

Tantrum Elimination through Self-Control:

A Paradigm that Employs Self-Awareness, Social Cognitive Learning and Executive Function

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Abstract

A paradigm employing self-awareness, social cognitive learning and executive function was used to teach three six-year-old boys diagnosed with (ODD) Oppositional Defiant Disorder, secondary to (ADHD) Attention Deficit Disorder and in one case (PDD) Pervasive Developmental Disorder, to issue self-initiated control over their tantrum behavior. The Self-Control paradigm was compared to two baseline conditions: B1 (initial data collection) and B2 (planned ignoring/"extinction") conditions. Tantrums were reduced in half but not eliminated for two of the three boys in the B2 condition. Extinction for the third boy failed. The paradigm utilized parents, trained in one session, to be agents of change in the natural setting of the home. Each boy viewed a video recording of one of his tantrums, while listening to his parent read or recite "The Message". "The Message" was designed to externalize blame (White & Epston, 1990); communicate the impression that the child's idealized self was being held hostage by the tantrum (Siegel & Bryson, 2012) and predict a no-reward outcome. Parents offered cued reminders of "The Message" at the first behavioral indicators of an imminent tantrum event and praised all successive behavioral displays of self-control. After an "extinction burst", all three children were able to eliminate their tantrum behavior.

Keywords

Tantrum; ODD; self-control; learning; ADHD; PDD

1.0

Introduction

Tantrum elimination has been an objective of pediatric psychology since the very inception of its field of study (Watson, 1928). Tantrum behaviors such as hitting, kicking, biting, throwing objects, crying and screaming are the most frequent reason for preschooler-referral to outpatient mental health services (Luby & Morgan, 1997; Renk, 2007). Tantrums disrupt family functioning and parent-child attachment. When the problem behavior occurs in the school setting, classroom decorum and education is compromised.

Interventions to reduce the frequency and intensity of tantrums or eliminate them altogether have been in place for the past fifty years; yet, their pragmatic usefulness for parents and/or schools is questionable. The earliest intervention for elimination of tantrum behavior was extinction (removal of parental attention) (Williams, 1959). Extinction, or simply ignoring the behavior, became the treatment of choice (Hawkins, et.al., 1966; Whaler, 1969; Wolf, Risley & Mees, 1964; Kakkar, 1972), and continues to be recommended by pediatricians (Beers, 2003). However, many parents cannot sustain ignoring for long enough (Whaley & Malott, 1968) and continued use of withdrawing parental attention (extinction) was at times reported to be blatantly unsuccessful (Thelan, 1979).

Time out from reinforcement (TO) has been used almost as frequently as extinction to quell the tide of tantrums. The success of TO has been haphazard as well particularly because: (a) For certain children in certain settings time out may function as positive reinforcement by allowing for escape from a demand situation (Carr & Newsom, 1985; Carr, Newsome & Binkoff, 1980) or provide opportunity for self-stimulation (Solnick, Rincover & Peterson, 1977), (b)

Parents cannot physically enforce time out (Thelan, 1979), because it is viewed as an aversive event and children typically avoid or try to escape from it (Leitenberg, 1965; Roberts, 1982).

Functional assessment (FA) has received massive amounts of contemporary attention as an intervention to decrease aggression and tantrum behavior in children with Autism Spectrum Disorder (ASD) (Hanley, Iwata, and McCord, 2003; Matson, 2009). FA employs the expertise of several professionals to focus on the problem behavior of one child in order to target the function of the tantrum behavior and then supplant it by differentially reinforcing other behavior (DRO). This has proven to be effective in school settings where observers and behavioral specialists can be enlisted. However, FA does not seem to be particularly pragmatic when considering the plight of parents, who may not have access to behavioral specialists.

More recently, tantrums and explosive episodes have been conceptualized as a default response, when the child's cognitive deficits, mostly in executive process, language processing and/or emotional regulation, render the child to be incapable of handling the real or perceived demand intensity of the situation (Green and Ablon, et al. 2004). The resultant treatment, "Collaborative Problem Solving" (CPS) has been shown to reduce the use of restraint and seclusion in response to explosive events (Martin, Krieg, et al., 2008). However, like FA, CPS requires a team of professionals over multiple training sessions to implement.

An even newer ASD tantrum-treatment trend has been the use of antipsychotic drugs to treat even very young children (Matson & Dempsey, 2008; Zito, et. al. 2007). Some studies have found Risperidone and Haldol to be no more effective than placebo (Tyrer et al., 2008; Matson & Wilkins ,2008) and have suggested discontinuing the pharmacological intervention.

The present research examined a parent's ability to teach their child to issue self-control over their proclivity to tantrum. Evidence of the natural existence of self-control has emerged

from observations of immediate tantrum termination (Potegal, 1996) and additional observations that many children confine their tantrums to the home environment, while controlling their explosiveness in school (Thelan, 1979; Altman & Krupsaw, 1983). Learned self-control or emotional regulation was considered to be the most efficient solution in terms of time, personnel and cost as compared to FA and CPS and perhaps a more effective solution in eliminating tantrum behavior than extinction or time-out.

2.0 METHOD

2.1 *Participants*

Three 6 year-old boys, diagnosed as having Oppositional Defiant Disorder (ODD), and their mothers were selected to participate. All three children had been referred to an outpatient mental health clinic for the treatment of their disruptive behavior. Two of the boys were referred to Wellspan Behavioral Health in York, PA and one was referred to TEAMCare Behavioral Health in Lancaster, PA. Two boys were recruited using IRB guidelines and the third, in a different setting, using ethical compliance guidelines just prior to their attendance (both parents and children) in a group parent management training program for ODD called FAST (Family Attachment Skills Training).

2.1.1 *Participant 1 (Fletcher):* Fletcher, age 6, was diagnosed with Attention Deficit Hyperactivity Disorder (ADHD); ODD. Mother reported that he had tantrums throughout the day. During a tantrum he would hit, pinch, kick, pull the dog's tail, yell and use profanity. Verbal threats included: "I'm gonna kill myself." During tantrum mode, he also threatened to

burn down the house. He once held a knife to his neck screaming, “Everyone hates me!” He confined his tantrums to the home environment.

2.1.2 *Participant 2 (Nikolas):* Nikolas, age 6, was diagnosed with ADHD; ODD. Mother reported that he had multiple tantrums during any given day. During a tantrum he banged on walls, broke objects; slammed the doors to mother’s curio cabinet. He once kicked a hole in the back door window. He confined his tantrums to the home environment.

2.1.3 *Participant 3 (Conner):* Conner, age 6, was diagnosed with Pervasive Developmental Disorder (PDD); ADHD; ODD. Mother reported that he had “meltdowns” four to five times per-day and on some days every hour. He was described as a very anxious child, who in tantrum mode, cried, pinched, hit, kicked and pulled the dog’s tail and legs. Loud noise would trigger a tantrum. He had tantrums in school though he was not aggressive with peers. Mother had tried Time Out but he would not stay in the Time Out area

2.2 *Behavior definitions*

Tantrums were defined as verbal aggression in the form of yelling, threatening, using profanity and/or any physical aggression demonstrated by throwing or breaking objects, slamming doors, hitting siblings or the family pet.

Self-Control was defined as heavy breathing, gulping air and/or quiet crying without verbal aggression. Self-Control also included the inhibition of all physical aggression.

2.3 *Procedure*

Parents reported the number of waking hours they were with their child each day of the week. Parents were given data sheets that required them to fill in the Date, Time Start, and Time

Stop of each tantrum occurrence. The data sheets provided a record of the frequency and duration of every tantrum episode. The total number of minutes the child engaged in tantrum behavior each day was divided by the total amount of time the child was in the presence of the parent for that day. The calculated behavioral rates of tantrums collapsed both frequency and duration of tantrums for each day, while in the parents' presence. The behavioral rate was also used in order to provide a numeric index of the severity and impact of the tantrum behavior upon the household.

Parents used their cell phones in order to observe and record the digital time start and time stop of each tantrum occurrence. Parents also were instructed, using their cell phone, to obtain one video recording of a typical tantrum, from a feasible distance, while maintaining silence. Parents were then taught the self-control learning paradigm via a ten minute lecture and demonstration and given a verbal script of the "The Message" to memorize or read.

2.4 *Measurement and reliability*

All three mothers kept daily records of the time start and time stop for each tantrum occurrence. Fathers of two of the children and grandmother of one also recorded the same data, usually during the week end, for reliability calculations. Percent agreement was calculated for occurrence, nonoccurrence and exact duration for 36% of the tantrum episodes in each of the three conditions: baseline, planned ignoring (extinction) and learned self-control. Percent agreement was computed by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100.

2.5 *Baseline*

Parents were asked to record the occurrence and termination of tantrum episodes for ten days with no further instructions.

2.6 *Planned Ignoring (Extinction)*

Parents were asked to continue to record the occurrence and termination of tantrum episodes without talking to, touching, or interacting in any way with their child. Parents were told to “disconnect” from their child immediately at the onset of a tantrum and to walk to a separate location where data sheets were kept for recording the episode. Instructions included the possibility that the child’s rage-state might present a danger to themselves or others. If that circumstance were to occur, parents were instructed to intervene as necessary. No subjects required such an intervention for safety purposes.

2.7 *Self-Control Learning Paradigm Overview*

Each child viewed a video recording of his/her own tantrum (during a calm interlude) while listening to “The Message.” As a narrative, the intent of “The Message” was to: (a) externalize the tantrum state, by giving it a name, “Tantrum Monster/Mr. Tantrum” thereby dispelling blame (White & Epston, 1990); (b) depict the tantrum as a victimized condition (the frontal lobe is held hostage) that made one’s self “act like a baby”(Siegel & Bryson, 2012), and (c) predict that no gain or winning outcome would result from engaging in a tantrum episode, thereby increasing the probability for social cognitive learning (Bandura, 1986). Pairing the video with “the Message” was designed to gain receptivity (by externalizing blame) and hold the child’s attention, while at the same time create a salient, emotive experience to further insure that learning would take place.

2.7.1 *The Paradigm Procedure*

The Self-Control Learning Paradigm consisted of four parts:

- (1) Showing the child a video of one of their tantrums at a calm time, while
- (2) Listening to “The Message” (See Table 1)
- (3) Cueing the child at the onset of the next tantrum to remind them of the Learning Paradigm (“Oh, I don’t pay any attention to Mr. Tantrum”) and then walking away
- (4) Praising the child after observation of behavioral indicators of self-control and a significantly diminished tantrum episode.

2.8 *Experimental Design*

A multiple baseline design (Baer, Wolf and Risley, 1968) compared two conditions: Baseline 1, in which parents were instructed to simply record the frequency and duration of each tantrum, and Baseline 2 (Planned Ignoring), in which parents were instructed to not react to the tantrum behavior and continue to record the same data. These conditions were compared to the efficacy of having parents use an observational/social learning paradigm that would hopefully help their child to mediate self-control over their proclivity to engage in tantrum behavior.

3.0

RESULTS

Baseline and treatment periods varied by a few days across subjects. Despite instructions, parent for participant one collected data for 10, 10 and 17 days. Parent for participant two collected data for 14, 10 and 18 days. Parent for participant three collected data for 11, 10 and 20 days.

3.1 Fletcher (Participant 1): Inter-observer agreement for the occurrence and nonoccurrence of tantrums was 100%; duration=93%. His tantrum duration ranged from 39 min. to 2 min. Comparing Baseline 1 to Baseline 2, Fletcher's mean behavioral rate of tantrums dropped from .06 to .02, which is a drop of 60%. In the Learned Self-Control condition, Fletcher was tantrum-free for three days following exposure to the learning paradigm. He then exhibited an "extinction burst" engaging in a 15 min., a 3 min. and finally a 7 min. tantrum on each of the next three days. Thereafter, Fletcher's tantrum rates stopped and he no longer exhibited the disruptive behavior for an observed 11 days. Thirty-six months later, Fletcher's mother honored a request for data and the record showed no further tantrum behavior. (See Figure 1)

3.2 Nikolas (Participant 2): Inter-observer agreement for the occurrence and nonoccurrence of tantrums was 100%; duration=100%. His tantrum duration ranged from 19 min. to 3 min. Comparing Baseline 1 to Baseline 2, Nikolas' mean behavioral rate of tantrums dropped from .007 to .004, which is a drop of 43%. In the Learned Self-Control condition, Nikolas was tantrum free for two days. He then exhibited an "extinction burst" engaging in a 7 min., 4 min., 6 min. and finally a 4 min. tantrum on each of the next four days. Thereafter, Nikolas' tantrum

rates stopped and he no longer exhibited the disruptive behavior for the next observed 13 days.

Thirty-six month follow-up data was requested but not obtained. (See Figure 2)

3.3 Connor (Participant 3): Inter-observer agreement for the occurrence and nonoccurrence of tantrums was 100%; duration=75%. His tantrum duration ranged from 22 min. to 2 min.

There was no change in mean behavioral rate from baseline 1 to baseline 2 condition. In the Learned Self-Control condition, Connor exhibited the longest “extinction burst” engaging in a 1 min., 0, 2 min., 0, 0, 2 min., 2 min., 3 min. and finally a 34 min. tantrum on each of the next 9 days. Thereafter, Connor’s tantrum rates stopped and he no longer exhibited tantrum behavior for a recorded 13 days. Twelve month follow-up data was requested but not obtained. (See Figure 3)

4.0 DISCUSSION

Results of the present study demonstrate that children whose emotional regulation is compromised can be taught to self-suppress explosive, tantrum episodes. All three children, in Figures 1, 2, and 3 demonstrated complete control over their tantrum behavior, thereby eliminating it. The plausibility of self-control is particularly relevant when considering the contemporary view of childhood anger from a neurobiological perspective. One contemporary parenting approach teaches the explosive child the connection between their “upstairs brain” and their “downstairs brain.” (Siegel & Bryson, 2012). This self-control learning paradigm was successful at teaching three volatile children to issue executive function control over their previous primitive habit of engaging in tantrum behavior.

It is of interest that this self-control was issued after an observed “extinction burst” for each of the children. It was as if the boys needed to test the promise that “Mr. Tantrum or the Tantrum Monster would never get his way.” Therefore, extinction in the natural setting reduced behavioral rates for two of the boys but did not eliminate the behavior.

This self-control paradigm could be considered to be much more efficient in terms of time, personnel and cost than FBA, CPS, and more effective than extinction (which is the current default treatment recommendation given to parents and teachers). Learned emotional regulation has implications for lifelong successful adaptation to frustration and an enhanced sense of self-efficacy and resilience as the child progresses developmentally. Additionally, in treating children who are explosive and the adults held hostage by the disruption that tantrums create, this paradigm for learned self-control can serve as a more effective and compassionate solution than pharmacological treatment.

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Table 1

The Message

Purpose	Narrative
Attention getter/ Externalizes blame	“Who is that? I don’t know who that is! That’s not my (insert your child’s name).
Externalizes blame/ Provides insight that the Tantrum Monster has hijacked the idealized self	That can’t be you! That child is acting just like a baby!
Externalizes blame Increases Receptivity	Oh wait. Oh, wait. I know who that is. That’s Mr. / Miss Tantrum or (The Tantrum Monster)...Yes! Mr./Miss Tantrum
Prediction of no reward to increase probability of social cognitive learning	You know what? I will never, ever give into Mr. /Miss Tantrum. He/ She acts like a baby and I will never, ever give him/her what he/she wants. I am always going to walk away, when I see Mr. / Miss Tantrum.”



