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Acceptance and Commitment Training to Enhance a Behavioral Parent Training with Parents of Children with Autism

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Acceptance and Commitment Training to Enhance a Behavioral Parent Training with Parents of Children with Autism

by

Jillian DeFreitas

A thesis in partial fulfillment of the requirements for the degree of Master of Arts Applied Behavior Analysis Department of Child and Family Studies College of Behavioral and Community Sciences University of South Florida

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Keywords: Applied Behavior Analysis, parent-child interactions, parenting tools, parenting skills

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Table of Contents

List of Tables

List of Figures

Abstract

Chapter One: Introduction
  The Role of Verbal Behavior in Parenting
  Experiential Avoidance and the ACT Model of Psychological Flexibility

Chapter Two: Method
  Participants
    Tiffany
    Tamra
    Dutney
  Setting
  Materials
  Experimental Design
  Dependent Variables and Measures
    Direct
    Indirect
  Interobserver Agreement
  Parenting Skill Implementation Integrity
  Negative Interactions
  Child Problem Behaviors
  Treatment Integrity
  Procedure
    Baseline
    Behavioral Parent Training
      ABC Data
      Minimizing Negative/Coercive Interactions
      Use Differential Reinforcement
      Ignore Junk Behavior
      3-Step Prompting
    Acceptance and Commitment Training
      Session 1
      Session 2
      Session 3
      Sessions 4-8
    Follow-up
    Social Validity
Chapter Three: Results

<table>
<thead>
<tr>
<th>Multiple Baseline</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiffany</td>
<td>33</td>
</tr>
<tr>
<td>Direct Measures</td>
<td>33</td>
</tr>
<tr>
<td>Indirect Measures</td>
<td>34</td>
</tr>
<tr>
<td>Tamra</td>
<td>35</td>
</tr>
<tr>
<td>Direct Measures</td>
<td>35</td>
</tr>
<tr>
<td>Indirect Measures</td>
<td>36</td>
</tr>
<tr>
<td>Dutney</td>
<td>37</td>
</tr>
<tr>
<td>Direct Measures</td>
<td>37</td>
</tr>
<tr>
<td>Indirect Measures</td>
<td>38</td>
</tr>
</tbody>
</table>

Chapter Four: Discussion

References

Appendices

| Appendix A: ACT Components and Definitions | 59 |
| Appendix B: Treatment Integrity Checklist   | 61 |
| Appendix C: Parenting Skill Task Analysis & Exercises: ABC Assessment | 65 |
| Appendix D: ACT Comprehension Questions    | 66 |
| Appendix E: Social Validity Questionnaire  | 67 |
| Appendix F: IRB Approval Letter            | 68 |
List of Tables

Table 1: Indirect measures, subscales, and scoring guidelines. 15
List of Figures

Figure 1: Frequency of coercive interactions and percentage correct parenting skill implementation integrity across all phases of the study for all three parents. 39

Figure 2: Frequency of coercive interactions, percentage correct of parenting skill implementation, and child problem behavior across all phases of the study for Tiffany. 40

Figure 3: Frequency of coercive interactions, percentage correct of parenting skill implementation, and child problem behavior across all phases of the study for Tamra. 41

Figure 4: Frequency of coercive interactions, percentage correct of parenting skill implementation, and child problem behavior across all phases of the study for Dutney. 42

Figure 5: PAAQ scores for all three parents. 43

Figure 6: PLOCS scores for all three parents. 44
Abstract

Behavioral Parent Training (BPT) is an effective teaching package that is often used to teach new parenting skills. While BPT has been established as efficacious in teaching parenting skills, performance often returns to baseline levels. There may be myriad reasons for this; however, it is possible that competing contingencies in difficult behavioral interactions, and long histories of practices that solve behavioral issues in the short term, affect parents' ability to implement what they were taught. This study sought to impact parental treatment integrity of a common set of parent training practices via an Acceptance and Commitment Training protocol. Parents were exposed to a behavioral parent training workshop targeting three parenting tools. Follow up measures were collected on implementation integrity and rate of parental coercive behaviors. Low levels of parenting skill implementation integrity were observed during baseline. Following the BPT training phase, implementation of parenting skills showed an increasing trend while parental coercives decreased in level. For the parent who met mastery criteria for all three tools, a follow up period, in which no feedback or training was implemented, and a decrease in level in parenting skill implementation integrity was observed. Following this, the parent participated in an Acceptance and Commitment Training (ACTr) workshop consisting of experiential exercises, metaphors, and homework assignments. After the ACTr workshop, implementation of parenting skills showed a continued increasing trend toward mastery, and frequency of negative parent-child interactions showed a further decreasing trend, as well for all parents.
Chapter One: Introduction

Raising a child presents myriad opportunities for loving, positive interactions each day. So too, a variety of factors may affect the valence of these interactions such as expenses, child-noncompliance and other problematic behaviors, and stressors from daily life (Crnic & Low, 2002). These factors may be further exacerbated when a child is identified as intellectually disabled (Dyson, 1997; Schieve, Blumberg, Rice, Visser, & Boyle, 2007; Suppo & Floyd, 2012). Challenges in parenting are inevitable and unavoidable, but they become an issue when these challenges interfere with the parent’s ability to effectively manage his or her child’s behavior. When parents are exposed to aversive stimulation (stressors), they tend to behave without an understanding of the functions of behavior, in ways that may be effective in stopping the problem behaviors in the short-term, but may actually worsen the behavior over time. For example, if a mother takes a doll from her daughter to clean it, the child might cry and scream, upon which the mother might give the child her toy back. Consequently, parents are likely to only see here-now what is happening, and attempt to get it to stop as a discrete event; however, the effects are future oriented and thus the short term solution is likely to cause greater issues later.

It is common for parents to inadvertently reinforce their child’s problem behavior (Wahler & Dumas, 1986). This supports the notion that it is important for parents to learn how to manage contingencies (i.e., effectively use reinforcement and extinction) in order to support their child’s appropriate repertoire (Wierson & Forehand, 1994). As an important aside, parenting that is inconsistent (e.g., inconsistently responding to child’s behaviors, intermittent reinforcement schedules), and/or with high rates of negative interactions is correlated with a high frequency of behavior problems in adolescent children (Campbell, 1995).
Given the ease with which it is possible to shape undesirable child behavior that may facilitate building a history of negative interactions between parent and child, it is increasingly important to find effective strategies for teaching parenting and behavior management skills that are likely to be utilized over time. When behavioral treatment is implemented consistently, for most of the child’s waking hours, more robust behavioral improvements are observed (Eldevik, Eikeseth, Jahr, & Smith, 2006; Eldevik et al., 2009; Solish & Perry, 2008). Behavioral Parent Training (BPT) teaches parents to intervene at appropriate times, identify desirable alternatives, and provide consequences for their children’s behaviors. BPT tends to be taught through various training procedures, including modeling (in-vivo or video), role-play, rehearsal, and feedback (Graziano & Diament, 1992; MacKenzie, 2007; Suppo & Floyd, 2012).

An often cited source for material on parent training in clinical venues and some research is the *Tools for Positive Parenting* (Latham, 1994). This collection of parenting tools is based on behavior analytic principles and provides both information on the context of implementation of the tools and how to effectively implement each skill set (Cohrs & Weil, 2012; Van Camp, Vollmer et al., 2008). The tools include: *Staying Close, Giving Positive Consequences, Ignoring Junk Behavior, Pivoting Away, Stopping-Redirecting-Giving Positive Consequences, Setting Expectations, Using Contracts, Appropriate Use of Timeout, and Recording the ABCs of Behavior*. Although behavioral parent trainings are effective in teaching skills to parents through a behavior skills training approach, implementation of these skills tends to decrease and return toward baseline levels at follow-up (Sanders & James, 1983; Serketich & Dumas, 1996; Van Camp, Montgomery et al., 2008; Wahler, 1980), and booster sessions are then the only recourse to re-establish the skill sets (MacKenzie, 2007). That is, failure to implement the parenting skill sets that are trained is seen as a deficit in ability rather than a deficit in motivation.

This high rate of non-adherence and parental drop-out may be influenced by individual learning histories that compete with effective implementation. So too, the aversive stimulation from
the problem behavior context may be difficult for some parents to confront. These factors may be compounded by the effects of a verbal repertoire, particularly experiential avoidance, or in other words, evading or attempting to remove aversive, unpleasant, or uncomfortable thoughts and events (Lloyd & Hastings, 2008; MacDonald & Hastings, 2010; MacDonald, Hastings, & Fitzsimons, 2010). Traditional behavioral approaches to changing parenting behavior neglects to address the covert behavior that may accompany the parenting experience, which may have a substantial influence on overt parenting behaviors (Coyne & Murrell, 2009). Additionally, as previously mentioned, parents of children with disabilities may suffer from more psychological distress than parents of typical children (Dyson, 1997); and although daily stressors are inevitable in parenting, some parents’ experiences prevent them from effectively managing their children’s behaviors and maintaining positive parent-child interactions (Hastings & Symes, 2002; Osborne, McHugh, Saunders, & Reed, 2008; Reyno & McGrath, 2006; Whittingham, Sofronoff, Sheffield, & Sanders, 2009).

The Role of Verbal Behavior in Parenting

One behavioral method that targets verbal behavior as a dependent variable with the intent of further affecting probability of action is Acceptance and Commitment Therapy (ACT). ACT is a functional behavioral approach designed to analyze verbal relational networks that may negatively affect a parent’s ability to intervene effectively with their children (Coyne & Murrell, 2009). The ACT model is built upon an operant framework that involves a focus on relating as an operant. This operant may take many forms (e.g., vocal verbal, selection based response). The base notion is that we relate stimuli and events based on our experiences, and as a result of a generalized operant ability. This relational ability permits transformation of stimulus function via the various relational nodes and may produce aversive stimulation that can alter the probability of action (e.g., giving up in the face of non-compliance, not even trying, yelling, despairing) and thus negatively affect the parent’s ability to intervene effectively.
How verbal relations are formed may lead to what has been termed experiential avoidance (Hayes & Wilson, 1994), or rather, literally avoiding actual experiences and/or the stimuli (e.g., thoughts) associated with those events. It is important to note that experiential avoidance may occur as a result of an impending “real” event, but the aversive function of that future event does not have to result from actual experience; it can be derived due to transformation of stimulus function. For example, if a parent derives a causal relation between giving the child instructions and the child screaming and banging his head as a result; head-banging and screaming may already be in a relational frame with bad, dangerous, embarrassing, avoid or he will hurt himself, scream, etc. The parent’s behavior may then come under the control of the aversive stimulation produced from relational responding, and derive that giving instructions to the child will probably be bad, and will refrain from doing so in the future in order to avoid the child’s problematic behavior (transformation of function). Loosely, the parent is following the rule “if I do not give demands, then my child will be calm and I will not feel anxious about his behavior.”

In the short-term this is true; however in the long-term, neither the child’s problematic behavior nor the mother’s anxiety will have decreased. The parent’s behavior becomes insensitive to the actual contingencies (Hayes, Strosahl, & Wilson, 1999). In refraining from giving the child a demand, the parent is engaging in experiential avoidance, which is negatively reinforced by the absence of the child’s problem behavior and accompanying aversive emotional responses. One method that has been shown to lessen experiential avoidance, and furthermore, strengthen a willingness to experience aversive experiences (i.e., child problem behavior), is Acceptance and Commitment Therapy (ACT).

**Experiential Avoidance and the ACT Model of Psychological Flexibility**

ACT targets six core processes that are said to reduce experiential avoidance and strengthen the ability to respond in a value-oriented manner even in the presence of aversive stimulation.
There is limited research in the area of ACT or ACT components used with parenting, and little research on actual parent-child dyad interactions following training; however what has been done shows promising results (Biglan, Hayes, & Pistorello, 2008; Blackledge & Hayes, 2006; Cohrs & Weil, unpublished manuscript). Blackledge and Hayes (2006) evaluated the effects of a group ACT training workshop that emphasized values, acceptance, and defusion with parents of children with autism on pre-, post-, and follow-up scores. The authors were interested in affecting experiential avoidance and cognitive fusion, a term used to describe when a person shows inflexibility with respect to self-generated rules. Results indicate that parents were able to reduce their experiential avoidance and cognitive fusion; so too, their self-reported levels of experiential avoidance and cognitive fusion continued to improve from post-probes to follow-up.

Poddar, Sinha, and Urbi (2015) evaluated a 10-week Acceptance and Commitment Therapy protocol with five parents of a child diagnosed with autism. Comparison of pre and post assessment scores suggested that an ACT protocol that consisted of 10 sessions over the course of two months improved levels of anxiety, depression, and psychological flexibility as measured by self report measures. Similarly, Kowalkowski (2012) found that an 8-week group ACT parent training protocol for parents of a child with autism yielded improved levels of parental distress and stress as measured by the Parental Distress Index and the Parental Stress Index-Short Form respectively.

Montgomery (2015), on the other hand, compared the effects of a group ACT parent training to a group BPT. The ACT and BPT group trainings consisted of five sessions, each lasting three hours (15 hours total). Results suggested that neither group (ACT or BPT) showed significant improvements on self reported levels of stress and depression; however, interestingly, they showed that although levels of stress and depression remained relatively unchanged for the ACT group, their self reported levels of quality of life improved from pre to post while the BPT group showed no such improvement.
Other studies have investigated the effects of using only a mindfulness protocol (contact with the present moment) on parenting behavior and parent-child interactions. Van der Oord, Bögels, and Peijnenburg (2012) implemented a mindful parent training program with parents of children with ADHD, and a coinciding mindfulness training for the child. Results showed an increase in mindful attending in the moment for parents and children, a reduction in parental over-reactivity, and a reduction in parent-rated problem behavior.

Singh et al. (2006) taught a 12-week course on mindfulness techniques, which targeted strengthening attending to immediate stimuli with parents of children with autism. Mindfulness training consisted of an introduction to and discussion about mindfulness followed by various lessons on mindful practice. The training took place with the researcher and the parent, wherein the researcher guided the parent through the meditation techniques. Results showed an increase in mindful parenting, and a subsequent decrease in child aggression, self-injurious behavior, and non-compliance. There were also improved parental satisfaction ratings, as well as increased and improved parent-child interactions.

Singh et al. (2010) trained caregivers in mindfulness techniques via the mindfulness-based book Peace is Every Step (Hanh, 1991). Mindfulness training consisted of several mindfulness exercises. It is important to point out that the caregivers were trained how to be mindful with their clients with intellectual disabilities specifically. Results showed improved caregiver/client interactions, but interestingly the results did not generalize to the caregivers’ own children. The researchers then trained the caregivers on mindfulness techniques with their own children, and subsequent improvements in child non-compliance were observed.

Others have evaluated the relationship between parental acceptance and experiential avoidance. Lloyd and Hastings (2008) gave out questionnaires to mothers of children with disabilities in areas of acceptance, mindfulness, coping, avoidance, and mental health. Results of the
self-reports suggest that higher ratings of acceptance are correlated with better mental health, and that higher ratings of experiential avoidance are correlated with a higher rate of depression. MacDonald, Hastings, and Fitzsimons (2010) extended the study and found that fathers’ results were similar to the mothers’ results.

These studies have shown promising results in understanding the relationship between experiential avoidance and undesirable parenting practices, reducing experiential avoidance, and improving parent-child interactions. However, interventions do not necessarily train parents how to effectively manage more difficult behaviors commonly observed with children with intellectual disabilities. Additionally, they do not consider generalization and maintenance as a deficit seen in the BPT literature at large. Cohrs and Weil (2012) tackled this issue by combining both traditional BPT techniques/methods with additional protocolized training on several ACT components in an effort to alter the probability of parental implementation integrity. This variation in ACT, from therapeutic milieu to its training as behavioral skill sets, is termed ACTraining (ACTr). In the BPT phase, they taught parents about negative interactions, and 5 of the parenting tools: ABC Assessment, Stay Close, Pivot, Redirect and Use Reinforcement, and Set Expectations.

Cohrs and Weil (2012) found that after the BPT phase, parent’s integrity of tool implementation improved slightly; but improved moreso after the ACT training phase. They also found that while negative interactions decreased during the BPT phase, and an even further decrease was observed for 2 out of 3 participants following the ACT training workshop. The workshop involved present moment work (noticing variety of stimuli in the environment—not just the aversive stimulation), values identification (future oriented, intangible reinforcers), and committed action (goal setting). Additionally, improved scores on the Parental Locus Of Control Scale (PLOCS) was observed for all 3 subjects after the completion of ACT training indicating an improvement in the parent’s view of their ability to parent during difficult times. Anecdotal reports supporting the social
validity of the intervention were offered by two of the three parents upon completion of the study. Each indicated being so very angry with their children they were concerned about becoming physically aggressive with them. After the ACT training, both reported it easier to stay focused on what was happening and what to do rather than be reactive and punishing.

Cohrs and Weil (2012) shows promising results, but is found lacking in that the ACT components were only taught in one 3-hour session and no additional training was provided to teach the parents appropriate discriminative control for implementing the exercises and metaphors without the help of the researcher. Previous research suggests that longer periods where subjects are able to use and practice newly learned ACT techniques over time yield better results (Blackledge & Hayes, 2006). More training and practice with the ACT exercises, as well as explicit maintenance training may yield more robust results with these parents and families, and future research should investigate this effect.

The behavioral parent training literature has been shown to be effective in strengthening parenting ability in the short term, but has limitations with regards to maintenance and generalization. BPT programs also fail to target experiential avoidance, which may weaken the probability of engaging in appropriate parenting behaviors during difficult situations, interactions that may be aversive, or relying on negative approaches to affect child behavior. The effects of a BPT package tend to be limited to the conditions under which the skills were taught, and after the training package is completed and removed, accuracy in skill execution declines back toward baseline levels (MacKenzie, 2007). Since it is crucial for parents to be a part of the environment and/or behavior therapy for a child with autism—a condition that makes effective parenting all the more difficult—it is increasingly important for us to discover interventions that allow for the parents’ skills to strengthen, generalize, and maintain after long follow-up periods where no trained expert is delivering the intervention, yet parents continue to use the skills on their own.
One method that shows promise in programming for generalization and maintenance in parent training programs are interventions on parents’ covert verbal repertoires, such as Acceptance and Commitment Therapy (Blackledge & Hayes, 2006); however, there is still is a lack of objective behavioral data in the literature, as well as a general lack of behavioral parenting tools in ACTraining. Therefore, the purpose of this study is to investigate the effects of an ACT parent training protocol on the accuracy of implementation of select parenting tools, rate of negative parent-child interactions, rate of child problem behaviors, perceived parental ability to manage child behavior as measured by scores on the Parental Locus of Control Scale (PLOCS) (Campis, Lyman, & Prentice-Dunn, 1986), and potential reductions in experiential avoidance as measured by scores on the Parental Acceptance and Action Questionnaire (PAAQ) (Cheron, Ehrenreich, & Pincus, 2009). Finally, follow-up probes will be conducted as well as to determine if any observed beneficial results are maintained over time.
Chapter Two: Method

Participants

The participants in this study were parents of children between the ages of 8 and 11 years old who are diagnosed with Autism Spectrum Disorder (ASD). Three parents participated in the study. Participants were recruited through fliers at an ABA clinic located in Tampa, FL, through listserves and professional contacts of faculty at USF, and around the USF Tampa campus. Previous parent training did not result in exclusion and may have actually set the occasion for more difficulties due to failed prior experience.

Specific inclusion criteria included implementation integrity of behavioral parenting skills occurring below mastery levels, or the presence of negative interactions, child problem behavior and child noncompliance as determined via parent interviews during intake and performance during observation sessions, and high scores on the PLOCS with low scores on the PAAQ. If low rates of child problem behavior, high rates of compliance, and low rates of negative interactions were observed during baseline observations then the participant would have been excluded from the study. Furthermore, if the child engaged in behavior that was dangerous to themselves or others the parent-child dyad would have been excluded from the study. None of the three parent-child dyads that participated in the study met exclusion criteria.

Tiffany. Tiffany was a single mother of three boys. Her oldest son, who was 11 years old, was diagnosed with autism, was non verbal, and performed at a low functioning level. Her two younger sons were eight and four years old. She was unemployed at the time of the study and was unable to apply for jobs because her youngest son was not old enough to go to school and daycare costs were too high. She identified her oldest son’s problem behaviors as tantrums, mild aggression,
and property destruction. These behaviors were typically seen under conditions where a reinforcing item or activity was removed. During baseline, her typical response to these behaviors were either hurrying to give him access to the reinforcer, or yelling at him to stop. She identified their problematic routines as ending his videos on the television, removing the iPad, and withholding second helpings of snacks.

**Tamra.** Tamra was a single, working mother of three children. Her oldest son, who was 10 years old, was diagnosed with autism, highly verbal, and performed at a level similar to that of his peers. Her other two children were an 8-year old son and a 6 year old daughter. She identified her oldest son’s problem behaviors as non compliance, arguing, and aggression. These behaviors were observed when she gave instructions and removed reinforcing items and activities. During baseline, her responses to these behaviors were arguing back, threatening to take away reinforcers, yelling, and questioning. She identified their problematic routines as homework from school and household chores.

**Dutney.** Dutney and his wife enrolled in the study together. Dutney worked in the school district and his wife was a stay at home mom. Training was provided to them simultaneously, but data were only collected on Dutney’s behavior and he was the only one present during the observation sessions. He was a father of two sons. His oldest son, who is 10 years old, was diagnosed with autism, is nonverbal, engages in tantrums with mild aggression and SIB, and performs at a low functioning level. These behaviors were usually observed when reinforcers were withheld and/or when demands were put in place. During baseline, the consequence for aggression was to turn away from him until he calmed down, while the consequence for crying and tantrums in the absence of aggression was generally to hurry and give him access to the desired reinforcer or to remove/delay the demand. Neither Dutney nor his wife engaged in coercive parent-child interactions.
Setting

The study took place in each family’s home setting. The observation sessions occurred in various parts of the home during times when both the parent and child could be present and when the parent identified the potential for high rate of parent-child interactions/difficult parent-child interactions. These observation sessions required specific “baiting” of the environment to evoke problem behavior. An example of this in the context of non-compliant behavior was to have the parent identify three low probability requests prior to the session that are then used during observations. The ACTr sessions occurred in a quiet room of the participant’s choice, with the parent and researcher only; however, due to the nature of the study, there were instances when the child/children would enter the room and request the parent’s attention.

Materials

All observation sessions were recorded using a video camera for the purpose of data recording, interobserver agreement (IOA), and treatment integrity. Interval recording was facilitated by timer display on the video. Paper handouts and packets with task analyses for each parenting skill were provided, as well as handouts containing specific metaphors, experiential exercises, and homework assignments used during the ACT training sessions (Appendices J-L). Any games or activities engaged in during parent-child interactions were those already in the family home.

Experimental Design

A non-concurrent multiple baseline across subjects design was used to evaluate the effects of a BPT training and subsequently an ACTr on the frequency of negative parent-child interactions, and the frequency of child problem behaviors. A pre-post format was used to analyze data on perceived parenting ability as measured by scores on the Parental Locus of Control Scale (PLOCS; Campis, Lyman, & Prentice-Dunn, 1986) and parental experiential avoidance as measured by scores
on the Parental Acceptance and Action Questionnaire (Cheron, Ehrenreich, & Pincus, 2009), and standard line charts are used to display these data.

**Dependent Variables and Measures**

Following is a description of the direct and indirect variables and measures included in the study. All parent-child observation sessions were video recorded and data were collected by a trained observer.

**Direct.** The dependent variables (DV) include the implementation of parenting skills as measured with a task analysis (TA) of skills trained that was adapted from Van Camp, (2008). This DV was measured as a percentage correct score on the steps involved in the TA. Parental implementation of differential reinforcement, ignoring junk behavior, and using 3-step prompting will be collected for each specified opportunity to implement the skill during observation sessions (Appendices B-D). A plus (+) was marked on the corresponding step on the checklist if the parent implemented the step correctly, a blank space was left if the parent’s response differed from what was specified on the checklist or if the parent did not emit a response. Data on implementation of the skills were only collected given opportunities to implement them with the child’s specific acceleration or deceleration behavior. Implementation integrity of parenting skills was computed each session and for each skill by dividing the total number of correct steps implemented by total number of steps (total number depends on number of response opportunities the parent is presented with in a given session and of a given skill set).

A second DV was parent-child negative interactions defined topographically from Latham (1994). Coercive interactions function as aversive stimulation in parent-child interactions and play a role in the acquisition and maintenance of child problem behavior. A third DV, while not specifically targeted for behavioral intervention, frequency of child problem behavior was tracked through in-vivo observation. These data were collected in an attempt to observe potential
concomitant effects on non-targeted child behavior as a result of changing parenting behavior management skills. Target behavior(s) for each child were defined independently given the particular presenting behaviors of each child. The target behaviors defined for Tiffany’s son were crying, flopping, and grabbing; the target behaviors defined for Tamra’s son were noncompliance, yelling, and verbal aggression; the target behaviors defined for Dutney’s son were crying and grabbing.

Data were collected during 30-minute observation sessions, during problematic routines identified by the parent. Tiffany was observed engaging in play and free-time with her son and reinforcers were removed or withheld, Tamra was observed during homework and/or chores, and Dutney was observed during homework and physical therapy exercises. Observation sessions were recorded on a video camera and coded at a later time at a different location by the researcher and a trained assistant. The video timestamp was used as a timer for interval recording of child behavior and parent coercives.

**Indirect.** Additional measures were collected on parental perception of ability as measured by scores on the Parental Locus of Control Scale (PLOC; Campis, Lyman, & Prentice-Dunn, 1986). The PLOCS was administered three times: following the consent process, after the BPT observation condition, and then again at the conclusion of the study. The Parental Locus of Control Scale (PLOCS) is a 47 item, 5-point Likert scale that is used to measure the participant ratings of parental self-efficacy, parental responsibility, child’s control of parent’s life, parent belief in fate/chance, and parental control of child behavior, which also predicts the probability of correct implementation of parenting tools (Campis, Lyman, & Prentice-Dunn, 1986).

A second self-report measure was delivered to measure parental experiential avoidance as measured by scores on the Parental Acceptance and Action Questionnaire (PAAQ; Cheron, Ehrenreich, & Pincus, 2009). The PAAQ was completed at the same time as the PLOCS (following
the consent process, after the BPT observation condition, and then again at the conclusion of the study). The PAAQ is a 15-item measure with a 7-point Likert scale that is used to evaluate the extent of experiential avoidance in the parenting context. High scores on the PAAQ indicate a higher rate of parental experiential avoidance and thus predicts a lower probability of correct implementation of the tools; the aim of this study was to lower PAAQ scores.

*Table 1. Indirect measures, Parental Locus of Control Scale (PLOCS) and Parental Acceptance and Action Questionnaire (PAAQ), their subscales, and scoring guidelines.*

<table>
<thead>
<tr>
<th>Test name</th>
<th>Subscales</th>
<th>Scoring</th>
</tr>
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<tbody>
<tr>
<td>PLOCS- Measures self reported parental perceptions of control</td>
<td>Parental self-efficacy (perception of ability)</td>
<td>Low= low perception of ability</td>
</tr>
<tr>
<td></td>
<td>Parental responsibility (perception of parental influence on child behavior)</td>
<td>Low= low perception of parental responsibility</td>
</tr>
<tr>
<td></td>
<td>Child control over parent’s life (influence of child on parental behavior)</td>
<td>Low= high child control over parent’s behavior</td>
</tr>
<tr>
<td></td>
<td>Parental belief in fate (high belief in external factors) vs. chance</td>
<td>Low= high belief in external factors</td>
</tr>
<tr>
<td></td>
<td>Parental control of child behavior (perceived ability to manage child behavior)</td>
<td>Low= low parental control of child behavior</td>
</tr>
<tr>
<td>PAAQ- Measures self reported experiential avoidance (EA)</td>
<td>Acceptance – alternative to avoidance</td>
<td>High = low acceptance (high EA)</td>
</tr>
<tr>
<td></td>
<td>Willingness – motivation to engage in aversive tasks/stimulation</td>
<td>High = low willingness (high EA)</td>
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**Interobserver Agreement**

Following is a description of the procedures utilized to calculated interobserver agreement for each direct dependent variable. A trained observer scored 33% of parent-child observation videos independently for all target behaviors during each phase of the study.

**Parenting Skill Implementation Integrity.** Data were collected via videotape of parental implementation of the behavioral parenting tools. Interobserver Agreement (IOA) was calculated
from data collected by two separate observers for 33% (18 out of 55) of sessions during baseline, intervention, and follow-up phases for each parent. IOA for percentage of implementation integrity of parenting tools was computed via number of agreements divided by total number of agreements plus disagreements, then multiplying that number by 100 in order to obtain a percentage. The interobserver agreement for parenting skill implementation integrity for this study was 87%.

**Negative Interactions.** Frequency of negative (or coercive) interactions was collected during in-vivo observation sessions. The coercive interaction for Tiffany was defined as yelling. Coercive interactions for Tamra were defined as yelling, arguing, threatening to remove reinforcers, and questioning. Coercive interactions were not observed with Dutney. Interobserver Agreement (IOA) for frequency of negative interactions was collected for 33% (18 out of 55) of sessions during baseline, intervention, and follow-up phases for each parent. A second observer scored negative interactions at a later time from the videotapes. Interobserver agreement for frequency of negative parent-child interactions was calculated via total count IOA by dividing the smaller recorded number by the larger recorded number and multiplying by 100 in order to get a percentage. The interobserver agreement for frequency of negative interactions for this study was 96%.

**Child Problem Behaviors.** Each instance of child problem behavior was recorded throughout the in vivo observation sessions in order to obtain a frequency count. Child problem behavior for Tiffany’s son was defined as crying, flopping, grabbing, and property destruction (throwing); child problem behavior for Tamra was defined as noncompliance and arguing; and child problem behavior for Dutney was defined as crying and grabbing. Interobserver Agreement (IOA) for frequency of child problem behaviors was scored by two separate observers for 33% (18 out of 55) of sessions during baseline, intervention, and follow-up phases for each parent. IOA for frequency of child problem behavior was collected at the same time as assessment of negative interactions. IOA was calculated via total count IOA by dividing the smaller recorded number by
the larger recorded number and multiplying by 100 in order to get a percentage. The interobserver agreement for child problem behaviors for this study was 98%.

**Treatment Integrity**

Each training session conducted by the primary investigator during the BPT and ACT training phases was video recorded and 52% (13 out of 25) of the training sessions were scored for integrity of training. A trained observer compared the researcher’s responses to a checklist containing 7-14 items in the order in which the exercises and metaphors were to be presented (Appendix B). A plus (+) was marked for each exercise implemented correctly and in the correct order. A minus (-) was marked for any exercise implemented incorrectly, or out of order. The data were compared and a percentage of treatment integrity was computed by dividing total number of exercises implemented correctly by total number of exercises during the training and multiplying by 100.

Treatment integrity was scored by a trained research assistant for 52% (13 out of 25 training videos) of BPT and ACT training sessions. Results indicated that the intervention was implemented with 100% treatment integrity according to the protocol.

**Procedures**

Following the consent process, the study began with participants completing the two questionnaires (PAAQ and PLOCS). Additionally, this first session included the identification of child problematic behaviors and selected the times of the observation sessions based on times of day and conditions under which child problem behavior was likely to be high; parents of children who did not display high rates of problem behavior were excluded from the study. Observation sessions lasted 30 minutes, occurred one to three times per week, and were video-recorded by the researcher for coding and IOA.

**Baseline.** During baseline, the researcher observed the parent and child in the family home during difficult routines or activities that were reported to correlate with a higher rate of child
problem behavior (as determined at intake). The parent was instructed to begin the problematic routine (e.g., gave instruction to clean room, put away a toy). The parent was told to provide a minimum number of instructions (i.e., five homework problems) or arranging for the problematic routine a minimum number of times (i.e., taking away iPad at least 10 times in 30 minutes). The opportunities to arrange for the problematic routine stayed consistent throughout the course of the study. The baseline phase continued for at least one week or until the data were observed to occur at sufficient levels (low percentages of appropriate parenting skill sets), or show a trend in the opposite direction expected after intervention. If high rates of child problem behavior and/or low rates of child compliance were not observed during the baseline phase then the parent was excluded from the study.

**Behavioral Parent Training.** The second phase of the study began with a single behavioral parent training (BPT) session that targeted acquisition of specific parenting skills adapted from Van Camp, Vollmer et al. (2008). The BPT program utilized a standard behavior skills training (BST) format that included instruction, role-play, modeling, rehearsal, feedback, and in situ training. The BPT sessions aimed to increase the use of (contingent) reinforcement, use of a 3-step prompting hierarchy for compliance to demands, ignoring junk behavior, and minimizing negative interactions. Task analysis checklists of the parenting skills and negative interactions were provided by the researcher at the start of the first session (Appendices B-E, & I).

**ABC Data.** The first skill that was taught was how to collect ABC data. This set the occasion for learning the subsequent behavioral parenting skills that will benefit from an understanding of the function of their child’s behavior (e.g., use reinforcement, 3-step prompting, ignore junk behavior). The parent and researcher reviewed the handout containing the *Identifying the Why of Your Parenting: The Tool of functional Analysis* exercise, and the *Your Core Strategies for Common Behavior Problems* exercise (Coyne & Murrell, 2009). A handout containing 10 exemplars/scenarios of
children engaging in behaviors, as well as likely antecedents and consequences, was provided to the parents. The parent was required to identify the antecedents, behaviors, and consequences in each example, and the researcher provided corrective feedback as necessary. After the parent completed the worksheet with 90% or higher accuracy, the parent and researcher discussed the child’s target behaviors and any antecedents and consequences that had been observed in the home. With this anecdotal information, the parent and researcher created a list of possible antecedents, behaviors, and consequences (Appendix C). The parent was encouraged to use this checklist during observation sessions if they wished, however, specific data were not collected on this behavior.

**Minimizing Negative/Coercive Interactions.** A handout containing the operational definitions for negative interactions was provided to the parent for review. The researcher and parent discussed these reduction behaviors at the start of the session, however, since these negative interactions are behaviors the parent was trying to decrease, opportunities for corrective feedback for this behavior was provided during role-plays for the subsequent parenting skills and in-situ observations. If the parent engaged in a negative interaction, the researcher provided corrective feedback, a model of the interaction/skill implemented correctly without any negative interaction, and an immediate opportunity to engage in the skill correctly again.

**Use Differential Reinforcement.** The parent and researcher then reviewed the handout with the *Parenting Strategy: Using Reinforcers* (Coyne & Murrell, 2009) exercise, followed by the handout containing the task analysis for the use reinforcement tool. The parent then reviewed a worksheet containing 10 written exemplars of parents implementing the skill with their child both correctly and incorrectly. The parent had to determine if the example represented correct or incorrect implementation of the skill, and then corrected any mistakes based off of the steps presented on the task analysis. When the parent completed the worksheet to 90% or higher accuracy, the researcher began the BST training for this tool (modeling, rehearsal, feedback).
**Ignore Junk Behavior.** The parent and researcher reviewed the worksheet with the *Parenting Strategy: Planned Ignoring* exercise, and the *Parenting Strategy: Using Planned Ignoring with Tantrums* exercise (Coyne & Murrell, 2009). The handout containing the task analysis for ignore junk behavior was reviewed the parent then completed the worksheet containing 10 correct and incorrect exemplars, and was required to identify and correct each mistake. Following this instructional phase, the researcher provided BST training (modeling, rehearsal, and feedback) until the parent implemented the skill in the analog setting with 90% or higher accuracy.

**Provide 3-Step Prompting.** Three-step prompting is effective in teaching the acquisition of a new skill, and in increasing compliance (Hsieh, Wilder, & Abellon, 2011; Wilder et al., 2012). The parent and researcher then reviewed the handout containing the *Parenting Strategy: Giving Directions Effectively* exercise (Coyne & Murrell, 2009), which emphasized gaining the child’s attention and providing a clear instruction. A handout containing the correct steps in implementing a 3-step prompting hierarchy (verbal, model, physical guidance) was provided. Following this, the parent completed the worksheet containing 10 exemplars of a parent using the 3-step prompting skill with their child, and corrected any mistakes in non-exemplar scenarios. After the parent completed the worksheet to 90% or higher accuracy, the researcher began modeling use of the skill, followed by parental rehearsal of the skill, and corrective feedback and praise as necessary. When the parent implemented the tool with 90% or higher accuracy with the researcher, training began on how to implement these skills together during compliance and skills acquisition training with their child.

Following successful demonstration of the parenting behaviors described above, training continued in-vivo (subsequent follow-up probes) with the parent engaging their child in various situations where implementation of the skills trained was observed and feedback was provided. The parent was instructed to use reinforcement for desirable behavior that occurred throughout the session, but parental implementation integrity data was only collected for reinforcement contingent
on target acceleration behaviors. The rationale for this is because opportunities to provide reinforcement are unlimited. The parent was required to provide a minimum number of demands during a session depending on the task (e.g., tell the child to do two different chores that are correlated with high rates of problem behaviors, instruct the child to wash five dishes, give ten instructions to the child for teaching letter sounds). An opportunity to use 3-step prompting occurred if the child did not respond, responded incorrectly, or engaged in problem behavior after a demand was placed. An opportunity to provide differential reinforcement (mild praise for a prompted response, high praise for an independent response) occurred contingent on completion of the task. The parent continued with this until they had completed the minimum number of demands. If problem behavior was still occurring after the completion of the tasks, the parent was instructed to use the planned ignoring skill until the child was calm again. After instruction on this, the researcher presented the BST training (modeling, rehearsal, feedback) for all three parenting skills used together.

After the parent implemented this protocol using all three skills with the researcher with 90% or higher accuracy, the parent qualified for mastering out of training via in situ implementation with their child. Prior to each observation session during the BPT phases, the parent and researcher engaged in modeling and roleplay of the target skills during the problematic routine. If the parent implemented the parenting skills correctly with the researcher, the 30-minute parent-child observation session immediately began. The parent was permitted a maximum of 3 opportunities to master out of training with their child at 90% or better treatment implementation (the parent received corrective feedback immediately following each of these sessions), if mastery did not occur by the third session, and if the trend did not show improvement, the ACT intervention was implemented without subsequent observations following the BPT tests for mastery. For those parents who did reach mastery with their child, a follow-up phase commenced whereby naturalistic
observations occurred to evaluate parental treatment integrity of the BPT skills over time. When it was observed that parental implementation integrity declined toward baselines levels during these observations, the ACTr began.

As an interesting side note regarding the rationale for training on values-as-rule-governance, typically in BPT when parental implementation integrity is observed to decrease, “booster trainings” are provided to strengthen the response. This occurs due to two reasons: first, the assumption is made that the parent does not truly “know” the skill; and second, behavior analysts do not control the reinforcers which would help to build motivation and impact parenting skills in a parent-child relationship. As with the thesis of this project, however, we posited that the problem was not a skills deficit but rather one of a lack of reinforcement (which affects motivation); thus, the inclusion of a values based (values-as-rules) approach may overcome situations involving thin schedules of reinforcement and presence of aversive stimulation until which point reinforcing interactions may be possible to help maintain parental implementation integrity.

**Acceptance and Commitment Training (ACTr).** Following, 1) either failure to meet mastery criteria after BPT training, or, 2) observing a subsequent decrease in performance to baseline levels across a two-week observation period, the final phase of the study was implemented. The following outline was followed with efforts to teach the parents the particular skill sets. It was hoped that the ACTr would positively impact parental implementation integrity by impacting motivative operations associated with the need to utilize effective parenting tools. Additionally, as seen in studies on the effects of reinforcement generally, parent perception of ability may be impacted as well.

**Session 1.** The components of the first session in Acceptance and Commitment Training intervention are presented as follows:

- *Noticing Your Mind* and *Noticing Your Feelings*
In the first ACTr intervention session the researcher began by answering any questions that the participant had thus far. The first exercise, *Noticing Your Mind* and *Noticing Your Feelings*, targeted contact with the present moment (Coyne & Murrell, 2009). This required the parent to focus on their breathing with eyes closed, while noticing any thoughts and feelings that may arise, then returning their attention to breathing. This serves to allow the parent to broaden the array of stimuli to which they can attend during exposure to aversive stimulation while engaging in covert verbal behavior (i.e., thinking). The next metaphor, *Quicksand* (Hayes & Smith, 2005), targeted creative
hopelessness to highlight the unworkability of control strategies. This emphasized the fact that attempting to control thoughts and feelings is ineffective in decreasing aversive stimulation produced by these covert events. Additionally, ceasing the struggle with escaping or avoiding emotions will instead broaden the behavioral repertoire by teaching the parent to give up control strategies, therefore allowing them to attend to other stimuli. Following this, the researcher provided the participant with *The Suffering Inventory* handout (Hayes & Smith, 2005) in order to make contact with some of the aversive parenting experiences that occur in their daily lives. This served to emphasize some of the barriers to behaving in accordance with identified values.

Following this, the researcher provided the participant with *The Pain is Gone, Now What?* hand-out (Hayes & Smith, 2005), which served to facilitate values identification. This allowed the parent to make a list of the things they think they could accomplish (their values or goals in the direction of their values) if their aversive experiences disappeared. After this, the researcher then used the *Digging a Hole* metaphor to facilitate contacting creative hopelessness, and emphasize that giving up the struggle with their aversive experiences may be the only way they can accomplish the things they listed in the previous exercise (Stoddard & Afari, 2014). Then the *Coping Strategies* worksheet was given to help the parent identify the consequences of their experiential avoidance techniques (Hayes & Smith, 2005). This worksheet highlights that actual outcomes resulting from avoidance strategies do not match up with their parenting goals and chosen valued direction.

Following this, values identification was introduced via use of the *Horizon Metaphor* and discussed what values are compared to goals (Stoddard & Afari, 2014). This served to emphasize that values are unattainable, and that committing to short-term goals each day which are based on the valued rule on a daily basis will help to move the parent in their valued direction.

After the Horizon Metaphor, the parent was guided through the *Attending Your Own Funeral* exercise (Hayes & Smith, 2005) and the *Epitaph* worksheet in order to facilitate contact with parental
values (Forsyth & Eifert, 2007; Stoddard & Afari, 2014). This required them to make contact with how they would like others to talk about and remember them, in order to assess long-term reinforcers (values). Now that they had made contact with their long-term reinforcers, the *Values Assessment Rating Form* and *Ten Valued Domains* exercise were provided (Hayes & Smith, 2005) to facilitate identification of values as they apply to daily life. Following this, the *Values Bulls Eye* (Harris, 2007) was introduced, followed by a discussion on how to use it to self-rate their accomplishment of goals in the direction of their values by placing the mark close to the center of the target when value-directed goals had been met, or by placing it toward the outer edge of the target if they engaged in experiential avoidance and control strategies. This functioned as a self-monitoring tool that allowed the parent to make contact with their daily behavior as it relates to their values.

Homework was assigned at the end of the session. Parents were required to complete their daily values bulls eye to orient them to their behavior with respect to their values and goals. They also had the added assignments of reading *Why Willingness* (Hayes & Smith, 2005) to emphasize the importance of a willingness to experience aversive events that function as barriers to behaving in a value directed manner, and completing the *What Type of Parent do you Want to Be?* handout (Coyne & Murrell, 2009) which will help facilitate identification of parenting values.

**Session 2.** The components of the second Acceptance and Commitment Training session are presented as follows:

- Review responses on What Type of Parent do you want to be worksheet – compare to 10 Valued domains and Control Strategies worksheets

- Component Review

- Sweet Spot

- Remember when?
The second session began by reviewing the homework from the prior session. Responses to the *What Type of Parent do You Want to Be?* worksheet were reviewed and compared to the *Ten Valued Domains* activity from the previous session. This served to find overlaps between the exercises and to ensure the parent was oriented to their values. After this, a brief questionnaire was provided to the parents to assess their understanding of the material from the previous session (Appendix D). Next was a review of the *Control Strategies* worksheet from the previous session and noticing if their reactions to aversive situations have moved them toward or away from their identified values, which served to make the delayed consequences of experiential avoidance more salient.

The parent was then led through the *Sweet Spot* exercise to allow them to make contact with their values by imagining that they are present in a pleasant, memorable moment from their past (Stoddard & Afari, 2014). The *Remember When?* Exercise was reviewed next, where the parent was asked to remember the earliest memory of the child as a newborn (Coyne & Murrell, 2009) followed
by a variation of the *Sweet Spot* exercise, in which the parent must imagine a pleasant event in parenting. After this, the parent completed the *Writing your Autobiography* exercise (Stoddard & Afari, 2014) in which the parent wrote the way they would like others to read their life story in order to further target values identification. Next, the researcher guided the parent through the *When You Have Reached Your Limit* exercise (Coyne & Murrell, 2009), where the parent imagined that they are present in an aversive moment in parenting. This allowed the parent to experience an aversive parenting event that usually evokes experiential avoidance and control strategies. They were asked to sit with this experience and notice any covert behavior (thoughts or feelings) that arise, then return to attending to the present moment. This exercise served to strengthen the parent’s ability to attend to a broader range of stimuli in the presence of aversive experiences.

The *Room full of Duct Tape* metaphor was then utilized (Stoddard & Afari, 2014) to emphasize the effect of experiential avoidance and control strategies: behavior that results in short-term negative reinforcement, but exacerbates the problem. Then the parent received the handout for *Ten Steps to Trying on a Value* (Stoddard & Afari, 2014), which included goal setting based on identified values. This prepared the parent for committing to action in the presence of aversive events by requiring them to select specific goals in the service of values.

The homework that was assigned for this session was continued data collection on the daily values bulls eye, with an additional assignment to complete the *Standing for Your Child-in a Bigger, Bolder Way* worksheet (Coyne & Murrell, 2009), which serves to have the parent identify the things they want for their child (i.e., values/long-term reinforcers), set small value-directed goals, and identify barriers that may decrease the likelihood of meeting goals. The *Triggers and Contexts* exercise was then reviewed (Coyne & Murrell, 2009), which allowed the parent to identify any aversive events that influence parent-child interactions, and to make a commitment to acting in accordance with values in the presence of these.
Session 3. The components of the third session of the Acceptance and Commitment Training intervention are presented as follows:

- Homework Review
- Component Review
- Personal Job Ad
- Appreciating your child
- Review of when you have reached your limit compared to Triggers and Contexts exercise
- Notice Willingness exercises
- How do you want to be remembered?
- 10 Steps to trying on a value
- Goal Setting and Barriers
- Table of Values
- Contexts that Affect my willingness
- Consequences of conditional willingness
- Whatever it Takes: Unconditional Commitment
- Unconditional Parenting
- Making space for failure
- Homework

Values Bulls eye

Table of Values

Writing a letter to your child

- Observation Session with corrective feedback on ACT components and values related behaviors trained thus far.
The third session began with a review of the triggers and contexts, as well as homework from the prior session. Following this, a brief questionnaire was provided that functioned to assess the parent’s understanding of the ACT components that are being utilized (Appendix D). Then the parent completed the Personal Job Ad exercise (Stoddard & Afari, 2014) to target values identification. This required the parent to list any qualities, skills, ambitions, and values, as well as the characteristics of an ideal job, and the non-negotiable characteristics. This allows parents to identify potent reinforcers and aversives. After this, the parent was guided through the Appreciating Your Child exercise (Coyne & Murrell, 2009), which facilitated mindfulness and an appreciation and acceptance of reinforcers and aversive events that are associated with their child. Following the Appreciating Your Child exercise, the parent was guided through the When you Have Reached Your Limit exercise from the previous session using responses from the Triggers and Contexts homework, and added the Notice Willingness exercise (Coyne & Murrell, 2009) to guide the parent to notice any possible barriers to committed action. After this, the parent completed the How Do You Want to Be Remembered? exercise (Coyne & Murrell, 2009) which is similar to the Funeral and Epitaph exercises from previous sessions, and further facilitated values identification.

Following completion of the How Do You Want to Be Remembered exercise, the parent was guided through the Ten Steps to Trying on a Value exercise (Stoddard & Afari, 2014) again, this time focusing on a different values domain. The parent then completed the Goal Setting to facilitate committed action by identifying short-term, value-directed behaviors; and the Barriers exercises (Hayes & Smith, 2005) to highlight any aversive experiences or competing reinforcers that can serve as abolishing operations for meeting goals. After this, the Table of Values exercise was discussed (Stoddard & Afari, 2014), which explored value domains. Following this, the parent completed the Contexts that Affect My Willingness exercise which served to identify events that function as abolishing operations that impede value-directed behavior, then completed the Consequences of Conditional
Willingness exercises (Coyne & Murrell, 2009) to emphasize the effects of experiential avoidance. Next, the parent completed the Unconditional Parenting exercise (Coyne & Murrell, 2009) to highlight the importance of committed action and behaving in the presence of aversives. This session ended with the Making Space for Failure exercise (Coyne & Murrell, 2009) to prepare parents to expect setbacks along the way.

Homework for the third session was continued data collection on the daily values bulls eye. There was additional daily homework of the Table of Values worksheet (Stoddard & Afari, 2014), which allowed the parent to evaluate their own behavior in relation to their values, and select which exercises and metaphors to use on their own. The parent also completed the Writing a Letter to Your Child (Coyne & Murrell, 2009) exercise that functions to aide in the identification of parental values for both the parent and child, as well as establishing the child as a reinforcer.

**Subsequent Sessions.** The components for the fourth session and those to follow during the ACTr intervention are presented as follows and are included in Appendices J-L:

- Component review
- Sweet Spot Exercise
- When you have reached your limit
- Notice willingness
- 10 Steps to trying on a value
- 2 entries in Table of Values
- Homework

Values Bulls eye
Table of Values
- Observation Session with corrective feedback for parenting skills
The following sessions began with a review of the Writing a Letter to Your Child homework from the previous session. A brief questionnaire was then completed that served to assess the parent’s understanding of the ACT components, and exercises and/or metaphors that may relate to it (Appendix D). Next the Ten Steps to Trying on a Value exercise was discussed (Stoddard & Afari, 2014), which served to strengthen the parent’s ability to select metaphors and exercises on their own. The parent also completed at least two entries in the Table of Values (Stoddard & Afari, 2014) and chose which metaphor or exercise to complete based off of their own responses on the table. Subsequent homework assignments were for the parent to collect data on the Daily Values Bulls Eye, and the Table of Values. A maximum of five sessions occurred in this manner, upon which the ACT training was terminated if the parent did not meet at least 90% accuracy of parenting skill implementation.

**Follow Up**

The follow up observation sessions were held four and eight weeks after termination of the last ACT training session, and were conducted in the same manner as the baseline observation sessions. Parents also completed the PLOCS and PAAQ measures, as well.

**Social Validity**

Social validity measures were collected from the parents at the end of the study. The social validity measure can be found in Appendix E. Parents were also asked to write which exercise from either the BPT or ACT phases was the most beneficial and meaningful for them throughout the study. This allowed us to assess if the target behaviors were appropriate, the intervention procedures were acceptable, and if significant improvement in behaviors were produced.
Chapter Three: Results

Following is a description of the results for all three parents across all phases. This study utilized a multiple baseline design to evaluate the effects of BPT and ACT across three parents on implementation integrity of parenting tools, negative interactions, and child problem behavior.

Multiple Baseline

Figure 1 displays data on integrity of parent implementation of each of the three parenting skills and the frequency of negative interactions for each parent on a multiple baseline graph. In general, parental integrity of implementation of BPT skills is seen to be stable, below mastery levels for all three parents. The frequency of negative interactions was stable at high levels high for Parent 1 and 2 during baseline (negative interactions were at or near zero for Dutney throughout the course of the study). After the behavioral parent training was implemented for Parent 1, an increasing trend in parental implementation integrity to mastery levels was observed, while the scores for Parents 2 and 3 remained stable at baseline levels. Following a BPT follow up period, in which no training or feedback was provided, implementation integrity of parenting tools showed a decreasing trend back toward baseline levels after several days. After the BPT training was implemented for Tamra, an increasing trend in parental implementation integrity was observed, while the baseline levels for Dutney remained stable. After the BPT intervention was implemented for Dutney, a subsequent increasing trend in parental implementation integrity was observed. Although an increasing trend was observed for Parents 2 and 3, they did not quite reach mastery levels, therefore a behavioral parent training follow up phase was not applied for either.
After the ACTr session was implemented, an increasing trend was observed for parental implementation integrity for each parent and each tool, and continued near mastery levels during 1-month follow-up observations (only one parent’s follow up data are included thus far). Furthermore, during the ACT phase, the rate of negative interactions remained at or near zero for all three parents, and during 1-month follow-up observations (follow up data are only included for one parent thus far).

**Tiffany**

Following is a description of the direct and indirect results for Tiffany. The direct measures include parent implementation integrity of the three parenting skills, the frequency of negative interactions, and the frequency of child problem behavior. The direct measures include the Parental Acceptance and Action Questionnaire (PAAQ), which measures parental experiential avoidance, and the Parental Locus of Control Scale (PLOCS), which measures parental perceived ability to manage their child’s behavior.

**Direct measures.** Figure 2 displays data on integrity of parent implementation of each of the three parenting skills, the frequency of negative interactions, and the frequency of child problem behavior for Tiffany. During baseline the percentage of parenting skill implementation integrity varied between 18% and 40% with an overall level for the condition at 29%. Through the condition, data was observed to remain stable. The frequency of child problem behaviors varied from 7 to 21 occurrences, with an overall level for the condition at 16. Throughout the condition, data were observed to trend up. The frequency of negative interactions varied between 5 and 26 with an overall level for the condition at 17. Through the condition, data was observed to remain stable.

After BPT was implemented, the percentage of parenting skill implementation integrity varied between 9% and 83% with an overall level for the condition at 65%. Throughout the
condition, data were observed to trend up and each parenting skill increased to mastery (90% or higher accuracy); however, after 3 follow-up sessions, in which no feedback was given, scores varied between 40% and 88% and showed an immediate slight decrease in level. Likewise, the frequency of negative interactions varied between 0 and 1 with an overall level for the condition at 0. Throughout the condition, data were observed to remain stable, and remained low after a follow up period. The frequency of child problem behavior varied from 9 to 14 with an overall level for the condition at 11. Throughout the condition, data were observed to remain stable. During the BPT follow up phase, child problem behavior varied from 3 to 5 with an overall level for the condition at 4. After the ACTr sessions, the percentage of parenting skill implementation integrity varied between 61% and 100% with an overall level for the condition at 91%. Through the condition, data were observed to show an increasing trend to mastery levels, which continued during the 4-week follow up. Additionally, the frequency of negative interactions remained at zero during the ACT and 4-week follow up phases. During the ACTr phase, the frequency of child problem behavior varied from 1 to 10 occurrences with an overall level for the condition at 5 occurrences.

**Indirect measures.** Figure 5 shows the results for the Parental Acceptance and Action Questionnaire (PAAQ) for all three parents completed during intake (prior to beginning baseline sessions), after the BPT phase (prior to beginning the ACT sessions), at 4-week follow up, and again at 8-week follow up. Higher scores indicate higher levels of experiential avoidance and results range from 15-105. Results indicate that her score was 48 during intake, 64 following the BPT phase, and 52 for the follow up phase. This suggests that parental reported experiential avoidance increased slightly following the BPT phase, but levels of EA decreased during the 4-week ACT follow up phase.

Figure 6 shows the results for the Parental Locus of Control Scale (PLOCS), which measured parental perceived ability to manage their child’s behavior, for all three parents. This
questionnaire was also completed during intake (prior to beginning baseline sessions), after the BPT phase (prior to beginning the ACT sessions), at 4-week follow up, and again at 8-week follow up. A low score indicates low parental perceived efficacy. Results indicate that her score on the PLOCS was 137 during baseline, 128 following the BPT phase, and 133 during the 4-week follow up phase. There was not a robust change observed over the phases of the study, however there was a slight change in level that indicated that there was a decrease in parental perceived ability following the BPT phase and a subsequent increase at the 4-week ACT follow up phase.

**Tamra**

Following is a description of the direct and indirect results for Tamra. The direct measures include implementation integrity of the three parenting skills, the frequency of negative interactions, and the frequency of child problem behavior. The indirect measures included the Parental Acceptance and Action Questionnaire (PAAQ), which measured parental experiential avoidance, and the Parental Locus of Control Scale (PLOCS), which measured parental perceived ability to manage their child’s behavior.

**Direct measures.** Figure 3 displays data on integrity of implementation of each of the three parenting skills, the frequency of negative interactions, and the frequency of child problem behavior for Tamra. During the baseline phase, parenting skill implementation integrity varied between 3% and 67% with an overall level for the condition at 29%. Throughout the condition, data were observed to remain stable. The frequency of child problem behavior varied between 16 and 51 occurrences with an overall level for the condition at 34. Throughout the condition, data were observed to remain stable. The frequency of negative interactions varied between 13 and 49 with an overall level for the condition at 30. Throughout the baseline condition, data were observed to remain stable.
After the BPT phase, parenting skill implementation integrity varied between 43% and 86% with an overall level for the condition at 72%. Throughout the condition, data were observed to remain stable for Use Reinforcement and 3-Step Prompting, but a decreasing trend was observed for Ignore Junk Behavior. Throughout this condition, the frequency of coercive interactions stayed at a stable level of 3 occurrences per session. Frequency of child behavior varied between 7 and 14 with an overall level for the condition at 11. Throughout the condition, data were observed to show an increasing trend. After the ACTr protocol, parenting skill implementation integrity varied between 29% and 100% with an overall level for the condition at 80%. Throughout the condition, data showed an increasing trend. Frequency of negative interactions varied between 1 and 7 occurrences with an overall level for the condition at 4 occurrences. Through the condition, data was observed to remain stable. The frequency of child problem behavior varied between 0 and 11 occurrences with an overall level for the condition at 6 occurrences. Through the condition, data was observed to remain stable.

**Indirect measures.** Figure 5 shows the results for the Parental Acceptance and Action Questionnaire (PAAQ). This questionnaire was completed during intake (prior to beginning baseline sessions), after the BPT phase (prior to beginning the ACT sessions), at 4-week follow up, and again at 8-week follow up. Results indicate that her score was 67 during intake and 58 following the BPT phase. This indicates that there was a slight decrease in parental reported experiential avoidance following the BPT phase.

Figure 6 shows the results for the Parental Locus of Control Scale (PLOCS). This questionnaire was also completed during intake (prior to beginning baseline sessions), after the BPT phase (prior to beginning the ACT sessions), at 4-week follow up, and again at 8-week follow up. Results indicate that her score on the PLOCS was 163 during baseline, and 152 following the BPT phase. This suggests that there was a slight decrease in self reported parental self efficacy following
the BPT phase. This decrease in parental perceived ability is interesting corresponding with a self reported decrease in parental experiential avoidance.

Dutney

Following is a description of the direct and indirect results for Dutney. The direct measures include parent implementation integrity of the three parenting skills, the frequency of negative interactions, and the frequency of child problem behavior. The direct measures include the Parental Acceptance and Action Questionnaire (PAAQ), which measures parental experiential avoidance, and the Parental Locus of Control Scale (PLOCS), which measures parental perceived ability to manage their child’s behavior.

**Direct measures.** Figure 4 displays data on integrity of implementation of each of the three parenting skills, the frequency of negative interactions, and the frequency of child problem behavior for Subject 3. The percentage of parenting skill implementation integrity varied between 38% and 96% with an overall level for the condition at 64%. Throughout the condition, data was observed to remain stable. The frequency of child problem behavior varied between 0 and 18 occurrences with an overall level for the condition at 7 occurrences. Throughout the condition, data was observed to remain stable. The frequency of negative interactions stayed at or near zero during all phases of the study with most data points occurring at zero.

Following the BPT phase, treatment integrity of parenting skills varied between 63% and 100% with an overall level for the condition at 81%. Throughout the condition, data were observed to remain stable. Frequency of child problem behavior varied between 0 and 6 with an overall level for the condition at 2 occurrences. Throughout the condition, data was observed to remain stable. After the ACTr sessions parenting skill implementation integrity varied between 83% and 97% with an overall level for the condition at 91%. Throughout the condition, data were observed to remain stable. The frequency of child problem behavior varied between 0 and 15 occurrences with an
outlier at 41 occurrences. The overall level for the condition was 11 occurrences. Through the condition, data was observed to remain stable. Negative interactions remained at zero during the ACTr phase.

**Indirect measures.** Figure 5 shows the results for the Parental Acceptance and Action Questionnaire (PAAQ). This questionnaire was completed during intake (prior to beginning baseline sessions), after the BPT phase (prior to beginning the ACT sessions), at 4-week follow up, and again at 8-week follow up. Results indicate that his score was 55 during intake and 65 following the BPT phase. This suggests that there was a slight increase in self reported parental experiential avoidance following the BPT phase of the study.

Figure 6 shows the results for the Parental Locus of Control Scale (PLOCS), which measures parental perceived ability to manage their child’s behavior. This questionnaire was also completed during intake (prior to beginning baseline sessions), after the BPT phase (prior to beginning the ACT sessions), at 4-week follow up, and again at 8-week follow up. A low score indicates low parental perceived efficacy. Results indicate that his score on the PLOCS was 130 during baseline and 108 following the BPT phase. This suggests that there was also a corresponding decrease in self reported parental self efficacy following the BPT phase.
Figure 1. Percent correct parenting skill implementation integrity, and frequency of parental coercives (PC) across baseline, Behavioral Parent Training (BPT), BPT follow up, Acceptance and Commitment Training (ACTr), and follow up phases for each parent.
Figure 2. Percent correct parenting skill implementation integrity, frequency of negative interactions, and child problem behavior for Tiffany.
Figure 3. Percent correct parenting skill implementation integrity, frequency of coercive interactions, and child problem behavior for Tamra.
Figure 4. Percent correct parenting skill implementation integrity, frequency of negative interactions, and child problem behavior for Dutney.
Figure 5. Scores on the PAAQ for each parent at baseline, BPT, ACT, and follow-up phases.
Figure 6. Scores on the PLOCS for each parent at baseline, BPT, ACT and follow-up phases.
Chapter Four: Discussion

The current study evaluated the efficacy of a behavioral parent training protocol paired with an Acceptance and Commitment Training protocol on improving the use of specific parenting skills with parents of children with autism. All three parents showed low implementation integrity for parenting tools during baseline. During BPT, 1 of the 3 parents (Participant 1) performed at mastery with the parenting skills; however, performance was observed to decrease during follow up observations. This effect is what is often reported in the parent training literature: parents are often able to learn the skill sets, and perhaps even implement them under the right conditions when an observer is present; however, implementation efficacy tends to wane over time. For the other two participants, while their implementation integrity of the parenting tools improved during BPT, they never reached mastery. This result is rarely reported in the literature; but then again, poor results of studies rarely become published. These types of outcomes beg the question for behavior analysts, however: Why are these basic skill sets so difficult for parents to implement and maintain? The thesis herein chose to evaluate if this was a skills deficit or issue with motivative conditions.

Typical approaches to poor implementation performance in behavior analysis include re-training, re-arrangement of antecedent conditions, and identifying reinforcers to deliver contingent on improved performance. In the context of parent training and relationship building between parents and their children, each of these presents difficulties in terms of time, cost, and logistics. Additionally, it is not even clear if the poor performance is a result of a skills deficit (can’t do) or issue with motivation (won’t do). Although Skinner consider his tome on verbal behavior (Skinner,
1958) to be his most important work; outside of language training for children diagnosed with autism, the effects of verbal behavior are rarely considered.

There is an extant literature on rule governance and how rules can affect contingency sensitivity (Hayes, 1989). This study sought to evaluate if poor implementation integrity of parenting skills was a function of deleterious rule following and covert verbal behavior, or a skills deficits. Regarding the latter, if a skills deficit was present, no improvements should have been observed following ACTr. To affect motivation via verbal behavior we introduced an ACTr approach focused on values identification (rule governed behavior linking parenting behavior and intangible reinforcers), present moment work (attending to all stimuli in the face of aversive stimulation), and committed action (goal setting).

Performances by all parents improved following this training; supporting the notion that parenting tool implementation integrity was not a matter of a skill deficit and adding credibility to the notion that affecting covert verbal behavior may provide the necessary key to helping parents overcome the influence of past reinforcement histories and control by aversive stimulation, from both actual experience and via relational rule following.

It should be noted that although improvements in parenting skill implementation integrity improved during the study between Participant 1 and her son who was diagnosed with autism, coercive behavior continued to occur between her and her two younger sons. She had noted during the course of the study that the typical children should “know better” while the child who has been diagnosed has less control over his behaviors. The behavioral parent training was effective in teaching her to use parenting skills with the target child, but the skills did not generalize to her other sons, therefore she may have benefited from specific training that targeted specific routines between her and her two other children.
Likewise, coercive interactions were still observed with Tamra with her son who is diagnosed with autism. He functions at a level similar to his typical peers, and his junk behavior occurred in the form of arguing and noncompliance (similar to a typical child). She noted that she just wanted to “make sure he understands it is unacceptable” when he would argue and talk back to his mom. This can be seen in her lower levels of implementation integrity for the Ignore Junk Behavior tool and corresponds with her higher rate of coercives (since many of their coercive interactions were back-and-forth arguing). It should be noted that Dutney did not engage in coercive interactions in his household, but was included in the study due to his low parenting skill implementation integrity for the Ignore Junk Behavior and Use 3-Step Prompting tools.

There was initial difficulty in topographically defining coercive interactions for each parent-child dyad. Particular topographies can function differently given different contexts; for example, explaining is appropriate in parent child interactions, but could be counted as coercive in a circumstance where it functions as an aversive stimulus and/or escalates current problematic behaviors. Furthermore, 30 minutes was often an excessive amount of time for capturing coercive parent-child interactions. Minimizing the time of naturalistic parent-child observation sessions to 10-20min. would be sufficient in capturing most challenging routines and/or activities that have a high frequency of parent-child interactions. Another limitation to this study lies in the inability to control for seasonal schedules of the parents. During the 4-week follow up phase of the study for Tamra, the school year started, and this was the first year Tiffany’s youngest son was able to go to school. This freed up her daytime hours from child rearing, leaving her much more free time, which was specifically noted as a challenge she faced at the beginning of the study. On the other hand, both Tamra and Dutney worked in schools, so their summer schedules transitioned to their busy school year schedules during their ACT phases of the study.
Feedback was provided in observation sessions during the ACTr phase of the study which may have positively impacted performance. In ACTr training, feedback is provided on the various aspects of the values protocol while the parent is working with their child. As part of the values work, behaviors that bring the parent closer to their parenting value requires mention of the values related behaviors as well. Although this may have functioned as an independent variable, we feel effects, if any, were minimal due to its low frequency of occurrence and generalized fashion of the feedback provided. It is important to note several differences from how feedback was provided during BPT. Each observation/feedback session of the BPT phase was preceded by explicit training on the parenting tools whereas there was no additional training provided on parenting tools prior to the ACTr observations. Also, corrective feedback in the BPT phase was provided contingent on every missed opportunity to use a parenting tool, while praise was provided contingent on every correct implementation of a parenting tool. Corrective feedback and praise in the ACTr phase was minimal (not contingent on each error or correct use) and provided in a generalized fashion. For instance, if the parent performed several components correctly over time, the researcher would say, “well done” thus not specifying specific behaviors or attaching it specifically to an individual occurrence in close temporal proximity. Future studies may be interested in investigating the efficacy of an ACT training protocol that does not include feedback in order to parse out the potential effects of minimal feedback as its own separate independent variable.

Another limitation is that other parenting tools may have been more appropriate for some parent-child interactions. For example, the Use of 3-Step prompting was not always appropriate for Tamra because she was smaller than her son and would not always be able to follow through with her physical prompt if he was non compliant. A model/gesture prompt and further vocal prompting were often effective in gaining compliance; however, choices between activities and specified rules about the contingencies were taught during the study and often utilized in gaining
compliance, as well. Other parenting tools may have been more effective for formal training during this study, such as setting expectations and setting consequences, or using contracts for weekly and/or daily target behaviors.

In addition to modifying which BPT skills are taught, future research may be interested in evaluating the delivery of the ACT training. Future research may focus on the effects from teaching the parent to be fluent in a limited number of ACT exercises rather than teaching them a wide array of exercises over the course of a few weeks. In addition to this, future research may focus on the efficacy of an ACT parent training that allows the parent to go through the experiential exercises, metaphors, and lessons on their own without the researcher present. Furthermore, this study provided a behavioral parent training phase before administering an Acceptance and Commitment Training phase. Future studies in this area may be interested in investigating the efficacy of a parent training protocol that utilized both BPT and ACT training procedures simultaneously.
References


Appendices

Appendix A

ACT Components and Definitions

**Contact with the present moment:** This refers to observation of external stimuli, as well as internal stimuli (such as the pace of one’s heartbeat or breath). Under aversive conditions we tend to experience a repertoire and attention narrowing effect. When one learns to attend to additional stimuli related to aversive stimulation (e.g., increased heart rate, sweaty palms, etc…), we can change the function and our relationship with the event and widen our attention and behavioral repertoire.

**Values:** The values component of the ACT hexaflex encompasses our long-term reinforcers. These are not short-term reinforcers, or reinforcers that can be tangibly attained, but they are direction toward which other over behaviors are aimed. Our behavior can be selected by short immediate consequences, however verbal behavior allows us to relate delayed consequences to our actions (Hayes, Strosahl, & Wilson, 2006).

**Committed action:** This is the overt behavior aspect of values. Committed action requires goal setting, and reaching those goals in the presence of any aversive stimulation that might arise. Goals are directed toward the verbally construed values and can be attained.

**Self as context:** RFT facilitates the origin of experience of being an “I” (Törneke, 2010). We are able to observe, and we are also able to recognize that we are the observer that is observing. This requires that we understand an I/here/now perspective compared to an I or you/there/then, and can move between the two vantage points.
**Defusion:** Defusion “can undermine the tendency of private events to influence behavior here-now (Törneke, 2010, p. 229). …When the dominance of rule following becomes strong “RFT uses the term fusion to indicate that certain actions are completely dominated by, or fused with, indirect stimulus functions. *Fusion occurs when certain verbal (indirect) stimulus functions dominate over other potentially available stimulus functions, both direct and indirect*” (Törneke, p. 148). Defusion takes place when these rules, these indirect stimulus functions, are deliteralized. To deliteralize means “to disrupt ordinary meaning functions of language”. Less emphasis is placed on the contingencies specified in the rule, but on the actual contingencies (i.e., moving toward or away from value).

**Acceptance:** Acceptance is the alternative to avoidance. It involves “an active process of feeling feelings as feelings, thinking thoughts as thoughts, remembering memories as memories” (Hayes, Strosahl, & Wilson, 1999, p. 77). Acceptance is better thought of as willingness, which is the alternative to control, avoidance, and escape.
Appendix B

Treatment Integrity Checklist

Mark a + in the corresponding box if the procedures are implemented in the correct order. Leave a blank space for any exercise or metaphor implemented out of order.

**Behavioral Parent Training Session**

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<th>Notes</th>
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<td>Why we do what we do</td>
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<tr>
<td>Core Strategies for Bx Problems</td>
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<tr>
<td>Functional Assessment Exercise</td>
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<td>Negative Interactions List</td>
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Parenting Skill: Use Reinforcement:

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<td>Rehearsal</td>
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Parenting Skill: Ignore Junk Bx

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<td>Rehearsal</td>
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Parenting Skill: Use 3-Step Prompting

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<td>Noticing Your Feelings</td>
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<td>Quicksand</td>
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<td>The Suffering Inventory</td>
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<td>The Pain is Gone, Now What?</td>
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<td>Digging a Hole</td>
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<td>Component Review</td>
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<td>Notice Willingness Exercise</td>
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<td>Consequences of Conditional Willingness</td>
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<td>Whatever it Takes: Unconditional Commitment</td>
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<td>Unconditional Parenting</td>
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### Making Space for Failure

**Homework assignment:**

- Personal Job Ad
- Writing a let to your child
- Table of values
- Values bullseye

### ACTraining Session 4

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<td>Sweet Spot Exercise</td>
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<td>When you have reached your limit</td>
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Appendix C

Parenting Skill Task Analysis & Exercises: ABC Assessment

Parent:__________________________________________________Date:_________________

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Appendix D

ACT Review Questions

1. How can our ways of controlling our negative experiences be like digging a hole?
2. What is another possible alternative to experiential avoidance?
3. What are values?
4. Why is willingness important?
5. How can contact with present moment influence your parenting?
6. Why is committed action important?
7. Choose one value and one way you can take committed action.
Appendix E

Social Validity Questionnaire

Parent:_______________________________________________________  
Date:__________________________________________________________

1. What did you enjoy the most about the study?  
2. What did you enjoy the least about the study?  
3. Which part did you find to be most important?  
4. Which part was the most helpful?  
5. Parent training is important.

1-Strongly Disagree  2  3-Neutral  4  5- Strongly Agree

6. Learning the parenting skills helped me manage my child’s behavior.

1-Strongly Disagree  2  3-Neutral  4  5- Strongly Agree

7. Learning the ACT skills helped me manage my child’s behavior.

1-Strongly Disagree  2  3-Neutral  4  5- Strongly Agree

8. I see improvements in my child’s behavior.

1-Strongly Disagree  2  3-Neutral  4  5- Strongly Agree

9. I satisfied with the overall outcome of the study.

1-Strongly Disagree  2  3-Neutral  4  5- Strongly Agree

10. I will continue to use the BPT skills.

1-Strongly Disagree  2  3-Neutral  4  5- Strongly Agree

11. I will continue to use the ACT skills.

1-Strongly Disagree  2  3-Neutral  4  5- Strongly Agree
Appendix F
IRB Approval Letter

4/15/2015

Jillian DeFreitas
USF ABA-Applied Behavior Analysis
13301 Bruce B Downs Blvd. MHC 2113A
Tampa, FL 33612

RE: Expedited Approval for Initial Review
IRB#: Pro00021708
Title: Investigating the Use of an Acceptance and Commitment Training to Enhance a Behavioral Parent Training with Parents of Children with Autism

Study Approval Period: 4/15/2015 to 4/15/2016

Dear Ms. DeFreitas:

On 4/15/2015, the Institutional Review Board (IRB) reviewed and APPROVED the above application and all documents outlined below.

Approved Item(s):
Protocol Document(s):
IRB Proposal

Consent/Assent Document(s)*:
Consent Form.pdf

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent document(s) are only valid during the approval period indicated at the top of the form(s).

It was the determination of the IRB that your study qualified for expedited review which includes activities that (1) present no more than minimal risk to human subjects, and (2) involve only procedures listed in one or more of the categories outlined below. The IRB may review research through the expedited review procedure authorized by 45CFR46.110 and 21 CFR 56.110. The research proposed in this study is categorized under the following expedited review category:
(6) Collection of data from voice, video, digital, or image recordings made for research purposes.

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval by an amendment.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomone, Ph.D., Vice Chairperson
USF Institutional Review Board