# *From Behavior Management to Positive Behavioral Supports:*
## *Post-World War II to Present*

***Prepared by: Bruce Kappel with Derrick Dufresne and Mike Mayer March 2012***

Preparation of this paper was financed in part by grant number G0801MNBS24 from the Department of Health and Human Services, Administration on Developmental Disabilities, under provisions of Public Law 106-402. Content of this paper does not necessarily reflect the position or policy of the Administration on Developmental Disabilities or the Minnesota Department of Administration.

## From Behavior Management to Positive Behavioral Supports: Post-World War II to Present

For hundreds of years, most people believed that people with disabilities could not learn. As a result people with developmental disabilities· weren't taught to behave differently. Because they couldn't always control their movements, body functions, voices or emotions, it was difficult to convince society that they should be included in the community.

Instead, many people with developmental disabilities lived isolated in the community or, worse, lived segregated in institutions, separated from people without disabilities. Yet, despite labels, both groups were and are citizens. Tragically for some, this birthright of citizenship deteriorated into clienthood and further isolation.

Punishment was usually the only technique used to change the way a person behaved. It's no surprise that isolation and punishment didn't work well. As we will see in this report, despite data and experience showing that punishment didn't work, and isolation only increased negative behavior, some professionals forged ahead with unproven, harmful and, in some extreme cases, tragic and unethical techniques. These not only harmed the physical body, but stripped the human spirit.

Fortunately, society has learned a lot about human behavior over the last 60 years. We now know that people with developmental disabilities can learn if taught in the right way. We also know that they can learn new modes of behavior that are positive, safe and blend into the communities in which they live as citizens.

Scientists and professionals who work with people with developmental disabilities now know:

- All kinds of behaviors can be changed.
- There are effective ways to teach people with developmental disabilities.
- It is extremely harmful to treat people badly, whether physically or emotionally.
- It is important to understand why a person behaves in a certain way before trying to change the behavior.

Sometimes the people doing the training may need to change the way they help people with learning new ways to behave.

## What is Behavior Management?

Behavior management was an early term referring to a systematic way of teaching people to act or control their reactions, or the way they behave toward other people. Behavior management was used to teach people new ways to act. It also was used to teach people not do things that are harmful or make others feel uncomfortable.

Behavior management is sometimes called behavior modification because the goal of behavior management almost always is to change (modify) the way a person acts.

Experts saw behavior modification as a way to:

1. Teach (condition) someone to behave in a new way. This is called an adaptive response.
2. Teach (condition) someone to change a behavior they have already learned but the behavior is harmful, negative or considered unacceptable by society.

Behavior modification used reinforcements to teach new behaviors or teach a person to stop a behavior or do something more or less often.

Reinforcements were either positive, such as smiles, tokens, treats or praise given when the acceptable behavior was observed. Reinforcements also could be negative, such as taking away something the person likes, making them leave a situation they enjoyed.

These approaches were clearly a huge step in the right direction, moving away from punishment and isolation. One of its biggest limitations was its focus on consequences, correction, and looking too much at the behavior, rather than its communicative function.

## Emergence of Applied Behavior Analysis

One of the first researchers to study behavior modification was a Russian physiologist named Ivan Pavlov. In the early 1900s, Pavlov discovered that animals could be taught to react in a certain way by connecting a desired behavior with a specific type of positive or negative reinforcement.

This is called a "conditioned response." A conditioned response is not the same as a reflex. Reflexes happen automatically, such as moving your hand if it gets too close to a flame. A conditioned response is learned.

Pavlov studied dogs to see if there was a relationship between a specific stimuli and salivation. Salivation is the body's way of preparing to digest food. Over a long period of time, Pavlov trained the dogs to get ready to eat by giving them food only when they heard a specific sound. After awhile, the dogs began to salivate when they heard the sound, even when no food was provided.

[1] We ask that the reader beware that some of the terms used herein that may seem dated or antiquated. The terms behavior management and behavior modification are seldom used any more. As we have learned about the communicative function of behavior, “positive behavioral supports” has come into use as the preferred terminology and model of behavioral support.

## Skinner's Groundbreaking Work

The majority of what we know about behavior management, or behavior modification, has been learned since the end of World War II. Many earlier studies of behavior focused on animal research.

Much of the initial post-World War II research took place at the University of Indiana under J. Robert Kantor. Kantor hired B.F. Skinner to head up the University's Psychology Department in the mid-1940s. Skinner is considered to be a founder of behavioral science and his work continues to be influential.

Although they worked closely together, Kantor and Skinner approached the study of human behavior in different ways. Kantor looked at human behavior philosophically. Skinner approached human behavior more scientifically. Skinner conducted many laboratory experiments designed to observe animal behavior. He later used what he learned to study human behavior.

## Operant Conditioning Takes Shape

Skinner studied "operant conditioning" in rats and pigeons as part of "Project Pigeon" during World War II. (Hearst and Capshaw, 1988)

Operant conditioning uses rewards and punishments to help reinforce specific behaviors. Positive rewards are used to reinforce desired behaviors; punishments are used to reduce or totally eliminate negative behaviors.

In 1949, Paul Fuller, a University of Indiana graduate student, applied some of the things that Skinner had learned about operant conditioning through his research with animals. Fuller conducted an experiment on a young man with disabilities who lived in an institution. The goal of the experiment was to use positive reinforcement to change the behavior of a young man with significant intellectual and physical disabilities.

He was able to move his arms, head and shoulder slightly, but he could not move his trunk or legs. Fuller hoped to show that the man could be taught to move his right arm by reinforcing the movement by injecting a sugar-milk solution into the man's mouth whenever he accomplished the desired movement.

After only four sessions of less than an hour each, the young man not only moved his arm more often, but he also moved it in a more focused way. Fuller then stopped giving the reward to test if the man would stop moving his right arm as often if he wasn't rewarded every time he did it. Once the injections were stopped, the new behavior stopped as well.

Fuller wrote about the results of this experiment in an article called "Operant Conditioning of a Vegetative Human Organism." It appeared in the *American Journal of Psychology* in 1949. This generally is considered the first time operant conditioning techniques were applied to a human subject in a controlled scientific experiment.

Despite the experimental nature of this "teaching" situation, Fuller was able to demonstrate two very remarkable things. First, he showed that an individual, whom they thought could not learn, actually could be taught. Second, Fuller showed that the concept

of operant conditioning could be applied to human beings, not just cats, rats, dogs and pigeons.

When Fuller asked to conduct similar experiments using other residents, psychiatrists and psychologists became upset. Fuller recalled that the clinic director was shocked and said, "**You can't treat a child like you do your rats and pigeons."** (Hearst and Capshaw, 1988, pg.58)

In the 1950's, Skinner began to apply what he had learned about operant conditioning from his animal experiments on human behavior. In one of the first studies of **Applied Behavioral Analysis,** two graduate students working with Skinner conducted an experiment to see if operant conditioning could be used to increase cooperation among children.

The experiment was simple. Children were given jellybeans when they cooperated and received no jellybeans if they did not cooperate. The scientists explained to the children when or why the jellybean rewards were given. Even if they never received any specific instructions, the children quickly connected positive behavior with the reward and soon were conditioned to cooperate with each other.

### What is Applied Behavior Analysis?

**Applied Behavior Analysis (ABA)** is a strategy for teaching people with disabilities to learn new behaviors or stop behaviors that are unacceptable or harmful. ABA is often used to teach children with autism spectrum disorder.

A person is observed over time to determine exactly when the person does a specific behavior. ABA also can focus on observing when a person doesn't show a specific behavior that he or she should be doing.

The observers also note when a behavior occurs, how often it is or isn't seen, what happens before (antecedents), and what happens after (consequences) the behavior is observed. This scientific approach is based on data and facts, making it easier to decide which behaviors need to be changed and the role the behavior plays in the person's life. All of this information is important to developing a detailed plan for the behavior.

### A Call for More Research

The success of these early experiments showed that more studies were needed. In 1958, Jack Tizard, a psychologist known for developing alternatives to institutional care and committed to using research to address important social problems, said:

> "What are needed today are properly controlled experimental studies and surveys designed to answer questions about the social costs of various types of administrative arrangements for dealing with [individuals with cognitive disabilities]. (Tizard, 1958, pg. 448)

Tizard urged researchers to:

- Find better ways to assist individuals with cognitive disabilities.
- Attempt to teach or train individuals with disabilities.
- Identify different treatment choices.
- Study the effects of various medical treatments for behavioral reasons.
- Develop new, more effective treatment options.
- Find ways to teach social skills to people with developmental disabilities.
- Help people with developmental disabilities deal more effectively with emotional or psychological challenges. (Tizard, 1958, pg. 448)

**Behavior Modification Expands Through the 1960s**

Understanding behavior modification increased dramatically in the 1960s. During this decade, significant behavioral research was conducted in the areas of:

- Language.
- Repetitive (echolalic) speech.
- Repetitive movements (stereotypical) that have no apparent purpose.
- Use of punishments.
- Toilet training.
- Autism.
- Tantrum behaviors.
- The way human behavior is shaped by living in an institutional setting. (Parmenter, 1996, pgs. 8-9)

By 1965, enough behavior management research results had been gathered to fill a book of case studies. Then, in 1968, *The Journal of Applied Behavior Analysis* was created to give professionals access to research on ways behavior analysis could be applied.

**Medical Model vs. Psychological Model**

As the study of human behavior created credibility among scientists and professionals working with people, a heated debate was taking place surrounding the most effective way to “manage” (again, a foreign concept today) the behavior of people with developmental disabilities.

Some professionals believed that an individual's unacceptable behaviors were the result of an underlying disease. As a result, they should be treated as medical challenges.

This thinking was in line with the widely held belief that people with developmental disabilities were sick and needed to be cured. It also explains why many of the institutions resembled hospitals, staff wore uniforms, residents were called patients, etc. This was called the **medical model.**

However, an increasing number of experts supported the **psychological model** as a more effective way to change unacceptable behaviors of people with intellectual disabilities. The psychological model is sometimes referred to as the learning model. Supporters of the psychological model believed that an individual with developmental disabilities could learn to control unacceptable behaviors through systematic behavior modification.

Some also believed that unacceptable, negative behaviors were caused by an earlier positive reinforcement effort that hadn't worked well. For example, in the past, caregivers may have removed an individual who has vomited after being placed in an uncomfortable situation. If this pattern is repeated a number of times, the person may connect vomiting with being removed from an unpleasant situation and begin to vomit as a way of not participating. This is called "maladaptive behavior." (Ullmann and Krasner, 1965, pg. 24*)*

In 1965, Ullmann and Krasner summarized the differences between the medical model and the psychological model. In the **medical model,**

> …the individual's behavior is considered peculiar, abnormal, or diseased because of some underlying cause. The analogy is made to physical medicine in which germs, viruses, lesions and other insults foreign to the normal working of the organism lead to the production of symptoms… [M]aladaptive behaviors cannot be treated directly because they are the products of these causes [and] changed behavior is not really important unless the 'real' trouble has been dealt with. (Ullmann and Krasner, 1965, pgs. 1-2)

The **psychological model** focuses on the behavior, not its underlying cause. The psychological model **does not** stress a behavior's unconscious cause or "neurosis." It focuses only on the behavior itself. Specific unacceptable behaviors, called "neurotic symptoms," are seen as simple learned habits. The model assumes that changing the behavior will eliminate the cause.

The working behavior therapist is likely to ask three questions: (a) What behavior is maladaptive, that is, what subject behaviors should be increased or decreased; (b) What environmental contingencies currently support the subject's behavior (either to maintain his undesirable behavior or to reduce the likelihood of his performing a more adaptive response) and (c) What environmental changes, usually reinforcing stimuli, may be manipulated to alter the subject's behavior. (Ullmann and Krasner, 1965, pgs. 1-2)

Ullmann and Krasner believed that behavior modification could be widely used to help teach many individuals with developmental disabilities, even those considered to be incapable of learning new behaviors.

> In terms of subjects suitable for behavior modification, there is reason for great optimism. It seems to us ... that behavior modification may offer the opportunity for therapeutic interventions in many cases thought unsuitable for traditional psychotherapy. The work by the University of Washington group...seems to us to be of particular value and social significance... (Ullmann and Krasner, 1965, pg. 59)

## Grappling with Ethical Imperatives

Many behaviorists believed psychologists had an ethical duty to use behavior modification therapies as a way of reducing unacceptable behaviors. Ullman and Krasner echoed the opinion that it was "ethically incumbent upon these psychologists to increase the efficiency of the modification of maladaptive behavior" as an alternative to traditional psychotherapy. They pointed out that scientific evidence was mounting as behavior modification techniques were being transferred successfully "**from rodents and college sophomores to the clinic, the nursery school, and the psychiatric hospital."** (Ullman and Krasner, 1965, pg. v)

[The] early studies of the 1950s and 1960s "suggested that perhaps the power tool needed to retrain and modify the behavior of the institutionalized patient was to be found in the principles of operant conditioning. In the following decade, pilot projects were developed in parts of wards, cottages or wings of buildings of large institutions to explore the applicability of these methods to treating larger groups of patients." (Thompson and Grabowski, 1972, pg. 9)

Like all new approaches, behavior therapy raised some ethical concerns that were hotly debated amongst researchers, psychologists and professionals working with people with developmental disabilities.

### The Question of Permission

The growth of behavior modification raised a critical question: **Was it acceptable to change a person's behavior without their permission?**

Supporters of the medical model expressed concern that using behavior modification to change an individual's behavior without his or her permission was unethical. Critics of behavior management therapies noted that, at the time, some behaviorists approved the use of **punishment** as a behavior modification technique.

In their 1965 book, **Case Studies in Behavior Modification**, Ullman and Krasner disagreed with these arguments, stating that it was perfectly appropriate to change the behavior of an individual with developmental disabilities without their permission.

> … if a person's behavior has become a burden to society and if his behavior can be changed, whether he wants it or not, it is right and proper to change the behavior. To the extent that other members of society must support the person

> who is in a hospital or prison, it is right and proper that the representatives of that society be employed to change the person. If conditions do not permit a person to return to a productive or adaptive role, then we think that there is an obligation to provide for him, but just as we favor training in new techniques to permit industrial reemployment, we think that retraining should proceed in changing conditions that are barriers to effective living. (Ullmann and Krasner, 1965, pg. 42)

They also pointed out that supporters of the medical model didn't appear to apply the same arguments to their own barbaric behaviors. Ullman and Krasner reminded fellow researchers that since:

> ... little argument on a 'value' basis has been raised against insulin coma, electric shock, lobotomy, or drug therapy with varying side effects, we find it strange that problems of 'values' should be raised in the case of behavior therapy ... It seems that many barbarities are permissible in the name of a medical model (including, historically, snake pits, beatings, cathartics, blood letting, lobotomies, twirling stools, physical restraints, and dunkings) but that there often is little dispensation for psychological model behavior modification. (Ullmann and Krasner, 1965, pg. 42)

Despite this debate, the use of punishments continued to be viewed as a future direction that behavior modification may take. Ullman and Krasner noted:

> One technique that seems particularly likely to be useful is that of time out from reinforcement as a mildly aversive, self-regulated response contingent stimulus. Since removal from a positively reinforcing situation is aversive, whenever the subject behaves in a maladaptive manner, he is removed from the reinforcing situation for a brief period of time... The purpose of punishment is not to suppress a behavior permanently, but to increase the chance of obtaining a behavior that is incompatible with the maladaptive behavior. The alternative behavior is reinforced so that its likelihood of emission will become greater than that of the maladaptive behavior. (Ullman and Krasner, 1965, pg. 59)

## Behavior Modification Moves to the Classroom

During the early 1960s, a University of Washington team was among the first to apply behavior modification to the classroom in a project called "Programmed Instruction in the Classroom." Some of the approaches used to change the behavior of children with intellectual disabilities eventually became widespread. Two of the most common techniques the researchers applied were token reinforcements and time-outs.

The University of Washington team focused on "educable [developmentally disabled] children." The purpose of the project was to:

- Develop and strengthen students' motivation.
- Help the students develop good study habits.
- Increase students' cooperation and perseverance.
- Improve students' concentration.

There was a practical side to the work. The project started as an attempt to help teachers find new ways to reach more children with developmental disabilities without sacrificing the extent and intensity of the education each pupil received.

Interestingly, the team was so vested in their approach that the researchers blamed themselves if the children did not learn. Jay Birnbrauer, one of the researchers involved, wrote, "Our basic assumption is that if the children do not learn or learn slowly, our procedures are ineffective, or at best inefficient." (Birnbrauer, et al. , 1965, pg. 359)

**Use of Tokens and Time-Outs**

A central feature of the University of Washington approach was use of a **token reinforcement system.**

> "A token reinforcement system was instituted after we discovered that these pupils would not work steadily for only social approval and knowledge of results. It appeared as if incorrect and correct answers were one and the same to them, and often the children did not even look at the answers provided in the teaching programs. Learning academic subjects had little value to them and in the light of their histories there are very few reasons why it should. Therefore, stars, together with verbal approval, were given when a pupil behaved acceptably or answered questions correctly. The criteria for acceptable behavior and the ratio of correct responses to tokens were increased gradually". (Birnbrauer, et al., 1965, pg. 360)

Initially, the primary way that educators coped with the behavior problems of children with developmental disabilities in the classroom was by ignoring the negative behavior in hopes that it would go away. Researchers had learned that recognizing a behavior often reinforces it. Ignoring a behavior is called "extinction" in behavior modification terms.

> "Behavior problems did occur frequently and most of the boys had not learned to study persistently by themselves. Behavior problems were handled almost exclusively by extinction, that is, in this case, by ignoring instances of inappropriate behavior, and positively reinforcing approximations to desired behaviors. In other words, the emphasis was upon strengthening the desirable behavior by positively reinforcing it. Praise and token reinforcers (stars) were used. The physical arrangement of the room, the staggered schedules, and the high teacher-to-pupil ratio permitted disruptive behavior to run its course

> without unduly affecting the studying of the other children". (Birnbrauer, et al. 1965, pg. 360)

This combined approach eventually expanded to include time-outs. During a time-out, a child was removed from the classroom when he or she misbehaved.

## Behavior Analysis Applications Continue to Grow

By 1970, **Applied Behavior Analysis (ABA)** was widely accepted as a therapy for improving social behaviors. The use of tokens to reinforce appropriate behaviors and reduce problem ones also was widely accepted.

Ivor Lovaas was one of many behaviorists using applied behavior analysis to change inappropriate social behaviors in the early 1970s. Lovaas focused on how ABA techniques could be applied to children with autism.

Lovaas' intensive program featured 40 hours of therapy per week and included the use of aversives**.** An aversive is something that tastes bad, causes discomfort, or causes pain. Some experts believed that using an aversive when a certain behavior occurs could help to eliminate a negative behavior over time. Later, Lovaas excluded the use of aversives (Note - the Lovaas method still exists and, despite some significant controversy, uses applied behavioral analysis).

Foxx and Azrin's 1973 book,***Toilet Training the Retarded****(sic),* is one example of how applied behavioral analysis techniques were being used to teach people who were previously considered unable to learn. At the time, people with extremely low IQ scores received little training and often were labeled "untrainable." As these individuals grew older, it became less and less likely that they would receive any training, making it more difficult for them to be included in the community. (Foxx and Azrin, 1973, pgs. 17-18)

> "The younger [developmentally disabled] are more fortunate, for our traditions dictate that children should be educated. Current concern for the [developmentally disabled] has caused a gratifying increase in educational programs especially within public schools .Since the "untrainable [child with developmental disabilities] " is usually ineligible for these classes, he does not benefit from this very recent and enlightened concern. If he is in an institution, he has a chance of receiving attention and training while still young. Volunteers are relatively eager to play with and teach the helpless and needy child. When he matures, however, these community volunteers are not likely to return for a second visit. His cuteness and promise are gone even though his need and helplessness continue." (Foxx and Azrin, 1973, pg. 17-18)

According to Foxx and Azrin, a lack of toileting skills almost invariably leads to further dehumanization and exclusion.

> …Passive shepherding of residents to the toilets fosters a dependent attitude by the residents and hinders efforts to motivate independence in other areas of their functioning. If incontinence persists, the availability of feces often leads to smearing or coprophagy, a behavioral disorder consisting of the habitual ingestion of feces. Epidemics of intestinal infections or viruses, such as shigella, accompanied by diarrhea, will be common and frequent. Laundry, clothing supplies, sanitation, and cleaning activities will become the staff's dominant concern rather than the education of the resident. Family visits will be discouraged, community concern will arise regarding this "snakepit," and staff interaction with the residents will decrease to the minimum possible. (Foxx and Azrin 1973, pg. 18)

Foxx and Azrin believed that an experienced trainer could teach an individual with intellectual disabilities to toilet independently in as little as four days. If the person had significant behavioral problems and physical limitations, the training might take two weeks or more. Regardless of how long it took, the researchers believed that being able to use the toilet independently would have a major positive impact on the lives of an individual previously considered untrainable. The individual eventually would be seen as having more potential and being less of a burden.

> “Within the past ten years, training procedures based upon behavior modification have offered hope for raising the level of functioning of the [developmentally disabled]. Using principles of learning, this approach has been responsible for the token economy for motivating mental hospital patients, programmed instruction now widely used in public schools, and treatment of several other problem areas where individuals suffer from learning and motivational deficits. (Foxx and Azrin 1973, pg. 19)

In the early 1950s, professionals working with people with developmental disabilities had never heard of terms such as *stimulus, response, reinforcement schedules, imitation* and *generalization.* By the 1970s, however, these keys to behavior management were well-known as some of the primary tools available to help practitioners change the socially unacceptable behaviors of people with developmental disabilities.

The main impact of [behavioral] research during the last 20 years (1955-1974) has been to change our view of what developmental disability means. Persons with developmental disabilities are not simply "vegetative or "animal-like." They are sentient humans who can learn and are social .The research has been done primarily by those committed to applied behavior analysis. The strength of this movement comes from its disciplined character, its empiricism, and resulting social activism. Current attacks on the general approach, as well as weaknesses of its own... may ultimately be detrimental to persons [with developmental”. (Berkson and Landesman-Dwyer,1977).

Berkson and Landesman-Dwyer also identified two issues that would mark major differences in alternative approaches in the 1980s.

First, the way social and physical environments helped shape and manage behavior -

> "Progressive caregiving and training orientations cannot be completely successful unless the physical and social environments in which persons [with developmental disabilities] live support these orientations. Characteristics of behavior appear to be related to the environments in which individuals spend most of their time…Environmental factors can cause behavioral differences"… (Berkson and Landesman Dwyer,1977,435)

Second, identifying the most appropriate response to anti-social,self-injurious behavior -

> "To date, no theory adequately accounts for either the development or maintenance of... antisocial or self-destructive behavior…; however, several techniques have reduced their level. These methods include: rewarding an alternative activity, withdrawing social rewards, isolating the individual, forcing him to perform an incompatible response and administering electric shock as a negative reinforcer. None of these techniques has been shown to be effective for all cases. The behavior is ordinarily not eliminated completely in the training situation, and the effects seldom generalize to other situations... Moreover, decreasing one self-destructive behavior may be accompanied by an increase in another undesirable behavior." (Berkson and Landesman-Dwyer, 1977, pg. 433).

## The Emergence of Positive Approaches

In the mid-1980s, practitioners began to distinguish between classic applied Behavioral Analysis (ABA).This was the dominant approach for much of the last half of the 20th Century. However, many people were increasingly uncomfortable with some of the negative aspects of ABA including:

- The aversive techniques that were being used.
- Lack of appreciation for the important role that relationships play.
- No recognition of the importance or function some inappropriate behaviors may have in the lives of the individual.
- The importance of friendship patterns, family support, physical illness, deprivation, and appropriate physical spaces for living, learning and working.

As a result, many professionals began looking for new, more positive options. By the mid-1980s, the concept of "positive approaches" began to emerge. During this time, Herb Lovett published **Cognitive Counseling and Persons with Special Needs**. John McGee and his colleagues developed Gentle Teaching and stressed positive approaches in their work. Anne Donnellan and her colleagues became known for Effective Approaches Without Punishment**.**

New and more positive ways of thinking about learning and behavior were being shaped.

## Behavior Serves a Function for the Person

These new approaches viewed a behavior's underlying causes more broadly and recognized that the function a behavior serves might actually cause the behavior in some cases.

Carr and Durand (1985) suggested that a challenging behavior often serves one or more of four typical functions:

- It brings attention to the individual.
- It allows the individual to escape a demand.
- It results in tangible reinforcement.
- It provides sensory stimulation.

Supporters of positive approaches suggested that anyone hoping to change a behavior or set of behaviors must first understand the functions the behavior serves for the individual. These supporters also believed the behavior must be looked at from different perspectives to determine why it may occur more often in certain situations.

## Functional Analysis Grows in Popularity

**Functional analysis** methods were developed to assess a behavior's underlying purpose and its usefulness to an individual with developmental disabilities.

A good functional analysis has many facets. It should incorporate both qualitative and quantitative information, including interviews, listening to the person, formal and informal observations, making connections between behaviors and situations, computer analysis, etc.

The goal of an effective functional analysis is to examine what is actually happening in a person's life in real life situations in order to create effective interventions. If a behavior's function is not well understood, eliminating it will likely result in a new "problem" behavior or re-emergence of the original one.

Hastings and Noone (2005) looked at approaches that were aimed at simply eliminating a behavior. They made no attempt to understand the underlying purpose the behavior served for the person. Hastings and Noone concluded that functional analysis was more ethical and effective in dealing with self injurious behavior than a behavior modification effort focused on eliminating the behavior.

They defined 'behavior modification' as the use of reinforcement or punishment without the analytical dimension of Applied Behavioral Analysis.

> "The present review suggests that basing treatment of self-injury on results of a prior functional assessment is more ethical than an eliminative behavior modification approach. Firstly, treatment based on functional analysis is more effective overall, more likely to generalize

> and maintain, and is probably more likely to be implemented with good fidelity by staff (presumably increasing the chance of successful treatment). Secondly, to the extent that treatments based on functional assessments are more likely to be constructional in nature they are also likely to be less restrictive than behavior modification approaches. Thirdly, although direct data from the small number of empirical studies are ambiguous, to the extent that procedures based on functional assessment use reinforcement-based strategies they are likely to be viewed by consumers as more acceptable." (Hastings and Noone, 2005, pg. 340)

### Rooted in ABA with an Emphasis on Relationships

Functional analysis is one aspect of the new, emerging positive approaches that were firmly rooted in the traditions of ABA. These positive approaches differ from ABA in several key areas, including recognizing the importance of building relationships. Gunnar Dybwad offered the following historical perspective when introducing Lovett's *Cognitive Counseling*…

> … "[Lovett's] message is clear and convincing: We cannot help others in a meaningful, sustaining way without forming a working relationship with them and, with patience and sensitivity, this can be done also with those profoundly handicapped(sic) individuals usually misjudged as unable to communicate.
>
> Even with those who are most severely impaired (sic), he is aiming to find ways of working honestly and respectfully to develop trusting relationships. Throughout one finds cautions about mechanistic uses of behaviour techniques. Lovett does not reject Skinner's research and its usefulness; he puts its application in perspective with greater emphasis on the individual person than on specific methodology". (Lovett, 1985, pgs v-vi).

McGee offered similar observations:

> The principles of applied behavioral analysis have contributed a great deal to our understanding of how persons learn in that caregivers can pinpoint behaviors and measure behavioral change over time. When applied to persons with severe behavioral problems, they often result in failure or the use of punishment and restraint. This failure centers on a lack of insight into the needs of persons with severe behavioral problems. Any primary focus on the elimination of maladaptive behaviors, rather than the teaching of bonding, is destined to fail. (McGee et al.1986, pg. 6).

Lovett's approach involved building a **relationship** with the individual as a person, not as someone defined by unacceptable behaviors. McGee underscored the importance of **bonding** between the individual with severe behavior problems and others in his/her life.

> ... [O]ur focus is based on the centrality of bonding. We will delineate a personal posture and allied techniques, which preclude punishment as a treatment option and focus on the teaching of bonding between persons [developmentally disabled] persons with severe behavioral problems and their caregivers. This posture involves the recognition that persons who hit, bite, kick, scratch, or self-stimulate have actually not bonded with their caregivers nor have the caregivers bonded with them. It is necessary to teach bonds of affection with the person... (McGee, et al. 1985, pg. 2)
>
> We advocate for the primacy of bonding through gentle and respectful teaching techniques rather than the submission of a person through punishment...

**Bonding** is the first goal of Gentle Teaching- moving the person away from aggressive, self-injurious, avoidant or self-stimulatory behaviors and toward relationships, first with direct caregivers and eventually with the community at large. We assume that it is possible and necessary to teach bonding through teaching the value inherent in human presence and reward. Bonding unites the caregiver and the person with these needs. (McGee, et al. 1985, pg. 5).

### Practical and Ethical Reactions Against Aversives

By the end of the 1980s, a growing number of people were voicing concerns about the aversive or punishing methods being used to control and correct behavior. Nancy Thaler, then Deputy Secretary of Mental Retardation (now Developmental Disabilities) in Pennsylvania, summarized the negative consequences of the dominant approach:

> “In 1989 most of us, at least most of us in Pennsylvania, were approaching people who exhibited difficult and dangerous behaviors with a "control and correct" strategy. We'd get control of a behavior that we didn't like with any means available, including physical and chemical restraint. Then we'd get the person to do what we wanted by using reward and punishment techniques. But there are limits to these methods and some of us were realizing them. The people with disabilities living under this "control and correct" methodologies were never happy. They rarely truly changed their behavior and, when the control was gone, usually reverted to the familiar difficult behaviors we were hoping we'd changed, which caused us to increase our efforts to gain control, often with more drastic and sometimes even dangerous methods.” (Lovett, 1986, pgs. ix-x)

Efforts to gain control often resulted in a range of punishing practices, including:

- Extended time-outs.
- Ritualistic over-correction.
- Use of cattle prods and sources of electric shock.
- Mechanical and physical restraints.

- An array of aversive, dehumanizing practices such as squirting ammonia or lemon juice in the person's face, cold water sprays, etc.

Ironically, in 1965, Ullmann and Krasner identified a similar list of abusive practices that were commonly found in the medical model. (Ullman and Krasner, 1965) At the time, they offered a behaviorist approach as an alternative. This underscores that every approach has the potential for abuse.

In the late 1970s, the debate over the effectiveness and ethical foundations of using aversives was just beginning. Even some approaches that were considered "positive" were being called into question. For instance, Axelrod (1978) and his colleagues questioned the common practices of **restitutional overcorrection** and **positive-practice overcorrection.** In restitutional overcorrection, an individual who disrupts the environment is required to restore it to the way it was before the incident, and then improve upon it. In positive-practice overcorrection, an offending individual must repeatedly perform an appropriate behavior.

McGee (1986, pg. 4) suggested that using even "mild" punishments should be carefully considered in light of potential broader impacts. For example, consider how the punishment would likely affect trust and relationships in the following "positive" practice response to bedwetting -

> Azrin, Sneed and Foxx (1973) reported a positive practice for bedwetting which involved awakening the resident, reprimanding him, having him replace the linen on the bed, having him lie down for three minutes, awakening him, and then directing him to the toilet. The final three procedures were repeated about nine times. This may eliminate bedwetting, but it is too toxic for the creation of bonding, for teaching the value inherent in human presence or for gaining interactional control ... [M]any current "treatment" practices for this complex population tend to fight violence with violence. ...Such an authoritarian and mechanistic approach can achieve obedience, but not bonding. (McGee et al.1986, 4)

Others took exception to the anti-aversive stance. In 1988, Alison Blake summarized the current arguments being made in favor of aversives in the new professional journal, *Autism Research Review International*:

- Non-aversive techniques do not always work to stop self-injurious behavior.
- Evidence supporting the effectiveness of non-aversive techniques was largely anecdotal or based on small studies.
- When a behavior is dangerous and has not improved with less intrusive procedures, increasingly aversive techniques, up to electric shock, are appropriate. “(AMA Council on Scientific Affairs 1982 Task Force)
- Aversive procedures, in general, are more effective than positive procedures...” (Blake, 1088).

Blake also identified arguments favoring nonaversive approaches that were offered by other practitioners who felt such approaches were both effective and ethical.

In the *Editor's Column* of a later issue of *Autism Research Review International,* Bernard Rimland defends the rights of parents to try treatments which may hold promise, including use of SIBIS (Self-Injurious Behavior Inhibiting System). This electronic device delivers a mild electric shock when the person exhibits certain behaviors. Rimland said:

> If my own autistic son... were self-injurious, I would certainly want aversives, including SIBIS, employed if positive reinforcement methods failed, and fail they sometimes do, according to the overwhelming majority of educators working with the severely autistic. Aversives are a fact of everyday life… They are integral to learning what not to do. (Rimland, 1988, pg. 3).

As the final decade of the 20th Century neared, practitioners and society in general were recognizing that people with disabilities could and should be supported to live, learn, work and play in the community. In addition to gaining general acceptance, this belief also was gaining legal support. Given this new, more inclusive environment, people who questioned the ethics of using aversive practices argued that these options were not appropriate in community settings. Because many of the more controlling approaches were applied in restrictive environments, it was difficult to use them in more open settings.

As the debate continued into the late 1980s, nonaversive, positive approaches were recognized as both effective and ethical.

For some learners, generalization is difficult, regardless of the nature of the procedure used. In order to maintain the gains made in the artificial setting, typically the treatment must also take place in natural settings. All other issues of effectiveness, legality, and ethics aside, it is clear that many of the treatment options that were permissible behind closed doors are totally unacceptable in integrated community settings. Time out booths, squirt bottles, shock sticks, and the like are neither available nor tolerable in supermarkets, bowling alleys, junior high schools, and office buildings. More than ever before, professionals, parents, and advocates are aware of the need to deal with problem behaviors in a manner that is both dignified and appropriate in integrated community settings...

Fortunately, there is a technology that is less intrusive in integrated community settings and has been demonstrated to be effective for managing even the most severe behavior problems. (Donnellan, et at. 1988).

## Features of Positive Approaches

Positive approaches take into account all of the many environments that a person experiences (educational, social, living, physical, etc.), how those environments can be improved so they do not contribute to problem behaviors, and the best way to help people learn appropriate skills and behaviors. The goal is to create positive interventions that work in real life environments.

In 1986, the Center on Human Policy at Syracuse University began a groundbreaking Community Integration Project. This project consolidated the latest learning, thinking and best practices for supporting people with severe and multiple disabilities in the community. An important outcome of the Community Integration Project was identification of several features that are common to all positive interventions. They determined that positive interventions must:

1) Attempt to understand the meaning a behavior has for a person with intellectual disabilities.

2) Offer the person a positive alternative.

3) Use non-intrusive techniques.

4) Offer strategies that have been validated and are appropriate for use in integrated community settings. *(Community Integration Project, 1986b)*

In a 1990 review, Robert Horner and his colleagues from across the U.S. coined the phrase **"Positive Approaches"** to encompass a range of theoretical and practical interventions. These interventions include:

- Educational programming.
- Positive programming.
- Functional communication training.
- Gentle teaching.
- Functional equivalence programming.
- Nonaversive behavior management.

Taken together, these approaches offer an array of methods for supporting people with challenging behaviors. Positive approaches emphasize an ethical standard that maintains and supports the dignity of the individual and prohibits and/or restricts the use of aversive approaches.

Horner acknowledged that, as of 1990, the lack of scientific evidence was a concern.

> At this writing, empirical support for a comprehensive, positive technology is developing but is by no means compelling... There are a number of clinical demonstrations in which positive procedures have been associated with a broad reduction in very severe behaviors... In addition, there is a growing literature providing empirically rigorous demonstrations that specific techniques can produce important behavior reduction under experimental conditions. There is not, however, a database that allows confidence in the ability of available positive programming technology to respond to all severe behavior challenges. The technology of positive programming is still developing and is just beginning to receive adequate empirical support. (Horner, et al., 1990, pgs. 126-127)

Horner identified nine themes that were common to most of the emerging positive technologies. (Horner, et al., 1990, pgs. 127-128).

| | |
|---|---|
| **Theme 1: Emphasis on long term lifestyle changes** | The goal of behavioral support is intended to result in durable, generalized changes in the way an individual behaves. These changes should affect the individual's access to community settings, social contact and a greater array of preferred activities. |
| **Theme 2: Integrates functional analysis** | Earlier events and consequences of a behavior are analyzed and the results used as the basis of an individual intervention program. |
| **Theme 3: Interventions have multiple components** | An effective intervention plan should address multiple aspects of the person's life, including: Setting preferred responses to inappropriate behaviors, opportunities for making choices, the way new functional behaviors will be taught, options for increasing inclusion, staff training needs, etc. |

| | |
|---|---|
| **Theme 4: Core events are considered and manipulated** | Positive interventions recognize that daily activities are important variables that help determine the quality of a person's life. Their presence, or lack of them, can help determine the extent to which undesirable behaviors occur. These variables include diet and meal schedules, exercise options, sleeping patterns, rapport, noise levels, density of housing, and the predictability of events. |
| **Theme 5: Emphasis is on antecedent settings and events** | Understanding the events or settings that have triggered undesirable behavior in the past is critical to reducing the chances that an unwelcome behavior will occur. This information can be used to modify settings to reduce or totally remove the stimuli. The opposite is true as well. Workers should understand what settings, etc. supported positive behaviors in the past to increase the chances that positive behaviors will be seen more frequently. |
| **Theme 6: A behavior's function is considered when creating an adaptive behavior teaching plan** | Workers should attempt to understand the role that a challenging behavior plays in the individual's life before creating an intervention plan to teach a socially acceptable way of achieving the same result. One of the most common examples of teaching adaptive behavior is communication skills training. |
| **Theme 7: Effective consequences are identified** | Nonaversive approaches include consistent procedures for rewarding positive behavior and reducing rewards for undesirable behavior. |
| **Theme 8: Minimizes use of punishers** | Use of punishers in an effort to eliminate challenging behaviors is not desirable in positive technologies. The most common alternative minimizes reinforcement of challenging behavior and redirects the person to more appropriate behaviors. This procedure combines instructional and environmental improvements. Many advocates of positive behavior management recognize, however, that an array of physical actions such as frowns or reprimands can provide critical learning information but may be viewed as punishers. |

| | |
|---|---|
| **Theme 9: Distinguishes emergency procedures from proactive programming** | Effective positive behavioral support must include specific emergency procedures that can be applied in dangerous situations. It is critical, however, to clearly distinguish between crisis intervention strategies that can be used only in emergency situations and ongoing proactive strategies designed to produce substantive positive change. |

Application of positive behavioral approaches and opportunities to learn about their effectiveness has grown since Horner's 1990 assessment.

From 1987 to 1992, the U.S. Department of Education, National Institute on Disability and Rehabilitation Research (NIDRR), provided a $670,000 grant to create for a "Rehabilitation Research and Training Center on Community-Referenced Technologies for Nonaversive Behavior Management." The Center's goal was to "develop and disseminate effective, practical and empirically validated procedures for improving support for individuals with disabilities."(Johnston, et al., 2006, p. 53)

The *Journal of Positive Behavior Interventions* began in 1999. In 2003, the Association for Positive Behavior Support (APBS) was founded.

## Use of Positive Behavior Supports in Education

Positive Behavior Supports (PBS) has dramatically influenced the education and inclusion of students with challenging behaviors. Initially, functional assessments and positive behavior plans were supported by public policy. Eventually, school wide interventions were recognized.

> "Early PBS studies were so compelling that one could argue that they led to the inclusion of the approach in the 1997 reauthorization of the Individuals with Disabilities Education Act." (Crimmins and Farrell, 2006, pg. 31).

IDEA 1997 increased the use of functional behavioral assessments (FBAs) and positive behavior intervention plans (BIPs) for students whose behaviors impeded their ability to learn. Functional assessments and intervention plans had been shown to help students with severe disabilities and persistent behavior problems. IDEA 1997 required educators and administrators to consider completing an FBA and developing a BIP for all students with challenging behaviors who received special education services.

As functional assessments and positive behavior intervention plans were developed for a much broader range of students, it became clear that the social and academic environments in schools were the bigger issue.

> Undoubtedly, providing individualized supports for all students was neither feasible nor advisable. Therefore, a growing acknowledgement of the need for

> system wide applications emerged. The 2004 reauthorization of the IDEA ... recognized the need for more universal approaches to behavior problems, which were specifically included in the law as a focus of training for teachers and administrators. (Crimmins and Farrell, 2006, pg. 31).

The result was creation of School-Wide Positive Behavior Supports (SWPBS). SWPBS expands the focus on prevention, skill building and environmental modification to the entire school community. Originally, this approach focused on individual students. SWPBS involves three levels of intervention, each focusing on an increasingly smaller percentage of the school population.

| Level of Intervention | Description |
|---|---|
| **Primary or universal prevention strategies** | Designed to prevent the majority of problem behaviors by applying proactive, school wide interventions to all students in all settings at all times and involving all adults.<br>Target group: Approximately 80% of the student population. |
| **Secondary prevention strategies** | Group based interventions for students who do not respond to universal prevention strategies but may not require individualized interventions. |
| **Tertiary prevention strategies (Individualized PBS)** | Highly specialized interventions involving functional assessments and comprehensive behavior support plans for individual students who present intense or chronic problem behaviors. |

(Bambara and Lohrmann, 2006, pg. 1 [based on Horner, Sugai, Todd, and Lewis-Palmer, 2005).

National training grants, funded by the U.S. Office of Special Education Programs and individual states, resulted in thousands of schools being trained to implement SWPBS by 2006.

Rapid growth of this new approach has led to concerns about the impact of expanding the focus from individuals with challenging behaviors to behavior management for an entire school.

Will SWPBS be used to break down the barriers between special education and general education as we realize that everybody benefits from the same technology, as all

students begin to participate and benefit from all levels of support? Or will school wide systems of support serve to divert resources and support from students with more challenging behaviors ... and promote further [division between] general and special education ... contributing to yet another reason why students with severe disabilities do not fit in our schools? We must be sure that ...no child is left behind. (Brown and Michaels, 2006, pg. 61)

## Distinguishing Between ABA and Positive Behavior Supports

Whether or not Applied Behavior Analysis (ABA) and Positive Behavior Supports (PBS) are really different approaches has been the subject of long debate. Some people think both are simply different forms of Applied Behavior Analysis. Clearly, Positive Behavior Supports are rooted firmly from the soil of Applied Behavior Analysis.

While Anderson and Freeman (2000) suggested that PBS is consistent with behavior analysis, Carr and Sidener (2002) thought it was time to think about separating the two.

In 2006, Johnston, et al. (2006) raised a number of concerns about PBS as an approach for delivering behavioral services and how it has impacted the way ABA is viewed in human services. They also looked at how PBS has been disseminated and its overall approach, including its commitment to cultural values.

The role given to cultural values in PBS contrasts with how such values are treated within ABA, where they might be described as secondary rather than primary… "Cultural values serve more as a context for clinical decision making than an a priori criterion for evaluating research findings." (Johnston, et. al., 2006, pgs. 54-55).

The authors also suggest that PBS may divert clinical services and stand in the way of skill development. Johnston said, "Describing interventions as supports thus enable the PBS movement to market PBS to agencies and providers that lack expertise in ABA, because it minimizes the technical requirements of service delivery." (Johnston et al., 2006, 56). They also characterized PBS as a social movement or marketing strategy

As such, PBS represents a threat to the integrity of Applied Behavior Analysis. More recently, PBS supporters have noted that "the practice of positive behavior supports and applied behavior analysis, in some instances, can be indistinguishable but that important differences in definitions and emphasis mandate an explicit distinction." (Dunlap, et al. 2008).

## Conclusion

The early work of Pavlov, Skinner and others identified people with developmental disabilities as behavioral beings that responded to classical stimulus and response. Their work and others outlined various operant approaches that attempted to modify, increase or decrease behaviors. This approach in some ways exemplified that the end justifies the means. In some ways, behavior just **was,** and as such needed less analysis and more modification.

Subsequently, Skinner and others moved toward Applied Behavioral Analysis (ABA). People like Tizard propelled the discussion forward by beginning to define people with developmental disabilities as social beings .As such, not only did we need to research behaviors, but social skills and emotional or psychological challenges.

This was good, but not good enough. What emerged was a burgeoning ethical debate that challenged the very notion of the end justifying the means. This approach allowed for a gradual ratcheting up of consequences up to and including the use of aversives, and punishment was allowed as a negative reinforcer. This approach was justified because it was coupled with positive reinforcers such as token economies, “level programs,” and other methods whereby people “earned” approval and independence.

Then along came Lovett, McGee and others, who not only thought outside the box, but burned it. They rejected the whole notion of behavioral consequences and introduced the field to “Behavior as Communication.” This was the birth of what has been come to be known as Positive Behavioral Supports.

In this context, behavior serves an important function that is positive and functional for the person even if the manifestation appears negative, or attention seeking. This has had profound impacts on our approach to behavior ever since.

One major impact was to take behavior management, restriction, and physical intervention off the table. Instead, we must seek to build trusting relationships, and focus on the individual and not just the behavior. The focus is on bonding, not correction or control.

And this has led to probably the most important lesson of the last 60 years in our journey involving behavior of people with developmental disabilities- that first and foremost, we are all human beings.

## BEHAVIOR MANAGEMENT REFERENCES


Anderson, C. M., & Freeman, K. A. (2000). *Positive behavior support: Expanding the application of applied behavior analysis.* The Behavior Analyst, 23, 85-94.

Axelrod, Saul; Brantner, Jennie P.; and Meddock, Terry D. (1978) *Overcorrection: A Review and Critical Analysis.* The Journal of Special Education, Vol. 12, No.4, 367-391

Azrin, N. H., and Lindsley, 0. R. (1956). *The reinforcement of cooperation between children.* Journal of Abnormal and Social Psychology, 52, 100-102.

Azrin NH, Sneed TJ, Foxx RM. (1973). *Dry bed: a rapid method of eliminating bedwetting (enuresis) of the retarded.* Behav Res Ther. 1973 Nov; 11(4):427-34.

Bambara, Linda M. & Lohrmann, Sharon (2006). *Introduction to Special Issue on Severe Disabilities and School-Wide Positive Behavior Support.* Research & Practice for Persons with Severe Disabilities Vol. 31, No. 1, 1- 3

Berkson, Gershon and Landesman-Dwyer, Sharon (1977). *Behavioral Research on Severe and Profound Mental Retardation (1955-1974).* American Journal of Mental Deficiency Vol 81, No 5, 428-454.

.

Birnbrauer, Jay S.; Bijou, Sidney W.; Wolf, Montrose W. (1965) *Programmed Instruction in the Classroom.* Adapted version of a paper delivered at the 1963 Convention of the American Association on Mental Deficiency. [in Ullman and Krasner (1965), pages 358-363.]

Blake, Alison (1988). *Aversives: Are They Needed? Are They Ethical?* Autism Research Review International. Vol. 2, No. 3.

Brown, Fredda and Michaels, Craig A. (2006) *Invited Commentary: School-wide positive behavior support initiatives and students with severe disabilities: A Time for Reflection.* In Research & Practice for Persons with Severe Disabilities Vol. 31, No. 1, 57-61.

Carr, E.G. and Durand, V. M. (1985) *Reducing Behavior Problems through Functional Communication Training.* Journal of Applied Behavior Analysis. 18, 111-126.

Carr, Edward G.; Carlson, Jane; Langdon, Nancy A.; Magito-Mclaughlin, Darlene; and Yarbrough, Scott C. (1998). *Two Perspectives on Antecedent Control: Molecular and Molar.* [in Luiselli and Cameron (1998)]

Carr, E.G.; Horner, R.H.; Turnbull, A.P.; Marquis, J.G.; Magito Mclaughlin, D.; McAtee, M.L.; Smith, C.E.; Anderson Ryan, K.; Ruef, M.B.; & Doolabh, A. (1999). Positive behavior support for people with developmental disabilities: Research synthesis (American Association on Mental Retardation Monograph Series). Washington, D.C.: American Association on Mental Retardation.

Carr, J. E. , & Sidener, T. M. (2002). *On the relation between applied behavior analysis and positive behavioral support.* The Behavior Analyst, 25, 245-253.

Community Integration Project (1986). A list of resources on positive interventions for severe behavior problems. Center on Human Policy, Syracuse University.

Community Integration Project (1986). Characteristics of Integrated Community-based Programs for People with Challenging Behaviors. Center on Human Policy, Syracuse University.

Crimmins, Daniel and Farrell, Anne F. (2006) *Individualized Behavioral Supports at 15 Years: It's Still Lonely at the Top.* Research & Practice for Persons with Severe Disabilities Vol. 31, No. 1, 31-45

Donnellan, Anne M; LaVigna, Gary W.; Negri-Shoultz, Nanette; and Fassbender, Lynette L. (1988) Progress without punishment: Effective Approaches for Learners with Behavior Problems. (1988) New York: Teachers College Press. Anne M Donnellan, Gary W LaVigna, Nanette Negri-Shoultz, and Lynette L. Fassbender.

Dunlap, Glen; Carr, Edward G.; Horner, Robert H; Zarcone, Jennifer R.; and Schwartz, Ilene (2008). *Positive Behavior Support and Applied Behavior Analysis: A Familial Alliance.* Behavior Modification. 32, 5, 682-698.

Foxx, Richard and Azrin, M.(1973). Toilet Training the Retarded, A program for day and nighttime independent toileting. Chicago: Research Press.

Fuller, Paul R (1949) *Operant Conditioning of* a *Vegetative Human Organism.* American Journal of Psychology. 62, 587-590. [in Ullman and Krasner (1965), pages 337-338]

Hastings, Richard P and Noone, Stephen J. *Self-Injurious Behavior and Functional Analysis: Ethics and Evidence.* Education and Training in Developmental Disabilities, 2005, 40(4), 335-342

Hearst, Eliot & Capshew, James H. eds. (1988) Psychology at Indiana University: A centennial review and compendium (1888-1998). Indiana University, Department of Psychology. 1988

Horner, Robert H., Dunlap, Glen, Koegel, Robert L., Carr, Edward G, Sailor, Wayne, Anderson, Jacki, Albin, Richard W., and O'Neill, Robert E. (1990) *Toward* a *Technology of "Nonaversive" Behavioral Support.* Journal of the Association for Persons with Severe Handicaps (JASH), 15, 3, 125-132.

Horner, R.H., Sugai, G., Todd, A.W. & Lewis-Palmer, T. (2005) *Schoolwide positive behavior support.* [In L.M. Bambara & L. Kern (Eds.)]. Individualized supports for students with problem behaviors. New York: Guildford Press. 359-390.

Johnston, J.M.. Foxx, Richard M., Jacobson, J.W., Green, Gina, and Mulick, James A. (2006) *Positive Behavior Support and Applied Behavior Analysis.* The Behavior Analyst. 29, 1 (Spring), 51-74.

Lovett, Herbert (1996) Learning to Listen: Positive Approaches and People with Difficult Behavior. Baltimore: Paul H Brookes Publishing.

Luiselli, James K. and Cameron, Michael J. (1998). Antecedent Control: Innovative approaches to behavioral support. Baltimore: Paul H Brookes Publishing.

Parameter, Trevor R. (1996). *Historical Overview of Applied Research in Intellectual Disabilities: The Foundation Years.* Chapter One in International Handbook of Research in Intellectual Disabilities

Rimland, Bernard (1988). *Aversives: friend or foe.* Autism Research Review international. Vol. 2, No 3. page 3.

Scotty, J.R., Evans, I.M., Meyer, L.H., & Walker, P. (1991) *A Meta-Analysis of Intervention Research with Problem Behavior: Treatment Validity and Standards of Practice.* American Journal on Mental Retardation, 6(3), 233-56.

Smull, Michael W. and Harrison, Susan Burke (1992) Supporting People with Severe Reputations in the Community. Alexandria VA: National Association of State Mental Retardation Program Directors, Inc.

Thompson, Travis and Grabowski, [In Editors (1972)]. Behavior Modification of the Mentally Retarded. New York: Oxford University Press.

Tizard, J. (1958). *Longitudinal and follow-up studies.* In A.M. Clarke & A.D.B. Clarke (Eds.) Mental Deficiency. The Changing Outlook (pp. 422-449). London: Methuen.
Ullmann, Leonard P. and Krasner, Leonard (Eds.) (1965) *Introduction.* Case Studies in Behavior Modification. NY: Holt, Rinehart and Winston. Pages 1-63.