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The effectiveness of functional analysis and behavioral intervention for children who are multi-handicapped and exhibit challenging behaviors

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THE EFFECTIVENESS OF FUNCTIONAL ANALYSIS AND BEHAVIORAL INTERVENTION FOR CHILDREN WHO ARE MULTI-HANDICAPPED AND EXHIBIT CHALLENGING BEHAVIORS

by
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ABSTRACT

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The purpose of this study was to determine the effectiveness of functional analysis of challenging behaviors and behavioral intervention programs on children with multiple handicaps. It was hypothesized that there would be difference in the exhibition of challenging behaviors in children with multiple handicaps following administration of a functional analysis and a behavioral intervention plan. Ten challenging behaviors exhibited by seven children who are multi-handicapped were examined using the process of functional analysis (records review, *Motivation Assessment Scale* and Analog Setting/Environmental Manipulation) and behavioral intervention. The children ranged in age from five years, four months, to eight years, nine months. The behaviors exhibited included stereotype, self-injury, aggressive and food refusal behaviors. Baseline and post-intervention scores were obtained using the observational recording method of partial interval recording. The data was analyzed using the Wilcoxon Test for Paired Samples. The results of the testing indicated that there was a significance between the two sets of scores. Individual differences in the behaviors of children with multiple

handicaps appear to be affected by factors such as the behavior itself, its maintaining variables and the resultant consequences of the behavior.

MINI-ABSTRACT

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Challenging behaviors are disturbing, disruptive and significantly prevalent characteristics of many individuals with developmental disabilities or other multiple handicapping conditions. There is a need to understand the function of these behaviors and modify them, which can potentially increase the quality of life of these individuals and those with whom they come into contact. One method of doing this is to use the results of a functional analysis to develop and implement an effective behavioral intervention plan.

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CHAPTER I: THE PROBLEM

Behavior, as defined in Webster's New Collegiate Dictionary (1981), is "...the manner of conducting oneself, ...involving action and response to stimulation, the response of an individual, group, or species to its environment...". It is a popular topic of discussion among many and varied populations, but appears to be of significant importance among parents and educators of both regular education and special education students alike. This interest is evidenced by the amount of readily available information in libraries, bookstores, at workshops and through electronic sources on concepts such as assertive discipline, behavior modification and classroom management. In addition, there is much to be gleaned from the study of practical applications of common sense and positive parenting, childcare and teaching practices. Much of the information regarding behavior management is tried and true and accepted as effective in most cases, but what about those children for whom these basic techniques don't work?

The Need

In any educational setting, there are students who are labeled as being "behavior problems". They are described in mild terms such as "acting out", "misbehaving" or "hyper" or in more severe terms such as having "challenging behaviors", "destructive

tendencies" or "abusive", either to the self or to others. Behavioral development is often abnormal in individuals with other abnormalities in development and can be a result of mental retardation, brain damage, autism, severe aphasia, severe emotional disorder, childhood schizophrenia or any other of a number of disorders (Lovaas, 1981) These abnormalities can occur either by themselves or in conjunction with other abnormalities. It is these children, with their multiplihandicapping conditions and the more severe forms of maladaptive behavior, on which this study will focus. In most instances, the inappropriate behaviors exhibited by these children are disruptive to the learning process – their own as well as that of their peers. It is for this reason, therefore, as well as the reason of potential risk of harm or injury to these children and others with whom they come into contact, that there is a vital need to understand these children and what is maintaining their negative behaviors and to develop effective behavior intervention programs to eliminate these behaviors. Meeting this need will serve to promote and enhance the safety and quality of life of these children and those significant others – families, friends, caretakers, educators and peers – with whom they share their lives.

The Purpose

Given the need, then, this study has been designed to investigate and define functional analysis and behavior modification and their proposed outcomes and apply their theories to children with multiple handicaps who exhibit maladaptive behaviors. The purpose of this study, therefore, is twofold:

* to determine the effectiveness of functional analysis of challenging

behaviors in children with multiple handicaps, and

* to determine the effectiveness of behavioral intervention programs on challenging behaviors in children with multiple handicaps.

The Hypothesis

Through review of relevant literature and practical investigative measures, the research hypothesis to be examined is as follows:

* Children with multiple handicaps who engage in maladaptive/ inappropriate behaviors will exhibit a change in occurrence of these behaviors following a functional analysis and implementation of an appropriate behavior modification program.

History and Background

The origins of functional analysis and behavior modification can be found as far back as Ivan Pavlov's research with physiology in the late 1800s and early 1900s. His formulation of the theory of classical conditioning, also known as respondent conditioning, in which learning takes place when stimuli evokes responses, became the basis of behavioral principles in psychology, as his finding suggested one way in which behavior can be learned (Comer, 1995).

Along with Pavlov's work with reflex responses, other experiments focused on the impact of consequences on behaviors. This theory, known as operant conditioning, was investigated and promoted by E. L. Thorndike and later by B. F. Skinner, who posited that all behaviors are controlled by consequences and that skills and learning can

be acquired by providing consequences based on the principles of reinforcement, punishment and extinction (Kazdin, 1994).

With the interest in scientific method and the movement toward more objective methods of studying behavior in the late 1800s and early 1900s came the development of the science of behaviorism. It was at this time that John Watson applied the principles of classical conditioning to experimental situations and identified the process of association learning. Watson also suggested that learning could entirely shape human behavior and used conditioning as the basis for explaining almost all behavior that was acquired as part of development. The principles of operant conditioning have resulted in the clinical applications of systematic desensitization, relaxation therapy and the token economies of the 1960s and 1970s (Comer, 1995, Kazdin, 1994).

Behavior modification as it is known today came about in the 1950 and 1960s as a response to dissatisfaction with the more traditional psychoanalytical methods of explaining behavior. Its central characteristics include an orientation toward treatment, a focus on behavior, and an emphasis on learning, assessment and evaluation. Current theories and developments such as Albert Bandura's social learning theory and theory of modeling, also known as observational learning, integrate several learning concepts and focus on cognitive skills and the environment as factors which shape behavior. Most recently emerged is the process of applied behavioral analysis, which is an experimental approach to studying behavior in a more specific manner. It endeavors to make meaningful changes in everyday situations by focusing on direct, overt behavior (Kazdin, 1994).

The behavioral approach, therefore, as it relates to this study, will focus on behavior: the observable acts in which an individual is engaging. It is directive in its approach, in that expectations and consequences are clearly stated. It is data-based, using assessment and analysis. It targets and teaches adaptive pro-social skills to replace undesirable behavior, which places an emphasis on learning. Finally, it is used with everyday people (the children) in everyday situations (their educational setting).

The Theory

To better understand the effectiveness and relevance of Functional Analysis to behavioral intervention plans designed to help children with challenging behaviors, the definition, the purpose of and the sequence of events involved in conducting a Functional Analysis of challenging behaviors will be discussed in this section.

Functional Analysis also known as Applied Behavioral Analysis, was first defined by Baer, Wolf and Risley in 1968 as the "process of applying sometimes tentative principles of behavior to the improvement of specific behaviors and simultaneously evaluating whether or not any changes noted are indeed attributable to the process of application (Baer, 1968). In this definition, the term "applied" means that the behavior targeted for change is socially relevant or important. The term "behavior" means an event or action that is observable and measurable. The term "analysis" refers to the process by which changes in behavior are measured (Schoss, 1998). Functional Analysis, therefore, can be seen as an objective and scientific assessment process which gathers information to be used in planning effective behavior support plans. It focuses on

environment/behavior interactions and on the relationship between assessment and treatment (Neef, 1994).

The purpose of Functional Analysis is to evaluate a targeted problem behavior, its antecedents and the consequences associated with the behavior and to use this information to design and evaluate an intervention program. This make Functional Analysis a critical prerequisite toward the intervention and management of challenging behaviors. The process of Functional Analysis is helpful in that it yields three outcomes:

1. a clear, objective definition/description of the targeted behavior
2. predictions as to when and where the behavior will and will not occur, and
3. determination of the function of the behavior and what factors are maintaining it

This information is important because it is the basis upon which an effective behavior intervention plan is formed. For example, not only does it provide an operational definition of the problem behavior which can then be easily observed and recognized by any observer, it can help to define the desired appropriate behavior which will be taught to replace it. It identifies factors leading up to the occurrence of the behavior, which, if manipulated or removed altogether, could possibly lead to the non-occurrence of the behavior. It also identifies the reason for the behavior's occurrence, or what the individual "gets out of it", which, in turn, also helps to identify what replacement behavior could be taught which will provide the same gratification or reinforcement to the individual.

Functional Analyses can be conducted using several methods:

* ABC Chart – an anecdotal log narrating what occurred, giving the antecedents, the behavior and the consequences

* Rating Scales – questionnaires designed to identify situations in which an individual is likely to behave in certain ways and rank-order maintaining functions of the behavior

* Structured Interviews/Team Meetings – an overall look at the behavior, its occurrences, environmental variables and consequences

* Record Review – history of intervention with the behavior; what methods were used and the results

* Analog Setting/Environmental Manipulations – use of information to create situations to test hypotheses/hunches about what is making the behavior happen

The philosophy behind Functional Analysis is that behavior problems are not abnormalities in and of themselves; they are reasonable behavioral adaptations made by an individual within the context of who he is and what his environment is. The problem behavior must be evaluated and understood in order to remove it and replace it with a more "normalized", appropriate behavior. Functional Analysis, therefore, is a very important first step in the ongoing cycle of assessment, program planning, teaching and reassessment.

The first step in the sequence of events in conducting a Functional Analysis and developing an appropriate behavior intervention program is to define the problem behavior in operational terms that are overt and identifiable to anyone observing the behavior. Next, a decision is made as to whether an intervention is warranted; in other words, should the behavior be modified? Considerations at this step are safety and if the behavior is objectively problematic; for example, does the behavior interfere with the individual's ability to learn or is it a problem in the home, school, community or other setting? If intervention is warranted, an assessment of the maintaining variables and functions of the behavior is made. Reinforcers are also assessed at this step to determine what potential reinforcers can be used as part of a reinforcement plan. Based on the assessment, an intervention plan is designed incorporating the components of ecological and antecedent changes, restructuring the environment to reduce the probability of the behavior occurring, providing a rich reinforcement schedule of consequences which are motivating to the individual, and provision of instruction in adaptive skills (such as communication, social skills or problem solving). Assessment is made of the effectiveness of the intervention plan and the plan is modified on an ongoing basis as needed until the desired goal is achieved.

Definitions

Behavior Modification – an approach geared toward the assessment, evaluation and alteration of behavior

Challenging Behavior (also referred to as Inappropriate or Maladaptive Behavior) – any behavior which interferes with the process of learning and/or adapting to a particular setting; it includes but is not limited to tantrums, ritualistic and stereotyped mannerisms, poor motivation to achieve, lack of appropriate focus in attention (Lovaas, 1981), self-stimulation (fingerflicking, eyepoking, rocking, fingersucking, for example) and aggression and/or injurious acts either toward the self or others

Functional Analysis – assessment process for gathering information that can be used to build effective behavioral support plans

Multiple Handicapping Conditions – having more than one handicapping condition (a sensory, physical, emotional or cognitive impairment) which impacts on an individual's ability to learn

Regular Education Students – those students who do not require specialized or additional support services to experience success in educational settings

Special Education Students – those students who are unable to experience success in educational settings without specialized or additional support related to their handicapping condition(s)

Assumptions

One of the main assumptions of any analysis of behavior and implementation of a behavior program is that what is identified as being effective in one setting may or may not be effective in another. Another assumption is that what one person identifies as a Particular behavior is defined well enough so that it is identifiable to another observer.

Interpretation and application of the behavior plan is a related issue in that the behavior program must be administered consistently and identically by all involved to optimize effectiveness. A final assumption is that no extraneous or unknown situations or conditions have occurred which could significantly impact upon the program and its results.

Limitations

Children do not live in a sterile, laboratory-like environment. Differing factors can come into play at any time during the course of a behavioral treatment which could significantly alter the effectiveness of the program. These factors may or may not be known to the person or persons administering the program and could include, among other things, illness, change in medication, or trauma or other stressful situations related to the home or school setting or both. Another limiting factor is that a program that works in one setting, such as the school, may not work in another setting, such as the home. Additionally, it may not be feasible or practical to implement a program across all settings due to inability or low motivation or unwillingness to cooperate.

Overview

In this chapter, Chapter I, the problem to be investigated in this study has been posed; namely, what effects, if any, are there of applied behavioral analysis and behavioral intervention on children with multiplihandicapping conditions in a school setting. In Chapter II, an investigation and summarization of current research findings as they relate to this topic will be reviewed. In Chapter III, the design of the study will be

described and will include an examination of the sample population, how the study was conducted and the results measured, and how this data relates to the hypothesis. An analysis of these findings will be detailed in Chapter IV. A summary, conclusions, relevant discussion and implications for future research will be discussed in the final chapter, Chapter V.

CHAPTER II: REVIEW OF THE LITERATURE

Overview

Although Functional Analysis was first defined in 1968, much of the body of research on Functional Analysis has been published fairly recently (within the past 15 years). Supporting research and the theory upon which Functional Analysis is based, however, can be traced back to the early 1960s in studies of behaviorism and basic principles of operant conditioning. Because the process of Functional Analysis focuses primarily on behaviors, the research literature on this topic focuses on specific aberrant behaviors, especially those which are evidenced primarily by individuals who are developmentally disabled and/or multiplihandicapped. Within each subgrouping of behaviors, different approaches are taken toward analyzing the behavior; that is, some literature focuses on antecedent events associated with the behavior, some focus on consequences, some on treatment and some on the process of the analysis itself. Therefore, Chapter II will consist of the presentation of information relevant to the functional analysis of self-injurious behavior; aggressive, destructive and tantrumming behavior; stereotypic behavior; elopement; pica and feeding problems. The chapter will

be concluded with a summary of findings and general trends which have emerged on the topic of Functional Analysis based on the findings of this literature review.

Self-Injurious Behavior

Self-injurious behavior is a debilitating disorder that occurs with extremely high incidence among the severely handicapped and the developmentally disabled. It is often a chronic aberrant behavior, and its causes appear to be poorly understood. Studies have found that 8% to 17% of institutionalized retarded persons engage in self-injurious behaviors but this figure is considered by some to be conservative (Repp, et al, 1988). Because self-injurious behavior is so common and has an increased potential for harm or injury, much research has been generated focusing on possible causes and possible methods of effective elimination. Although its causes appear to be poorly understood, most research has identified the following causes as the most common; and it is these causes which are of most relevant importance to applied behavioral analysis: self-stimulation, positive reinforcement and negative reinforcement. Although it is consistently cautioned in the literature that not all of these hypotheses apply to all individuals, it is suggested that the most effective treatment programs can be developed if treatment is matched to the cause of the behavior (Repp, et al, 1988). Most recent research has focused on finding methods to effectively eliminate these behaviors. The only treatments which have been noted as being consistently effective in treating self-injurious behaviors are those based on punishment with application of aversive stimulation; however, due to concerns about the safe and appropriate use of these

treatments, this method is generally recommended only when all other possible interventions have been unsuccessful (Iwata, et al, 1994). Success has been found in the application of operant conditioning principles as well. For example, several studies which have based treatment on a functional analysis of maintaining variables of self-injurious behavior indicated that self-injury increased when commands were given but decreased when simple declarative sentences were used instead, that self-injury is related to the type of task presented and that self-injury could be reduced by decreasing demands using easier tasks and errorless teaching procedures (Carr, et al, 1976; Gaylord-Ross, et al, 1980; Weeks and Gaylord-Ross, 1981). Research also supports that the identification of limiting conditions with treatments for self-injurious behavior would be helpful prior to initiating treatment so that the most appropriate form of intervention can be determined based on probably cause and maintaining factors (Iwata, 1994).

Many studies have attempted to identify the functional characteristics of self-injurious behavior. Results indicate that most self-injurious behavior is learned behavior acquired through an individual's ongoing interactions with the social and physical environment. An implication of these findings is that a functional analysis of the conditions that produce or maintain self-injurious behavior could provide relevant information regarding both treatment and prevention (Iwata, et al, 1994). These studies, conducted on large subject samples, have almost all collected their data through the use of questionnaires with information provided by caretakers or those who work with the subjects. The largest and most extensive study reported in the literature in the area of

events surrounding the occurrence of self-injurious behavior, including antecedent and consequential events, was conducted by Maurice and Trudel in 1982 and identified the following variables as being the most frequent events associated with self-injurious behavior:

Antecedent Events:	Frustration	33.7%
	Refusal	32.0%
	No identifying circumstances	24.3%
	Anger	19.9%
	Agitation	16.6%
Consequent Events:	Verbal reprimand	44.7%
	Restraint	20.6%
	Isolation	17.1%
	Other	16.6%

Demand conditions, such as presence of materials, type of demand and type of attention also have been found to be related to self-injurious behavior (Iwata, et al, 1994).

As effective treatment is closely linked to accurate assessment of cause of behavior, a study by Repp, Felce and Barton (1988) focused on determining whether self-injurious behavior is developed and maintained by self-stimulation, positive reinforcement or negative reinforcement and if matching the cause of the behavior can be used to develop an effective treatment program. In this three-phase study, Repp, et al, obtained baseline data for three subjects: a 7-year-old male, a 7-year-old female and a 6-

year-old female enrolled in special education classes for severely retarded children, with each child having been identified as having high rates of stereotypic as well as self-injurious behaviors. (A variation in traditional functional analysis methodology is noted in this study in that standardized definitions of the target behaviors from an outside source were used rather than using the functional analysis to define the behavior.) During the baseline data phase data was collected and a judgement made regarding which hypothesis was most likely to be causing the behavior (self-stimulation, positive reinforcement or negative reinforcement). During phase 2, a treatment based on the hypothesis was used in two separate classroom settings. In phase 3, the treatment that was most effective in phase 2 was conducted in both classrooms. Results of this study indicated that choosing a treatment based upon the hypothesis regarding cause of behavior can be an effective means of treating stereotypic as well as self-injurious behavior because the hypothesis based on the functional analysis was the most successful one in treating the behavior. It also found that self-injurious behavior can be related to the type of task presented, and the choice of treatment should be based on the cause of the behavior. For example, one subject increased self-injurious behavior when presented with task demands, therefore, the treatment was to teach compliance rather than lessen the difficulty of the task, since the subject did not differentiate self-injury across different types of tasks. This study makes a strong contribution in support of basing treatment programs on the condition maintaining the behavior.

In 1994, Iwata, Dorsey, Slifer, Bauman and Richman reported the self-injurious behaviors of 9 developmentally disabled subjects ranging in age from one to 17 years across several analog settings (presence v. absence of play materials, high v. low experimenter demands, and absent v. noncontingent v. contingent social attention). Using a multielemental approach, they found that the subjects in the study presented five general patterns of response: (1.) relatively low levels of self-injurious behavior during unstructured play as compared to other conditions, (2.) self-injurious behavior was greatest during the alone situations in which access to external sources of stimuli was minimal, (3.) little to no self-injury during all but the high demand situation, (4.) self-injury occurred most often during the social disapproval condition and (5.) presence of undifferentiated patterns – the occurrence of either very high or similar amounts of self-injury across two or more conditions. Although there was a great deal of between-subject and within-subject variability, the majority of the higher levels of self-injury were consistently associated with a specific stimulus condition, which suggested that within-subject variability was a function of a particular feature encountered in the social or physical environment. This study provides direct empirical evidence that self-injury can be a function of different sources of reinforcement; this finding also has significant implications for treatment.

In 1994, Iwata, Pace, Dorsey, Zarcone, Vollmer, Smith, Rodgers, Lerman, Shore, Mazaleski, Goh, Cowdery, Kalsher, McCosh and Willis summarized data from 152 single-subject analyses of the reinforcement function of self-injurious behavior taken

over an 11-year period. The subjects ranged in age from one to 50 years, were all developmentally disabled and all engaged in defined behaviors such as banging (body, head), biting, choking, hitting (body, head), kicking (body, head), hand mouthing, pica, pinching, poking (eye, ear), hair pulling, scratching and self-restraint. The subjects were exposed to a series of conditions designed to determine the effects of antecedent and consequent events on self-injurious behavior. These effects were systematically analyzed using multielemental, reversal or combined designs. Differential or high responding was observed in over 95% of the subjects. The largest portion of the sample, 38.1%, engaged in self-injurious behavior as a result of social/negative reinforcement (escape from task demands or other sources of aversive stimulation). 26.3% of the subjects engaged in self-injurious behavior as a result of social/positive reinforcement (attention, access to food or other tangibles). Automatic (sensory) reinforcement was the cause of 25.7% of self-injurious behaviors among the subjects. Multiple controlling elements were cited for 5.3% of the subjects, and 4.6% of the subjects showed uninterpretable or inconsistent responses. These results indicate that the use of functional analysis is extremely effective in identifying the environmental determinants of self-injurious behaviors. Specifically, Iwata, et al, came to the conclusion that self-injurious behavior appears to be a disorder maintained mostly by social reinforcement. The finding that social/negative reinforcement was more of a maintaining factor than social/positive reinforcement was interesting in light of the fact that social/positive reinforcement has long been considered to be the primary motivation responsible for the development of self-injurious behavior

(Lovaas, et al, 1965; Peterson and Peterson, 1968). Iwata, et al, cautioned that at the time of the research, individuals with developmental disabilities did not receive much formal education, so Iwata, et al, feel it is possible that their findings may have been affected by the increase in formal educational programs for the developmentally disabled available and mandated today. Iwata, et al, further noted that current instructional programs may not sufficiently motivate some developmentally disabled individuals, which can produce escape behaviors which can escalate to levels of self-injurious behavior. Since escape was the most common reinforcement for self-injurious behavior, it is recommended that specific instructional strategies be employed to decrease the incidence of escape behaviors such as increasing positive reinforcement for compliance while increasing response requirements during training, teaching individuals to request help appropriately, and teaching alternative escape behaviors such as requesting work breaks. This body of work also emphasizes the importance of individualization during the assessment process, as many behaviors were identified as being maintained by specific, unusual or idiosyncratic stimuli. With respect to treatment, this study also supports the relationship between behavioral function and treatment procedures in that it replicates results of studies of smaller groups (Carr and Durand, 1985; Iwata, et al, 1994; Repp, et al, 1988) that interventions relevant to behavioral functions are more likely to be effective than arbitrarily chosen ones.

The use of functional analysis can increase the likelihood that effective treatment plans can be designed and implemented to eliminate self-injurious behaviors. They work

because the variables that maintain a behavior (antecedents and consequences) can be identified and manipulated to reduce the problem behavior as well as reinforce appropriate behaviors. In the majority of cases studied, behaviors are maintained by socially mediated reinforcers such as attention, acquisition of tangibles or escape. Though some studies indicate that 5% of functional analyses are inconclusive and over 25% did not show a sensitivity to social reinforcement (Iwata, et al, 1994) and 34% of subjects in another study maintained their self-injurious behaviors due to sensory consequences (Derby, et al, 1992), relatively few studies have focused on treatment of behavior disorders with undifferentiated results of functional analyses (Vollmer, et al, 1994). In these cases, behavioral analysts can use three general strategies which are likely to increase the chances of success of a behavioral intervention: (1.) maximizing the quality of reinforcement in an enriched environment or use of a differential reinforcement procedure based on stimulus preference assessment (Horner, 1980; Fisher, et al, 1992); (2.) sensory extinction procedures (Lovaas, et al, 1987; Rincover, 1978); or (3.) punishment of inappropriate behavior while increasing the relative value of reinforcement for appropriate behaviors (Vollmer,et al, 1994).

Preference assessment can be a useful component of functional analysis when designing a reinforcement-based treatment procedure for self-injurious behaviors. In a study by Piazza, Fisher, Hanley, Hilker and Derby (1996), results of a preference assessment with two individuals with mental retardation and severe self-injurious behaviors identified three types of stimuli: high preference stimuli associated with high

rates of self-injurious behavior, high preference stimuli associated with relatively lower rates of self-injurious behavior, and low preference stimuli associated with low rates of self-injurious behavior. Using a differential-reinforcement-of-other-behavior schedule with high preference/high self-injury stimuli resulted in increased rates of self-injury. A differential-reinforcement-of-other-behavior schedule with low preference/low self-injury stimuli resulted in no changes in rates of self-injury, nor did a change in self-injury rates occur when high preference/low self-injury stimuli were used in a differential-reinforcement-of-other-behavior schedule. The implication here is that a stimulus preference assessment may be useful in predicting both positive and negative side effects of stimulus in a differential-reinforcement-of-other-behavior schedule.

In 1994, Vollmer, Marcus and LeBlanc examined these strategies as they applied to three preschool-aged children with severe disabilities who had previously had had functional analyses with inconclusive results. First, an assessment of preferred stimuli was conducted for each child. Then a functional analysis was conducted for two of the three children across these settings: attention, tangible, positive reinforcement, instruction, no interaction and play. The third child received a no interaction assessment only so that one participant would have no history of social reinforcement experience during the third phase of analog treatment. The results of these analyses indicated that high rates of self-injury occurred across all settings, including the no interaction setting. In the analog treatment analysis phase, a reversal design was used of intervals of baseline (no interaction), enriched environment with preferred stimuli, enriched environment with

non-preferred stimuli, enriched environment with preferred stimuli and positive reinforcement and enriched environment with positive reinforcement and time out. For all of the children, environmental enrichment with preferred stimuli decreased inappropriate behavior with additional reductions noted when explicit reinforcement of toy play was used with two of the children and time out was used with one child. Following teacher and family training, the effects of these treatments were able to be carried over to the home and school environments. This study lends support to the theory that there is an inverse relationship between reduction in self-injurious behavior and increase in appropriate behavior. Additionally, it also supports treatment of self-injurious behavior using environmental enrichment even though results of functional analysis can be inconclusive, and that treatment interventions need to be highly individualized to meet the idiosyncratic preferences of each subject.

That self-injurious behavior can be influenced due to the effects of environmental enrichment is also shown in a study focusing on the self-injurious behaviors of three children with developmental disabilities aged 3, 4 and 5. In the first phase of this study, a functional analysis was conducted which suggested that their self-injurious behaviors were maintained independently of social consequences due to undifferentiated responses. The multielemental conditions of the functional analyses were escape, attention, tangibles, positive reinforcement and no interaction. In the second phase of this study, a preference assessment was conducted and relative measures of stimulus engagement and self-injury were obtained to serve as comparisons of relative preference. The outcome of

this phase was the hypothesizations that the self-injurious behavior might be reduced either through environmental enrichment alone, environmental enrichment alone might not be sufficient to reduce self-injurious behaviors or access to tangibles contingent on alternate behaviors (differential reinforcement of alternative behavior) or on the omission of self-injurious behavior (differential reinforcement of other behavior) might reduce self-injurious behaviors. Phase 3 of the study investigated these predictions through the use of an analog treatment setting consisting of baseline, environmental enrichment, differential reinforcement of alternative behavior, differential reinforcement of other behavior, differential reinforcement of alternative or other behavior and environmental enrichment with hands-down command. The results of this study indicated that the preference assessment correctly predicted the success or failure of environmental enrichment in decreasing self-injurious behavior. Implications of this study indicate the effectiveness of identifying stimuli that are substitutable for a relatively more-preferred behavior (in this case, the self-injurious behavior), support of other literature reporting that self-injurious behavior can be maintained by other than social consequences, it replicates the use of functional analysis as a means of pretreatment assessment for self-injurious behaviors and it illustrates a successful treatment plan for self-injurious behaviors that is not socially mediated (Ringdahl, Vollmer, Marcus and Roane, 1997).

A trio of studies was conducted in which environmental factors were assessed in relation to the self-injurious behaviors of seven developmentally disabled individuals aged 4 to 16, and these results were then used as a basis for treatment. After being

exposed to a series of settings designed to identify maintaining factors of the self-injurious behaviors, the maintaining factors were determined to be positive reinforcement (attention contingent on the self-injurious behavior), negative reinforcement (escape from or avoidance of demands contingent on the self-injurious behavior), automatic reinforcement (alone condition), and a control (play) condition. A multielemental design study yielded the result that the self-injurious behaviors occurred most frequently during demand conditions, therefore, the self-injurious behaviors served an escape or avoidance function. As a treatment, escape extinction was introduced and results indicated reduction or elimination of self-injurious behaviors for each individual as well as an increase in compliance with demands. The third study used extinction plus reinforcement for tolerance of demand situations, and this study indicated reduction or elimination of self-injurious behaviors and increase in compliance as well. Also, these findings were able to be generalized across different individuals and in different settings. These studies support previous research indicating that systematic manipulation of the environment 9the process of functional analysis) can provide important information about the functionality of self-injurious behavior as well as the relation between environmental variables and effective treatment procedures (Iwata, et al, 1990).

If antecedent events cannot be determined as maintaining factors of self-injurious behavior, it is sometimes necessary to look to the source of reinforcement, especially in cases of inconclusive functional analysis. One such study examined the self-injurious behavior of eye-poking in a 4-year-old girl with severe developmental disabilities and a

visual impairment. Using a multielemental design, a functional analysis was conducted across the following conditions: attention, task demand, play, tangibles and alone. This analysis resulted in high levels of eye-poking across all conditions, suggesting that the behavior may have been maintained by a consequence produced by the behavior itself. Intervention in the form of interrupting the behavior, either by blocking or by goggles, also served to support this hypothesis, especially since this behavior prevented the response cycle from being completed. It also serves to support previous research indicating that manual optical stimulation may be a potential reinforcer for eye-poking (Lalli, et al, 1996).

The use of behavior assessment to prescribe and evaluate treatments for severely handicapped children has also been demonstrated in a study of two multiplihandicapped children aged 4 and 8. For the 4-year-old, assessment of the self-injurious behavior was conducted in solitary (alone), demand, unstructured play and response-cost conditions. Reinforcer preference was also conducted to determine which stimuli were most reinforcing. An assessment of the self-injurious behavior of the 8-year-old was conducted during solitary toileting, solitary positioning and vocational task conditions followed by a reinforcer preference assessment. Treatment of self-injurious behavior was implemented based on the results of the assessment of self-injury and reinforcer preference. Evaluation of the treatment programs indicated a decrease in the occurrence of self-injurious behaviors accompanied by an increase in appropriate on-task behavior. Implications of this study include the increased effectiveness of a treatment program in

which a preferred reinforcer is identified through empirical assessment and effective treatment can be based on the results of a functional analysis and stimulus preference assessment. The authors of this study also noted that this was the first study which employed a two-phase assessment procedure to prescribe individual treatments based on assessment data identifying both positive reinforcement for appropriate behavior and the maintaining conditions for the self-injurious behaviors (Steege, Wacker, Berg, Cigrand and Cooper, 1989).

A study by Fisher, Iwata and Worsdell (1997) investigated the results of functional analysis for 36 institutionalized individuals whose self-injurious behaviors were maintained by attention. The results of this study suggest that functional analysis outcomes are most differentiated when analog situations using establishing antecedent conditions to evoke behavior and a reinforcing consequence to maintain the behavior are investigated. By manipulating the amounts of attention the individuals received, it was suggested that deprivation of attention evoked the highest levels of self-injurious behavior except when the attention was withheld as a consequence of the self-injurious behavior, and the lowest levels of self-injurious behavior were reported when a rich schedule of noncontingent reinforcement was employed. This study lends support to studies reporting that treatments are more likely to be effective when both antecedent and consequent events are evaluated.

Another treatment, noncontingent reinforcement with continuous access to reinforcers and extinction, has proved effective when based on results of functional

analyses using attention, escape, materials, alone and control situations. A study of this type focused on three children, aged 3, 9 and 7, diagnosed with mental retardation and/or developmental delays who engaged in self-injurious behaviors to acquire materials. Results of this study indicated a noncontingent reinforcement schedule based on latency and noncontingent reinforcement without extinction were effective in reducing rates of problem behavior as compared with baseline data (Lalli, Casey and Kates, 1997).

Functional analyses results can be considered inconclusive if and when inappropriate behavior occurs only sporadically or episodically. These behaviors are often maintained by events which are not manipulatable within the environment. Recent research suggests that biological conditions such as sleep deprivation, allergies or other illnesses or medical-related concerns can serve to develop and maintain inappropriate behavior (Kennedy and Meyer, 1996; O'Reilly, 1997).

A study which examined the potential of analog techniques to assess the function of episodic self-injurious behavior and the relationship between self-injury and otitis media involved a 26-month-old girl with moderate developmental disabilities and Williams Syndrome, a conditions associated with hypersensitivity to sound and recurrent otitis media. The subject's episodes of the self-injurious behaviors of backbanging and earpoking were hypothesized to be maintained by one or more of the following conditions: social attention during episodes of otitis media, escape from demands during episodes of otitis media, sensory reduction during episodes of otitis media and sensory stimulation during episodes of otitis media. When the subject exhibited the self-injurious

behaviors, she was taken to her doctor for a medical examination, and if otitis media was diagnosed, a functional analysis was conducted. A functional analysis was also conducted when otitis media was not present. The analyses were conducted in a multielemental design with the following assessment conditions: social attention, escape from demands, alone, radio on, escape from high sensory and play. Results indicated that no self-injurious behaviors were evidenced in the absence of otitis media and that the highest levels of self-injury occurred during the radio on setting, indicating that the behavior may have been occurring as a sensory escape function. Despite the limitations that this was a single-subject study and the analog setting phases were not replicated to demonstrate more consistent conclusions, this study serves to support the use of analog setting techniques as a viable method of functional analysis of episodic self-injury and further demonstrates a conditional functional relationship between the presence of otitis media and self-injurious behaviors (O'Reilly, 1997).

Aggressive, Destructive and Tantrumming Behavior

Aggressive, destructive and tantrumming behaviors elicit high levels of concern in all areas of society. These behaviors are disruptive and interfere with functioning within the family, the educational setting and in the community. Further, there are indications that children that exhibit these behaviors grow up to become adults who exhibit these behaviors. To that end, there has been an increasing focus on the factors that are responsible for maintaining these behaviors and subsequent treatment procedures which are effective in reducing and eliminating them. Treatment procedures

have been shifting from punishment procedures toward nonaversive ones that focus on manipulating the maintaining variables as well as training more appropriate behaviors to take the place of these behaviors. Application of the process of functional analysis can be an effective method of modifying these behaviors.

A functional analysis of the problem behavior of tantrumming of two developmentally disabled individuals aged 7 and 9 was conducted using a multiple-baseline design. Collection of baseline data indicated that both individuals engaged in high rates of tantrumming during demand situations versus no-demand situations. The functional analysis indicated that the function of the behavior was to gain attention (positive reinforcement) rather than to avoid or escape the demand (negative reinforcement). Intervention plans were based on a positive reinforcement hypothesis and focused on changing the relationship between behavior and attention rather than changing an aspect of the demand situation. The intervention resulted in reduction of tantrums for both individuals. This study has implications regarding the need for accurate analysis of the maintaining function of the behavior (in this case, the behavior was maintained by an attention function rather than an escape function) and the relationship between the analysis of function and the effectiveness of a treatment play (Repp and Karsh, 1994).

Another study which points to attention as a possible maintaining function of aggressive behavior was conducted with a 7-year-old boy with severe mental retardation and pervasive developmental delays. Following inconclusive results of a direct

functional analysis of this individual's aggressive behaviors of hitting, kicking and chin grinding in which these behaviors occurred at fairly high rates across settings involving demand, social attention, tangibles and play conditions, a second, indirect, analysis using anecdotal observation and descriptive assessment was employed. Based on these observations it was hypothesized that the chin grinding was maintained by automatic reinforcement and that the aggressive behaviors served to gain access to adult attention. A second functional analysis was then conducted to assess the effects of social attention of the chin grinding and aggression using a multielemental design that delivered attention contingent on aggression versus attention noncontingent on aggression. This analysis yielded results indicating that the chin grinding persisted independent of contingent and noncontingent attention and that the other aggressive behaviors occurred almost exclusively when it was the only means of obtaining attention. Another result was that a decrease in the aggressive behaviors of hitting and kicking occurred when attention was given for the behavior of chin grinding. A treatment plan was then implemented in which functional communication training was initiated to reduce the attention-maintained behavior. When training was completed, functional communication training plus extinction was implemented and a reversal design was used to compare functional communication training plus extinction to baseline conditions. Results of this treatment indicated a reduction in aggressive behaviors as well as an increase in the use of appropriate communication to receive attention. The results of this study add to the implications noted in functional analysis treatment of aggression literature in the

following ways: it demonstrates that aggression may sometimes persist in the absence of social consequences, it illustrates how additional individual analysis can be used to further clarify maintaining functions of behavior when a direct functional analysis is inconclusive, it provides support for categorizing behavior by function rather than descriptive or topographical dimensions, it demonstrates that delivery of a consequence may not affect a targeted behavior but may have an effect on another behavior, and it also supports the benefits of developing treatment plans based on results of functional analysis even when there may be multiple functions maintaining a behavior (Thompson, Fisher, Piazza and Kuhn, 1998; Hagopian, Fisher, Sullivan, Acquisto and LeBlanc, 1998).

The use of noncontingent presentation of attention has also been demonstrated to be effective in reducing destructive behavior when attention is identified as the stimulus responsible for the maintenance of the behavior. Functional analysis of two boys, aged 11 and 16, diagnosed as mentally retarded with other handicapping conditions who exhibited the behaviors of aggression, property destruction and self-injury, was conducted in settings of demand, social attention, toy play, alone and access to tangibles. The results indicated that the behaviors were maintained by adult attention, access to tangibles and escape. A stimulus choice assessment was conducted to identify preferred stimulus for each individual and a simultaneous treatment evaluation was conducted consisting of a baseline condition, noncontingent attention condition, and noncontingent tangible condition using the preferred items identified during the stimulus choice assessment. Both the noncontingent attention and noncontingent tangible conditions

were effective in reducing the destructive behaviors. The implications of this study are that treatment can be effective for individuals whose destructive behavior is maintained by attention regardless of whether the behavior is also maintained by access to tangible items and that alternative and more practical forms of noncontingent reinforcement can be provided (i.e., preferred items) when attention is not always a viable or practical reinforcement procedure (Hanley, Piazza and Fisher, 1997).

Another study focusing on the noncontingent reinforcement of destructive behavior maintained by attention was reported by Hagopian, Fisher and Legacy. This study examined dense and lean schedules of response-independent attention given to 5-year-old identical quadruplets diagnosed with mental retardation and pervasive developmental delays who displayed destructive behavior maintained by social attention. The girls' destructive behaviors were identified as aggression, disruption and self-injury. Specifically, the study sought to determine whether a dense schedule of reinforcement is necessary prior to fading to a lean schedule or whether treatment would be just as effective beginning with a sparse schedule. A functional analysis was conducted with each child in the following settings: social attention, toy play and demand. It was determined that the behaviors were maintained by social attention. A noncontingent reinforcement treatment evaluation was then conducted using a dense schedule of reinforcement condition (i.e., continuous reinforcement) and a lean schedule condition. After comparing the two conditions, a gradual fading from dense to lean was implemented and criterion for reduction in destructive behavior was met. A

generalization and follow up of treatment was introduced across settings and therapists at one and two months after the study which indicated the reduced levels of destructive behavior were being maintained. The implications of this investigation indicate that noncontingent reinforcement using the reinforcement responsible for behavior maintenance (in this case, social attention) can be an effective treatment for destructive behavior. It also suggested that a dense schedule of reinforcement is necessary at the outset of a treatment program but that with systematic fading a leaner schedule of reinforcement can be enhanced (Hagopian, Fisher and Legacy, 1994).

At times, however, destructive behavior can be maintained by both positive reinforcement in the form of access to tangible items, attention or both, as well as negative reinforcement in the form of escape from a task, as illustrated in a study of three moderately mentally retarded individuals ranging in age from 7 to 9 whose behaviors included aggression and destruction. These maintaining functions were determined following a functional analysis across multielemental conditions of demand, social attention, toy play and access to tangibles. A treatment phase of demand analysis consisting of multielemental and reversal designs was then implemented in which consequences for compliance and destructive behaviors were manipulated and included differential reinforcement of compliance with extinction (praise/break), differential reinforcement of alternate behavior without extinction (break/break), differential reinforcement of alternate behavior without extinction (tangible/break), differential reinforcement of alternate behavior with extinction (break/extinction) and differential

reinforcement of alternate behavior with extinction (tangible/extinction). Following the meeting of criteria for reduction of destructive behavior, the schedule of reinforcement was thinned and a fading process was begun with compliance and reduction in destructive behavior being maintained. The implications of this study are that multiple reinforcers of behavior may occur in conjunction as the maintaining factors of destructive behavior, compliance can be increased while destructive behaviors decrease and it supports the relation between reinforcing variables and effective treatment outcomes (Piazza, Fisher, Hanley, Remick, Contrucci and Aitken, 1997).

When functional analysis results are inconclusive in determining the maintaining function of aggressive behavior, manipulation of consequences may yield more differentiating results. In the case of an 11-year-old moderately retarded boy who exhibited consistent rates of aggressive and destructive behaviors in attention, demand and tangible conditions, unequal reinforcement duration phases were introduced with the result being higher rates of aberrant behavior during the attention condition. When equal rates of reinforcement were introduced, the attention, demand and tangible conditions yielded consistent rates of behavior. The implication here is that the behavior was sensitive to the rate of reinforcement (equal v. unequal) rather than the type of reinforcement (attention) and that it can be important to consider both these variables (rate and type) of reinforcement to be able to determine an effective treatment program (Fisher, Piazza and Chiang, 1996).

Negative reinforcement alone in the form of escape has also been identified as a maintaining factor of aggressive behavior according to a study involving the aggressive behaviors of two retarded children aged 9 and 14. The aggressive behaviors were identified as scratching, hitting, kicking, biting, pinching and hair pulling. The individuals were presented with demand and no demand situations with aggression occurring most frequently in the demand condition and rarely in the no demand condition. A stimulus which was introduced as a signal to the end of the demand condition also evoked a very low level of aggression, as well as when a variety of preferred reinforcers were introduced into the demand situation contingent on correct responses. (For the individual in this situation, his aggressive behavior was maintained by positive reinforcement.) When the individuals were permitted to leave the demand situation following a nonaggressive response of if they were prevented from leaving the demand situation despite high levels of aggression, the aggressive behaviors fell to near-zero levels. Higher levels of aggression resulted when they were allowed to leave the demand situation following aggressive behaviors. The implications of this study of escape-maintained aggressive behavior are that aggression can sometimes function as an escape response; escape-motivated aggression can be controlled by introducing preferred reinforcers to neutralize the aversiveness of the demand situation, the strengthening of an alternative (nonaggressive) escape response can be an effective component of a treatment plan; and aggressive behaviors can be reduced using an escape-extinction procedure (Carr, Newsom and Binkoff, 1980).

Reinforcer preference is a key variable in maintaining problem behavior, especially when the behavior is multiply controlled. Treatment plans based on previously identified reinforcer preferences can be effective in treating problem behaviors of aggression and self-injury in developmentally delayed children (Lalli and Kates, 1998). Some forms of attention, for instance, have been shown to be more reinforcing than others. A treatment based on the content of verbal attention was suggested to be effective with a 4-year-old boy with autism, oppositional-defiant disorder and moderate mental retardation. This boy's rates of destructive behavior increased when verbal reprimands related to the destructive act were given and decreased when the contingent statements were unrelated to the destructive act (Ninness, Piazza, Owen-DeSchryver, 1996). Conversely, the role of antecedents as controlling variables of problem behavior, especially idiosyncratic stimulus variables, can significantly alter the outcome of functional analyses of such behavior and therefore have either a positive or negative effect on planned treatment programs (Carr, Yarbrough and Langdon, 1997).

Stereotypic Behavior

Stereotypic (or self-stimulatory) behaviors are behaviors which are highly consistent and repetitive and have no apparent adaptive function (Lovaas, et al, 1973). They take on a variety of forms such as repetitive body rocking, hand flapping, mouthing, and body posturing. Like self-injurious behavior, stereotypic behavior is another common form of maladaptive behavior among severely handicapped and developmentally disabled individuals. It occurs at high frequencies and has been

observed in institutionalized retarded persons 7% to 47% of the time. Interestingly, however, this rate decreases to 13% among community-based groups.

Analysis and development of effective treatment programs to reduce or eliminate these behaviors are necessary because of the stigmatization of individuals who exhibit them, as well as the interference they cause as related to the severely handicapped individual's ability to learn or be trained to function in more appropriate ways. Reduction of stereotypic behavior has focused on both response-contingent aversive procedures as well as nonaversive procedures such as differential reinforcement of other behavior and differential reinforcement of incompatible behavior. These procedures are in response to the hypothesis that these behaviors are reinforced by sensory input and operate on the premise that if sensory input is decreased then the stereotypic behaviors will decrease also (Lovaas, et al, 1965; Repp, et al 1976; Favell, 1973; Hung, 1978; Rincover, 1978).

A recently emerging theory, that these behaviors are maintained by social functions, has been investigated by Durand and Carr (1987). Using a series of three experiments, an assessment procedure was used to determine the relative influences of social attention and task demands on stereotypic behavior using procedural time out and removal of task demands. The results of the first two experiments were used to develop a communication treatment plan that consisted of teaching appropriate ways to request

assistance on difficult tasks. The subjects for these experiments were four boys, aged 7, 11, 11, and 13, who were enrolled in a special education day school and displayed the stereotypic behaviors of body rocking and hand flapping. Using a multielemental reversal design, the experiments yielded the following results: for all four boys, hand flapping and body rocking increased when difficult academic tasks were introduced, removal of task demands contingent on stereotypic behavior resulted in increased rates of the behaviors, and application of the communication treatment resulted in significant reductions in the behaviors. These results serve to support the theory that some stereotypic behavior is maintained as a social function, such as an escape-maintained behavior. The authors also noted that even though these behaviors may have begun and been maintained by their sensory consequences, the social environment of some individuals could serve to negatively reinforce behavior. This data is consistent with similar research indicating that motivation of behavior changes over time and that stereotypic behavior originally maintained by organic factors could be maintained by social attention or to escape aversive situations (Carr, 1977; Carr and McDowell, 1980; Durand, 1982). The Durand and Carr study also supports the assessment-treatment relationship in that teaching alternative assistance-seeing responses reduced stereotypic behavior based on the prediction that the behaviors were maintained by social consequences. This would not have been the case had the behaviors been maintained by sensory consequences. Again, the functional significance of the targeted behavior must be considered when designing an effective treatment plan.

A somewhat unusual, little researched topic is the use of aberrant behavior as reinforcement for autistic children. Identifying reinforcement for autistic children is sometimes difficult as they tend not to respond to stimuli that interests other children, and their most preferred activities are their stereotypic behaviors. Several studies lend support to the idea that stereotypy, although it is an aberrant behavior, can be an effective reinforcer with no negative side effects resulting from brief, controlled periods of engaging in stereotypy contingent upon compliance (Lovaas, Koegel, Simmons and Long, 1972; Sugai and White, 1986; Wolery, Kirk and Gast, 1985). Further support is garnered from a study in which the use of autistic children's aberrant behaviors as reinforcement to increase correct task responding included an experiment comparing the reinforcement value of stereotypy, food and varied (food or stereotypy); an experiment comparing the reinforcement value of delayed echolalia, food and varied (food or delayed echolalia); and an experiment comparing the reinforcement value of perseverative behavior, stereotypy and food. The results of these experiments indicated that in general edibles were associated with the lowest levels of performance and engagement in aberrant behaviors were associated with the highest levels of performance. As in previous studies, no negative side effects such as an increase in aberrant behavior were observed. Although not all autistic children may respond to this somewhat more pragmatic approach to positive reinforcement due to the inability to control some of the more highly preferred stereotypic behaviors such as eye gazing or saliva swishing, this study lends support to the theory that stereotypy can have a functional aspect as well as

supporting the relative potency of stereotypy as a reinforcer (Charlop, Kurtz and Casey, 1990).

Elopement

Elopement, or repeated attempts to leave designated areas without permission or supervision, not only interferes with instructional activities and acquisition of skills but also can place an individual in dangerous situations such as traffic areas or other nonsecure environments. Elopement occurs with relatively high prevalence among individuals with developmental disabilities and is generally treated by placement in more restrictive settings or reinforcement for absence of elopement and access to less restrictive settings in the absence of elopement (Piazza, et al, 1997). The process of functional analysis can be applied to the treatment of the behavior of elopement as well.

In a study focusing on the assessment and treatment of elopement behavior in three boys aged 4, 10 and 11 with developmental disabilities and aggressive and disruptive behaviors, a functional analysis was conducted to determine the maintaining function of the elopement behavior in the following settings: demand, attention, access to tangibles, ignoring and toy play (control), followed by reinforcer assessment which helped to clarify the reinforcement for elopement. Access to tangibles and attention yielded the highest prevalence of the behaviors. Based on this information, treatment programs were developed for each subject to reduce the incidence of elopement. The effects of the treatment were evaluated using a reversal design with the treatment confirming that the behavior was maintained by the tangible and attention variables.

Successful treatment involved the process of differential reinforcement of other behavior and differential reinforcement of alternate behavior plus blocking with a gradually thinned schedule of reinforcement with generalization to other settings being achieved. This study indicates a relationship between the process of functional analysis to determine maintaining functions of a behavior and the development of an effective treatment program as well as the application of the process of functional analysis to the behavior of elopement (Piazza, Hanley, Bowman, Ruyter, Lindauer and Saiontz, 1997).

Pica

Along with increased rates of self-injurious behavior and stereotypic behavior among developmentally disabled individuals, pica, the ingestion of non-edible substances, is also a significant problem with this population. It has been described as a treatment-resistant condition that may result in a variety of medical risks; and the risk of death from pica may be higher than the risk of death from other forms of self-injurious behavior (Piazza, et al, 1998).

Treatment for pica most commonly centers on strategies of arbitrary reinforcement and punishers with inconsistent effectiveness evident. Further, few studies have examined treatment based on systematic behavior assessments. A study by Piazza, et al, was conducted to identify the operant function of pica in three individuals and to determine the effectiveness of functional analysis-based treatments if the behavior was found to be socially maintained. The three individuals involved in this study were a 4-year-old girl, a 17-year-old girl and a 5-year-old boy with multiplihandicapping

conditions and developmental disabilities. A multielemental design was used across the following settings: social attention, demand, alone, play and access to tangibles. Results indicated that automatic reinforcement maintained the pica of one individual and the behavior of the other two individuals was multiply maintained by social and automatic reinforcement. Based on these findings, subsequent preference and treatment analyses identified stimuli which would interfere with the automatic function; these analyses also identified that oral stimulation was the specific maintaining component of the automatic reinforcement. Treatment methods were implemented to address the social function of the behaviors for the individuals for whom this was identified as a maintaining function and differential reinforcement procedures were implemented to address the automatic reinforcement function of this behavior. This study not only has implications in terms of developing analyses to identify specific sources of reinforcement (i.e., oral stimulation) for automatic reinforcement, but it also stresses the importance of using the results of functional analysis to develop effective treatment plans for inappropriate behaviors (Piazza, et al, 1998).

Feeding Problems

Approximately one-third of children with developmental disabilities and as many as 80% of individuals with severe or profound mental retardation exhibit feeding problems. Feeding problems can be classified as one of the following: lack of independent self-feeding skills, disruptive behavior (tantrums or theft of food) during meals, eating too much or too little, or limited intake due to type or texture selectivity that

can result in dietary inadequacies. Most behavior interventions used to treat feeding problems focus on access to preferred food contingent upon eating nonpreferred food, prompting and positive reinforcement, ignoring inappropriate responses, forcefeeding and overcorrection. These interventions are based on the manipulation of consequences of the feeding problem behavior, although feeding problems may be associated with antecedent events associated with the food itself. Therefore, problem feeding behavior may be associated with or independent of the food being served, and this means that treatment of the behavior should be contingent upon the maintaining factor (Munk and Repp, 1994).

One study with the purpose of evaluating an assessment procedure developed for feeding problems analyzed the mealtime behaviors of 5 individuals with severe disabilities ranging in age from 5 to 21. This study manipulated antecedent conditions to identify relationships between food characteristics (type and texture) and problem behaviors during mealtimes. Behavior categories included acceptance, rejection or expulsion of food or other negative behaviors. Results indicated that each individual fit into one of the following four categories of feeding problems: (1.) total refusal, (2.) type selectivity, (3.) texture selectivity or (4.) type and texture selectivity. Treatment procedures were developed based on these categories with the purpose of increasing food intake. Consequently, this study suggested that treatments for feeding problems may be based on assessments that indicate a relationship between food type and texture to an individual's rejection or expulsion of food; and although behavioral interventions

focusing on consequences have been used to treat problem feeding behaviors, no assessment procedure prior to this study has been employed to determine a functional relationship between a person's acceptance of food and the type and texture of the presented food (Munk and Repp, 1994.)

Conclusions

This review of literature related to functional analysis focused on the functional analysis of aberrant behaviors such as self-injury; aggression, destruction and tantrumming; stereotypic behavior; elopement; pica and feeding problems; behaviors characteristic of and displayed in high incidence among individuals with developmental disabilities, mental retardation or other multiplihandicapping conditions. General trends in functional analysis that are evidenced by this literature review are:

* There is an increasing use of functional analysis to determine antecedent and consequent variables that maintain aberrant behavior.

* Results of functional analyses indicate that a majority of aberrant behaviors are served by attention, escape, access to tangible or sensory functions.

* Any one of these functions, alone or in combination, can serve to maintain an aberrant behavior.

* Aberrant behaviors can be reinforced through operant conditioning principles.

* Although the process of functional analysis can be generalized across behaviors, its application is highly individualized, meaning that the same topographical

behavior in two different individuals can be maintained by different antecedent and/or consequent events.

* There is a relationship between functional analysis outcomes and effective treatment programs; and these treatment programs can serve to reduce aberrant behaviors as well as increase appropriate behaviors when acquisition of skills is taught through programs such as functional communication training.

CHAPTER III: DESIGN OF THE STUDY

Subjects

Seven subjects participated in this study. The subjects of this study included five males who ranged in age from 5 to 8 years and two females; one 5 years old and one 6 years old. The multiple handicapping conditions of the subjects included autistic behavior, global developmental delays, Down Syndrome, pervasive developmental delay, neurological impairment, cerebral palsy, mental retardation, hearing impairment and blindness. The subjects exhibited delays in one or more of the following skill areas: cognitive, adaptive, communication, fine motor and gross motor skills. All the subjects were educationally classified as "Multiply Handicapped". Demographic information for each subject is provided in Table 1 of Appendix A. The subjects were selected for this study based on the severity of their challenging behaviors and subsequent need for intervention. The challenging behaviors exhibited by the subjects included self-injurious behavior (face slapping and headbanging); stereotypic behavior (headshaking and fingerflicking); aggressive, destructive and tantrumming behavior (pinching, throwing and tantrumming); elopement and feeding problems (food refusal). A listing of the specific challenging behaviors observed for each subject, along with the operational

definitions used in collecting data, is provided in Table 2 of Appendix A.

The subjects all attended the same self-contained class for primary-aged children with multiple handicapping conditions. The classroom was housed in a county-managed public school for students deemed eligible for special education services located in a small town within the county. The children received individualized, small group and large group instruction in their identified goals and objectives areas of their Individualized Education Plans (IEPs). The classroom instruction emphasized development of communication, self-help, gross motor, fine motor, social and cognitive skills and was staffed by one certified teacher of the handicapped and two instructional aides. There were eight children enrolled in the class, seven of whom participated in this study. In addition to classroom instruction, the children participated in a weekly Art, Music and Adaptive Physical Education class. All seven of the children participated in a weekly group session with an Occupational Therapist, all seven of the children participated in a weekly individual session with a Speech and Language Pathologist, and four of the children participated in a weekly small group session with a Physical Therapist.

The classroom was equipped with tables and chairs for small and large group activities and chairs with attachable trays for individual activities. There were a variety of toys and materials appropriate for use at the infant, toddler, preschool and kindergarten levels, including audio-visual equipment (television, video cassette recorder, record player and cassette player) and two computers with Touch Screens, adapted keyboards

and speech output capabilities. The floor had a carpeted and a tiled area. The room had access to a bathroom with toilet and changing mat. The classroom also had a sink. One door led into the hallway of the school, and a second door led into the parking lot/driveway area on the school grounds.

Test Procedure

The process of functional analysis for each student began with an individual description of the challenging behavior. If a particular student demonstrated more than one challenging behavior, a determination was made prioritizing the behavior most in need of intervention based on factors of safety and social appropriateness. In five cases, one challenging behavior was identified for intervention. In one case, three challenging behaviors were identified for intervention, and in one case, two challenging behaviors were identified for intervention.

After developing an operational definition of each challenging behavior, a decision was made regarding whether the behavior warranted intervention. Consideration was given to safety factors related to both the subject and those with whom the subject came in contact, whether the behavior interfered with the subject's ability to learn and whether the behavior was considered socially aberrant. After the decision was made that the behavior or behaviors warranted modification, data collection to establish a baseline condition prior to intervention was conducted. This data collection was conducted over a consecutive three-day period with each day comprised of 7 activity sessions (Circle Time, Breakfast, Work Time, Recess, Lunch, Play Time and Story

Time). The observational recording method of partial interval recording was used to record whether or not the behavior occurred during each session on each of the three days. This raw data was then converted to a percentage to indicate the percentages of occurring behavior.

The first assessment of the Functional Analysis was a records review which included a background summary of the subject and the behavior and was used to determine what, if any, history of intervention was noted, including methods tried and the results of the intervention.

The maintaining variables of the behavior were then assessed using the *Motivation Assessment Scale* by V. Mark Durand and Daniel B. Crimmins. The purpose of the *Motivation Assessment Scale* is to rank-order the main function or functions of the behavior as exhibited by the subject in question in a particular identified setting, which, for the purposes of this study, was the classroom. The function or functions of the behavior are described by the *Motivation Assessment Scale* are as follows:

1. Attention – desire for being noticed, addressed or otherwise engaged in an interactive manner

2. Escape – desire to remove self from an unpleasant stimulus or avoid an unpleasant demand

3. Tangible – desire for something concrete, such as a toy, an activity or a snack

4. Self-Stimulatory/Sensory – desire for something internally or intrinsically motivating

A reliability study was conducted with 50 teachers of individuals with developmental disabilities who exhibited self-injurious behaviors. Interrater reliability, or a comparison of the data from the individual's teacher and assistant teacher, was measured by Pearson correlation coefficients and ranged from .80 to .95. Test-retest reliability, or a comparison of the data from the teachers' scoring responses 30 days apart, was also measured by Pearson correlation coefficients and ranged from .89 to .98, indicating that the *Motivation Assessment Scale* can be considered a reliable instrument. This population was also used to determine the validity of the *Motivation Assessment Scale*. Teacher's ratings on the *Motivation Assessment Scale* and a rating of individual's behaviors in analog settings were examined, and data from these experiments support the validity of the *Motivation Assessment Scale* because the teachers' ratings on the *Scale* predicted how the individuals would behave in the analog settings with the experimenters (Durand and Crimmins, 1992).

The third component of the Functional Analysis included an assessment of analog settings and environmental manipulations. This assessment created a situation to test the hypotheses about what makes the behavior happen. It included a manipulation of antecedents and consequences based on the identified behavior and the maintaining function of the behavior, and gave ideas for successful intervention. The analog setting/environmental manipulation settings included Ignoring/Extinction, Mechanical Restraint, Verbal Command, Physical Restraint, Increased Attention and Decreased Task Demand.

Following the analog setting/environmental manipulation phase of the Functional Analysis, a determination was made as to what intervention would most likely have an effect on the behavior. This intervention was applied over a four-week period, and a post-intervention assessment was made over a three-day period similar to the baseline assessment. The observational recording method of partial interval recording was used to determine if the behavior occurred at all or if the intervention caused the behavior to stop once it had begun.

The actual Functional Analyses of each subject can be found in Appendix B and include an operational definition of the behavior. Baseline conditions and results, the *Motivation Assessment Scale* completed for each behavior, the results of the records review, a description of and the results of the analog/setting/environmental manipulations assessment, and a summary of findings stating the identified function of the behavior and a description of the intervention plan.

Hypotheses and Variables

Through these practical investigative measures, the research hypotheses to be examined are as follows:

HO – There will be no difference in exhibition of maladaptive/inappropriate behaviors in children with multiple handicaps following a functional analysis and implementation of an appropriate behavior modification program.

HI – There will be a difference in exhibition of maladaptive/inappropriate behaviors in children with multiple handicaps following a functional analysis and implementation of an appropriate behavior modification program.

The dependent variable in this research project is the exhibition of the maladaptive/inappropriate behaviors of the children with multiple handicaps. The independent variable in this research project is the functional analysis and appropriate behavior modification program.

Design

This research project will use the Wilcoxon Test for Paired Samples to provide an analysis of the data. The Wilcoxon Test is a nonparametric measure that does not require data from a normally distributed population. It measures paired data with two dependent samples with the two sets of data coming from a population with a common distribution.

Summary

The impact, if any, of a functional analysis and behavior intervention plan on the exhibition of challenging behaviors of seven children with multiple handicaps will be examined using a functional analysis consisting of a records review, completion of a rating scale to determine the motivation for the maintaining of the behavior, and analog setting/environmental manipulation procedures followed by implementation of a behavior intervention plan. Analysis of the data collected will be examined using nonparametric methods.

CHAPTER IV: ANALYSIS OF RESULTS

The purpose of this study was to determine if there would be a difference in the exhibition of maladaptive/inappropriate behaviors in children with multiple handicaps following a functional analysis and implementation of an appropriate behavior modification program. The occurrences of the behavior during the baseline phase and the post-intervention phase were converted into a percentage of time that the behavior occurred over a three-day period.

In order to examine this hypothesis, the baseline results were compared to the post-intervention results using the Wilcoxon Test for paired samples. Results of the Wilcoxon test showed that there was a significance between the two sets of scores: $Z = 2.371$, $p = <.05$. Therefore, the hypothesis that there will be a difference in the exhibition of maladaptive/inappropriate behaviors in children with multiple handicaps following a functional analysis and implementation of an appropriate behavior modification program can be accepted, and the null hypothesis, that there will be no difference, can be rejected. Figure 4.1 illustrates the effectiveness of intervention between the baseline and post-intervention scores.

Figure 4.1

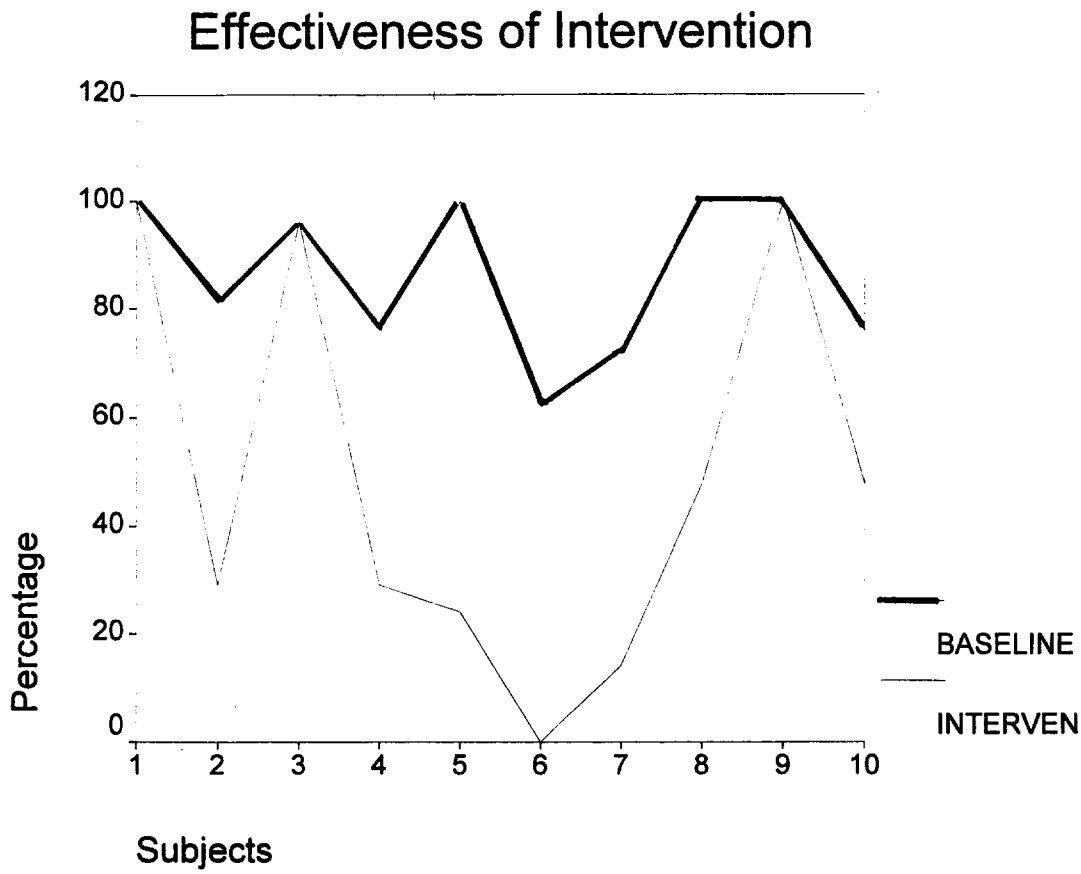
Effectiveness of Intervention
120
100
80
60
40
20
0
Percentage
1
2
3
4
5
6
7
8
9
10
Subjects
BASELINE
INTERVEN

Table 4.1 presents the actual percentages of time the behavior was exhibited during the baseline and post-intervention periods.

Table 4.1
Percentage of Times Behavior Was Exhibited

Subject	Behavior	Baseline	Post-Intervention
1	headshaking & fingerflicking	100	100
2	tantrumming	81	29
3	face slapping	96	96
	pinching	76	29
	throwing	100	24
4	elopement	62	0
5	tantrumming	72	14
6	tantrumming	100	48
	food refusal	100	100
7	head banging	76	48

One behavior, elopement (Subject 4), showed a complete decrease (100%) of occurrence following the implementation of the intervention program. Two behaviors, tantrumming (Subjects 2, 5 and 6) and throwing (Subject 3), showed a moderate decrease (over 50%) in occurrence. Two behaviors, pinching (Subject 3) and headbanging (Subject 7), showed a mild decrease in occurrence. Three behaviors, headshaking and fingerflicking (Subject 1), face slapping (Subject 3), and food refusal (Subject 6), showed no decrease in occurrence following the implementation of the intervention program.

To determine if a particular intervention would be effective in preventing a behavior from occurring or cause a behavior to stop once it had begun, various

interventions were administered during the analog setting/environmental manipulation phase of the functional analyses. A summary of the percentage of time each behavior occurred during this can be found in Table 4.2.

Table 4.2
Percentage of Time Behavior Occurred During Analog Setting/Environmental Manipulation Phase

Subject	Behavior	Analog Setting/Environmental Manipulation					
		Ignoring/ Extinction	Mechanical Restraint	Verbal Command	Physical Restraint	Increased Attention	Decreased Task Demand
1	headshaking & fingerflicking	100	not applicable	100	100	100	100
2	tantrumming	100	100	80	100	60	0
3	face slapping	not applicable	not applicable	100	70	90	80
	pinching	100	not applicable	70	80	40	not applicable
	throwing	100	not applicable	80	80	50	40
4	elopement	100	not applicable	20	10	0	0
5	tantrumming	100	100	50	100	0	20
6	tantrumming	100	100	100	100	0	50
	food refusal	100	not applicable	100	not applicable	100	100
7	headbanging	100	100	100	100	20	40

The least effective of the interventions were found to be ignoring/extinction and, when used, mechanical restraint, as these interventions had no impact on the occurrence of the behaviors. Verbal commands and physical restraint were found to be only slightly effective. Overall, the most effective interventions appeared to be increased attention and decreased task demand.

The behavioral intervention programs implemented based upon the maintaining variable and most effective analog setting/environmental manipulation can be found in Table 4.3.

Table 4.3
Behavioral Intervention Based on Maintaining Variable and Most Effective Analog Setting/Environmental Manipulation

Subject	Behavior	Maintaining Variable	Most Effective Analog Setting/Environmental Manipulation	Behavioral Intervention
1	headshaking & fingerflicking	sensory	none	ignoring & consistent task demand
2	tantrumming	tangibles	decreased task demand	decreased task demand & increased access to tangibles
3	face slapping	Escape	physical restraint	physical restraint
	pinching	Attention	increased attention	increased attention
	throwing	Escape	decreased task demand	decreased task demand
4	elopement	Attention	increased attention & decreased task demand	increased attention & decreased task demand
5	tantrumming	Tangibles	increased attention	increased attention & increased access to tangibles
6	tantrumming	Tangibles	increased attention	increased attention & increased access to tangibles
	food refusal	escape	none	increased attention & consistent task demand
7	headbanging	escape & attention	increased attention	increased attention & decreased task demand

Descriptively, several interesting results were noted. In one case, the headshaking and fingerflicking behavior of Subject 1, none of the interventions had any impact on the occurrence of the behavior, and it appears that no consequence was equally as or more reinforcing than the sensory input that this subject received from his behavior. The same appears true for the food refusal behavior of Subject 6. Again, none of the interventions had an impact on this behavior. The identified maintaining variable of escape appears to be supported by the fact that there was no intervention or reinforcement which caused the subject to not refuse any food other than the few items he was known to accept. In both of these cases, further analysis and the development of a more unique, or individualized intervention plan appears to be warranted.

In the case of Subject 3's face slapping behavior, medical intervention alleviating the symptoms associated with ear infections and otitis media was the most effective strategy employed as opposed to the interventions employed during this study. Further, identification of escape as the maintaining variable indicates that there is the possibility that he is trying to escape the physical sensations associated with the medical condition through the behavior.

The three subjects whose behaviors were identified as tantrumming each had acquisition of tangibles indicated as the maintaining variable; however one subject responded best to decreased task demand, and the other two responded best to increased attention. For these subjects, a combination approach incorporating both conditions resulted in effective intervention. Similarly, subject 7's behavior of headbanging was

equally maintained by the variables of escape and attention and responded most effectively to increased attention; therefore, a combination of increased attention accompanied by decreased task demand appeared to be an effective intervention strategy. The combination of increased attention, accommodating the maintaining variable of attention, and decreased task demand, also resulted in the reduction of the elopement behavior of Subject 4.

Individual differences in the behaviors of children with multiple handicaps appear to be affected by factors such as the behavior itself, its maintaining variables, and the resultant consequences of the behavior. In summary, however, the results of this study indicate that there will be a difference in the exhibition of maladaptive/ inappropriate behaviors in children with multiple handicaps following administration of a functional analysis and a behavioral intervention plan.

CHAPTER V: SUMMARY AND CONCLUSIONS

Inappropriate or maladaptive behaviors such as self-injury, aggressive actions, tantrums, and stereotypy are disturbing, disruptive and significantly prevalent characteristics of many individuals with developmental disabilities or other multiple handicapping conditions. These behaviors can interfere with the an individual's ability to take care of himself, to learn academic or vocational skills, or can otherwise prevent him from taking and enjoying his rightful place as a functioning, contributing member of his environment, whether that environment be the home, the educational setting, the work place or the community. These behaviors do not only have an impact on the individual who exhibits these behaviors, but also upon those with whom he may come in contact. These behaviors interfere with the learning process, can be potentially harmful or dangerous, and in general can have an overall negative effect on the quality of life of the individual, his family, his peers and society.

Behavior has long been an interest and topic of study for psychologists and educators alike. This is particularly true in the field of special education, since behavioral development is often abnormal in individuals with other developmental abnormalities. Theories of how behavior is learned and can be changed can be traced back to prior to the

beginning of this century, and the contributions of Pavlov, Thorndike, Skinner and Watson are still very much in evidence in the behavioral theories and practices of today. The study of behavior today, however, especially as it applies to individuals with disabilities, focuses on any number of variables which influence behavior. The study of behavior and the goal of changing behavior are approached through a systematic and objective process of examining antecedent conditions, maintaining variables, and consequences that reinforce the behavior. This important process, known as Functional Analysis, is used to evaluate a defined behavior. Equally as important, it is also used to design and implement an effective behavioral intervention program for the purpose of managing and reducing challenging behaviors and replacing these behaviors with more appropriate behaviors which can increase the ability of the individual to access his environment.

Summary

It was hypothesized in this study that there would be a difference in exhibition of maladaptive/inappropriate behaviors in children with multiple handicaps following a functional analysis and implementation of an appropriate behavior modification program. A review of literature related to functional analysis and behavioral intervention programs supported this hypothesis. Additionally, the review of the literature indicated that not only is there an increasing use of functional analysis to determine antecedent and consequent variables which maintain aberrant behavior, it also indicated that there is a relationship between functional analysis outcomes and effective treatment programs.

Further, treatment programs which are linked to the results of a functional analysis can serve to reduce inappropriate behaviors as well as increase appropriate behaviors when acquisition of skills is taught through programs such as functional communication training.

To that end, this research study was conducted in which the challenging behaviors of seven children with multiple handicaps were evaluated using the process of functional analysis. The findings of these functional analyses were then used to develop and implement an appropriate behavior modification program for each child. The effectiveness of the functional analysis and behavioral intervention program was then examined. Results of the research indicated that there was a significant difference in the percentage of time that the children exhibited the challenging behaviors during a baseline phase and a post-intervention phase. Of the ten behaviors examined, seven behaviors showed a decrease in occurrence, and three behaviors remained unchanged. The results of this research study appear to support the findings of the literature that many challenging behaviors are served by attention, escape, access to tangibles or sensory functions and that these functions can act alone or in combination to maintain a particular behavior. It also supported the highly individualized nature of behavior in that different antecedent and/or consequent events were found to maintain the same observable behaviors in different individuals.

Implications for Future Research

A great deal has been written through the years about behavior in general and aberrant behavior specifically. Still, with all the great strides made in research, training and education in this area, the majority of individuals with special needs due to cognitive, social-emotional, language and other developmental deficits and disabilities continue to exhibit inappropriate behaviors. Implications for future research appear to point toward increasing the focus on the individualization of this process. Although many principles can be generalized across behaviors, the application of the process must be one that is designed to address the complex interplay of all factors involved in the maintenance of the behavior. This may also help to more efficiently weed out less appropriate or effective interventions in the analog setting/environmental manipulation stage of the functional analysis, leading to implementation of a more appropriate program earlier on in the process. A more individualized approach could also reduce the number of functional analyses with inconsistent or undifferentiated results. Studies that also take into consideration some of the less researched factors involved in the function and maintenance of challenging behaviors are indicated as well. Examples of these factors include the consideration of medical and physical components as possible antecedent variables, as well as the use of self-stimulatory behaviors as a positive reinforcement for other, more desired behaviors. Communication, or the lack of a reliable method of communication, appears to be a commonality among many individuals who exhibit challenging behaviors. A focus on developing or use of functional communication

systems as an integral part of any behavior intervention program may be indicated as well.

Discussion

Children with inappropriate behaviors often grow up to be adults with inappropriate behaviors. As age increases, so too does the potential for an increase in severity and number of inappropriate behaviors. Despite the effectiveness of functional analysis and behavioral intervention for individuals of all ages, these behaviors can also be more resistant to modification as age increases as well. This, in turn, can limit their ability to lead a productive, fulfilling, happy life as well as interact in a meaningful way in their environment. However, this does not have to be their destiny, or at least it appears so for the children who participated in this study. These children seem to be more relaxed and able to enjoy being in school – it does not seem to always be a struggle for them to participate and be involved in meaningful and purposeful activities. They can anticipate what comes next in their daily routine, know what is expected of them and feel secure in the consistency of their world. They can communicate meaningfully and know that they are heard. They can make choices, and they can experience consequences based on the choices they make. They know that they have power in their own lives. Other staff members who work with these children have noted the positive changes in their behavior as well. This has resulted in more positive and productive sessions outside of the classroom. Communication with parents and caretakers focuses more on what the children are learning and the progress they are making and are not just complaints of

seemingly unchangeable behavior. Also, when behavioral issues arise, they are not seen as hopeless characteristics. The positive results of the interventions used give evidence and hope that these issues can be dealt with in a objective, effective manner. For the children whose behaviors were unaffected by this study, the study and the results have given direction for further evaluation and pointed to new directions in which to go to find ways to help these children as well. Overall, the effects of this study are positive and greater reaching than may have originally been thought at its onset.

As educators, psychologists and advocates for our special children, we need to be aware of the multifaceted and multidimensional factors that contribute to their uniqueness, especially the behavioral factor. We need to be aware of and be able to use the tools available to us to help them. By doing so, we give them tools with which they can help themselves and in turn, help others.

Conclusions

The conclusions drawn by this study are as follows:

1. Challenging behaviors of various types are evidenced by a large number of individuals with developmental disabilities or multiple handicapping conditions. These behaviors are detrimental to the quality of life of these individuals and those around them.

2. There is a need to understand the function of these behaviors and modify them. This can result in an increase in the quality of life of these individuals and those around them.

3. An understanding of the behaviors, including maintaining variables, antecedents and consequences can be gained through the process of functional analysis.

4. The results of the functional analysis can be used to develop and implement an effective behavioral intervention program.

5. The most effective behavioral intervention programs appear to be those which focus on all the relevant aspects pertaining to the behavior, such as antecedents, maintaining variables and consequences and reinforcement and which incorporate the findings of the functional analysis into the program.

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APPENDIX A

Table 1
DEMOGRAPHIC CHARACTERISTICS OF SUBJECTS

SUBJECT	SEX	CA*	MA**	DIAGNOSIS	BEHAVIOR
1	Male	5 - 9	2 – 0	Autistic Behaviors	Headshaking & Fingerflicking
2	Female	5 - 4	2 – 0	Global Developmental Delay	Tantrumming
3	Male	8 - 9	1 - 6	Down Syndrome, Bilateral Hearing Loss, Farsighted	Face Slapping Pinching Throwing
4	Male	5 - 5	4 - 6	Pervasive Developmental Delay, Attention Deficit Disorder	Elopement
5	Male	5 - 5	2 - 6	Neurological Impairment, Cortical Blindness	Tantrumming
6	Male	6 - 1	1 - 0	Profound Mental Retardation, Visual Impairment	Tantrumming Food Refusal
7	Female	6 - 7	1 - 6	Cerebral Palsy, Blind	Headbanging

* CA – Chronological Age – indicated in years – months
** MA - Mental Age – indicated in years – months

Table 2
OPERATIONAL DEFINITION OF CHALLENGING BEHAVIORS BY SUBJECT

SUBJECT	BEHAVIOR	OPERATIONAL DEFINITION
1	Headshaking & Fingerflicking	rapidly moving the head back and forth in a left-to-right/right-to-left movement while at the same time rapidly rubbing the thumb and fingers together of one or both hands
2	Tantrumming	bouncing the body up and down in a quick motion while waving hands up and down and away from body in a quick, flapping motion and screaming accompanied by moving the body away from the area by getting up and running or walking away, sliding down out of chair, climbing over furniture or pushing furniture of persons out of the way; tears and taking off and bending/throwing glasses may accompany
3	Face Slapping	striking the side of own face forcefully with an open hand once or several times in succession
	Pinching	squeezing another person's skin or clothing tightly between the thumb and index finger
	Throwing	releasing a grasped object with force in an overhead or sidearm manner
4	Elopement	leaving or attempting to leave a designated area without permission or supervision by running away, at times preceded by throwing self out of chair and screaming; while running may scream and look back at others
5	Tantrumming	throwing self to floor and flailing body, arms and/or legs accompanied by screaming, crying, spitting, cursing and/or yelling; may be accompanied by removal and throwing of shoes and socks as well as other clothing and striking out with arms and/or legs at others
6	Tantrumming	screaming, crying, rocking of head and/or upper body back and forth, hitting out toward others, throwing body to ground and mouth/bite right hand
	Food Refusal	pressing lips together and closing mouth to prevent insertion of any food not in routine diet; turning head away or pushing out inserted food with tongue, may be followed by crying, body rocking, cupping hands over ears or biting right hand
7	Headbanging	placing of both hands on surface, centering self,, and slowly, rhythmically banging forehead against surface with moderate to hard force; may result in injuries such as bruises or cuts

APPENDIX B

FUNCTIONAL ANALYSIS – SUBJECT 1

Definition of Behavior: Headshaking and Fingerflicking

The subject will rapidly move his head back and forth in a left-to-right/right-to-left movement while at the same time rapidly rub together the thumb and fingers of one or both hands.

Baseline:

A baseline was obtained using the observational recording method of partial interval recording in the classroom over a three-day period, with each day beginning at 9:15 a.m. and ending at 2:15 p.m. The structure of all three days included Circle Time, Breakfast, Work Time, Recess, Lunch, Play Time, and Story Time.

Baseline Results:

The subject displayed the behavior at least one time during each interval of each of the three days.

Assessment No. 1: Record Review

The subject is a five-year, nine-month old male who is diagnosed as having autistic behaviors and moderate delays. He has moderate delays in all areas, including cognition, social/emotional, fine and gross motor, self-help and communication. He is ambulatory and nonverbal. He functions overall at approximately a two-year-old level. He is on no medication at the present time. He lives with his mother and father, two older siblings and one younger sibling. Previous records indicate history of engaging in self-stimulatory behaviors such as rubbing fingertips or hands on carpets, twirling fingers or objects, flapping his fingers or hands in front of his face, body rocking, making grunting sounds, and grinding his teeth. No mention is made of specific interventions. An interview with his parents indicates that although they would prefer he not do these things, they are unable to stop him.

Assessment No. 2: *Motivation Assessment Scale*

The results of the *Motivation Assessment Scale* indicate that the behavior is maintained for sensory purposes primarily and escape purposes secondarily.

Assessment No. 3: Analog Setting/Environmental Manipulation

Setting A: Ignoring the Behavior/Extinction

When the subject began to headshake and fingerflick, staff would either ignore the behavior or turn attention to another student or task. Ten out of ten times the subject continued the behavior.

Setting B: Use of Mechanical Restraint

Mechanical restraint was not used to intervene on this behavior.

Setting C: Verbal Commands

When the subject began to headshake and fingerflick, the subject was told, "Stop! Stop shaking head and flicking fingers!". Ten out of ten times the subject continued the behavior.

Setting D: Physical Restraint with Verbal Commands

Ten out of ten times when physical restraint was attempted by holding the subject's head and/or hands with verbal commands to stop, the subject continued the behavior while struggling to escape the restraint.

Setting E: Increased Attention

When given direct one-on-one attention (sitting with the subject, giving direct verbal prompts and/or hand-over-hand manipulation) related to the task at hand, the subject exhibited the behavior ten out of ten times.

Setting F: Decreased Task Demand

When no demands were made on the subject and he was given free choice of preferred items and access to a staff member, he exhibited the behavior ten out of ten times.

Summary

The subject is a five-year, nine-month-old male with a diagnosis of autistic behaviors and moderate delays in all areas of functioning. He exhibits the behavior of headshaking and fingerflicking, which interfere with the learning process and is socially inappropriate. A Functional Analysis consisting of a Records Review, completion of the

Motivation Assessment Scale and an Analog Setting/Environmental Manipulation was conducted to analyze this behavior; and the following conclusions were drawn:

1. The subject has a history of self-stimulatory behavior with no previous intervention strategies employed.

2. The subject's behavior appears to be maintained primarily by a need for sensory input secondarily by a need for an escape from task demands.

3. No specific intervention strategy had an impact on the behavior.

4. It was observed that the subject could and would participate in all activities while demonstrating the behavior intermittently. He exhibited the behavior most often in more stressful, chaotic or loud situations. When engaged in activities that were more familiar or routine, he did not exhibit the behavior as frequently. It is suggested that the behavior be ignored and consistent task demands be placed on the subject in a low-stimulation environment with as little extraneous visual and auditory stimulation as possible. New activities and information should be introduced in as neutral and non-threatening ways as possible with ample opportunities for success (i.e., discrete trial procedure). The use of vestibular movement or other sensory experiences should be explored in terms of reinforcement. Functional communication training should also be explored to give this nonverbal child a way to express his wants and needs, as well as to give him an alternate, more appropriate way to indicate when he is frustrated or overstimulated.

Motivation Assessment Scale

by V. Mark Durand and Daniel Crimmins

Name Subject No. 1 **Today's Date** 10/ /98

Rater B. Horner

Behavior Description headshaking and fingerflicking

Setting Description classroom

GENERAL INSTRUCTIONS

Name: Enter the name of the individual with the problem behavior.

Rater: Enter the name of the person filling out the scale or being interviewed.

Behavior Description:
Enter a *specific* behavior (e.g., hits his head) rather than a more general description of the individual's behavior (e.g., he gets upset).

Setting Description:
Specify the situation where the behavior is a problem (e.g., at home after dinner, during lunch, during one-on-one teaching).

INSTRUCTIONS TO RATERS

Rate each of the 16 items on the following two pages by circling the number that corresponds to about how often the individual engages in the behavior indicated, in the setting which has been selected.

Subject No. 1

Motivation Assessment Scale

ITEM	*RESPONSE*						
	Never	Almost Never	Seldom	Half the Time	Usually	Almost Always	Always
1. Would the behavior occur continuously, over and over, if this person was left alone for long periods of time? (For example, several hours.)	0	1	2	3	4	(5)	6
2. Does the behavior occur following a request to perform a difficult task?	0	1	2	3	4	(5)	6
3. Does the behavior seem to occur in response to your talking to other persons in the room?	0	1	(2)	3	4	5	6
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can't have?	0	1	(2)	3	4	5	6
5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one was around? (For example, rocking back and forth for over an hour.)	0	1	2	3	(4)	5	6
6. Does the behavior occur when any request is made of this person?	0	1	2	3	(4)	5	6
7. Does the behavior occur whenever you stop attending to this person?	0	1	(2)	3	4	5	6
8. Does the behavior occur when you take away a favorite toy, food, or activity?	0	1	(2)	3	4	5	6

ITEM	RESPONSE
9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · **Almost Always 5** · Always 6
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attehtion to him or her? (For example, if you are sitting in a separate room, interacting with another person.)	Never 0 · Almost Never 1 · **Seldom 2** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
12. Does the behavior stop occurring shortly after you give this person the toy, food or activity he or she has requested?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · **Almost Always 5** · Always 6
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · **Almost Always 5** · Always 6
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?	Never 0 · Almost Never 1 · Seldom 2 · **Half the Time 3** · Usually 4 · Almost Always 5 · Always 6
15. Does this person seem to do the behavior to get you to spend some time with him or her?	Never 0 · Almost Never 1 · **Seldom 2** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
16. Does this behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?	Never 0 · Almost Never 1 · Seldom 2 · **Half the Time 3** · Usually 4 · Almost Always 5 · Always 6

Subject No. 1

SCORING

Transfer the numeric **Response** for each **Item** to the blanks below. Scores are organized into columns by type of motivation. Total each column of numbers (**Total Score**) and calculate the **Mean Score** (**Total Score** divided by 4) for each motivation. Determine the **Relative Ranking** for each motivation by assigning the number "1" to the motivation with the highest **Mean Score**, "2" to the motivation with the second-highest **Mean Score**, and so forth.

	Sensory	Escape	Attention	Tangible
	1. 5	2. 5	3. 2	4. 2
	5. 4	6. 4	7. 2	8. 2
	9. 5	10. 4	11. 2	12. 5
	13. 5	14. 3	15. 2	16. 3
Total Score =	19	16	8	12
Mean Score =	4.75	4	2	3
Relative Ranking =	1	2	4	3

MONACO & Associates

FUNCTIONAL ANALYSIS – SUBJECT 2

Definition of Behavior: Tantrumming

The subject will bounce her body up and down in a quick motion while waving her hands up, down and away from her body in a quick, flapping motion and screaming. She will also move herself from the area by getting up and running or walking away, sliding down out of her chair, climbing over furniture or pushing furniture or persons out of the way. This behavior may or may not be accompanied by tears or taking off and bending or throwing her glasses.

Baseline:

A baseline was obtained using the observational recording method of partial interval recording in the classroom over a three-day period, with each day beginning at 9:15 a.m. and ending at 2:15 p.m. The structure of all three days included Circle Time, Breakfast, Work Time, Recess, Lunch, Play Time and Story Time.

Baseline Results:

The subject demonstrated the behavior at least one time per interval six out of seven intervals on Day 1, six out of seven intervals on Day 2 and five out of seven intervals on Day 3

Assessment No. 1: Records Review

The subject is a five-year, four-month-old female who has been diagnosed with global developmental delays. She is severely delayed in the areas of cognition, social/emotional, fine motor and language. She is moderately delayed in the area of gross motor. She is ambulatory and non-verbal. She functions overall at approximately a one-and-a-half to two-year-old level. She receives medication to control seizures, but she experiences absence seizures on an almost daily basis. She lives with her mother and father and one younger sibling. Previous records indicate a history of the tantrumming behavior both at home and school which were dealt with using a Time Out procedure, with the subject either being put in her bedroom at home or being physically contained in a Time Out area in her classroom.

Assessment No. 2: *Motivation Assessment Scale*

The results of the *Motivation Assessment Scale* indicate that the behavior is maintained primarily for the purpose of obtaining a tangible item and for escape purposes secondarily.

Assessment No. 3: Analog Setting/Environmental Manipulation

Setting A: Ignoring the Behavior/Extinction

When the subject began to tantrum, staff would either ignore the behavior or turn attention to another student or task. The subject would continue to tantrum ten out of ten times.

Setting B: Mechanical Restraint

When the subject began to tantrum, a seat belt attached to her chair was used to contain her. The subject would continue the behavior ten out of ten times and pull at the belt to free herself.

Setting C: Verbal Commands

When the subject began to tantrum, she would be told, "No! No tantrums!" and be redirected verbally to the task at hand. Eight out of ten times the subject would continue to tantrum after the verbal command was given.

Setting D: Physical Restraint with Verbal Commands

When the subject began to tantrum, she would be told, "No! No tantrums!", be redirected verbally to the task at hand and held physically in her chair. Ten out of ten times the subject would continue to tantrum.

Setting E: Increased Attention

When given direct one-on-one attention (sitting with the subject, giving direct verbal prompts and/or hand-over-hand manipulation) related to the task at hand, the subject exhibited the behavior six out of ten times.

Setting F: Decreased Task Demand

When no demands were made on the subject and she was given free choice of preferred items and access to a staff member, she exhibited the behavior zero out of ten times.

Summary:

The subject is a five-year, four-month-old female who has been diagnosed with global developmental delays and moderate to severe delays in all areas of functioning. She exhibits the behavior of tantrumming, which is disruptive, potential harmful to the subject and others, and interferes with the learning process. A Functional Analysis consisting of a records review, completion of the *Motivation Assessment Scale* and an Analog Setting/Environmental Manipulation was conducted to analyze this behavior; and the following conclusions were drawn:

1. The subject has a history of tantrumming behavior that was dealt with by using Time Out procedures.

2. The subject's behavior appears to be maintained primarily by a desire to obtain tangibles and secondarily for escape purposes.

3. Decreased task demand was the most effective intervention setting.

4. As the subject is essentially nonverbal, she has no reliable means for indicating her wants and needs. She frustrates easily and it appears she has developed her own way of expressing herself, namely, through tantrumming. Functional communication training using a picture exchange system should be implemented to allow her a means of effective communicating with other to obtain tangibles/desired objects. She should be allowed increased access to these items while learning the picture that corresponds to each item, as well as allowing staff to observe preferred v. nonpreferred items. Further, task demands should be decreased and task analysis used when introducing new skills and tasks to reduce the potential for frustration and allow for ample opportunities for success.

Motivation Assessment Scale

by V. Mark Durand and Daniel Crimmins

Name Subject No. 2 **Today's Date** 10/ /98

Rater B. Horner

Behavior Description tantrumming

Setting Description classroom

GENERAL INSTRUCTIONS

Name: Enter the name of the individual with the problem behavior.

Rater: Enter the name of the person filling out the scale or being interviewed.

Behavior Description:
Enter a *specific* behavior (e.g., hits his head) rather than a more general description of the individual's behavior (e.g., he gets upset).

Setting Description:
Specify the situation where the behavior is a problem (e.g., at home after dinner, during lunch, during one-on-one teaching).

INSTRUCTIONS TO RATERS

Rate each of the 16 items on the following two pages by circling the number that corresponds to about how often the individual engages in the behavior indicated, in the setting which has been selected.

Subject No. 2
Motivation Assessment Scale

ITEM	*RESPONSE*
1. Would the behavior occur continuously, over and over, if this person was left alone for long periods of time? (For example, several hours.)	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
2. Does the behavior occur following a request to perform a difficult task?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
3. Does the behavior seem to occur in response to your talking to other persons in the room?	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can't have?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always (5) · Always 6
5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one was around? (For example, rocking back and forth for over an hour.)	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
6. Does the behavior occur when any request is made of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
7. Does the behavior occur whenever you stop attending to this person?	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
8. Does the behavior occur when you take away a favorite toy, food, or activity?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always (5) · Always 6

ITEM	*RESPONSE*
9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)	Never 0 · Almost Never **1** · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her? (For example, if you are sitting in a separate room, interacting with another person.)	Never 0 · Almost Never **1** · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
12. Does the behavior stop occurring shortly after you give this person the toy, food or activity he or she has requested?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **5** · Always 6
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
15. Does this person seem to do the behavior to get you to spend some time with him or her?	Never 0 · Almost Never **1** · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
16. Does this behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **5** · Always 6

Subject No. 2

SCORING

Transfer the numeric **Response** for each **Item** to the blanks below. Scores are organized into columns by type of motivation. Total each column of numbers (**Total Score**) and calculate the **Mean Score** (**Total Score** divided by 4) for each motivation. Determine the **Relative Ranking** for each motivation by assigning the number "1" to the motivation with the highest **Mean Score**, "2" to the motivation with the second-highest **Mean Score**, and so forth.

	Sensory	Escape	Attention	Tangible
	1. 1	**2.** 4	**3.** 1	**4.** 5
	5. 1	**6.** 4	**7.** 1	**8.** 5
	9. 1	**10.** 4	**11.** 1	**12.** 5
	13. 4	**14.** 4	**15.** 1	**16.** 5
Total Score =	7	16	4	20
Mean Score =	1.75	4	1	5
Relative Ranking =	3	2	4	1

MONACO & Associates

FUNCTIONAL ANALYSIS – SUBJECT 3

Definition of Behavior: Face Slapping

The subject will strike either side of his own face forcefully with an open hand either just once or several times in rapid succession.

Baseline:

A baseline was obtained using the observational recording method of partial interval recording in the classroom over a three-day period, with each day beginning at 9:15 a.m. and ending at 2:15 p.m. The structure of all three days included Circle Time, Breakfast, Work Time, Recess, Lunch, Play Time and Story Time.

Baseline Results:

The subject displayed the behavior at least one time seven out of seven intervals on Day 1, six out of seven intervals on Day 2 and seven out of seven intervals on Day 3.

Assessment No. 1: Records Review

The subject is an eight-year, nine-month-old male diagnosed with Down Syndrome. He has a severe bilateral hearing loss and is extremely farsighted. He is severely delayed in the areas of cognition, social/emotional and fine motor skills. He is moderately delayed in the area of gross motor skills. He is ambulatory and nonverbal. He functions overall at approximately an 18-month-old level. He is not on medication, but suffers from frequent otitis media and ear infections. He wears hearing aids at school to correct his hearing loss. He does not wear corrective lenses for his visual deficit. He lives with his grandfather and grandmother who have legal custody of him, as well as two older and one younger siblings. Previous records indicate that his face slapping is an ongoing concern. Intervention has included physically holding his hand after the initial slap. It has also been noted previously that his face slapping increases when he is experiencing earaches or pain from otitis media or ear infections. Therefore, when he is experiencing increased or escalated bouts of face slapping, his grandfather is made aware of it and he is taken to the doctor. The incidences of face slapping decrease dramatically when the subject is receiving medication for his medical condition. The subject also exhibits other challenging behaviors such as pinching and throwing.

Assessment No. 2: *Motivation Assessment Scale*

The results of the *Motivation Assessment Scale* indicate that the behavior is maintained primarily for the purpose of escape and secondarily for obtaining tangibles.

Assessment No. 3: Analog Setting/Environmental Manipulation

Setting A: Ignoring the Behavior/Extinction

Ignoring the behavior/extinction was not used to intervene on this behavior.

Setting B: Mechanical Restraint

Mechanical restraint was not used to intervene on this behavior.

Setting C: Verbal Commands

When the subject would face slap, he would be told, "No! No slapping!" Ten out of ten times the subject continued to slap.

Setting D: Physical Restraint with Verbal Commands

When the subject would face slap, he would be told, "No! No slapping!" and his hands would be held to prevent further slapping. Seven out of ten times the subject would slap after his hands were released.

Setting E: Increased Attention

When given direct one-on-on attention (sitting with the subject, giving direct verbal prompts and/or hand-over-hand manipulation) related to the task at hand, the subject demonstrated the behavior nine out of ten times.

Setting F: Decreased Task Demand

When no demands were made on the subject and he was given free choice of preferred items and access to a staff member, the subject exhibited the behavior eight out of ten times.

Summary:

The subject is an eight-year, nine-month-old male diagnosed with Down Syndrome and auditory and visual deficits. He is moderately to severely delayed in all areas of functioning. He experiences frequent episodes of otitis media and ear infections. He exhibits the behavior of face slapping, which is self-injurious. A Functional Analysis consisting of a records review, completion of the Motivation Assessment Scale and an Analog Setting/Environmental Manipulation was conducted to analyze this behavior; and the following conclusions were drawn:

FA3FS-3

1. The subject has a history of face slapping behavior which has been successfully modified through medication for otitis media/ear infections.

2. The subject's behavior appears to be maintained primarily for escape purposes and secondarily by for obtaining tangibles.

3. Decreased task demand was mildly effective in modifying the behavior.

4. As past records indicate that the subject's behavior was successfully modified through the use of medicine to treat otitis media/ear infections, it is recommended that this chronic condition be closely monitored and treated. This will involve ongoing, long-term communication between the subject's teacher, caretaker and physician. This is especially critical as the subject is nonverbal and has no way to communicate pain or discomfort associated with this condition other than the behavior. The use of functional communication training could be explored and a determination made as to if this is a viable method of communication for him. As the behavior appears to be maintained by an escape function, this could lend support to the idea that the subject could be trying to escape the pain of the earache by demonstrating this behavior. When he is known to be experiencing this condition, task demands could be lessened while he is not feeling well to accommodate his lower tolerance for frustration and overall decreased level of functioning. Finally, another Functional Analysis could be conducted at a time when the subject is known to be experiencing otitis media/ear infection to further test/refute these findings.

Motivation Assessment Scale

by V. Mark Durand and Daniel Crimmins

Name Subject No. 3 **Today's Date** 10/ /98

Rater B. Horner

Behavior Description face slapping

Setting Description classroom

GENERAL INSTRUCTIONS

Name: Enter the name of the individual with the problem behavior.

Rater: Enter the name of the person filling out the scale or being interviewed.

Behavior Description:
Enter a *specific* behavior (e.g., hits his head) rather than a more general description of the individual's behavior (e.g., he gets upset).

Setting Description:
Specify the situation where the behavior is a problem (e.g., at home after dinner, during lunch, during one-on-one teaching).

INSTRUCTIONS TO RATERS

Rate each of the 16 items on the following two pages by circling the number that corresponds to about how often the individual engages in the behavior indicated, in the setting which has been selected.

Subject No. 3 - face slapping

Motivation Assessment Scale

ITEM	*RESPONSE*
1. Would the behavior occur continuously, over and over, if this person was left alone for long periods of time? (For example, several hours.)	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
2. Does the behavior occur following a request to perform a difficult task?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time (3) · Usually 4 · Almost Always 5 · Always 6
3. Does the behavior seem to occur in response to your talking to other persons in the room?	Never (0) · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can't have?	Never 0 · Almost Never 1 · Seldom (2) · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one was around? (For example, rocking back and forth for over an hour.)	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
6. Does the behavior occur when any request is made of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time (3) · Usually 4 · Almost Always 5 · Always 6
7. Does the behavior occur whenever you stop attending to this person?	Never 0 · Almost Never 1 · Seldom (2) · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
8. Does the behavior occur when you take away a favorite toy, food, or activity?	Never 0 · Almost Never 1 · Seldom (2) · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6

ITEM	RESPONSE
9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her? (For example, if you are sitting in a separate room, interacting with another person.)	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
12. Does the behavior stop occurring shortly after you give this person the toy, food or activity he or she has requested?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?	Never 0 · Almost Never 1 · Seldom (2) · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
15. Does this person seem to do the behavior to get you to spend some time with him or her?	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
16. Does this behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?	Never 0 · Almost Never 1 · Seldom (2) · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6

Subject No. 3 - face slapping

SCORING

Transfer the numeric **Response** for each **Item** to the blanks below. Scores are organized into columns by type of motivation. Total each column of numbers (**Total Score**) and calculate the **Mean Score** (**Total Score** divided by 4) for each motivation. Determine the **Relative Ranking** for each motivation by assigning the number "1" to the motivation with the highest **Mean Score**, "2" to the motivation with the second-highest **Mean Score**, and so forth.

	Sensory	Escape	Attention	Tangible
	1. 1	2. 3	3. 0	4. 2
	5. 1	6. 3	7. 2	8. 2
	9. 1	10. 4	11. 1	12. 4
	13. 2	14. 4	15. 1	16. 2
Total Score =	5	14	4	10
Mean Score =	1.25	3.50	1	2.50
Relative Ranking =	3	1	4	2

MONACO & Associates

FUNCTIONAL ANALYSIS – SUBJECT 3

Definition of Behavior: Pinching

The subject will squeeze another person's skin and/or clothing tightly between his thumb and index finger.

Baseline:

A baseline was obtained using the observational recording method of partial interval recording in the classroom over a three-day period, with each day beginning at 9:15 a.m. and ending at 2:15 p.m. The structure of all three days included Circle Time, Breakfast, Work Time, Recess, Lunch, Play Time and Story Time.

Baseline Results:

The subject displayed the behavior at least one time five out of seven intervals on Day 1, six out of seven intervals on Day 2 and five out of seven intervals on Day 3.

Assessment No. 1: Records Review

The subject is an eight-year, nine-month-old male diagnosed with Down Syndrome. He has a severe bilateral hearing loss and is extremely farsighted. He is severely delayed in the areas of cognition, social/emotional and fine motor skills. He is moderately delayed in the area of gross motor skills. He is ambulatory and nonverbal. He functions overall at approximately an 18-month-old level. He is not on medication, but suffers from frequent otitis media and ear infections. He wears hearing aids at school to correct his hearing loss. He does not wear corrective lenses for his visual deficit. He lives with his grandfather and grandmother who have legal custody of him, as well as two older and one younger siblings. Previous records indicate that his pinching is an ongoing concern. An interview with his grandfather indicates that at home, the subject uses pinching as a way to get a family member's attention. When this happens, he is "yelled at" or told, "No – no!" and his hand is removed from whatever he is pinching. The subject may or may not then repeat the behavior. The subject also exhibits other challenging behaviors, such as face slapping and throwing.

Assessment No. 2: *Motivation Assessment Scale*

The results of the *Motivation Assessment Scale* indicate that the behavior is maintained primarily for the purpose of attention and secondarily for obtaining tangibles.

Assessment No. 3: Analog Setting/Environmental Manipulation

Setting A: Ignoring the Behavior/Extinction

When the subject pinched, staff would either ignore the behavior or turn attention to another student or task. Ten out of ten times the subject would pinch/attempt to pinch the staff member again.

Setting B: Mechanical Restraint

Mechanical restraint was not used to intervene on this behavior.

Setting C: Verbal Commands

When the subject would pinch, he would be told, "No! No pinching!" Seven out of ten times the subject again pinched/attempted to pinch.

Setting D: Physical Restraint with Verbal Commands

When the subject would pinch, he would be told, "No! No pinching!" and his hands would be held to prevent further pinching. Eight out of ten times the subject would pinch/attempt to pinch after his hands were released.

Setting E: Increased Attention

When given direct one-on-on attention (sitting with the subject, giving direct verbal prompts and/or hand-over-hand manipulation) related to the task at hand, the subject demonstrated the behavior four out of ten times.

Setting F: Decreased Task Demand

Decreased task demand was not used to intervene on this behavior.

Summary:

The subject is an eight-year, nine-month-old male diagnosed with Down Syndrome and auditory and visual deficits. He is moderately to severely delayed in all areas of functioning. He experiences frequent episodes of otitis media and ear infections. He exhibits the behavior of pinching, which is harmful to others. A Functional Analysis consisting of a records review, completion of the *Motivation Assessment Scale* and an Analog Setting/Environmental Manipulation was conducted to analyze this behavior; and the following conclusions were drawn:

FA3P-3

1. The subject has a history of pinching behavior that has been addressed by verbal reprimand and physical redirection.

2. The subject's behavior appears to be maintained primarily for attention purposes and secondarily by for obtaining tangibles.

3. Increased attention was mildly effective in modifying the behavior.

4. As this subject is nonverbal, he appears to have developed his own means of obtaining attention, namely, the pinching behavior. This lack of appropriate communication skills is compounded by the fact that, by caretaker's report, although the subject lives with two (older) adults and his siblings, there are often other family members and friends living transiently in the home and in this somewhat chaotic environment, he does not often receive interaction other than having his basic needs met. As the records review, *Motivation Assessment Scale* and Analog Setting all indicate a decrease in this behavior related to increasing attention provided to the subject, this seems to be the most promising of all interventions. Additionally, functional communication training needs to be addressed and a determination made if this is a viable method of communication for him. Finally, instruction in play skills should be implemented and a preference assessment conducted to find items and activities with which the subject could occupy himself during the times that attention is not available. It is also interesting to note that the secondary purpose of the behavior appears to be for obtaining tangibles; it is possible the subject may have generalized this behavior to include expressing needs and wants other than his desire for attention, such as getting things (toys, food, drinks, etc.) that he wants as well.

Motivation Assessment Scale

by V. Mark Durand and Daniel Crimmins

Name Subject No. 3 **Today's Date** 10 / / 98

Rater B. Horner

Behavior Description pinching

Setting Description classroom

GENERAL INSTRUCTIONS

Name: Enter the name of the individual with the problem behavior.

Rater: Enter the name of the person filling out the scale or being interviewed.

Behavior Description:
Enter a *specific* behavior (e.g., hits his head) rather than a more general description of the individual's behavior (e.g., he gets upset).

Setting Description:
Specify the situation where the behavior is a problem (e.g., at home after dinner, during lunch, during one-on-one teaching).

INSTRUCTIONS TO RATERS

Rate each of the 16 items on the following two pages by circling the number that corresponds to about how often the individual engages in the behavior indicated, in the setting which has been selected.

ITEM	*RESPONSE*						
	Never	Almost Never	Seldom	Half the Time	Usually	Almost Always	Always
1. Would the behavior occur continuously, over and over, if this person was left alone for long periods of time? (For example, several hours.)	(0)	1	2	3	4	5	6
2. Does the behavior occur following a request to perform a difficult task?	0	(1)	2	3	4	5	6
3. Does the behavior seem to occur in response to your talking to other persons in the room?	0	1	2	(3)	4	5	6
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can't have?	0	1	(2)	3	4	5	6
5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one was around? (For example, rocking back and forth for over an hour.)	(0)	1	2	3	4	5	6
6. Does the behavior occur when any request is made of this person?	0	(1)	2	3	4	5	6
7. Does the behavior occur whenever you stop attending to this person?	0	1	2	(3)	4	5	6
8. Does the behavior occur when you take away a favorite toy, food, or activity?	0	1	(2)	3	4	5	6

ITEM	*RESPONSE*
9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **3** · Usually 4 · Almost Always 5 · Always 6
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her? (For example, if you are sitting in a separate room, interacting with another person.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
12. Does the behavior stop occurring shortly after you give this person the toy, food or activity he or she has requested?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?	Never 0 · Almost Never **1** · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
15. Does this person seem to do the behavior to get you to spend some time with him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **3** · Usually 4 · Almost Always 5 · Always 6
16. Does this behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **3** · Usually 4 · Almost Always 5 · Always 6

SCORING

Transfer the numeric **Response** for each **Item** to the blanks below. Scores are organized into columns by type of motivation. Total each column of numbers (**Total Score**) and calculate the **Mean Score** (**Total Score** divided by 4) for each motivation. Determine the **Relative Ranking** for each motivation by assigning the number "1" to the motivation with the highest **Mean Score**, "2" to the motivation with the second-highest **Mean Score**, and so forth.

	Sensory	Escape	Attention	Tangible
	1. 0	2. 1	3. 3	4. 2
	5. 0	6. 1	7. 3	8. 2
	9. 4	10. 3	11. 4	12. 4
	13. 1	14. 4	15. 3	16. 3
Total Score =	5	9	13	11
Mean Score =	1.25	2.25	3.25	2.75
Relative Ranking =	4	3	1	2

MONACO & Associates

FUNCTIONAL ANALYSIS – SUBJECT 3

Definition of Behavior: Throwing

The subject will release a grasped object with force in an overhead or sidearm manner.

Baseline:

A baseline was obtained using the observational recording method of partial interval recording in the classroom over a three-day period, with each day beginning at 9:15 a.m. and ending at 2:15 p.m. The structure of all three days included Circle Time, Breakfast, Work Time, Recess, Lunch, Play Time and Story Time.

Baseline Results:

The subject displayed the behavior at least one time seven out of seven intervals on Day 1, seven out of seven intervals on Day 2 and seven out of seven intervals on Day 3.

Assessment No. 1: Records Review

The subject is an eight-year, nine-month-old male diagnosed with Down Syndrome. He has a severe bilateral hearing loss and is extremely farsighted. He is severely delayed in the areas of cognition, social/emotional and fine motor skills. He is moderately delayed in the area of gross motor skills. He is ambulatory and nonverbal. He functions overall at approximately an 18-month-old level. He is not on medication, but suffers from frequent otitis media and ear infections. He wears hearing aids at school to correct his hearing loss. He does not wear corrective lenses for his visual deficit. He lives with his grandfather and grandmother who have legal custody of him, as well as two older and one younger siblings. There is no mention of his throwing behavior in his records. An interview with his grandfather indicates that he likes to throw toys around the house so they give him only stuffed animals with which to play. The subject also exhibits other challenging behaviors such as face slapping and pinching.

Assessment No. 2: *Motivation Assessment Scale*

The results of the *Motivation Assessment Scale* indicate that the behavior is maintained primarily for the purpose of escape and secondarily for attention.

Assessment No. 3: Analog Setting/Environmental Manipulation

Setting A: Ignoring the Behavior/Extinction

When the subject would throw objects, staff would either ignore the behavior or tun attention to another student or task. Ten out of ten times the subject continued the behavior.

Setting B: Mechanical Restraint

Mechanical restraint was not used to intervene on this behavior.

Setting C: Verbal Commands

When the subject would throw objects, he would be told, "No! No throwing!" Eight out of ten times the subject continued to throw.

Setting D: Physical Restraint with Verbal Commands

When the subject would throw objects, he would be told, "No! No throwing!" and his hands would be held in a crossed fashion across his chest in a modified basket hold to prevent further throwing. Eight out of ten times the subject would throw objects after his hands were released.

Setting E: Increased Attention

When given direct one-on-on attention (sitting with the subject, giving direct verbal prompts and/or hand-over-hand manipulation) related to the task at hand, the subject demonstrated the behavior five out of ten times.

Setting F: Decreased Task Demand

When no demands were made on the subject and he was given free choice of preferred items and access to a staff member, the subject exhibited the behavior four out of ten times.

Summary:

The subject is an eight-year, nine-month-old male diagnosed with Down Syndrome and auditory and visual deficits. He is moderately to severely delayed in all areas of functioning. He experiences frequent episodes of otitis media and ear infections. He exhibits the behavior of throwing, which is potentially dangerous to others as well as aggressive and destructive. A Functional Analysis consisting of a records review,

completion of the *Motivation Assessment Scale* and an Analog Setting/Environmental Manipulation was conducted to analyze this behavior; and the following conclusions were drawn:

1. The subject has a been noted to exhibit this behavior in the past and it is dealt with by modifying his environment, i.e., giving him only soft things to throw.

2. The subject's behavior appears to be maintained primarily for escape purposes and secondarily for attention.

3. Decreased task demand was moderately effective in modifying the behavior, with increased attention only slightly less effective.

4. The subject appears to be using the throwing of objects as his way of communicating his displeasure with an item or task or that he is finished with it. Additionally, as with his pinching behavior, he may have generalized this behavior as a means of obtaining attention. The use of functional communication training could be explored and a determination made as to if this is a viable method of communication for him. As decreased task demand appears to be a viable method of intervention, this method should be employed and task analysis used when introducing new skills and tasks to reduce the potential for frustration and allow for amply opportunities for success. Due to the subject's low level of functioning, care should be taken to ensure that all activities and tasks presented to him are functional in nature and within his cognitive and fine and gross motor abilities.

Motivation Assessment Scale

by V. Mark Durand and Daniel Crimmins

Name Subject No. 3 **Today's Date** 10 / 7 / 98

Rater B. Horner

Behavior Description throwing

Setting Description classroom

GENERAL INSTRUCTIONS

Name: Enter the name of the individual with the problem behavior.

Rater: Enter the name of the person filling out the scale or being interviewed.

Behavior Description:
Enter a *specific* behavior (e.g., hits his head) rather than a more general description of the individual's behavior (e.g., he gets upset).

Setting Description:
Specify the situation where the behavior is a problem (e.g., at home after dinner, during lunch, during one-on-one teaching).

INSTRUCTIONS TO RATERS

Rate each of the 16 items on the following two pages by circling the number that corresponds to about how often the individual engages in the behavior indicated, in the setting which has been selected.

Subject No. 3 - throwing
Motivation Assessment Scale

ITEM	*RESPONSE*
1. Would the behavior occur continuously, over and over, if this person was left alone for long periods of time? (For example, several hours.)	Never 0 · Almost Never 1 · Seldom **2** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
2. Does the behavior occur following a request to perform a difficult task?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
3. Does the behavior seem to occur in response to your talking to other persons in the room?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **3** · Usually 4 · Almost Always 5 · Always 6
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can't have?	Never 0 · Almost Never **1** · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one was around? (For example, rocking back and forth for over an hour.)	Never 0 · Almost Never 1 · Seldom **2** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
6. Does the behavior occur when any request is made of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
7. Does the behavior occur whenever you stop attending to this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
8. Does the behavior occur when you take away a favorite toy, food, or activity?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6

ITEM	RESPONSE
9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her? (For example, if you are sitting in a separate room, interacting with another person.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6
12. Does the behavior stop occurring shortly after you give this person the toy, food or activity he or she has requested?	Never 0 · Almost Never 1 · Seldom 2 · **Half the Time 3** · Usually 4 · Almost Always 5 · Always 6
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6
15. Does this person seem to do the behavior to get you to spend some time with him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6
16. Does this behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6

SCORING

Transfer the numeric **Response** for each **Item** to the blanks below. Scores are organized into columns by type of motivation. Total each column of numbers (**Total Score**) and calculate the **Mean Score** (**Total Score** divided by 4) for each motivation. Determine the **Relative Ranking** for each motivation by assigning the number "1" to the motivation with the highest **Mean Score**, "2" to the motivation with the second-highest **Mean Score**, and so forth.

	Sensory	Escape	Attention	Tangible
	1. 2	2. 4	3. 3	4. 1
	5. 2	6. 4	7. 4	8. 4
	9. 4	10. 4	11. 4	12. 3
	13. 4	14. 4	15. 4	16. 4
Total Score =	12	16	15	12
Mean Score =	3	4	3.75	3
Relative Ranking =	3	1	2	3

FUNCTIONAL ANALYSIS – SUBJECT 4

Definition of Behavior: Elopement

The subject will attempt to leave a designated area without permission or supervision by running away; the running away at times is preceded by throwing himself out of his chair and screaming. While running, the subject may or may not scream and turn and look back at the staff member.

Baseline:

A baseline was obtained using the observational recording method of partial interval recording in the classroom over a three-day period, with each day beginning at 9:15 a.m. and ending at 2:15 p.m. The structure of all three days included Circle Time, Breakfast, Work Time, Recess, Lunch, Play Time and Story Time.

Baseline Results:

The subject displayed the behavior in the classroom five out of seven intervals on Day 1, four out of seven intervals on Day 2 and four out of seven intervals on Day 3.

Assessment No. 1: Records Review

The subject is a five-year, five-month-old male who is diagnosed with pervasive developmental delay and Attention Deficit Disorder. A suggestion of mental retardation has been made due to uneven scores in recent psychological testing. He has mild delays in the areas of cognition, speech, fine motor and social skills. His self-help skills and gross motor skills are normal. He is ambulatory and verbal. He functions overall at a four-and-one-half-year-old level. He experienced prenatal exposure to drugs and alcohol. He lives with his adoptive mother and father, his biological, older sibling and an adoptive older sibling. He receives daily medication for hyperactivity. Past records indicate that the elopement has been an ongoing problem and was dealt with by providing a one-on-one aide. When he did elope, he was brought back and put in a Time Out Room.

Assessment No. 2: *Motivation Assessment Scale*

The results of the *Motivation Assessment Scale* indicate that the behavior is maintained primarily for the purpose of attention and secondarily for obtaining tangibles.

Assessment No. 3: Analog Setting/Environmental Manipulation

Setting A: Ignoring the Behavior/Extinction

When the subject eloped, staff would either ignore the behavior or turn attention to another student or task. (Care was taken to have the doors which led out of the classroom secured so the subject was unable to leave the room.) Ten out of ten times the subject would eventually return to his seat.

Setting B: Mechanical Restraint

Mechanical restraint was not used to intervene on this behavior.

Setting C: Verbal Commands

When the subject would elope, he would be told, "No! No running away!" Two out of ten times the subject would return to his seat.

Setting D: Physical Restraint with Verbal Commands

When the subject would elope, he would be told, "No! No running away!" and the staff member would go get the subject, return him to his seat, and hold him in his seat in a modified basket hold. One out of ten times the subject would not attempt to elope when he was released.

Setting E: Increased Attention

When given direct one-on-one attention (sitting with the subject, giving verbal prompts and/or hand-over-hand manipulation) related to the task at hand, the subject exhibited the behavior zero out of ten times.

Setting F: Decreased Task Demand

When no demands were made on the subject and he was given free choice of preferred items and access to a staff member, he exhibited the behavior zero out of ten times.

Summary:

The subject is a five-year, five-month-old male who is diagnosed with Pervasive Developmental Delay and Attention Deficit Disorder. He is verbal and ambulatory and functions overall at approximately one year below age level. He is on medication for hyperactivity. He exhibits the behavior of elopement, which is potentially harmful to

himself or others and is also socially inappropriate. A Functional Analysis consisting of a records review, completion of the *Motivation Assessment Scale* and an Analog Setting/Environmental Manipulation was conducted to analyze this behavior; and the following conclusions were drawn:

1. The subject has a history of exhibiting this behavior that was dealt with by providing increased (one-on-one) supervision and Time Out.

2. The subject's behavior appears to be maintained primarily for attention and secondarily for obtaining tangibles.

3. The most effective interventions were increased attention and decreased task demand.

4. Increased attention (one-on-one) is recommended for the beginning phase of modifying this behavior. When acceptable levels of performance are obtained (no elopement), the attention should be less intrusive: the subject should work in a small group with one or two other children and a staff member, then add more students as acceptable levels of performance are maintained. Also, the proximity of the staff member should be decreased, such as moving from next to the student to across the table, to the table next to his, and so on. These changes need to be gradual and consistent so the subject can become comfortable with them. As these changes are introduced, task demands should be lessened to decrease the likelihood that the student would need help and be unable to obtain it and revert back to his prior method of obtaining attention, i.e., the elopement behavior. The subject also needs to learn an appropriate method of requesting attention and/or assistance, such as a signal like a raised hand, verbally or a combination. In terms of the secondary function of obtaining tangibles, the student is functionally capable of both physically going to get what he wants and verbally expressing his wants or needs. It may be that he uses the elopement to get someone to get something for him, perhaps to get him to return or to keep him from running away, further investigation in this area is possibly warranted; intervention could include teaching him to ask for what he wants verbally after ascertaining that he has the vocabulary to do so. Finally, it is probably also advisable to make sure any doors leading out of the subject's designated area are secured to prevent him from leaving and getting too far from supervision and safety.

Motivation Assessment Scale

by V. Mark Durand and Daniel Crimmins

Name Subject No. 4 **Today's Date** 10/ /98

Rater B. Horner

Behavior Description elopement

Setting Description classroom

GENERAL INSTRUCTIONS

Name: Enter the name of the individual with the problem behavior.

Rater: Enter the name of the person filling out the scale or being interviewed.

Behavior Description:
Enter a *specific* behavior (e.g., hits his head) rather than a more general description of the individual's behavior (e.g., he gets upset).

Setting Description:
Specify the situation where the behavior is a problem (e.g., at home after dinner, during lunch, during one-on-one teaching).

INSTRUCTIONS TO RATERS

Rate each of the 16 items on the following two pages by circling the number that corresponds to about how often the individual engages in the behavior indicated, in the setting which has been selected.

Subject No. 4

Motivation Assessment Scale

ITEM	*RESPONSE*
1. Would the behavior occur continuously, over and over, if this person was left alone for long periods of time? (For example, several hours.)	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
2. Does the behavior occur following a request to perform a difficult task?	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
3. Does the behavior seem to occur in response to your talking to other persons in the room?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can't have?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one was around? (For example, rocking back and forth for over an hour.)	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
6. Does the behavior occur when any request is made of this person?	Never 0 · Almost Never 1 · Seldom (2) · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
7. Does the behavior occur whenever you stop attending to this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
8. Does the behavior occur when you take away a favorite toy, food, or activity?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always (5) · Always 6

ITEM	RESPONSE
9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · **Almost Always 5** · Always 6
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her? (For example, if you are sitting in a separate room, interacting with another person.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · **Almost Always 5** · Always 6
12. Does the behavior stop occurring shortly after you give this person the toy, food or activity he or she has requested?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · **Almost Always 5** · Always 6
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?	Never 0 · **Almost Never 1** · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6
15. Does this person seem to do the behavior to get you to spend some time with him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · **Usually 4** · Almost Always 5 · Always 6
16. Does this behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · **Almost Always 5** · Always 6

Subject No. 4

SCORING

Transfer the numeric **Response** for each **Item** to the blanks below. Scores are organized into columns by type of motivation. Total each column of numbers (**Total Score**) and calculate the **Mean Score** (**Total Score** divided by 4) for each motivation. Determine the **Relative Ranking** for each motivation by assigning the number "1" to the motivation with the highest **Mean Score**, "2" to the motivation with the second-highest **Mean Score**, and so forth.

	Sensory	Escape	Attention	Tangible
	1. 1	2. 1	3. 4	4. 4
	5. 1	6. 2	7. 4	8. 5
	9. 5	10. 4	11. 5	12. 5
	13. 1	14. 4	15. 4	16. 5
Total Score =	8	11	21	19
Mean Score =	2	2.75	5.25	4.75
Relative Ranking =	4	3	1	2

MONACO & Associates

FUNCTIONAL ANALYSIS – SUBJECT 5

Definition of Behavior: Tantrumming

The subject will throw himself to the floor and flail his body, arms and/or legs. He will scream, cry, spit, curse and/or yell. At times the tantrum may be accompanied by removal and throwing of shoes and socks as well as removal of other clothing. He may also strike out with arms and/or legs at anyone in proximity.

Baseline:

A baseline was obtained using the observational recording method of partial interval recording in the classroom over a three-day period, with each day beginning at 9:15 a.m. and ending at 2:15 p.m. The structure of all three days included Circle Time, Breakfast, Work Time, Recess, Lunch, Play Time and Story Time.

Baseline Results:

The subject displayed the behavior of tantrumming in the classroom five out of seven intervals on Day 1, five out of seven intervals on Day 2 and five out of seven intervals on Day 3.

Assessment No. 1: Records Review

The subject is a five-year, five-month-old male who is diagnosed as having a neurological impairment as a result of a seizure at two years of age with resultant cortical blindness and left-sided weakness. He has moderate delays in all areas, including cognitive, speech, fine motor, gross motor, social and self-help skills. He is ambulatory and verbal. He functions overall approximately at a two-and-a-half-year-old level. He receives no medication. He lives with his mother, father and one older sibling. Previous records indicate that the tantrumming behavior has been an ongoing concern and is dealt with at home and in school with Time Out.

Assessment No. 2: *Motivation Assessment Scale*

The results of the *Motivation Assessment Scale* indicate that the behavior is maintained primarily to obtain tangibles and secondarily for escape purposes.

Assessment No. 3: Analog Setting/Environmental Manipulation

Setting A: Ignoring the Behavior/Extinction

When the subject began to tantrum, staff would either ignore the behavior or turn attention to another student or task. Ten out of ten times the subject continued the behavior.

Setting B: Mechanical Restraint

When the subject began to tantrum, a seat belt attached to his chair was used to contain him. The subject would continue the behavior ten out of times, actively resisting the clasping of the seat belt buckle or trying to throw himself out of his chair.

Setting C: Verbal Commands

When the subject began to tantrum, he would be told, "No! No tantrumming!" Five out of ten times the subject would continue to tantrum.

Setting D: Physical Restraint with Verbal Commands

When the subject began to tantrum, he would be told, "No! No tantrumming!" and be held physically in his chair in a modified basket hold. Ten out of ten times the subject would continue to tantrum.

Setting E: Increased Attention

When given direct one-on-one attention (sitting with the subject, giving verbal prompts and/or hand-over-hand manipulation) related to the task at hand, the subject exhibited the behavior zero out of ten times .

Setting F: Decreased Task Demand

When no demands were made on the subject and he was given free choice of preferred items and access to a staff member, he exhibited the behavior two out of ten times.

Summary:

The subject is a five-year, five-month-old male diagnosed with neurological impairment due to a seizure with resultant cortical blindness and left-sided weakness. He

has moderate delays in all areas of functioning. He exhibits the behavior of tantrumming, which is potentially dangerous to the subject and others and interferes with the learning process. A Functional Analysis consisting of a records review, completion of the *Motivation Assessment Scale*, and an Analog Setting/Environmental Manipulation was conducted to analyze this behavior; and the following conclusions were drawn:

1. The subject has a history of tantrumming behavior that was dealt with using Time Out.

2. The subject's behavior appears to be maintained primarily to obtain tangibles and secondarily for escape purposes.

3. Increased attention was the most effective intervention setting, followed by decreased task demand. That the subject responded positively to verbal intervention also indicates support for the use of increased attention to modify the behavior.

4. Increased attention (one-on-one) is recommended for the beginning phase of modifying this behavior. When acceptable levels of performance are obtained (no tantrums), the attention should become less intrusive and the subject should begin working in small group settings with one or two other children and a staff member, gradually increasing the number of students in a group. Also, the proximity of the staff member should be decreased, such as moving from next to the student to across the table, to the table next to his, and so on. These changes need to be gradual and consistent so the subject can become comfortable with them. As these changes are introduced, task demands should be lessened to decrease the likelihood that the subject would need help and be unable to obtain it and revert back to his prior method of obtaining attention, i.e., tantrumming. The subject also needs to learn an appropriate method of requesting attention and/or assistance, such as a signal like a raised hand, verbally or a combination of both. Further, since the subject does have moderate delays in speech, he should participate in a functional communication program which stresses pragmatic and conversational skills, as well as focusing on increasing vocabulary so the subject has a means of acquiring the tangibles he desires appropriately rather than tantrumming for them.

Motivation Assessment Scale

by V. Mark Durand and Daniel Crimmins

Name Subject No. 5 **Today's Date** 10 / / 98

Rater B. Horner

Behavior Description Tantrumming

Setting Description classroom

GENERAL INSTRUCTIONS

Name: Enter the name of the individual with the problem behavior.

Rater: Enter the name of the person filling out the scale or being interviewed.

Behavior Description:
Enter a *specific* behavior (e.g., hits his head) rather than a more general description of the individual's behavior (e.g., he gets upset).

Setting Description:
Specify the situation where the behavior is a problem (e.g., at home after dinner, during lunch, during one-on-one teaching).

INSTRUCTIONS TO RATERS

Rate each of the 16 items on the following two pages by circling the number that corresponds to about how often the individual engages in the behavior indicated, in the setting which has been selected.

Subject No. 5

Motivation Assessment Scale

ITEM	*RESPONSE*
1. Would the behavior occur continuously, over and over, if this person was left alone for long periods of time? (For example, several hours.)	Never 0 · Almost Never 1 · Seldom **(2)** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
2. Does the behavior occur following a request to perform a difficult task?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **(4)** · Almost Always 5 · Always 6
3. Does the behavior seem to occur in response to your talking to other persons in the room?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **(4)** · Almost Always 5 · Always 6
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can't have?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **(5)** · Always 6
5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one was around? (For example, rocking back and forth for over an hour.)	Never 0 · Almost Never 1 · Seldom **(2)** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
6. Does the behavior occur when any request is made of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **(3)** · Usually 4 · Almost Always 5 · Always 6
7. Does the behavior occur whenever you stop attending to this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **(3)** · Usually 4 · Almost Always 5 · Always 6
8. Does the behavior occur when you take away a favorite toy, food, or activity?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **(5)** · Always 6

ITEM	RESPONSE
9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her? (For example, if you are sitting in a separate room, interacting with another person.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
12. Does the behavior stop occurring shortly after you give this person the toy, food or activity he or she has requested?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always (5) · Always 6
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?	Never 0 · Almost Never (1) · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always (5) · Always 6
15. Does this person seem to do the behavior to get you to spend some time with him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually (4) · Almost Always 5 · Always 6
16. Does this behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always (5) · Always 6

Subject No. 5

SCORING

Transfer the numeric **Response** for each **Item** to the blanks below. Scores are organized into columns by type of motivation. Total each column of numbers (**Total Score**) and calculate the **Mean Score** (**Total Score** divided by 4) for each motivation. Determine the **Relative Ranking** for each motivation by assigning the number "1" to the motivation with the highest **Mean Score**, "2" to the motivation with the second-highest **Mean Score**, and so forth.

	Sensory	Escape	Attention	Tangible
	1. 2	2. 4	3. 4	4. 5
	5. 2	6. 3	7. 3	8. 5
	9. 1	10. 4	11. 4	12. 5
	13. 1	14. 5	15. 4	16. 5
Total Score =	6	16	15	20
Mean Score =	1.50	4	3.75	5
Relative Ranking =	4	2	3	1

FUNCTIONAL ANALYSIS – SUBJECT 6

Definition of Behavior: Tantrumming

The subject will scream, cry, rock his head and/or upper body back and forth, hit out toward others, throw his body to the ground and mouth/bite his right hand.

Baseline:

A baseline was obtained using the observational recording method of partial interval recording in the classroom over a three-day period, with each day beginning at 9:15 a.m. and ending at 2:15 p.m. The structure of all three days included Circle Time, Breakfast, Work Time, Recess, Lunch, Play Time and Story Time.

Baseline Results:

The subject displayed the behavior of tantrumming one or more times per interval in the classroom seven out of seven intervals on Day 1, seven out of seven intervals on Day 2 and seven out of seven intervals on Day 3.

Assessment No. 1: Records Review

The subject is a six-year, one-month-old male who is diagnosed as profoundly mentally retarded with significant visual impairment. He has severe/profound delays in all areas, including cognition, social/emotional, fine and gross motor, self-help and communication skills. He functions overall at approximately an eight-to-twelve-month-old level. He lives with his mother and younger sibling. Previous records indicate that the tantrumming behavior is a serious concern both at home and school and has been dealt with through use of physical restraint, mechanical restraint, verbal redirection, Time Out and various combinations of these techniques. In addition, calming sensory experiences have also been employed such as playing soothing music or putting the subject in a net swing to rock and soothe him. Parent report indicates that his mother will sing to him and rock his hands back and forth or offer him juice to calm down. No particular intervention, however, has been noted to be effective. When the tantrumming occurred at school, his mother would be called to come and take him home. This occurred three to four times weekly.

Assessment No. 2: *Motivation Assessment Scale*

The results of the *Motivation Assessment Scale* indicate that the behavior is maintained primarily for obtaining tangibles and secondarily for attention.

FA6T-2

Assessment No. 3: Analog Setting/Environmental Manipulation

Setting A: Ignoring the Behavior/Extinction

When the subject began to tantrum, staff would either ignore the behavior or turn attention to another student or task. Ten out of ten times the subject continued the behavior.

Setting B: Mechanical Restraint

When the subject began to tantrum, a seat belt attached to his chair was used to contain him. The subject would continue the behavior ten out of times and throw himself and the chair to the floor.

Setting C: Verbal Commands

When the subject would tantrum, he would be told, "No! No tantrums!" Ten out of ten times the subject would continue to tantrum.

Setting D: Physical Restraint with Verbal Commands

When the subject would tantrum, he would be told, "No! No tantrums!" and be held in his chair in a modified basket hold. Ten out of ten times the subject would continue to tantrum.

Setting E: Increased Attention

When given direct one-on-one attention (sitting with the subject, giving verbal prompts and/or hand-over-hand manipulation) related to the task at hand, the subject exhibited the behavior zero out of ten times.

Setting F: Decreased Task Demand

When no demands were made on the subject and he was given free choice of preferred items and access to a staff member, he exhibited the behavior five out of ten times.

FA6T-3

Summary:

The subject is a six-year, one-month-old male with a diagnosis of profound mental retardation and significant visual impairment. He functions overall at an eight-to-twelve-month-old level. He has a history of severe tantrumming behavior across settings that can be potentially dangerous to the subject and/or others, interferes with the learning process and is socially inappropriate. A Functional Analysis consisting of a records review, completion of the *Motivation Assessment Scale*, and an Analog Setting/Environmental Manipulation was conducted to analyze this behavior; and the following conclusions were drawn:

1. The subject has a history of severe tantrumming across settings which have been resistant to various, inconsistently applied interventions.

2. The subject's behavior appears to be maintained primarily for obtaining tangibles and secondarily for escape.

3. Increased attention was the most effective intervention followed by decreased task demand.

4. Increased attention and increased access to tangibles is recommended to modify this behavior. The subject is an extremely low functioning child who is dependent on others for having all his needs met. Although he can walk, he will only do so when led by the hand. He appears fearful of all objects and materials presented to him with which he does not have a solid knowledge base, such as cup, clothing, diaper and chair, for example. He does not exhibit any curiosity about the world around him; he does not explore by independent walking, crawling, or even with his hands, which he prefers to keep in his mouth. The subject also appears easily frustrated with task demands with which he has no prior experience. As he is nonverbal, he has no effective way to communicate his needs and wants. The subject appears to use his tantrumming behavior as his only method of communicating as experience has shown him that if he tantrums a vast array of materials, persons and attention is presented to him. This student needs to participate in a multi-sensory stimulation program with increased attention geared toward presenting experiences that would provide immediate feedback – visual, auditory, tactual, olfactory and gustatory. The increased attention of a staff member is needed to facilitate, label and organize the input that the subject receives, and more importantly, to provide a sense of safety, encouragement and success during the learning process. The subject needs increased access to functional tangibles (things with which the subject has had prior experience or needs to use in his daily routine) to learn what they are. Functional communication training using objects or an electronic speech-output device or a combination of both needs to investigated to allow opportunities for the subject to express himself.

Motivation Assessment Scale

by V. Mark Durand and Daniel Crimmins

Name Subject No. 6 **Today's Date** 10/__/98

Rater B. Horner

Behavior Description tantrumming

Setting Description classroom

GENERAL INSTRUCTIONS

Name: Enter the name of the individual with the problem behavior.

Rater: Enter the name of the person filling out the scale or being interviewed.

Behavior Description:
Enter a *specific* behavior (e.g., hits his head) rather than a more general description of the individual's behavior (e.g., he gets upset).

Setting Description:
Specify the situation where the behavior is a problem (e.g., at home after dinner, during lunch, during one-on-one teaching).

INSTRUCTIONS TO RATERS

Rate each of the 16 items on the following two pages by circling the number that corresponds to about how often the individual engages in the behavior indicated, in the setting which has been selected.

Subject No. 6 0 tantrumming
Motivation Assessment Scale

ITEM	RESPONSE
1. Would the behavior occur continuously, over and over, if this person was left alone for long periods of time? (For example, several hours.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
2. Does the behavior occur following a request to perform a difficult task?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **5** · Always 6
3. Does the behavior seem to occur in response to your talking to other persons in the room?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **3** · Usually 4 · Almost Always 5 · Always 6
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can't have?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always **6**
5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one was around? (For example, rocking back and forth for over an hour.)	Never 0 · Almost Never 1 · Seldom **2** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
6. Does the behavior occur when any request is made of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **5** · Always 6
7. Does the behavior occur whenever you stop attending to this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
8. Does the behavior occur when you take away a favorite toy, food, or activity?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always **6**

ITEM	*RESPONSE*
9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)	Never (0) · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always (5) · Always 6
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her? (For example, if you are sitting in a separate room, interacting with another person.)	Never 0 · Almost Never 1 · Seldom (2) · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
12. Does the behavior stop occurring shortly after you give this person the toy, food or activity he or she has requested?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always (5) · Always 6
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time (3) · Usually 4 · Almost Always 5 · Always 6
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time (3) · Usually 4 · Almost Always 5 · Always 6
15. Does this person seem to do the behavior to get you to spend some time with him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always (5) · Always 6
16. Does this behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always (5) · Always 6

SCORING

Transfer the numeric **Response** for each **Item** to the blanks below. Scores are organized into columns by type of motivation. Total each column of numbers (**Total Score**) and calculate the **Mean Score** (**Total Score** divided by 4) for each motivation. Determine the **Relative Ranking** for each motivation by assigning the number "1" to the motivation with the highest **Mean Score**, "2" to the motivation with the second-highest **Mean Score**, and so forth.

	Sensory	Escape	Attention	Tangible
	1. 4	2. 5	3. 3	4. 6
	5. 2	6. 5	7. 4	8. 6
	9. 0	10. 5	11. 2	12. 5
	13. 3	14. 3	15. 5	16. 5
Total Score =	9	18	14	22
Mean Score =	2.25	4.50	3.50	5.50
Relative Ranking =	4	2	3	1

MONACO & Associates

FUNCTIONAL ANALYSIS – SUBJECT 6

Definition of Behavior: Food Refusal

When presented with food outside of the subject's normal diet (small canned ravioli or spaghetti, applesauce, pudding and fruit juice) the subject will press his lips together and close his mouth against the insertion of the food, turn his head away, or push out the food with his tongue if it is placed in his mouth. The behavior may or may not be followed by crying, body rocking, cupping his hands over his ears or biting his right hand.

Baseline:

A baseline was obtained using the observational recording method of partial interval recording in the classroom over a three-day period, with two intervals per day (breakfast and lunch).

Baseline Results:

The subject displayed the behavior of food refusal two out of two intervals on Day 1, two out of two intervals on Day 2 and two out of two intervals on Day 3.

Assessment No. 1: Records Review

The subject is a six-year, one-month-old male who is diagnosed as profoundly mentally retarded with significant visual impairment. He has severe/profound delays in all areas, including cognition, social/emotional, fine and gross motor, self-help and communication skills. He functions overall at approximately an eight-to-twelve-month-old level. He lives with his mother and younger sibling. Previous records indicate that the food refusal behavior has been noted at school. Interview with his mother indicates that she just feels he is a "picky eater" and although she would like him to eat more there is nothing she can do about it.

Assessment No. 2: *Motivation Assessment Scale*

The results of the *Motivation Assessment Scale* indicate that the behavior is maintained by an escape function.

FA6FR-2

Assessment No. 3: Analog Setting/Environmental Manipulation

Setting A: Ignoring the Behavior/Extinction

When the subject refused to accept offered food, staff would either ignore the behavior or turn attention to another student or task. Ten out of ten times the subject continued the behavior.

Setting B: Mechanical Restraint

Mechanical restraint was not used to intervene on this behavior.

Setting C: Verbal Commands

When the subject refused to accept offered food, he would be told, "Open mouth! Taste (name of food)!", " You might like it!", "Open up! Yummy, yummy!" or some other encouraging phrase. Ten out of ten times the subject would continue to tantrum.

Setting D: Physical Restraint with Verbal Commands

Physical restraint was not used to intervene on this behavior.

Setting E: Increased Attention

When given direct one-on-one attention (sitting with the subject and giving verbal prompts such as the ones used in Setting C) related to the task at hand, the subject exhibited the behavior ten out of ten times.

Setting F: Decreased Task Demand

When no demands were made on the subject and his meal was placed on the table in front of him, he exhibited the behavior ten out of ten times.

Summary:

The subject is a six-year, one-month-old male with a diagnosis of profound mental retardation and significant visual impairment. He functions overall at an eight-to-twelve-month-old level. He has a history of food refusal behavior that raises nutritional/health concerns and is socially inappropriate. A Functional Analysis consisting of a records review, completion of the *Motivation Assessment Scale*, and an Analog Setting/Environmental Manipulation was conducted to analyze this behavior; and the following conclusions were drawn:

FA6FR-3

1. The subject has a history of food refusal. This behavior is a concern of school staff but not his parent.

2. The subject's behavior appears to be maintained for escape purposes.

3. No attempted intervention was effective in modifying this behavior.

4. Although this behavior is not a concern to the parent, it can be potentially dangerous to the subject in terms of nutrition, oral hygiene and dental status. Within the classroom setting, increased attention and encouragement to provide a safe, comfortable, inviting mealtime atmosphere should be provided and new foods should be offered and available on a regular basis – consistency is the key to introducing new foods, as it has been determined that the subject is fearful and therefore rejecting of all new, unknown experiences. New foods could be mixed in with known foods in small portions to introduce them. Care should be taken to not introduce new textures and new tastes at the same time, however. A feeding/swallowing evaluation is also recommended. Finally, consultation should be continued with the parent on an ongoing basis to share with her the concerns associated with this behavior in a nonthreatening, collaborative manner.

Motivation Assessment Scale

by V. Mark Durand and Daniel Crimmins

Name Subject No. 6 **Today's Date** 10/98

Rater B. Horner

Behavior Description food refusal

Setting Description classroom

GENERAL INSTRUCTIONS

Name: Enter the name of the individual with the problem behavior.

Rater: Enter the name of the person filling out the scale or being interviewed.

Behavior Description:
Enter a *specific* behavior (e.g., hits his head) rather than a more general description of the individual's behavior (e.g., he gets upset).

Setting Description:
Specify the situation where the behavior is a problem (e.g., at home after dinner, during lunch, during one-on-one teaching).

INSTRUCTIONS TO RATERS

Rate each of the 16 items on the following two pages by circling the number that corresponds to about how often the individual engages in the behavior indicated, in the setting which has been selected.

Subject No. 6 - food refusal
Motivation Assessment Scale

ITEM	*RESPONSE*						
	Never	Almost Never	Seldom	Half the Time	Usually	Almost Always	Always
1. Would the behavior occur continuously, over and over, if this person was left alone for long periods of time? (For example, several hours.)	0	1	2	3	4	5	6
2. Does the behavior occur following a request to perform a difficult task?	0	1	2	3	4	5	6
3. Does the behavior seem to occur in response to your talking to other persons in the room?	0	1	2	3	4	5	6
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can't have?	0	1	2	3	4	5	6
5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one was around? (For example, rocking back and forth for over an hour.)	0	1	2	3	4	5	6
6. Does the behavior occur when any request is made of this person?	0	1	2	3	4	5	6
7. Does the behavior occur whenever you stop attending to this person?	0	1	2	3	4	5	6
8. Does the behavior occur when you take away a favorite toy, food, or activity?	0	1	2	3	4	5	6

ITEM	RESPONSE
9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her? (For example, if you are sitting in a separate room, interacting with another person.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
12. Does the behavior stop occurring shortly after you give this person the toy, food or activity he or she has requested?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
15. Does this person seem to do the behavior to get you to spend some time with him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
16. Does this behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6

SCORING

Transfer the numeric **Response** for each **Item** to the blanks below. Scores are organized into columns by type of motivation. Total each column of numbers (**Total Score**) and calculate the **Mean Score** (**Total Score** divided by 4) for each motivation. Determine the **Relative Ranking** for each motivation by assigning the number "1" to the motivation with the highest **Mean Score**, "2" to the motivation with the second-highest **Mean Score**, and so forth.

	Sensory	Escape	Attention	Tangible
	1. 0	2. 6	3. 0	4. 0
	5. 0	6. 6	7. 0	8. 0
	9. 1	10. 1	11. 0	12. 6
	13. 1	14. 6	15. 1	16. 0
Total Score =	2	19	1	6
Mean Score =	.50	4.75	.25	1.5
Relative Ranking =	3	1	4	2

MONACO & Associates

FUNCTIONAL ANALYSIS – SUBJECT 7

Definition of Behavior: Headbanging

The subject will place both hands on the surface against which she will bang her head, center herself, and slowly, rhythmically bang her forehead against the surface with moderate to hard force. Depending upon the surface upon which she strikes her head, it can result in injury such as bruises or cuts.

Baseline:

A baseline was obtained using the observational recording method of partial interval recording in the classroom over a three-day period, with each day beginning at 9:15 a.m. and ending at 2:15 p.m. The structure of all three days included Circle Time, Breakfast, Work Time, Recess, Lunch, Play Time and Story Time.

Baseline Results:

The subject displayed the behavior of headbanging in the classroom six out of seven intervals on Day 1, five out of seven intervals on Day 2 and five out of seven intervals on Day 3.

Assessment No. 1: Records Review

The subject is a six-year, seven-month-old female who is blind and has cerebral palsy due to prematurity. She is severely delayed in all areas, including cognition, social/emotional, fine and gross motor, self-help and language skills. She functions overall at approximately a one-and-a-half-hear-old level. She is ambulatory. She is on no medication at the present time. The subject lives in a single-parent family with four older siblings and a twin, who functions slightly higher than the subject but is more physically challenged due to the cerebral palsy. The twin does not exhibit the subject's headbanging behavior. The subject has a history since infancy of engaging in self-stimulatory behaviors such as eyepoking, headrocking, swaying and verbalizing to herself, as well as a history of abusive behavior, including spitting, biting and hitting (herself and others) in addition to the headbanging.

Since infancy, physical restraint has been attempted by the subject's parent and/or siblings in the home and by staff at her educational setting. At approximately one year of age, the subject was made to wear a protective helmet to protect her head from injury. Apparently the subject did not care for the helmet and its use was inconsistent and eventually discontinued. Within the past year, consultation with a medical specialist to determine if the behavior is organically based or neurological in nature and if the

behavior could be medicinally altered or controlled was recommended by the education staff but was met with no follow through. Within the past six months, consultation with a state agency that provides in-home behavior modification training was recommended by the education staff but was met with no follow through by the parent. Within the past two months, the subject's mother reported that the subject's pediatrician recommended ignoring the behavior but that she should be told while the behavior is occurring that she will be given what she wants then given the desired item when the behavior stops.

Assessment No. 2: *Motivation Assessment Scale*

The results of the *Motivation Assessment Scale* indicate that the behavior is maintained equally for attention and escape purposes.

Assessment No. 3: Analog Setting/Environmental Manipulation

Setting A: Ignoring the Behavior/Extinction

When the subject began to headbang, staff would either ignore the behavior or turn attention to another student or task. Ten out of ten times the subject continued the behavior. If the staff member moved away from the subject, the subject would follow by creeping closer to the staff member and continue to headbang.

Setting B: Mechanical Restraint

When the subject began to headbang, staff would put the protective helmet on the subject's head, usually with a struggle. The subject would remove and throw the helmet and continue the behavior ten out of times.

Setting C: Verbal Commands

When the subject would headbang, she would be told, "Stop! Stop banging your head!!" Ten out of ten times the subject would turn away, continue to headbang and echo the command to herself.

Setting D: Physical Restraint with Verbal Commands

When the subject would headbang, she would be told, "Stop! Stop banging your head!" and be placed in a modified basket hold. Ten out of ten times the subject would struggle against the restrainer and continue to make the headbanging motion while echoing the command.

Setting E: Increased Attention

When given direct one-on-one attention (sitting with the subject, giving verbal prompts and/or hand-over-hand manipulation) related to the task at hand, the subject exhibited the behavior two out of ten times .

Setting F: Decreased Task Demand

When no demands were made on the subject and she was given free choice of preferred items and access to a staff member, she exhibited the behavior four out of ten times.

Summary:

The subject is a six-year, seven-month-old female who is blind and has cerebral palsy due to prematurity. She functions overall at approximately a one-and-a-half-month-old level. This is her first year of consistent attendance in a formal educational program. The subject exhibits a headbanging behavior, which is potentially dangerous to herself, interferes with the learning process and is socially inappropriate. A Functional Analysis consisting of a records review, completion of the *Motivation Assessment Scale*, and an Analog Setting/Environmental Manipulation was conducted to analyze this behavior; and the following conclusions were drawn:

1. The subject has a history since infancy of headbanging that has been resistant to a variety of inconsistently attempted interventions.

2. The subject's behavior appears to be maintained for escape purposes.

3. Increased attention was the most effective intervention, followed by decreased task demand.

4. As the subject is essentially nonverbal, she has no way to indicate her needs and wants, and therefore appears easily frustrated and has developed her own way to express herself and her desire for attention and/or assistance, namely headbanging. As this is the subject's first year of consistent attendance in a formal school setting, she is probably further frustrated by task demands with which she has had no prior experience, and again, it appears she has developed her own way to communication this frustration through headbanging. The subject appears to have learned that her headbanging is extremely effective in getting her what she wants because she almost always receives some sort of immediate attention when she engages in the behavior. The subject's negative reactions to the helmet and to physical and/or verbal restraint, as well as her positive reactions to increased staff attention and/or decreased task demands indicate an emerging sense of

cause-and-effect and a beginning understanding of consequences. It shows evidence that a behavior modification program using positive reinforcement could be effective in reducing and/or eliminating this behavior. The subject appears to be most likely to engage in the behavior when not receiving attention or when she is directed to perform a task not to her liking or to end a desired activity. Conversely, she appears least likely to engage in the behavior when given extensive staff support and decreased task demands. This suggests that a possible restructuring of the activities within the subject's school day and an increased use of task analysis may be viable alternatives to use in reducing and/or eliminating this behavior.

Motivation Assessment Scale

by V. Mark Durand and Daniel Crimmins

Name Subject No. 7 **Today's Date** 10/ /98

Rater B. Horner

Behavior Description headbanging

Setting Description classroom

GENERAL INSTRUCTIONS

Name: Enter the name of the individual with the problem behavior.

Rater: Enter the name of the person filling out the scale or being interviewed.

Behavior Description:
Enter a *specific* behavior (e.g., hits his head) rather than a more general description of the individual's behavior (e.g., he gets upset).

Setting Description:
Specify the situation where the behavior is a problem (e.g., at home after dinner, during lunch, during one-on-one teaching).

INSTRUCTIONS TO RATERS

Rate each of the 16 items on the following two pages by circling the number that corresponds to about how often the individual engages in the behavior indicated, in the setting which has been selected.

Subject No. 7
Motivation Assessment Scale

ITEM	RESPONSE
1. Would the behavior occur continuously, over and over, if this person was left alone for long periods of time? (For example, several hours.)	Never 0 · Almost Never 1 · Seldom **2** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
2. Does the behavior occur following a request to perform a difficult task?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **5** · Always 6
3. Does the behavior seem to occur in response to your talking to other persons in the room?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **5** · Always 6
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can't have?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **3** · Usually 4 · Almost Always 5 · Always 6
5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one was around? (For example, rocking back and forth for over an hour.)	Never 0 · Almost Never 1 · Seldom **2** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
6. Does the behavior occur when any request is made of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **5** · Always 6
7. Does the behavior occur whenever you stop attending to this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **5** · Always 6
8. Does the behavior occur when you take away a favorite toy, food, or activity?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **3** · Usually 4 · Almost Always 5 · Always 6

ITEM	RESPONSE
9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)	Never 0 · Almost Never 1 · Seldom **2** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **5** · Always 6
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her? (For example, if you are sitting in a separate room, interacting with another person.)	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually 4 · Almost Always **5** · Always 6
12. Does the behavior stop occurring shortly after you give this person the toy, food or activity he or she has requested?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **3** · Usually 4 · Almost Always 5 · Always 6
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?	Never 0 · Almost Never 1 · Seldom **2** · Half the Time 3 · Usually 4 · Almost Always 5 · Always 6
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
15. Does this person seem to do the behavior to get you to spend some time with him or her?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time 3 · Usually **4** · Almost Always 5 · Always 6
16. Does this behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?	Never 0 · Almost Never 1 · Seldom 2 · Half the Time **3** · Usually 4 · Almost Always 5 · Always 6

Subject No. 7

SCORING

Transfer the numeric **Response** for each **Item** to the blanks below. Scores are organized into columns by type of motivation. Total each column of numbers (**Total Score**) and calculate the **Mean Score** (**Total Score** divided by 4) for each motivation. Determine the **Relative Ranking** for each motivation by assigning the number "1" to the motivation with the highest **Mean Score**, "2" to the motivation with the second-highest **Mean Score**, and so forth.

	Sensory	Escape	Attention	Tangible
	1. 2	**2.** 5	**3.** 5	**4.** 3
	5. 2	**6.** 5	**7.** 5	**8.** 3
	9. 2	**10.** 5	**11.** 5	**12.** 3
	13. 2	**14.** 4	**15.** 4	**16.** 3
Total Score =	8	19	19	12
Mean Score =	2	4.75	4.75	3
Relative Ranking =	3	1	1	2

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APPENDIX C

Table 1
BASELINE DATA
NUMBER OF INTERVALS IN WHICH BEHAVIOR OCCURRED PER DAY
(SEVEN INTERVALS PER DAY)

SUBJECT	BEHAVIOR	DAY 1	DAY 2	DAY 3	TOTAL
1	Headshaking & Fingerflicking	7	7	7	21
2	Tantrumming	6	6	5	17
3	Face Slapping	7	6	7	20
	Pinching	5	6	5	16
	Throwing	7	7	7	21
4	Elopement	5	4	4	13
5	Tantrumming	5	5	5	15
6	Tantrumming	7	7	7	21
	Food Refusal	2*	2*	2*	6*
7	Headbanging	6	5	5	16

* - Subject 6's Food Refusal Behavior was measured during two intervals per day.

Table 2
POST-INTERVENTION DATA
NUMBER OF INTERVALS IN WHICH BEHAVIOR OCCURRED PER DAY
(SEVEN INTERVALS PER DAY)

SUBJECT	BEHAVIOR	DAY 1	DAY 2	DAY 3	TOTAL
1	Headshaking & Fingerflicking	7	7	7	21
2	Tantrumming	3	2	1	6
3	Face Slapping	6	7	7	20
	Pinching	2	2	2	6
	Throwing	2	2	1	5
4	Elopement	0	0	0	0
5	Tantrumming	1	1	1	3
6	Tantrumming	2	5	3	10
	Food Refusal	2*	2*	2*	6*
7	Headbanging	3	4	3	10

* - Subject 6's Food Refusal Behavior was measured during two intervals per day.

Table 3
PREVIOUS INTERVENTIONS ATTEMPTED
AS INDICATED BY RECORDS REVIEW

TYPE OF INTERVENTION ATTEMPTED					
NONE	TIME OUT	MECHANICAL	PHYSICAL	VERBAL COMMAND	OTHER (MEDICAL)
Headshaking & Fingerflicking (1)	Tantrumming (2)	Headbanging (7)	Face Slapping (3)	Pinching (3)	Face Slapping (3)
Food Refusal (6)	Elopement (4)		Tantrumming (6)	Throwing (3)	
	Tantrumming (5)		Headbanging (7)		

Number in parentheses ( ) refers to Subject Number

Table 4
MAINTAINING VARIABLES OF BEHAVIOR AS IDENTIFIED BY
MOTIVATION ASSESSMENT SCALE

SENSORY	ESCAPE	ATTENTION	TANGIBLES
Headshaking & Fingerflicking (1)	Face Slapping (3)	Pinching (3)	Tantrumming (2)
	Throwing (3)	Elopement (4)	Tantrumming (5)
	Food Refusal (6)	Headbanging* (7)	Tantrumming (6)
	Headbanging* (7)		

Number in parenthesis ( ) refers to Subject Number
* - Headbanging (7) – indicates the same behavior maintained equally by two variables

APPENDIX D

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Dear Ms. Horner:

I am writing to notify you that your request to use the Motivation Assessment Scale in your thesis work is approved and I am sending a package of protocols for your use. Should you require additional protocols, please contact Christina Aguilar (ca@monacoassociates.com).

The current requirements for printing the MAS as part of a thesis or dissertation are

Only a completed MAS protocol may be used in the Thesis or Dissertation.

I apologize for any delay in sending this approval. Best wishes for a successful research effort.

Very truly yours,

Gregory E. Monaco, Ph.D.
CEO/President