, it typically worsens before decreasing. It is like the storm before the calm. Yet, the typical reaction in such cases is "We've got to stop the program because it's making the client worse." The program is indeed making the client worse because he or she is displaying behavior that has been shaped and strengthened over time by the discontinuation of programmatic efforts. Most clients with severe problem behavior have been generously negatively reinforced for escalating their problem behavior.

Typically, the lower the functioning of the individual, the more likely the behavioral escalation will occur quickly, whereas higher functioning individuals tend to wait until the behavior analyst has gotten smug. One can never feel completely confident that a reductive program is a success until there has been some behavioral escalation. The key to programmatic success is the willingness to ride out the escalation. To do anything less is a disservice to the client.

Severe Problem Behavior Is Episodic

Episodic behavior is so difficult to treat because there are so few opportunities to provide treatment. There also is the potential for the treatment program to be used improperly because of the infrequency with which it may be applied. These problems can be overcome if we approach episodic behavior as we would emergency room or shock trauma unit situations. When someone stops breathing, treatment must be applied within minutes. There is no time to go to the file cabinet to look up the program on how to perform a tracheotomy or apply oxygen. But this is not a problem, because emergency personnel know what to do from repeated training and rehearsal.

They recognize the antecedents that characterize respiratory distress.

To follow this model, have staff practice recognizing antecedents and applying the treatment program during periods when there is no problematic behavior. Practice to the point at which staff react reflexively, but appropriately, when they encounter a serious episodic behavior or its antecedents.

Boredom and Routine Erode Maintenance Effects

Rigid adherence to successful treatment scenarios over an extended period of time can erode maintenance effects (Carr, McConnachie, Levin, & Kemp, 1993). Client and staff behavior deteriorate when flexibility and variety are not programmed into daily routines (Foxx et al., 1994). Both become bored and fall into routines that make them less responsive. Systematically and intermittently changing the daily activities for both clients and staff is one way of overcoming this problem.

Failure to Reinstate a Successful Program

Two factors that influence whether or not a successful program will be reinstituted are the passage of time and the number of times the client has been transferred to a new setting. Simply put, the longer the time between the treatment program and the return of the severe problem behavior, the lower the likelihood that the original, successful program will be reinstated. Similarly, each setting transfer decreases the likelihood that the successful program will be reinstated should the behavior return. In both cases, the procedure chosen will typically involve the least amount of staff effort and time (Foxx & Livesay, 1984). One way to reduce the probability that a previously successful program will be overlooked or discarded is to place a brightly colored sheet of paper in the front of the individual's chart or records that briefly describes all previously successful programs.

Low-Functioning Clients

A 10-year follow-up study (Foxx & Livesay, 1984) of 8 persons treated by overcorrection procedures (Foxx & Bechtel, 1983) revealed that higher functioning individuals showed longer and better reduction of serious behavior than did lower functioning individuals. One reason appeared to be that the former had more opportunities to obtain reinforcers and positive interactions with others because they had well-developed expressive language. Their language skills enabled them to demand positive maintenance programs. In contrast, lower functioning individuals are dependent on others for such programming. To overcome this problem, more direct programming of competing reinforcers and activities is required in maintenance programs for lower functioning individuals (Foxx, 1982b).

CONCLUSIONS

We may need a triage model for treating severe problem behavior. Triage is a medical procedure for sorting battlefield casualties into categories on the basis of their severity. For example, some casualties have life-threatening injuries and require immediate treatment, whereas the treatment of others can be postponed because their injuries are much less serious. A triage model might prove to be useful for some kinds of severe behavior such as pica and self-injurious behavior, for which the risk of permanent injury or premature death is great. Consider that Foxx and Livesay (1984) found that 3 of 4 individuals who had been successfully treated for pica had died prematurely. Naturally, the use of a triage model is possible only in those systems that possess the necessary expertise to handle very difficult problems first.

The overall successful treatment of severe problem behavior requires a consideration of the following strategies and factors (Foxx et al., 1994). First, use an hypothesis-driven treatment model (Carr, Robinson, & Pal-

umbo, 1990) in which interventions are designed after a formal functional analysis has identified the variables that control the behavior. Because severe problem behavior is sometimes under multiple motivational and setting events and hence cannot be definitely linked to specific consequences, conduct an in-depth analysis of antecedent and setting events in order to determine whether the occurrence of the behavior is correlated with environmental events that occurred with specific staff or activities or across times of the day or days of the week. Second, ensure that the stimuli that can control appropriate behavior are present before, during, and after the problem behavior is treated. Third, employ a skill-building strategy wherein new behavior is taught to serve the same function as the problem behavior. Emphasize behavior that contacts the same reinforcers, especially communicative ones. Teach requesting behavior that is functionally equivalent to the problem behavior but that is more effective in generating reinforcement. In effect, requesting behavior must be less effortful than problem behavior. Select staff to participate in treatment because they are associated with positive reinforcement. Fourth, eliminate situations such as frustration, boredom, and protracted periods of inactivity that are known to occasion problem behavior. Fifth, follow the least restrictive treatment model (Foxy, 1982a). Sixth, do not allow problem behavior to produce escape from educational and vocational activities (Foxy, McMorow, Bittle, & Bechtel, 1986). Seventh, increase the complexity of social reinforcement and tasks as the client's behavior becomes increasingly more appropriate (Foxy & McMorow, 1983). Eighth, actively encourage choice making (Foxy, Faw, Taylor, Davis, & Fulia, 1993), problem solving (Foxy & Bittle, 1989; Foxy, Kyle, Faw, & Bittle, 1989), and the participation of the client's significant others.

It is equally important to plan for the maintenance and long-term assessment

of treatment effects. Some successful strategies for achieving maintenance effects include actively programming for maintenance (Foxy, Bittle, & Faw, 1989; Stokes & Osnes, 1986), ensuring similarity between the treatment and maintenance programs (Foxy & Livesay, 1984; Monroe, 1988), ensuring that there is change agent and system accountability (Foxy & Azrin, 1973), and considering social validity (Kazdin, 1977; Wolf, 1978).

The need for long-term follow-up assessment is particularly critical in the treatment of severe problem behavior, given the controversy that surrounds some treatment approaches (Guess, Helmstetter, Turnbull, & Knowlton, 1987). Conclusions regarding the long-term effectiveness of any procedure designed to decrease problem behavior should be based, in part, on whether the procedure is needed to maintain the therapeutic effects as well as on the size and duration of reduction (Foxy, 1990; Foxy & Livesay, 1984). Ideally, the problem behavior should remain greatly reduced after the procedure is withdrawn (Foxy, Bittle, & Faw, 1989). Follow-up assessments should include repeated observations that are conducted over an extended period rather than a single behavioral sample (Foxy et al., 1994). The contingencies in effect throughout the maintenance phase should be specified so that factors that may have contributed to any durable effects can be identified (Foxy, Bittle, & Faw, 1989). Finally, maintenance should be assessed independently of generalization because they are separable and measurable (Koegel & Rincover, 1977) and because doing so will prevent confounding the two.

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