

# The Effect of a Residential-Based Behavioral Treatment for an Adolescent Boy with a History of Maltreatment and Challenging Behaviors

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## Abstract

This article involves two studies implemented within a behavior support plan designed for a 12-year-old boy who had a history of severe abuse and neglect and was removed from his parents by the police and placed into the care of the state. One study examined the effect of a multi-element intervention consisting of a concurrent token economy and contingency contract with response cost. Challenging behavior was reduced to zero levels as measured by monthly frequency of incidents. Within this behavior support plan another study targeting personal hygiene was implemented, increasing compliance with daily personal hygiene tasks to 100%.

## Keywords

maltreatment, challenging behaviors, residential treatment, behavioral treatment

There is a wealth of literature focusing on the implementation of applied behavior analysis (ABA) with individuals with developmental disabilities and the outcomes this practice can achieve, especially in the field of autism. Indeed, this area is where behavior analysis has traditionally focused and demonstrated significant success (O'Donohue & Fryling, 2007). ABA has become so synonymous with autism that the authors are often asked if one of the 'As' in ABA stands for autism. This relationship does not exist, however, between ABA and adolescents with a history of abuse who have emotional and behavioral problems. Wyatt (2007) found that in a review of a ten year index of the *Journal of Applied Behavior Analysis (JABA)* there were no index listings for child abuse. In fact, the percentage of studies on populations with developmental disabilities has significantly increased, from 24.7% in the first five years of the journal, to 61.4% during the 2000-2004 five year period (O'Donohue & Fryling, 2007).

The reasons for a dearth of research with children who have experienced abuse/neglect in the behavioral literature become apparent when working with young people with emotional and behavioral problems stemming from abuse. The environment is not easily controlled, and the young person's behavior is influenced by so many extraneous variables, that good treatment integrity can be almost impossible to maintain. Where there is a history of neglect or abuse, maintaining control over behavior support plans can be even more difficult, as contingencies compete against a long and usually successful (from the young person's point of view) instructional history. These young people frequently present with queries of borderline or antisocial personality disorders in their file and, although research has indicated that individuals with personality disorders can be treated with behavioral methods, it also highlights the difficulty of as-

essment and analysis of these behaviors (Nelson-Grey et al., 2009).

The types of behavior involved are more difficult to operationally define, such as depression, self-harm (as opposed to self-injurious behavior), food hoarding, lying, stealing, and manipulation of others. Some of these behaviors are not discovered until after the fact and definitive and reliable evidence that they have occurred is not available. They do not lend themselves easily to functional analysis and the behavior's mentioned above may be the beginning of behavior chains that can lead to elopement, under-age drinking and drug taking, promiscuity and homelessness (Golden, 2009; Snyder et al., 2006).

Although these young people do not maintain good relationships over time, this is not necessarily due to a lack of social skills; in fact, many have a very high level of social skills, and are very adept at manipulating people and situations. From both authors' experience, young people with a history of trauma can present as very different personality types depending on the situation or people they are dealing with. For example, the young person in this study could be well behaved with older female staff and at the same time very aggressive with younger female staff. It was noted that the younger female staff in question frequently exhibited fear responses such as flinching in response to aggression and appeared intimidated by the young person, while the older more experienced staff did not.

Sometimes these young people have high rates of emotional and behavioral disorders, or post-traumatic stress disorder (Dubner & Motta, 1999). Although there is disagreement over the classification of emotional and behavioral disturbances, we do know that students with emotional and behavioral disorders have the highest school dropout rate of any special education group (Merrell, 2008). This population, however complex, can

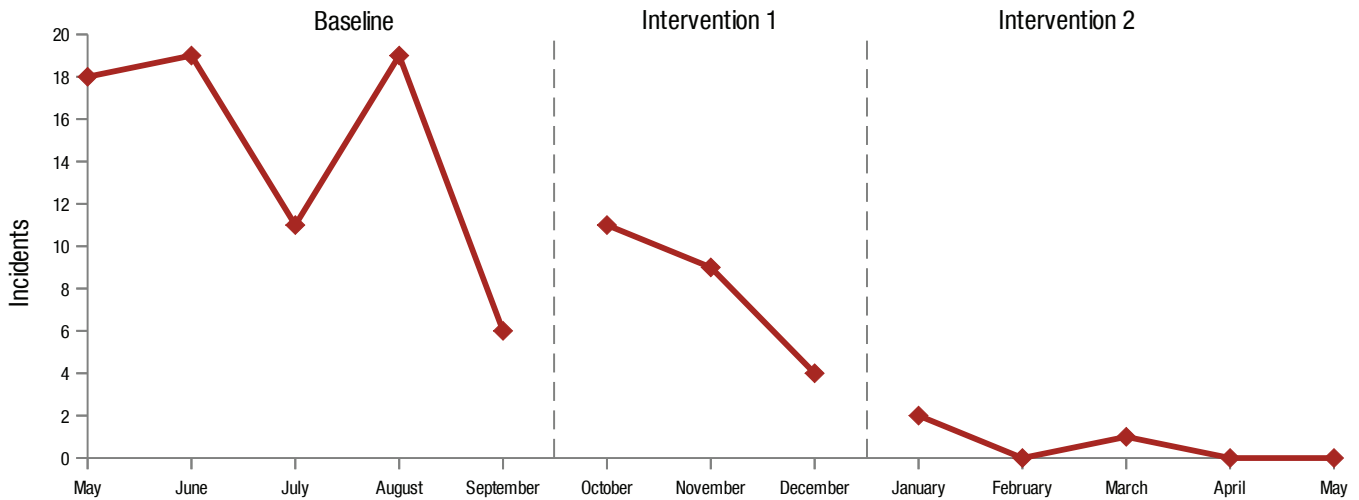


Figure 1. Total monthly incidents.

benefit greatly from the many strategies that behavior analysts implement regularly with children with autism.

The client who was the focus of the present study was in the care of the state for ten months. He had suffered severe abuse and neglect by his biological parents (the extent of which was unclear) until the time he was taken into care followed by breakdowns in a foster placement and a previous residential placement. He displayed severe challenging behavior including: physical assault, property destruction, prolonged verbal abuse and dangerous behavior while in the car. Reading difficulties, lack of conformity to social norms, and lack of personal hygiene were also present. The purpose of the first study was to reduce these challenging behaviors and to teach age-appropriate skills. The purpose of the second study was to increase personal hygiene behaviors.

10:00 am. Michael had to be supervised when in the presence of peers due to the risk to others from his challenging behavior. The home was in a rural setting within short driving distance of school and other activities.

**ASSESSMENT**

Functional assessment interviews (adapted from O’Neill et al., 1997) were carried out with staff members, direct observations were made, and a full review of all available information were conducted. ABC data were also collected. These assessments showed that the main triggers for aggression were verbal instructions from staff, staff not complying with Michael’s requests, and interrupting a preferred activity. Michael also verbally expressed a desire to control events and people in the house.

**METHOD**

**PARTICIPANT AND SETTING**

The participant was a 12-year-old male called Michael who lived in an individual residential home with a 2:1 staff to child ratio. Staff worked on 24 hour shifts, with a daily shift change at

**STUDY 1**

**TARGET BEHAVIORS**

Physical aggression: Any time Michael engages in one or more of the following behaviors: pinching, punching, pushing, pulling, kicking, digging nails into others body parts, or making

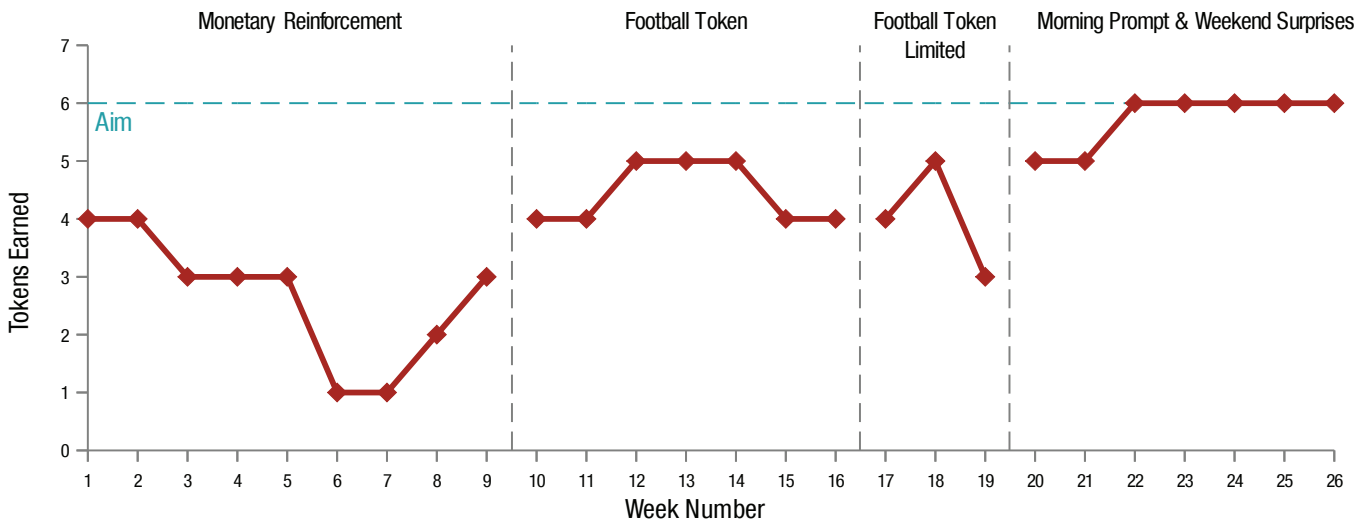


Figure 2. Total weekly tasks completed.

contact with an object towards staff or peers. Contact is not a criterion (contact could be a staff block or staff avoiding contact). An incident ends after ten minutes in the absence of the behavior.

**Dangerous behavior in car:** Any time Michael removes his seatbelt, kicks the driver or passenger seats, opens windows when instructed to keep them closed, or shouts at the driver or passengers. An incident ends after ten minutes of absence of the behavior. Precursors to this behavior are repeated requests to drive in a certain direction and demanding control of the radio but on their own are not considered an incident.

**Property destruction:** Any time Michael throws or makes contact with his hand, foot or item against other items found in or outside the property (resulting in a visible alteration or auditory noise from contact). Contact is a criterion. An incident ends after ten minutes in the absence of the behavior.

### PROCEDURE

A multi-element behavior support plan was implemented, consisting of the following:

- A new point system was implemented, to increase cooperation with household chores such as bed making and tidying of the area. A concurrent token system was implemented, targeting less crucial behavior's such as letting someone else choose a movie, playing a game with staff, and eating portions of fruit and vegetables. Choice of tasks was provided.
- A good behavior contract targeting days free of incidents was implemented. The initial contract was 14 days; the contract was reset if an incident occurred.
- For Intervention 1, the target behaviors for the good behavior contract were 'Physical Aggression' and 'Dangerous Behavior in Car'.
- For Intervention 2, the target behaviors for the good behavior contract were 'Physical Aggression'; 'Dangerous Behavior in Car' and 'Property Destruction'.
- A response cost was implemented, consisting of removing access to the TV and associated items (computer, PlayStation) for 24 hours following an incident of the target behaviors mentioned above.

## RESULTS

As seen in Figure 1, the behavior support plan reduced the number of incidents to 0 per month, following an initial extinction burst. Of the eleven incidents in October, three incidents occurred on the day following the implementation of the plan. The frequency of incidents did decrease during the baseline phase; however, the client started school this month and so had less contact with staff.

## STUDY 2

In addition to displaying high levels of aggressive and challenging behavior, the client also had a severe lack of personal hygiene skills. The domestic conditions and parental neglect of the client's previous twelve years had resulted in a poor self-awareness of levels of personal hygiene. As enuresis and encopresis were a constant issue in the client's daily life, self-awareness as well as functional skill acquisition was addressed.

### ASSESSMENT

Following a period of task analysis and probe testing of skill levels, the following daily skills were identified as requiring behavior support:

- The wearing of clean and appropriate clothing
- Flushing and cleaning the toilet after use
- Following an exercise plan for one hour
- Daily shower
- Morning and nightly routine of washing hands and face, brushing hair and teeth

### PROCEDURE

#### SKILL TEACHING

To ensure the participant had the skills to complete each of the target behaviors a brief period of skill teaching was implemented consisting of the following:

- Modeling and verbal prompts were used to teach ablu-tion skills, toilet cleaning, and teeth brushing.
- A supplement of dental plaque disclosing tablets were utilized to aid with identifying why teeth require cleaning daily following the skill acquisition.

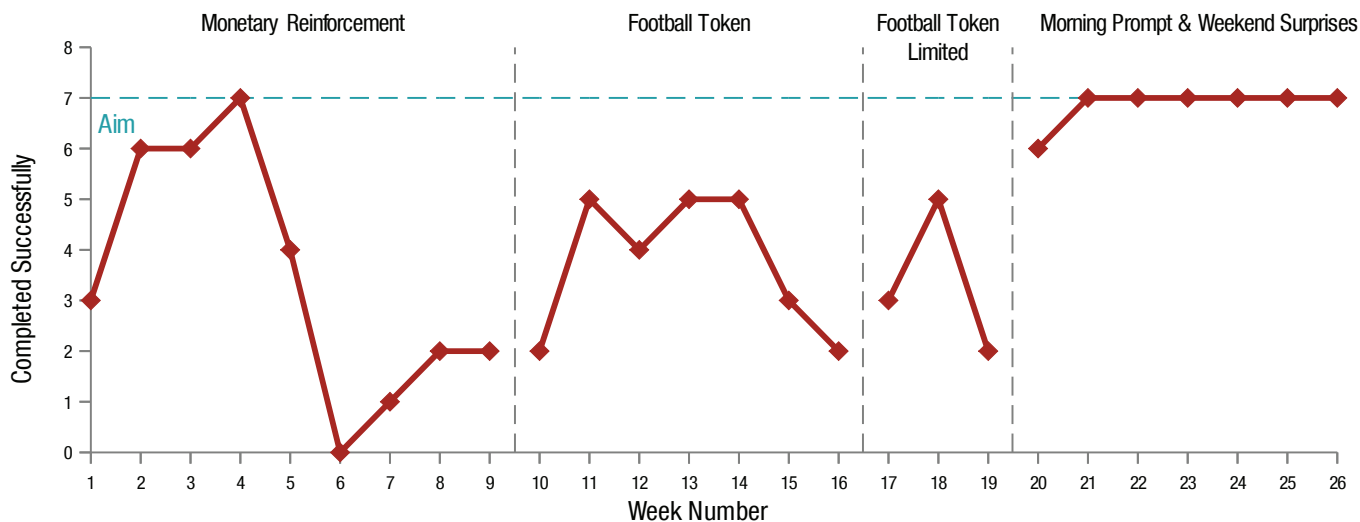


Figure 3. Weekly totals of compliance with morning routine (wash hands & face, brush hair & teeth).

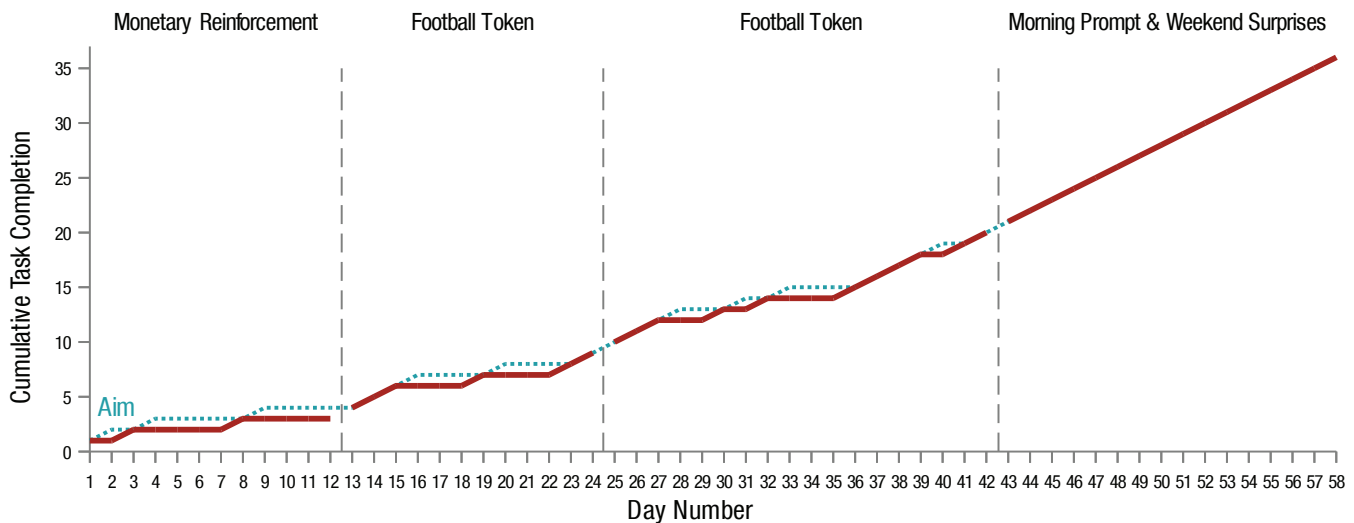


Figure 4. Daily compliance with morning routine.

### ENVIRONMENTAL ARRANGEMENT

With skill teaching established, the environment was prepared to maximize the opportunities for success. Clothing apparel was augmented with new size and weather appropriate clothing, laundry baskets were established in the client's bedroom and adjacent to the washing machine, preferred fragrances and toiletries were supplied and choices of enjoyable exercise activities were offered.

### BEHAVIOR PLAN

Token economies were previously established for auxiliary ongoing behavior acquisition, reduction or increment and the client participated in designing a token reward system for supporting his new hygiene routine. Each task was rewarded with a token and a weekly average of 5 tokens resulted in a supplement to the Michael's pocket money of 2 euro, 6 tokens were 2.50 euros and 7 tokens were 3 euros. As tasks were chained and grouped together, additional tasks added such as washing before meals, and delivering and putting away laundry, variations of the monetary reward system were manipulated. Throughout, this strategy influenced the client's behavior adequately enough to produce a pattern of responding but not enough to provide opportunities for reinforcement. Accompanying behavior programs were providing similar reinforcers for less effort and satiation was achieved prior to response opportunities within the hygiene program. The crossover effects limited the value of the token and it was essential to modify the program.

The token system was therefore integrated into a successful ongoing embedded token economy where tokens represented opportunities for monthly football related rewards within a system designed to achieve an opportunity to visit a football field at the end of the year. The tasks were now grouped to present 6 distinct opportunities for achievement and completion of all 6 each day was reinforced by 1 Football Token. The value of the token was maximized as it could not be earned outside of these two programs. Meanwhile, seeking social praise and pride in personal appearance were evident to support staff and external agency personnel. There were still some diluting effects from the concurrent program; therefore, it was redesigned to ensure that the hygiene token was essential to achieve the monthly

football – related reinforcer. Minor acts of non-compliance often resulted in missed opportunities due to leaving one task incomplete with no occasion to rectify the situation (e.g. morning routine can't be completed at night) therefore a verbal prompt for teeth brushing was introduced to act as an impetus for other tasks prior to school attendance.

Unstructured days continued to be a source of difficulty for the client (see Figure 2). Examination of the data showed that problem areas were morning and night teeth brushing, daily showers and cleaning the toilet. The days were restructured so that toilet cleaning was in the morning and showers were at night. Verbal prompts were used in the morning to encourage teeth brushing thus maximizing the opportunity for success at night when only a shower and teeth brushing were required to earn a token

For unstructured days (weekends and school holidays), the pattern shown in the graph for the morning routine (see figure 3) was similar to the response pattern for taking showers and completing the night routine. It can be clearly seen that every two days out of seven and during the mid-term week holiday, compliance with the program deteriorated. The social reinforcement from peers during school time was enough to support the client; therefore, only unstructured non-school days were targeted to counteract their limiting effects. To eliminate this negative pattern on the weekend and during school holidays, additional reinforcers were made available in the form of wrapped surprise novelty items (painting set, bubble maker, sponge ball, play dough, buried treasure, etc.) immediately upon dressing and completion of morning routine. With compliance firmly established and pride of appearance notably apparent, the verbal prompt for morning teeth brushing was faded out. The unstructured day's reinforcers were faded first to two concurrent days for one prize and then only on school holidays until no longer required at all.

The diluting effects of concurrent programs and the availability of equal reinforcement for alternative behavior programs hampered the effectiveness of the program. Once the value of the token was important to the client, a positive pattern of responding occurred and opportunities to reinforce the desired behavior both with tangible and social reinforcers presented

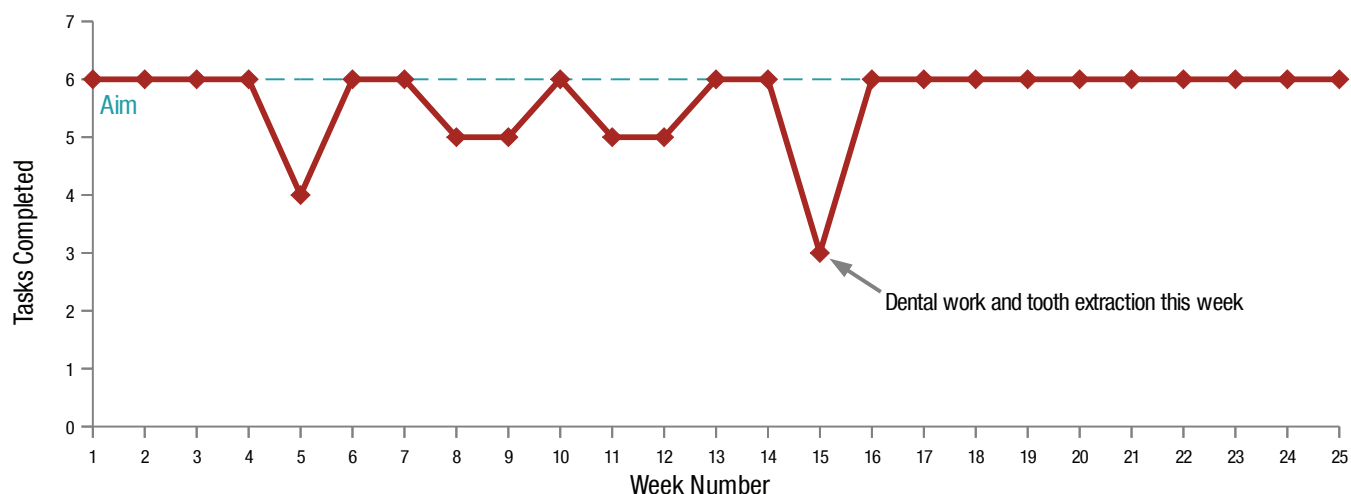


Figure 5. Current status of total weekly tasks completed.

themselves (see Figure 4). With positive behavior being reinforced, it occurred at an increased rate but did not achieve the 100% aim. Modification to the paired program was possible and introduction of the verbal prompt had a domino effect on all desired behaviors. After unstructured days were targeted and supplementary reinforcers were provided where reinforcing events were limited, compliance reached 100% (see Figure 5). Not all behaviors required additional reinforcers. Those behaviors that occurred in the evening or end of the day were reinforced by the token itself.

## DISCUSSION

The follow-up data for all personal hygiene tasks showed a consistent pattern of completion of all tasks, with the exception of days he was unable to complete morning and night teeth brushing due to extensive dental work. Michael appeared to have learned the need for and benefit of personal hygiene regulation and self-maintenance. He was no longer identified by his peers as having a noxious personal odor, he attended peer related social events, and his orthodontist was pleased with his attention to dental hygiene. Generalization of hygienic behavior had occurred in school and sports club settings. Michael initiated additional showers after a sporting event and began to wash his hands unprompted prior to preparing food. Response cost, token value, reinforcer magnitude, and concurrent program dilution effects all needed to be considered when the program was producing inconsistent responses. In addition, limiting access to events by requiring compliance with more than one section of the program was invaluable to the success of the program. Currently, all behavior supports have been withdrawn and only natural positive social consequences are maintaining Michael's hygienic behaviors.

## GENERAL DISCUSSION

The purpose of these two studies was to show how applied behavior analysis could be utilized to treat the challenging behavior of a 12-year-old male with a history of abuse and neglect and the data have shown that this approach was indeed successful in reducing challenging behavior and teaching pro-social be-

haviors.

The difficulties outlined in the introduction were indeed encountered during the implementation of the behavior support plans, but through training, providing positive reinforcement, and monitoring of staff, consistency was maintained. Initially there was some resistance from staff at taking what was viewed as a rather clinical and overly structured approach with a young person who had been so traumatized. Also staff reported that they preferred to 'reason' with Michael and to use their relationship to de-escalate his behavior. However, as the data showed, this approach was not reducing challenging behavior and dangerous car behavior was increasing in both frequency and intensity.

Another issue some staff members reported was that the program was artificial, and that Michael should not be rewarded with points for behavior that was expected of him and that it was effectively bribing him. This point is often raised with young people who have good verbal skills, especially teenagers (Goldstein, Harootunian, Close, & Conoley, 1994), the objection being that these behaviors should be intrinsically rewarding. This does not help when these behaviors are not intrinsically rewarding for a particular individual. Goldstein et al. (1994) argue that this view is hypocritical, because in society there are external rewards present. The issue in the setting of the current study was addressed by discussing with staff the external rewards they receive, such as payment for work, and querying if they would exhibit the behavior of working their shifts if this external reward system was not in place. As Goldstein et al. (1994) add we cannot punish these young people for not exhibiting behavior that is expected by society, as some of them genuinely do not know what society expects.

In a traditional household, we learn the behaviors and social norms of society through modeling from our parents, and contact with natural contingencies. If parents provide consistent care and attention they become conditioned reinforcers – what Bowlby (1988) and Ainsworth (1989) would call 'attachment'. When parents do not provide this consistency, the child has different learning experiences. When parents are neglectful of the child's demand for attention, they put these demand behaviors on an intermittent schedule of reinforcement, thus strength-

ening both the frequency and intensity of these behaviors. If this continues as the child grows, what is called 'tantrums' in a young child manifests in aggressive and violent behavior in adolescence. Similarly, if children are abused by their parents, they do not learn the natural contingent relationship between appropriate behavior and rewards. Rather, aggressive behavior is modeled and the child can learn through observation that this is an effective method of getting people to comply. They also learn coercive and manipulative behaviors (Prather & Golden, 2009) which can lead people to believe they are more mature than they really are. Research has shown that this can lead to significant problems for adoptive and foster parents (Dyer, 2004). This is likely to be amplified in residential settings, where staff change shifts frequently and the attachments that are built (with particular direct care staff, for example) can be broken easily when that staff member leaves, further reinforcing the manipulative behavior. When a child is removed from an aversive family situation and placed in what is supposed to be a secure and safe environment, but yet is still let down, the child is likely to feel that there is no point in exhibiting good behavior.

Anecdotal reports from staff during the implementation of the program, when they began to see success, were very positive. Again the discussion centered around their relationships with Michael, and being able to verbally de-escalate him was positively reinforcing for them. They also reported positively about implementing the response cost consistently across people. Since it was a strategy agreed upon and implemented by all, they did not feel guilty when delivering this consequence nor were they individually targeted by Michael, as the consequence was the same across people. One of the behaviors targeted by the football tokens program was reading aloud with staff. This behavior was selected for several reasons: to improve his reading ability, to encourage activities not related to the television, and to condition staff as reinforcers (or in their words, 'to build a relationship'). Despite initial misgivings at giving artificial reinforcement for this, it was reported as the staff and Michael's favorite part of the day. The activity became intrinsically rewarding for both parties and it has continued long after the tokens stopped.

A tactic that was used across all aspects of this program was the provision of limited choice. This was to target the issues around control that were observed and also expressed by Michael himself. As we know from behavior analytic literature, choice is hugely important to people, both as a choice of tasks (Dunlap et al., 1994; Koegel, Dyer & Bell, 1987) and as a reinforcer (Tiger, Hanley & Heal, 2006). This negated the need for some of the verbal discourses that had occurred between staff and Michael around issues of control and increased appropriate choice making, as desired behaviors that were occurring at a low rate were weighted to increase the likelihood of Michael choosing them. For example, at the beginning of the program reading with staff earned Michael 3 points, whereas most other activities earned him one or two. Previously, being told he had to read

with staff had triggered incidents of challenging behavior.

The first study is a snapshot of the use of behavior methods to decrease challenging behavior in a child with a history of maltreatment and the authors hope it can be a starting point for similar data-driven research with this population. One limitation of the first study is its relatively unique setting consisting of a 2:1 staff-to-child ratio, the child not living with peers, and the child constantly being supervised when with peers. An additional limitation is the lack of empirical data to back up the anecdotal evidence provided by staff since, as mentioned in the introduction, taking reliable data in these settings is difficult. The data that are presented in this study are reliable and well documented, as this documentation was already part of the requirements in that setting (i.e., documentation of incidents and of self-care is required by the state) and this method of data collection was already in place.

Another avenue to investigate is the generalization of the appropriate behavior. This study showed how challenging behavior can be reduced in the constant presence of a behavior support plan, but not whether that would maintain in the absence of this structure, or in the absence of the staff that had become conditioned reinforcers. Whether generalization of treatment gains would be considered rule-governed behavior or the development of a 'moral conscience' has been discussed in the literature (Termini & Golden 2007). Either way, it is an area that would benefit from further single case study research with children with histories of maltreatment.

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