Helping a Child with ASD Overcome an Aversion to Socially-Mediated Reinforcement

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Abstract
This case study illustrates the development of a unique reinforcement system for a student with autism spectrum disorder (ASD) who had a strong aversion to socially-mediated reinforcement (i.e., any reinforcement delivered by a person) which significantly impacted his daily behavior. Social reinforcers such as, verbal praise, eye contact, gestures, smiles, etc., were completely eliminated and then systematically re-introduced resulting in considerable behavioral improvement for the student.

Introduction
Many studies have investigated the benefits of using behavioral techniques such as instructional fading, conditioned reinforcers, contingent reinforcement, shaping, and visual supports. Specifically, these studies have highlighted the efficacy of these behavioral techniques in applied settings with children with (ASD). Additionally, several studies have investigated the relationship between cognitive rigidity and behavioral rigidity. It is possible that problem behavior may be related to behavioral rigidity. The use of these behavioral strategies to increase acceptance of socially mediated reinforcement as it relates to problem behavior and behavioral rigidity has not been extensively examined in this population.

Taylor, Ekdahl, Romanczyk, and Miller (2004) evaluated the relationship between low and high social interactions across settings with children with ASD in frequency of inappropriate behavior. The authors found that there was an increase in the frequency of inappropriate behavior following the combination of therapist request and social statements (e.g. Sit down, nice job!).

Peyton, Lindauer, and Richman (2005) observed that problem behavior occurred at differentially higher rates during demand situations when directive prompts were used.

Charlop-Christy and Haymes (1998) observed increased accuracy on tasks and decreased rates of inappropriate behavior when student obsessions were incorporated into token systems.

Ringdahl, et al. (2002) suggested that the use of instructional fading resulted in low levels of problem behavior and these results were sustained as the instruction rate increased.

Researchers have also found that restricted and repetitive behaviors and interests have been proposed to be associated deficits in cognitive flexibility. Cognitive flexibility deficits were related to rigidity in behavior which often leads to problem behavior. (Geurts, Corbett, & Solomon, 2009; Van Eyslen, et al., 2001).

Method

Participants: The participant, a 7 year old boy with a diagnosis of ASD, had been enrolled in an intensive center-based program for at least two years. Prior to the intervention, the student engaged in high rates of maladaptive responses to socially mediated reinforcement, oppositional behavior, and frequent episodes of maladaptive behavior in response to instructional demands including: undressing, hitting, elopement, spitting, property destruction, screaming and crying. The student also engaged in rote, repetitive behavior such as scripted verbal responses, scripted imaginary play scenarios, and strict adherence to arbitrary routines which was indicative of behavioral rigidity.

Setting and Materials: The intervention took place in the student’s classroom, a self-contained autism class with 7 students and 2 teachers. The classroom included a cool down area, a 7 x 8 space, with mats and pillows. A visual with the letters MARIO WORLD was placed on the wall and each letter was covered by a brick “door”. A key was adhered to the wall next to the visual and the key was used to open Mario World. Mario World consisted of a locked back pack which contained a collection of highly preferred toys, pictures, and activities. A daily behavior note was also used throughout each phase of the intervention.

Data collection: Throughout all phases of the intervention, including baseline, trial-by-trial data were collected on frequency and intensity of maladaptive behaviors and on percentage of acceptance of backup reinforcers. Acceptance was defined as absence of verbal refusal or protests or attempts to physically remove or destroy any part of the system. Data were also collected on the student’s frequency of participation during 3 randomly selected activities per week. Data were collected for 15 minutes per activity.

Procedure, Phase 1: Elimination of Social Reinforcers
Verbal praise, gestures, eye contact, and any approval of the student’s behavior were completely eliminated throughout the school day, including during token delivery. When the student engaged in appropriate behavior, the teacher “opened” a door on the Mario World visual while stating that the door was open in a neutral tone of voice (e.g., Door 1, Door 2, Door 3, etc.). Behaviors targeted for increase were determined in advance for each activity.

Instructional Fading: The following behaviors were systematically increased using a combination of instructional fading and the reinforcement system: proximity of student to group, sustained group interaction, and each letter was covered by a brick “door”. A key was adhered to the wall next to the visual and the key was used to open Mario World. Mario World consisted of a locked back pack which contained a collection of highly preferred toys, pictures, and activities. A daily behavior note was also used throughout each phase of the intervention.

Results

In phase 1 of the intervention, the student accepted 99% of tokens delivered. The frequency of intervals containing maladaptive behavior decreased from an average of 2 intervals per day to an average of 0 intervals per day. The frequency of the student’s participation in group lessons increased from 0 responses per 15 minute interval to an average of 5 responses per 15 minute interval. In phase 2 of the intervention, the student accepted 97% of tokens delivered by his teacher + social reinforcers. The student maintained high rates of participation and low rates of maladaptive behavior throughout phase 2 of the intervention.

Discussion
This intervention resulted in significant behavioral improvement for the student. Following the initial implementation of the intervention, a significant decrease in inappropriate behavior and reinforcement refusal was observed. Most importantly, the student engaged in high rates of pro-social behavior including participation in group activities, interactive play with peers, spontaneous conversations with peers, and acceptance of various forms of socially-mediated reinforcement (e.g. verbal praise, gestural approval, eye contact, etc.). Additionally, the student made significant academic gains and his teachers were able to accurately measure his skill levels in a wide variety of subjects.

References