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CONVERGENT VALIDITY OF THE FUNCTIONAL ASSESSMENT INFORMANT RECORD FOR TEACHERS (FAIR-T)

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CONVERGENT VALIDITY OF THE FUNCTIONAL ASSESSMENT INFORMANT RECORD FOR TEACHERS

(FAIR-T)

DISSERTATION

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the College of Education at the University of Kentucky

By

Laura Elizabeth Pierce

Lexington, Kentucky

Director: Dr. H. Thompson Prout, Professor of Education, School, and Counseling Psychology

Lexington, Kentucky

2013

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ABSTRACT OF DISSERTATION

CONVERGENT VALIDITY OF THE FUNCTIONAL ASSESSMENT INFORMANT RECORD FOR TEACHERS (FAIR-T)

This study assessed the convergent validity of the Functional Assessment Informant Record for Teachers (FAIR-T; Edwards, 2002) with analog functional analyses (FAs). Participants were five teachers and students located at a specialized school serving individuals with disabilities. Teachers had worked with the student for a minimum of 1 month, and students displayed a variety of behavioral topographies. The FAIR-T was conducted by the researcher using telephone or video conferencing technology, and analog functional analyses were conducted in a clinic setting by trained therapists within the course of the student's typical treatment plan. Results of the FAIR-T were coded according to function, and the results of the analog FAs were graphed and analyzed visually. Results of the FAIR-T and FAs indicated limited convergence between the two assessment methods, though results were somewhat inconclusive. Results are discussed in relation to the utility of the FAIR-T, particularly in the school setting. Directions for future research are discussed in light of the need to delineate efficient means with which to conduct functional behavior assessments within the schools.

KEYWORDS: Functional Behavior Assessment, Behavior Assessment, Functional Analysis, Indirect Assessment, Behavior Analysis

Laura E. Pierce

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CONVERGENT VALIDITY OF THE FUNCTIONAL ASSESSMENT INFORMANT RECORD FOR TEACHERS
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Chapter One: Introduction and Review of Literature

Functional behavior assessment (FBA) includes a variety of methods for gathering information about an individual's behavior, from basic topography to the antecedents and consequences believed to influence the behavior. The goal of such an assessment is to determine the *function* of the behavior in an effort to affect behavior change. The concept of an FBA is not new to the fields of psychology and education. In fact, the use of FBA principles to assess the variables that control problem behavior emerged over four decades ago (Sailor, Guess, Rutherford, & Baer, 1968), and has been evolving ever since. Under the Individuals with Disabilities Education Improvement Act of 2004 (IDEA), federal law now mandates that educators employ the use of FBAs to address behavior problems within school settings. These laws, which apply specifically to special education, call for a manifestation determination review in any instance where an administrator orders the long-term removal of a child with a disability (more than 10 days; 20 U.S.C. §1415 (k)(1)(E)(2004)). If the behavior in question is determined to be a manifestation of the child's disability, the law further calls for an FBA to be conducted to guide the creation of a Behavior Intervention Plan (BIP; 20 U.S.C. §1415 (k)(1)(F)(i)(2004)).

Manifestation determinations are not, however, the only time FBAs are utilized within special education. Most commonly, functional behavior assessments are used in the development of behavior intervention plans as part of the traditional IEP process for many students whose behavior has been determined to impede their ability to access the curriculum. The federal guidelines leave much room for interpretation in the methods used to conduct FBAs, but are clear in their emphasis on addressing problem behaviors by first determining their function.

In addition to the use of FBAs to develop BIPs for children receiving special education services, these methods are being used increasingly for children in the general education curriculum with difficult behaviors. Often, school psychologists are involved in consultation and

implementation within this process. Thus, school psychologists are often in a position to determine why a child is misbehaving and offer suggestions on how to address the problem. Behavioral consultants outside the field of school psychology have long utilized FBA methods in order to develop effective interventions for individuals in clinic, home, and classroom settings. Research supports the effectiveness of interventions that incorporate functional assessment, collaboration, and evidence-based treatment, and it is often the role of the school psychologist to facilitate these components of intervention development (Gettinger & Stoiber, 2006). This study will focus on a way to efficiently determine the function of a child's behavior in school settings, allowing school professionals to quickly develop effective function-based interventions. To do this, the study will investigate different components of the FBA process to determine their effectiveness, paying particular attention to the utility of an indirect assessment of behavior in identifying behavioral function. The current chapter will cover the purpose of a functional behavioral assessment, common components of an FBA including experimental, direct descriptive, and indirect descriptive assessments, and will review the specific purpose of the current study.

Purpose of FBA

The purpose of an FBA is, on the surface, quite clear— to determine the function of a problem behavior in order to develop a function-based intervention. Once a function is identified via FBA, it is possible to develop interventions that specifically address that function in order to reduce or eliminate problem behaviors *and* promote appropriate replacement behaviors. For example, Lang, et al. (2009) conducted functional assessments in order to determine the function of problem behavior in two different settings, the classroom and the playground. Researchers identified different functions for the same challenging behaviors (same

topography) for individuals in each setting. As a result, they were able to create and implement different interventions to address the function of the behaviors in their respective settings. This study highlights the importance of evaluating behavioral function since a single intervention developed regardless of function would likely not have worked in both the classroom and the playground. Some concern has arisen among professionals that fields utilizing functional assessment methods have become complacent throughout the years, often relying on more generalized “packaged” interventions to address problem behaviors (Ervin, Erhardt, & Poling, 2001). While these interventions may, indeed, effectively address some problem behaviors, they may not be adequate to address others. Additionally, the implementation of generic interventions without knowing the function of a behavior may actually *increase* the incidence of the behavior if the intervention fulfills the function. An example may be seen in the widespread use of time out procedures for misbehavior in classrooms. If a child misbehaves in order to get out of doing classwork, then sending him to time out fulfills the function of the misbehavior by allowing him to escape from the work. Thus, while those in charge may consider this a “punishment” for the child, his behavior is likely to grow increasingly worse as he is allowed to escape his work each time he misbehaves. Vollmer and Northup (1996) highlight some problems with non-function-based interventions including the risk that the intervention may strengthen a problem behavior via positive or negative reinforcement, the risk that the intervention may be functionally irrelevant to the problem behavior and thereby achieve nothing, and the intervention may not provide alternative sources of reinforcement for more desirable behavior, therefore failing to teach the individual appropriate behavior. While some suggest that function-based interventions are no more effective than generalized interventions (Beavers, Kratochwill, & Braden, 2004), there is a wealth of research to support the effectiveness of function-based

interventions, and it is this research base that drives the legal mandate for FBAs in school settings (Ingram, Palmer, & Sugai, 2005).

Components of FBA

While IDEA indicates when an FBA should be conducted, it fails to specify how it is to be done. There is little agreement as to what constitutes an adequate FBA, and some have suggested that generally accepted practical guidelines may be difficult to establish (Ervin et al., 2001). Additionally, widespread variations in methods across and within studies make it difficult to identify critical features or essential components of functional assessment (Ervin et al.). To date, no definitive evidence exists to support specific FBA procedures in relation to optimal school-based treatment development (Sterling-Turner, Robinson, & Wilczynski, 2001). Thus, there are many research questions surrounding the use of FBA procedures in school settings, including the agreement among different FBA methods and the generalization of information obtained through an FBA across settings, practitioners, and behaviors. Specifically, current research highlights the inconsistent reliability among various types of assessment within FBAs (indirect, direct, descriptive) indicating this as an area in need of clarification (Hall, 2005; Martens, Gertz, Werder, & Rymanowski, 2010). Ervin et al. suggest acceptability as an additional area of interest regarding the implementation of functional assessment procedures in school settings. Though there is no agreed-upon set of methods for an “adequate” FBA, the methods most commonly recommended include a compilation of information from several different types of assessment which can be time consuming and intrusive in the classroom. There is clearly a need to identify a reliable and *efficient* means to assess the function of problem behavior within school settings that will allow school psychologists and other professionals to create function-based intervention plans.

In an effort to decipher an efficient means to conduct a functional assessment within a school setting, it is important to first understand the various components of functional behavioral assessments today. A comprehensive FBA may consist of a variety of methods, including experimental functional analyses, direct descriptive assessments, and indirect descriptive assessments. Each of these approaches has its merit, yet are also lacking in unique ways.

Experimental analysis. The experimental functional analysis is an approach that behavioral clinicians have utilized for decades as a way to decipher the function of a behavior in a highly controlled environment. Iwata, Dorsey, Slifer, Bauman, and Richman (1982, 1994) described a multielement design to these assessments that included the four conditions most likely to elicit undesirable behavior: access to attention, access to noncontingent play, escape from a demand, and sensory fulfillment. These authors conducted this seminal work on an individual with self-injurious behavior, but professionals in the fields of behaviorism and psychology have since applied these principles to a wide variety of populations with great success (Lang, et al., 2010; Bachmeyer et al., 2009; Valdovinos, Roberts, & Kennedy, 2004; Wilder, Harris, Reagan, & Rasey, 2007). Additionally, researchers in the field have also expanded the conditions used so that they may best represent those conditions in the individual's natural environment (e.g., access to tangible). These highly controlled analyses began in analogue settings, such as treatment rooms within hospitals and clinics, which allowed experimenters to completely control the variables surrounding the individual's behavior. More modern approaches to experimental functional analyses have begun to apply these multielement designs to natural settings. Mueller, Edwards, and Trahan (2003) conducted an experimental functional analysis in the classroom involving both teachers and peers. The researchers further used these outcomes and teacher input to derive interventions that reduced problem behavior

in the classroom for all three participants in the study. Furthermore, Kodak, Grow, and Northup (2004) conducted a modified experimental functional analysis on elopement in the natural setting of a kickball game. Moving these functional analyses from analogue to natural settings allows professionals to incorporate naturally occurring stimuli and consequences, which some argue allows for better identification of behavioral function. However, it is also important to highlight some differences that may be seen in functional analyses conducted in more natural settings. For example, conducting experimental functional analyses in natural settings such as classrooms may compromise the procedural integrity of the experiment due to a lack of control related to the nature of classrooms (Vollmer, Borrero, Sloman, Pipkin, & Bourret, 2009). The presence of teachers, peers, toys, and the constraints of a classroom schedule could all affect the integrity with which the experimental conditions may be run (Lang et al. 2008). The use of natural stimuli in functional analyses run within the classroom, while often cited as a strength when using the natural setting, may taint the results of these experiments. Ringdahl, Winborn, Andelman, and Kitsukawa (2002) examined the effects of noncontingently available alternative stimuli on FA outcomes. They found that the presence of preferred alternative stimuli (such as additional toys in preschool centers) weakened the data, while the function was clear when sessions were run without these items. It is unclear, given current research, which is the best setting for conducting experimental functional analyses.

In addition to the traditional multielement experimental design proposed by Iwata et al. (1982, 1994), researchers have applied a variety of designs to the experimental analysis of behavioral function. These include brief functional analyses, in which the experimental conditions are presented only one time with a session length of approximately 5 minutes (as compared to traditional multielement designs in which experimental conditions are presented multiple times and with greater session length)(Boyajian, DuPaul, Handler, Eckert, & McGoey,

2001; Wilder, Chen, Atwell, Pritchard, & Weinstein, 2006). Often used in tandem with a brief functional analysis is the contingency reversal in which the reinforcement contingencies of two topographically different responses are exchanged (Northrup et al., 1991). This often occurs for the session that resulted in the highest rate of behavior during the brief functional analysis. Another of the modern approaches to experimental functional analysis involves the hypothesis-driven experimental analysis (Ervin, DuPaul, Kern, & Friman, 1998). In these analyses, only those conditions that identified maintaining variables in the descriptive analyses (described later) are experimentally tested. Thus, rather than running all the conditions of a traditional functional analysis, experimental conditions are limited to those conditions hypothesized to maintain the behavior after descriptive data such as interviews and observations are conducted.

The use of experimental functional analysis (FA) has long been considered a “gold standard” for determining behavioral function because the high level of control embedded in the methodology of this approach allows for determination of causal relationships between variables and behavior. This approach has decades of research supporting its effectiveness in determining behavioral function, thereby allowing for the creation of effective function-based interventions. Additionally, this approach has shown itself flexible enough to move from sterile clinical settings to more natural environments (Iwata et al., 2000; Moore et al., 2002). The use of experimental FAs is not without drawbacks, however. These methods require a significant amount of training in order to be run with accuracy, and many professionals working within the schools, including school psychologists, do not have the level of training necessary (Wallace, Doney, Mintz, Resudek, & Tarbox, 2004). Another limitation of experimental functional analyses, regardless of the setting of implementation, is the possibility that the process may temporarily strengthen or increase the problem behavior or, worse, create a *new* function for the behavior (Cooper, Heron, & Heward, 2007). Similarly, some argue the possibility that the high level of

control and high contingency value used in experimental functional analyses may reflect false relationships as the individual learns that the only way to achieve attention/escape/tangible is to emit the problem behavior (Shirley, Iwata, & Kahng, 1999; Vollmer, Borrero, Wright, Camp, & Lalli, 2001). Furthermore, conducting experimental manipulations within school settings can be difficult due to the restraints of time, staffing, and class schedules. This is increasingly problematic as schools find themselves with fewer staff to handle more children, while implementing a growing number of educational initiatives. Finally, not all behaviors are amenable to functional analysis procedures and may be better addressed using other methods such as direct and indirect descriptive assessments.

Direct descriptive assessment. Direct descriptive assessments involve the direct observation of behavior and events in a natural environment. Observations of behavior during direct descriptive assessments offer a stark contrast to observations of behavior during experimental FAs because the observer has less (and in many cases no) control over environmental variables. Direct observation of antecedents, behaviors, and consequences is the hallmark of Functional Behavior Assessment (FBA) as the term is used in schools (Gresham, Watson, & Skinner, 2001). These observations can yield information about naturally occurring schedules of reinforcement and idiosyncratic variables associated with problem behavior (Anderson & Long, 2002). Descriptive assessments can be conducted using several different methodologies including A-B-C recording, in which the antecedents and consequences surrounding each incidence of a problem behavior is meticulously recorded; event-based recording; interval-based recording; time-based recording; permanent products; and structured descriptive assessments. These methodologies seek to identify patterns in the occurrence of problem behaviors. These patterns may revolve around the time of day the behavior is more likely to occur, settings in which the behavior is likely to occur, or specific contingencies that

appear to be associated with the problem behavior. Like experimental functional analyses, descriptive assessments have been used in a wide variety of settings to assess problem behavior in many populations. VanDerHeyden, Witt, and Gatti (2001) conducted descriptive analyses in early childhood classrooms during regularly scheduled classroom activities. In both classrooms, the descriptive analyses were used to guide a contingency-reversal which resulted in an effective treatment. Anderson and Long conducted a structured descriptive assessment (SDA), which involves loosely aligning the descriptive assessment with those conditions used in experimental functional analyses, but without actually running sessions. These researchers confirmed the results of the SDA with an analogue functional analysis and a treatment analysis, further supporting the use of descriptive assessment procedures.

Descriptive assessments may offer an enhanced understanding of how reinforcement operates in the natural environment. While this is often cited as a potential strength of conducting experimental analyses in natural settings, descriptive assessments offer little disruption to the classroom comparatively, and do not pose the risk of strengthening problem behavior or instituting new functions for problem behaviors. In this way, descriptive assessments offer a way to assess behavior when functional analysis is difficult or impossible to conduct. These assessments, however, require a substantial amount of time to conduct, particularly if a behavior occurs at a low rate, or if it occurs under multiple contingencies (Hall, 2005). Descriptive assessments also do not offer the environmental control that experimental analyses do, therefore presenting the risk that functionally relevant stimuli may not occur during the observation period. This is especially likely in a classroom if teachers have altered the environment in an attempt to prevent the problem behavior, as is often the case. Similarly, behavior that is reinforced only occasionally may be difficult to identify in relation to particular contingencies (Anderson & Long, 2002). For example, it is unlikely in a classroom that the

delivery of attention for an attention-maintained problem behavior will occur on an FR-1 schedule. Rather, it is likely that attention is delivered on a variable ratio, making it possible that an observer may see the occurrence of the behavior in the classroom without the consequence of attention sometimes, and with the consequence of attention at other times. This schedule of reinforcement delivery not only makes pattern identification more difficult, but it also strengthens the behavior, making it more resistant to change. The result is a behavior pattern that is difficult to witness yet continues to strengthen.

Direct descriptive assessments are frequently used as a pivotal component of the FBA process in the schools. However, evidence on the validity of these assessments is inconclusive. Convergent validity studies in which researchers compared hypotheses developed from direct descriptive assessments to results of analog functional analyses, suggest acceptable convergence in some cases, especially when both approaches identified only a single function (Emerson, Thompson, Reeves, Henderson, & Robertson, 1995; Toogood & Timlin, 1996; Broussard & Northup, 1995; Alter, Conroy, Mancil, & Haydon, 2008). In most cases, however, convergence has not been acceptable (Toogood & Timlin, 1996; Conroy, Fox, Crain, Jenkins, & Belcher, 1995; Thompson & Iwata, 2007; Pence, Roscoe, Bourret, & Ahearn, 2009). Treatment validity of direct descriptive assessments is promising, though the research is not complete in this area (Grandy & Peck, 1997; Sterling-Turner, et al., 2001). Thus, direct descriptive assessments offer an opportunity to observe problem behavior and the contingencies surrounding such behavior in a way that does not require the level of control and expertise that experimental analyses do, but may be even more time consuming than experimental analyses, and may or may not be a valid way to determine the function of a behavior in place of experimental analyses (Lerman & Iwata, 1993; Noell, VanDerHeyden, Gatti, & Whitmarsh, 2001). Direct descriptive assessments are, however, much more heavily relied-upon in school settings

as the pivotal component of FBA procedures. Though sometimes used in isolation as the way to assess function, direct descriptive assessments in school settings are often accompanied by a third component of comprehensive FBAs, the indirect descriptive assessment.

Indirect descriptive assessment. Experimental functional analysis and direct descriptive assessments both involve assessing a behavior through direct observation of that behavior. Indirect descriptive assessment offers a way to investigate a behavior that is removed in time and place from that behavior. Examples of indirect descriptive assessments include historical/archival records reviews, behavior rating scales and checklists, performance-based behavioral recording, and functional assessment interviews. Historical/archival records reviews involve searching school records to determine patterns in behavior that have been reported throughout the years. This may be particularly helpful in schools if the team does not know much about the individual, the current setting fails to accurately report behavior incidences, and/or the behavior is low-incidence. Some posit that records reviews are a vital component of the FBA process within schools (Gresham et al., 2001). Behavior rating scales and checklists can be used to briefly identify target behaviors, and can be adapted to include more specific details regarding controlling variables and contexts (Gresham et al.). These scales require teachers and/or caregivers to rate the degree to which environmental variables are perceived to influence students' behavior. Well-known examples of such rating scales include the *Motivation Assessment Scale* (MAS; Durand & Crimmins, 1988); the *Problem Behavior Questionnaire* (PBQ; Lewis, Scott, & Sugai, 1994); and the *Functional Analysis Screening Tool* (FAST; Goh, Iwata, & DeLeon, 1996). Performance-based behavioral recording can be used for those behaviors that do not necessarily lend themselves to event, duration, or interval forms of data collection. This type of data collection uses teachers or caregivers to collect data on the occurrence of target behaviors in relevant settings, and feasibly would allow assessors to collect data on multiple

individuals or multiple target behaviors at once (Steege, Davin, & Hathaway, 2001). Doing so, however, places a high demand on teachers to closely monitor behaviors in the course of their classroom activities.

Functional assessment interviews are a form of indirect descriptive assessment that offer a way to gather information on behaviors from sources such as teachers and caregivers who work with the individual on a daily basis. Gresham et al. (2001) outlined four primary goals of a functional assessment interview. These are

To identify and operationally define the target behavior

To identify the antecedent events associated with the target behavior

To obtain preliminary information concerning the hypothesized function served by the target behavior

To identify appropriate replacement behaviors that will serve the same function served by the target behavior

Examples of currently used functional assessment interviews are the *Functional Assessment Interview* (FAI; O'Neill, Horner, Albin, Storey, & Sprague, 1990); the *Preliminary Functional Assessment Survey* (Dunlap et al., 1993); and the *Functional Assessment Informant Record for Teachers* (FAIR-T; Doggett, Mueller, & Moore, 2002). Interviews can offer a valuable way to gather information from individuals who have witnessed a child's behavior for an extended period of time. This is a technique that is often used in schools, yet is often conducted using protocols that have not been published or validated in any way (Ervin et al., 2001). This is largely due to the paucity of research in this area. Furthermore, data that have been collected are far from conclusive. Some researchers suggest that indirect measures do not reliably identify behavioral function and provide little useful information for treatment development (Sigafos,

Kerr, Roberst, & Couzens, 1993; Stage, Cheney, Walker, & LaRocque, 2002; Zarccone, Rodgers, Iwata, Rourke, & Dorsey, 1991), while others have shown them to have convergent validity with experimental manipulations (Alter et al., 2008; Doggett, Edwards, Moore, Tingstrom, & Wilczynski, 2001). Indirect assessments have the potential to help the consultant identify potential time periods during which to collect direct assessment data, generate initial hypotheses about behavioral function, and establish rapport with the consultee (Sterling-Turner et al., 2001). Additionally, indirect assessments can be less time consuming than direct behavioral observations, less invasive than experimental analyses, and do not require the level of expertise necessary for experimental analyses. However, it can be argued that an assessment such as an interview offers only one perspective of the problem, yielding only partial information regarding behavioral function.

Indirect descriptive assessments used in conjunction with direct descriptive assessments are the most commonly used methods of functional behavioral assessments in school settings. However, a lack of stability in FBA methods among professionals and school districts, coupled with a lack of consistent data attesting to the validity of the methods used results in the use of inconsistent and questionable practices at a time when schools are placing heavy emphasis on the use of evidence-based practices to teach skills and remediate academic and behavioral problems. Additionally, a current economic climate that has resulted in multiple state and federal budget reductions means that school professionals such as school psychologists face an ever-demanding workload. This necessitates the use of efficient assessment protocols and instruments that allow for accurate assessment in a short amount of time. Indirect descriptive assessments, and in particular functional assessment interviews, offer a way to quickly gather information about a behavior. The general approach to functional behavioral assessments in school settings currently is to employ the use of multiple methods of

both indirect and direct descriptive assessments. This is appropriate to ensure that a rounded picture of the individual is obtained. However, by not employing evidence-based strategies of assessment, or employing those strategies incorrectly (e.g., conducting too few hours of direct observation), school psychologists risk spending valuable time on methods that do not yield accurate data, or are superfluous to other methods of data collection.

The FAIR-T is an informant method of indirect assessment used to gather information about single or multiple problem behaviors in the classroom. The FAIR-T gathers information on demographics, classroom performance, and antecedents and consequences surrounding problem behaviors. Additionally, the FAIR-T allows for interaction between the interviewer and interviewee to gather specific details about possible maintaining variables. The measure allows for discussion of multiple target behaviors, and administration length varies depending on the number of behaviors discussed. A typical interview covering a single target behavior can be conducted in approximately 30 minutes. While there are no established guidelines on the amount of training required to conduct the interview, the tool will likely yield more useful information to someone with training in behavioral principles. The FAIR-T is a published measure that has been compared with descriptive and experimental assessments with positive results. Moore, Doggett, Edwards, and Olmi (1999) used the FAIR-T along with other descriptive assessments to guide the conditions used in a brief functional analysis for two students with ADHD. In both cases, the FAIR-T suggested attention as the maintaining variable and the researchers were able to develop an effective function-based intervention. Doggett et al., 2001 conducted a similar study in which the hypotheses derived from the FAIR-T and other descriptive assessments were confirmed by brief experimental analyses. Additionally, Doggett et al. (2001) used the FAIR-T to develop an effective function-based intervention for five children without the use of experimental analysis. The authors concluded that the use of

information based solely on an informant measure such as the FAIR-T could be effective in suggesting hypotheses about the function of behavior and lead to effective function-based interventions. The above-mentioned studies are promising for the use of the FAIR-T in the FBA process. However, the FAIR-T has not been systematically evaluated by researchers external to the development of the measure.

Purpose

The purpose of the current study is to determine the convergent validity of a functional assessment interview, the *Functional Assessment Informant Record for Teachers* (FAIR-T) with analog functional analyses. Previous research on the use of indirect descriptive assessments such as teacher interviews is limited and inconclusive. Therefore, no a priori hypotheses are made regarding the convergence of the FAIR-T with analog functional analyses. All methodology received approval by the University of Kentucky Institutional Review Board.

Chapter Two: Methodology

Participants and Setting

The participants in this study were five classroom teachers, five children, and two behavioral therapists within a private, nonprofit school serving children with special needs between the ages of 5 and 22 years located in the southwest region of the United States. The school offers individualized and comprehensive educational, therapeutic, vocational, behavioral, life skills, and transitional services to a variety of populations, including those with autism, intellectual, emotional, physical disabilities and health impairments. Behavioral assessment and treatment is heavily emphasized within the school, which employs certified behavioral therapists to assist in the assessment of behavior and development of Behavior Intervention Plans. All students attending the school have an educational diagnosis in one or more of the following areas: Autism, Emotional and Learning Disability, Multiple Disability (including Severe Sensory Impairment), Developmental Delay, Physical Disability, Intellectual Disability, Traumatic Brain Injury, Speech and Language Impairment and Other Health Impairments. Additionally, the school offers services to those with vision/hearing impairments. Students are most often placed for services at the school by the student's Individualized Education Planning Team at their home school. Parents may also request placement for their children.

Teachers were identified through parents whose children attended the school. Parents of children attending the school were notified of the current study, and upon consent for their child's participation in the study, provided the name of the child's teacher. Teachers were subsequently contacted regarding participation in the study. In total, eight parents provided permission for their child's participation in the study, and of those eight, five teachers agreed to participate. Classroom teachers knew and worked with the child for at least one month.

Children were between the ages of 4 and 18, and demonstrated behavior excesses or deficits in a variety of topographies. No other exclusionary criteria were used to determine the sample. Classroom teachers were employed through the center. Participants were identified from children whose families independently sought services through the center. Therefore, children were not recruited for treatment at the center, but the data typically collected through the assessment process (i.e., Functional Analysis) at the center was used in the current study in addition to interview data gathered from the teachers regarding their corresponding students.

Child 1 was a 15-year-old Caucasian male identified with autism who was reported to be reading on a Kindergarten to First Grade level, but with limited comprehension. Child 1's math skills were reported to be on a First Grade level. Child 1's target behavior was aggression, defined as slapping, biting, and kicking. Child 1's aggression had been occurring the entire school year, and he had recently received a one-on-one aide to assist with his problem behavior in the classroom. Child 1's teacher indicated that his behavior was nearly unmanageable, was disruptive to the class, and occurred from 1-3 times per day. The behavior reportedly occurred more frequently prior to the implementation of the one-on-one aide who was reportedly able to physically manage the child's behavior. Previous strategies that had been implemented to address Child 1's problem behaviors were extinction, differential reinforcement of alternative behavior (DRA), 1-on-1 aide, behavior charts, and restructuring the environment. Child 1's teacher was a male with a Bachelor's degree in Elementary Special Education. Child 1's teacher had 5 years of teaching experience, 3 of which were at the center in which Child 1 attended. He had been teaching Child 1 for 3 years at the time of the study. He did not indicate that he had received any formal training in Applied Behavior Analysis beyond basic coursework. Child 1's therapist during analog functional analysis sessions was a male with a doctoral level board certification in behavior analysis.

Child 2 was an 8-year-old Hispanic male diagnosed with autism whose reading and math skills were reported to be at a pre-school level. Child 2's target behavior was aggression, defined as hitting, pushing, spitting, biting, head-butting, kicking, pinching, and scratching. Child 2's aggression had been occurring the entire school year. Previous strategies that had been implemented to address Child 2's problem behaviors were extinction, positive praise, a "first-then" folder, a transition item, and a communication device. Child 2's teacher was a female with a Master's degree in Special Education. She had 6 years of teaching experience, all of which were at the center in which Child 2 attended. She did not indicate that she had received any formal training in applied behavior analysis beyond basic coursework. Child 2's therapist during analog functional analysis sessions was a Caucasian female working towards a Master's level board certification in Applied Behavior Analysis.

Child 3 was a 10-year-old African American female diagnosed with autism and Attention Deficit Hyperactivity Disorder whose reading and math skills were reported to be on a pre-school level. Child 3's target behavior was aggression, defined as grabbing, pulling hair, hitting, biting, and spitting. Child 3's aggression had been occurring the entire school year and was rated as moderately disruptive, with some instance of aggression occurring 4-6 times per day. Previous strategies that had been implemented to address Child 3's problem behaviors was differential reinforcement of alternative behavior (DRA), functional communication training, "first-then" statements, physical blocking, and a de-escalation room. Child 3's teacher was a female with a Master's Degree in Special Education. She had 5 years of teaching experience, less than one of which were at the center in which Child 3 was enrolled. She had been working with Child 3 for 5 months at the time of the study. She did not indicate that she had received any formal training in Applied Behavior Analysis beyond basic coursework. Child 3's therapist for analog functional analysis sessions was the same as that for Child 2.

Child 4 was a 16-year-old Caucasian female diagnosed with autism whose reading and math skills were reported to be below a pre-school level. Child 4's target behavior was self-injury, defined as spitting on herself and rubbing her arms until blisters formed, pinching herself, and pulling her hair. Child 4's self-injury had been occurring the entire school year, and was rated as unmanageable and very disruptive, with some instance of self-injury occurring more than 13 times per day. Previous strategies that had been implemented to address Child 4's problem behaviors were extinction, oral stimulation, body armor, and positive praise. Child 4's teacher was a female with a Master's degree in Special Education. She had 4 years of teaching experience, all of which were at the center in which Child 4 was enrolled. She indicated that she had not had any formal training in Applied Behavior Analysis beyond basic coursework at the time of the study. Child 4's therapist during analog functional analysis sessions was the same as that for Child 1 and Child 5.

Child 5 was a 13-year-old Caucasian female diagnosed with a moderate intellectual disability, and a speech-language impairment whose reading and math skills were reported to be on a pre-school level. Child 5's target behavior was tantrums, defined as some combination of the following behaviors: falling to the ground, head banging, biting herself, hitting others, and property destruction. Child 5's tantrums had been occurring the entire school year and were rated as unmanageable and disruptive, with a tantrum occurring from 1-3 times per day. Previous strategies that had been implemented to address Child 5's problem behaviors were non-contingent attention and three-step prompting. Child 5's teacher was a female with a Master's degree in Special Education. She had 1 year of teaching experience, all of which was at the center in which Child 5 was enrolled. She indicated that she had received some coursework in Applied Behavior Analysis in college, and had received some training in Applied Behavior

Analysis at the center in which she worked. Child 5's therapist for analog functional analysis sessions was the same as that for Child 1 and Child 4.

All teacher interviews were conducted after the teacher's school day via telephone or online video conferencing in a private room. All functional analysis sessions were conducted in a closed room which contained a desk, 1 or 2 chairs (depending on condition), and appropriate materials according to condition (e.g. toys, demand activities). Each session room was equipped with a 2-way mirror.

Data Collection

FAIR-T. The primary function identified by the FAIR-T was determined by coding item responses according to the function they indicated. For example, if a teacher indicated that after the behavior was exhibited and the consequence of "termination of task" occurred, this would indicate a possible escape function, while if a teacher indicated that the behavior occurred more often after a request had been denied, this would indicate a possible "access to activity or item" function, etc. In order to ensure consistent coding among administrations, a coding matrix was created. Possible responses on the FAIR-T were identified as indicators of specific functions (Attention, Escape, Access to a Preferred Activity). After coding of the FAIR-T, the condition with the highest percentage of indicators noted was considered the primary function identified by the measure. As attention is often delivered in conjunction with those variables that maintain escape-driven behaviors and those behaviors maintained by access to preferred items or activities, when attention was identified with the same percentage as escape or access, attention was considered the secondary function. In the case that an equal percentage of indicators were present in all conditions, it was determined that the measure failed to identify a primary function.

Results of the researcher's coding of the FAIR-T did not, in any way, affect the analog functional analysis sessions, nor did it affect the child's treatment plan.

Analog FA. Functional analyses were carried out in a multi-element design modeled after Iwata (1982,1994) using the conditions contingent attention, contingent escape, contingent access, alone, and a control condition. Specific conditions varied for each child according to the target behavior. For example, it was not appropriate to run alone conditions for participants with the target behavior of aggression, as instances of aggression require the presence of someone else. All sessions were conducted in a closed treatment room which contained a desk and one or two chairs (depending on the condition). Trained therapists collected direct observation data from an observation room behind a 2-way mirror. All sessions were conducted by a Board Certified Behavior Analyst (BCBA), or a BCBA trainee under direct supervision of a fully certified analyst. Two therapists were present in addition to the participant for each session. One therapist ran the session while the other observed and collected data.

During the contingent attention condition, attention was delivered in the form of a brief reprimand (e.g., "don't hit") by the therapist contingent on the occurrence of the target behavior. Prior to the beginning of the condition, the consultant engaged with the child for one minute. After one minute, the therapist remained near the child, but did not attend unless the target behavior occurred. If needed, the therapist also physically blocked the child's responses while delivering the verbal correction. The therapist ignored the occurrence of appropriate or alternative behaviors.

During the contingent escape condition, the child was presented with a non-preferred task (e.g., math worksheet). Prior to beginning the session, the consultant engaged with the child for one minute. After one minute, the therapist began a three-step prompting procedure (verbal request, model, physical prompt) requesting that the child complete the task.

Occurrence of the target behavior resulted in the removal of the task demand for 30s. After 30 seconds, the therapist re-issued the demand instructions.

During the contingent access condition, the child was given access to a highly preferred tangible or activity for 30 seconds contingent upon the occurrence of the target behavior. Prior to beginning the session, the child was allowed access to the preferred tangible or activity for one minute. After one minute, the therapist removed access to the tangible or activity. Upon occurrence of the target behavior, the child was granted access to the preferred tangible or activity for 30 seconds.

During the alone condition, the child was alone in the analog room for the length of the session. No action was taken upon the occurrence of the target behavior. Trained therapists watched the child from behind a 2-way mirror throughout the session.

During the control condition (free play), the child had continued access to highly preferred toys with no instructional or task demands placed upon him. Positive or neutral attention was delivered every 30 seconds on a fixed-ratio schedule. All target behaviors were ignored (with the exception of physical blocking if necessary), and the therapist remained in close proximity to the child throughout the session.

Frequency data was taken in all cases except Child 5, whose target behavior was tantrums. While frequency data is appropriate for discrete behaviors such as hitting or spitting, tantrum behavior is often better measured with other data collection procedures, such as duration or interval recording. In the case of Child 5, partial interval recording using 10 second intervals was conducted. Results of the analog functional analysis sessions were analyzed visually. Degree of overlapping data points between sessions was used to identify the function of the behavior. Primary function was identified by the condition which displayed the least

amount of overlap with other conditions. Results of the researcher's coding of the functional analysis videos did not, in any way, affect the child's treatment plan.

Interobserver agreement (IOA). Inter-rater agreement data was collected on at least 33% of FAIR-T administrations and Functional Analysis sessions in accordance with current conventions within single-subject research designs (Kennedy, 2005). IOA data was collected on 40% of FAIR-T administrations using an independent observer certified in applied behavior analysis. Prior to coding the FAIR-T, an independent observer received training on how to code the measure using examples of the FAIR-T completed with fabricated data. Training was complete when the independent observer obtained 100% agreement with the researcher. Interobserver agreement was calculated using the point-by-point agreement method to determine the occurrence, non-occurrence, and total agreement for FAIR-T responses. IOA across codings of the FAIR-T was 98%.

Analog sessions were video recorded, and IOA data was collected by the researcher from the videos for each participant by calculating the total agreement for target behaviors. Data was collected after coding of the FAIR-T administration for that individual to ensure that results of the analog FA did not influence FAIR-T coding. For Child 1, IOA was taken on 33% of sessions. Overall reliability was 100%. For Child 2, IOA was taken on 33% of sessions. Overall reliability was 100%. For Child 3, IOA was taken on 36% of sessions. Overall reliability was 100%. For Child 4, IOA was taken on 34% of sessions. Overall reliability was 96%. For Child 5, IOA was taken on 33% of sessions. Overall reliability was 97%.

Procedure

FAIR-T administration. The FAIR-T was administered to teachers by a graduate student trained in Applied Behavior Analysis and interview techniques using telephone or video-

conferencing technology. The FAIR-T includes general information, teacher ratings of the severity of the problem behavior, and determination of antecedents and consequences surrounding the behavior. For the purposes of determining hypotheses about the function of the problem behavior, only the section regarding antecedents and consequences were coded. General information and teacher ratings of the severity of the problem behavior were noted as descriptors of the child and the problem behavior. All FAIR-T administrations were coded by the researcher. The interview was conducted and coded by the researcher prior to analog functional analysis sessions.

Analog functional analysis. Functional analysis sessions, as described at the beginning of the chapter, were administered by a Board Certified Behavior Analyst a BCBA trainee under direct supervision of a certified analyst. Functional analyses were carried out in a multielement design using a combination of the conditions attention, escape, access to a tangible, alone, and a control condition. During all conditions, if the target behavior was considered dangerous to the child or the therapist, then occurrence of the target behavior during a session resulted in delivery of the consequence of the condition (i.e. attention), and then the session was terminated. This was to protect the safety of both the child and the therapist. Three sessions per condition were run for Child 1, Child 2, and Child 3. Seven sessions per condition were run for Child 4, and six sessions per condition were run for Child 5. The length of sessions began at 2 minutes, but was extended if needed until a clear pattern of responding was established. Session length ranged from 2 to 10 minutes. Conditions alternated in a quasi-randomized design in order to assure that two sessions under the same conditions were not run consecutively.

Chapter Three: Results

The primary function identified by the FAIR-T was compared to the primary function identified by the analog functional analysis to determine convergent validity. The FAIR-T administrations were conducted via video conferencing for Child 1 and Child 5, while the rest of the administrations were conducted via telephone. Results of the FAIR-T and analog FA are displayed for each child in Table 1.

Table 3.1

Results of FAIR-T Administrations and Analog FA Sessions by Participant

Participant	Target Behavior	FAIR-T	Analog FA	Interview Method
Child 1	AGG	Attention	Unidentified	Video-Conference
Child 2	AGG	Escape	Escape	Telephone
Child 3	AGG	Attention	Tangible	Telephone
Child 4	SIB	Attention	Automatic	Telephone
Child 5	Tantrums	Escape	Escape	Video-Conference

Child 1

The FAIR-T administration revealed that 80% of the potential attention-maintained indicators were noted by the teacher. In comparison, 36% of the potential escape-maintained indicators were noted, and no potential access-maintained indicators were noted. Therefore, it was determined that the primary function as identified by the FAIR-T was attention. During the analog functional analysis, the target behavior was not elicited in any condition (see Figure 1).

Therefore, it was not possible to determine a function based on the results of this experimental analysis. In this case, the FAIR-T identified a function while the functional analysis did not.

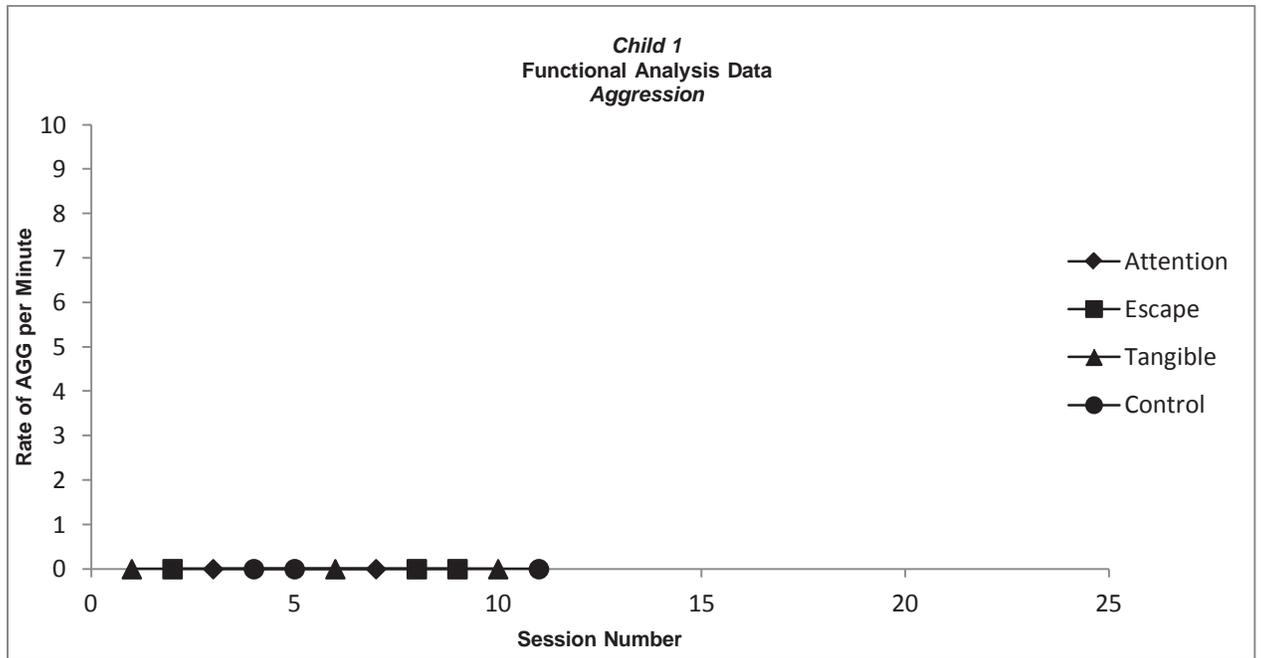


Figure 1. Child 1's rate of aggression per minute during functional analysis sessions.

Child 2

The FAIR-T administration revealed that 83% of potential escape-maintained indicators were noted by the teacher. In comparison, 50% of the attention-maintained responses and 43% of the tangible-maintained indicators were noted. Therefore, it was determined that the primary function as identified by the FAIR-T was escape. The functional analysis results indicated an escape function for Child 2 (see Figure 2). Elevated data points occurred in attention, tangible, and escape conditions; however, a larger majority of data points were elevated in the escape condition. No elevated data points were observed in the control condition. In this case, the responses to the FAIR-T indicated a possible escape function, which was confirmed by the analog functional analysis.

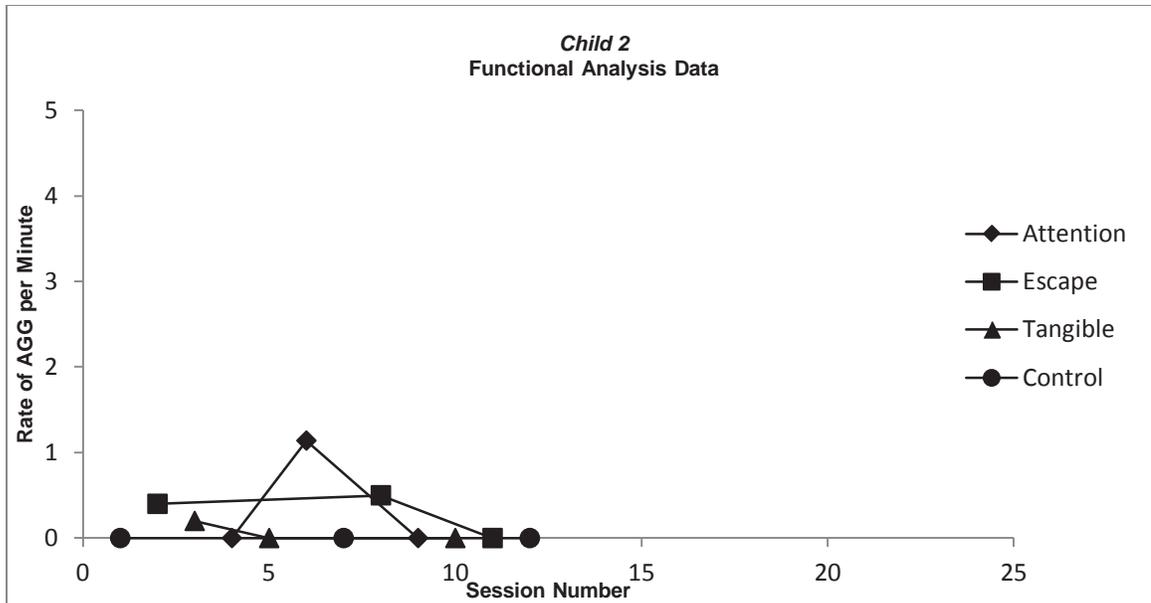


Figure 2. Child 2's rate of aggression per minute during functional analysis sessions.

Child 3

The FAIR-T administration revealed that 60% of potential attention-maintained indicators were noted by the teacher. In comparison, 31% of escape-maintained and 17% of access-maintained indicators were noted. Therefore, it was determined that the primary function as identified by the FAIR-T was attention. The functional analysis results for Child 3 indicated a clear tangible function despite an elevated data point in the escape condition (see Figure 3). No elevated data points were observed in the control condition. In this case, the responses to the FAIR-T indicated a possible attention function, while the results of the analog functional analysis indicted a tangible function.

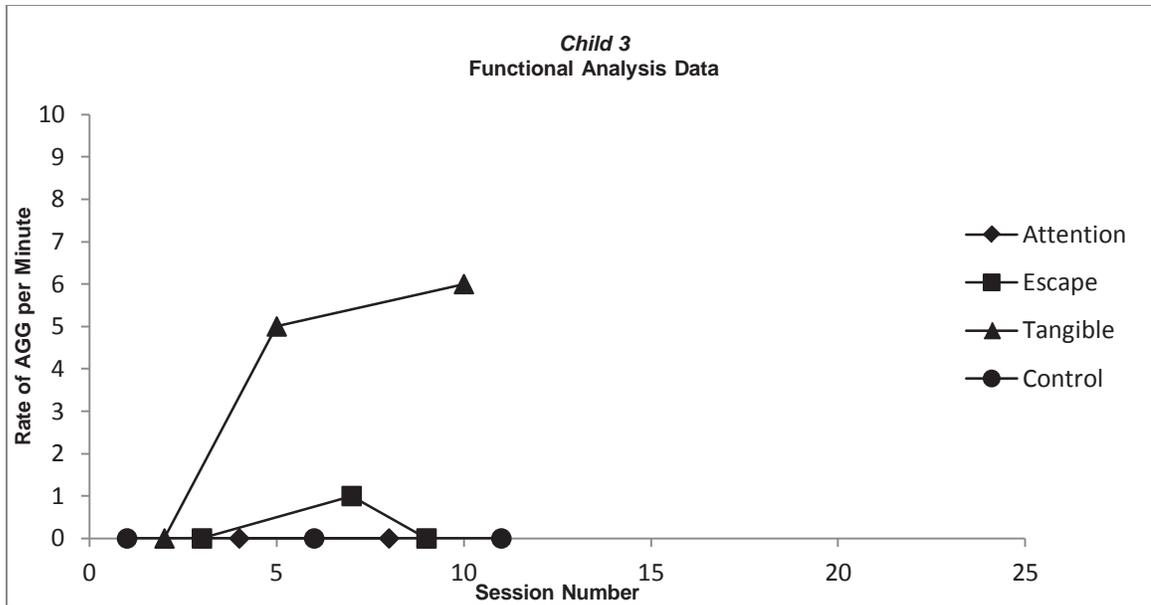


Figure 3. Child 3's rate of aggression per minute during functional analysis sessions.

Child 4

The FAIR-T administration revealed that 75% of potential attention-maintained indicators were noted by the teacher. In comparison, 27% of potential escape-maintained and 17% of potential access-maintained indicators were noted. Therefore, it was determined that the primary function as identified by the FAIR-T was attention. The functional analysis results for Child 4 revealed elevated data points in all conditions, including the control and alone conditions, indicating an automatic function for her behavior (see Figure 4). In this case, the responses to the FAIR-T indicated a possible attention function, while the results of the analog functional analysis indicated an automatic (sensory) function.

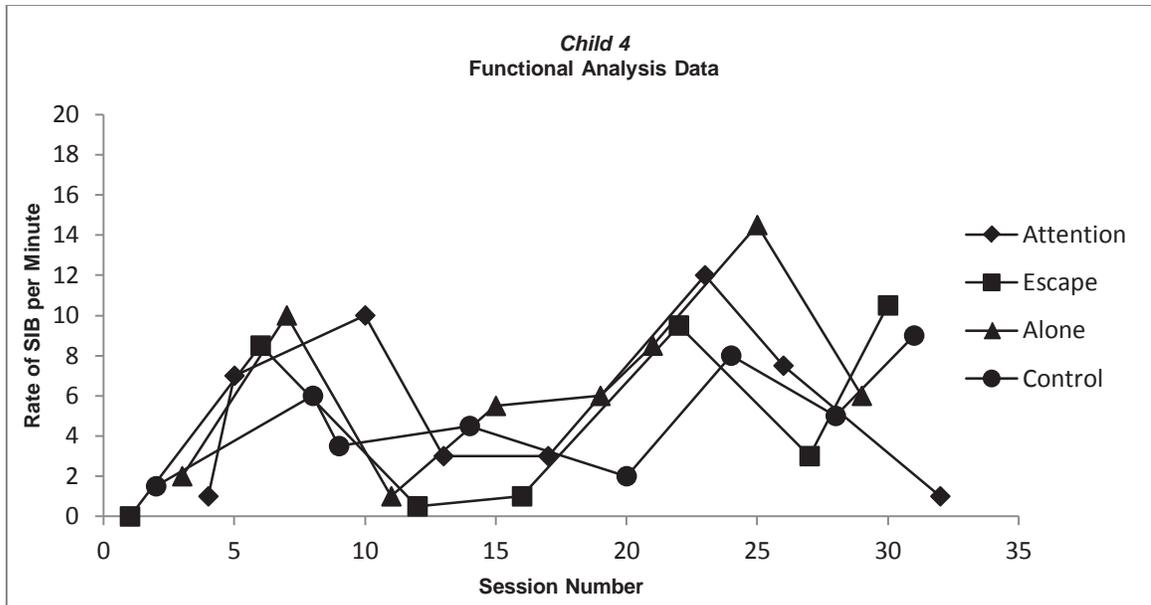


Figure 4. Child 4's rate of self-injurious behavior per minute during functional analysis sessions.

Child 5

The FAIR-T administration revealed that 50% of potential attention-maintained and 46% of escape-maintained indicators were noted by the teacher. In comparison, 17% of potential access-maintained indicators were noted. As indicated in the description of the FAIR-T coding, at any time when attention was identified in conjunction with another function, the non-attention function was considered primary. Because the percentages in Child 5's FAIR-T administration were so close between attention and escape-maintained responses, it was determined that the primary function as identified by the FAIR-T was escape. The functional analysis results indicated an escape function for Child 5 (see Figure 5). Elevated data points occurred in both tangible and escape conditions, however, a larger majority of data points were elevated in the escape condition. No elevated data points were observed in the attention or control conditions. In this case, the responses to the FAIR-T indicated a possible escape function, which was confirmed by the analog functional analysis.

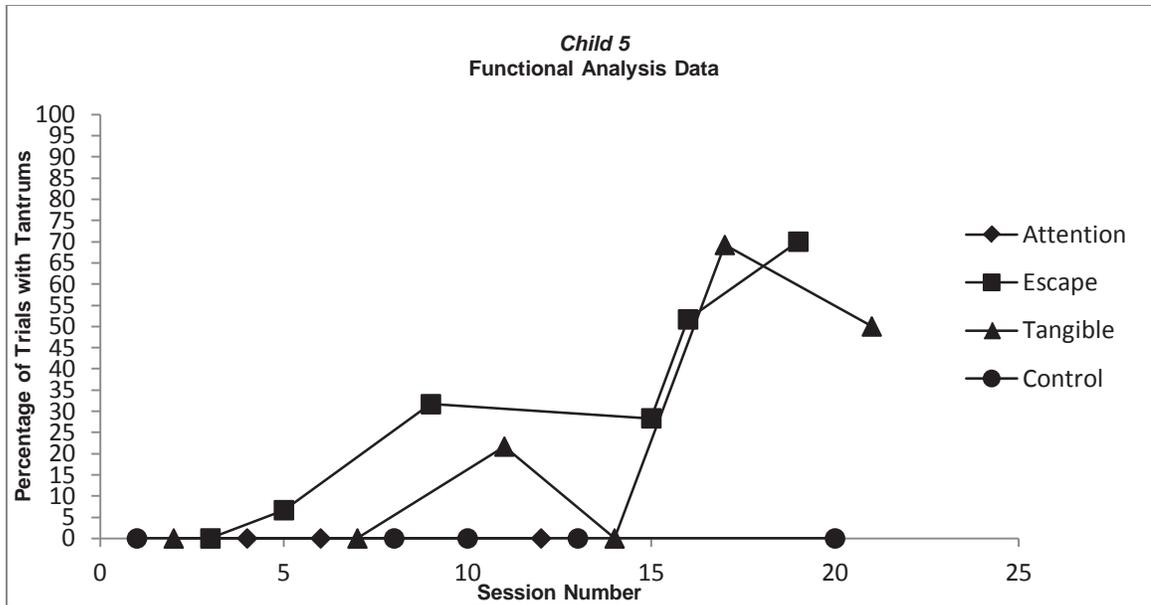


Figure 5. Child 5's percent of trials with tantrum behavior during functional analysis sessions.

Overall, the FAIR-T indicated attention as the possible function maintaining target behaviors in 3 out of the 5 cases. In the remaining 2 cases, the FAIR-T indicated escape as the possible function. The results of the analog functional analyses did not indicate attention as the maintaining function for any of the cases. In the two cases in which escape was indicated by the FAIR-T, escape was also indicated by the analog FA. Therefore, convergent validity between the FAIR-T and analog FAs was observed in 40% of the cases.

Chapter Four: Discussion

The purpose of the current study was to evaluate the convergent validity of a functional assessment interview, the *Functional Assessment Informant Record for Teachers* (FAIR-T) with analog functional analyses. The impetus behind this study was to contribute to the FBA literature in the hopes to provide some clarity for those seeking the most efficient ways to conduct FBAs. Though experimental analyses are often considered by clinicians to be the most definitive way to capture the function of a behavior, and these methods have the most treatment validity research associated with them, they are also not always feasible within school settings. Though the specific methodologies used within schools vary across districts and states, the majority of FBA procedures include some combination of indirect and descriptive assessments.

Summary

The results of this study suggest the convergence between the FAIR-T and analog functional analyses is inconclusive. The FAIR-T and analog FAs were conducted with 5 participants, yielding convergence in only 2 cases. The primary function identified by the various FAIR-T administrations was attention, though none of the FA results indicated attention as the primary function. In the case of Child 1, the FAIR-T identified attention as the primary function, while no primary function was identified through the analog FA. In the case of Child 2, the FAIR-T identified escape as the primary function, as did the analog FA. In the case of Child 3, the FAIR-T identified attention as the primary function, while the analog FA identified a tangible function. Child 4's FAIR-T results indicated an attention function, while the analog FA results indicated an automatic function. In the case of Child 5, the FAIR-T and analog FA each identified escape. Thus, for each child in which the FAIR-T identified attention as the maintaining function, the

analog FA indicated a different primary function, or failed to identify a function. In the case of Child 3, though attention was identified by the FAIR-T, there were no elevated data points in the attention condition of the analog FA. Therefore, the current data does not support or refute the argument for the FAIR-T's ability to accurately identify a primary function for problem behavior when using analog functional analyses as the basis for comparison.

Furthermore, while the FAIR-T does not lend itself well to identifying automatic functions, it may be expected that for an individual with automatically maintained behavior, the FAIR-T would result in elevated responses in all conditions (Attention, Escape, Tangible). This logic is based on the clinical judgment that during an analog functional analysis, if behavior is elicited in all conditions, one explanation is that the behavior is automatically maintained. Though the analog functional analysis for Child 4 indicated an automatic function, the FAIR-T results heavily favored attention as a primary function. Additionally, the FAIR-T for Child 2, Child 3, and Child 5 all revealed slightly elevated responses in all conditions, though none of the FA results for these participants suggested an automatic function. This may suggest that the measure is too limited in sensitivity to delineate an automatic function. Overall, the results of this study are consistent with previous research that questioned the ability of indirect measures to reliably identify function (Stage, Cheney, Walker, & LaRocque, 2002).

Implications and Future Research

This study extends previous investigations by providing an evaluation of the FAIR-T by an investigator external to the development of the measure. Additionally, the current study utilized a larger number of participants than previous research using the FAIR-T. The current study has several implications to the application of the FAIR-T in the analysis of behavior, particularly within school settings. Previous research conducted by the developers of the

measure has suggested the validity of the FAIR-T when compared with brief functional analysis results, and the utility of the FAIR-T in developing effective treatments. The current study, conducted with a larger number of participants suggests that the convergence between the FAIR-T and experimental analyses may not be as strong as the developers' original research indicated. These conclusions have implications for practice because they emphasize the importance of utilizing a variety of data collection methods when conducting FBAs in the school setting. Heavy reliance on one form of data collection, without a strong evidence base could not be considered best practice, and may lead to ineffective behavior plans. However, as stated previously, the most common FBA methodology seen in schools is some combination of indirect and descriptive assessments. The current study evaluated an indirect assessment in comparison to an experimental assessment, but the utility of the FAIR-T in conjunction with descriptive methods is unexplored.

One way to consider the use of the FAIR-T, like other indirect methods of data collection, is to use the interview to narrow down possible functions, thereby allowing practitioners to run fewer conditions in an experimental analysis. This may be done by selecting the two conditions which are most strongly indicated by the indirect assessment for the experimental analysis. For example, if the FAIR-T indicated elevated responses in both attention and escape conditions, it may be possible to eliminate other conditions (e.g., alone, tangible) from the functional analysis. In the current study, this may have been a successful approach for two of the participants. However, in the case of Child 1, no function was identified by the FAIR-T, while in the case of Child 4, the two most elevated conditions on the FAIR-T were attention and escape. If a practitioner were to use these conditions in an abbreviated functional analysis, they would likely have obtained elevated data points in both conditions, and would have had to run more conditions to identify the automatic function anyway. For Child 3, the two most

elevated conditions on the FAIR-T were escape and attention, while the tangible condition had the smallest percentage of responses. The funneling of FA sessions based on the FAIR-T results for Child 3 would have eliminated the tangible session, which the FA indicated was the primary function. Therefore, if a practitioner were to select the two highest-rated conditions to run in the experimental analysis, they would likely fail to identify the correct function. In this study, neither the first nor second-most indicated condition on the FAIR-T was identified by the analog FA for the three participants whose results did not converge with the FAIR-T. Thus, the FAIR-T may not be a useful tool for identifying the most likely potential functions in order to run more efficient experimental analyses.

Another potential benefit of indirect assessments such as the FAIR-T is that they may allow therapists to gather information on low-incidence behaviors, or behaviors that are difficult to elicit. In the case of Child 1, it is possible that the FAIR-T identified a possible function that the analog FA failed to capture because the therapists were unable to elicit the behavior. The results of Child 1's FAIR-T clearly indicated attention as the primary function of his aggressive behavior, which may offer therapists a starting point for intervention planning that they may not have obtained if relying solely on experimental analysis results. This may be particularly useful for professionals within traditional school settings, as many of the children who require a behavior intervention plan do not engage in such elevated rates of problem behavior as children with severe disabilities. The current study utilized participants attending a highly specialized school designed to serve students who struggled to make progress within a typical school setting. Participants within this study generally demonstrated a high level of problem behavior. It may be more difficult for staff completing an FBA within a traditional school setting to capture the problem behavior in the time that they observe the child, and would need to rely more heavily

on indirect assessment data. Future research on the FAIR-T should evaluate its application to populations with low-incidence problem behaviors.

One characteristic noted in previous discussions of the FAIR-T is its tendency to over-identify attention as the primary function maintaining problem behavior (Doggett, Mueller, & Moore, 2002). In the current study, three out of the five FAIR-T administrations identified attention as the primary function, and in all administrations of the FAIR-T, at least 50% of the possible attention maintained responses were identified. These results are consistent with the argument that the FAIR-T over-emphasizes attention as the function of problem behavior. This is further highlighted by the fact that the analog functional analyses failed to identify attention as the primary function in any case. However, it may be argued that this is a weakness of many indirect measures used to assess behavior as attention is so often delivered in conjunction with other consequences. Attention is, in fact, so prevalent among the consequences of any behavior that many intervention strategies manipulate the delivery of attention (e.g., extinction, DRA) in conjunction with other antecedent and consequence manipulations. Thus, it may be difficult for any indirect measure to differentiate attention absolutely from other maintaining conditions.

The results of this study illuminate several more ideas for future investigation. First, future research should focus on the validity of treatments developed from the use of the FAIR-T and other indirect measures. Regardless of whether various data collection methods are convergent with each other, the ultimate goal is the development of an effective treatment. Therefore, treatment validity should be a large focus for any future research on any behavioral assessment techniques. Furthermore, many treatment validity studies that have been conducted thus far rely on a small number of participants. This is a realistic approach to such research due to the complex and time-consuming nature of behavioral analysis and treatment. However, investigations that examine the success of treatments developed from assessment

results across a larger number of participants would provide useful information for practitioners. This is particularly true in the case of school-based assessment and intervention as function-based interventions developed within a clinic setting do not always generalize to a school setting. Therefore, treatment validity studies in which school-based treatments are derived from school-based assessment would contribute greatly to the literature.

Additionally, more information is needed about the current research conducted on indirect functional assessment measures as a whole. As this is a highly utilized form of data collection in school systems, more summative analyses of existing research may provide school practitioners more easily accessible information regarding the most validated forms of indirect assessment. One hindrance to this area of research is the wide variety among the procedures of the studies that have been conducted. As many studies are conducted within the context of clinical treatment, it is not always possible or ethical to create ideal methodology that is consistent with previous methodologies. This is another reason why frequent summative analyses in this area of research would be particularly helpful for all practitioners.

Limitations

This study has limitations that require consideration. Firstly, this study utilized participants from a special school serving only individuals with disabilities severe enough to warrant removal from the typical school population. Therefore, the children in this study may not be a broad representation of the population served in the majority of schools within the country. As FBAs are conducted not only on individuals within the special education population, but also on typically developing children, it is important to consider the differences in the types of behaviors, as well as the intensity of behaviors the two different populations exhibit. However, behavior analysis does not apply only to individuals with severe disabilities, and the

principles surrounding the analysis of behavior hold true regardless of an individual's disability or the topography or intensity of their behaviors. The teachers within this study held the same educational degrees as special education teachers in typical school settings, and it is not likely that their responding was greatly influenced by the fact that they worked in a specialized setting.

Secondly, due to the fact that the FAIR-T is an interview, and does not include instructions regarding how to code responses, some clinical judgment is required to interpret the measure. For this current study, coding was conducted in a systematic manner that considered the nature of each question. However, the almost qualitative aspect of the measure ensures that the measure may not be interpreted in the same way by every interviewer. In the current study, the FAIR-T was reliably coded by two individuals trained in applied behavior analysis and thus the codings are considered accurate. This characteristic of the FAIR-T has larger practical implications, however. While it is likely that those trained in behavioral analysis procedures would draw similar conclusions from FAIR-T administrations, it is also likely that more variation would occur if the measure was administered by individuals with less training in this area. It is possible that this tool may be less useful for individuals conducting FBAs in school settings who have not had explicit training in behavioral analysis.

A third limitation of this study aligns with the development of a coding system for research purposes. In an effort to adhere to the coding procedures outlined for this research study, the researcher was not able to probe further on many questions. Therefore, many questions were taken at face value for the purposes of coding. In many cases an interviewer can obtain much more information through exploring questions, particularly during interviews with parents or teachers regarding children's problem behaviors. However, many informant methods

of data collection use discrete rating scales in order to obtain quantitative data, and much more variability is observed in the coding of open interviews.

A fourth and most important limitation of this study is the lack of a treatment component to validate the results of either the FAIR-T or the analog functional analyses. While analog FAs have a wide research base, and are generally considered a valid way to assess function of behavior, the development of a successful treatment program is the ultimate validation of such assessments. While, for the purposes of this study, the results of the functional analyses were considered the basis for measuring the validity of the FAIR-T, more confident conclusions could be drawn with the presence of treatment validity data.

The results of this study demonstrate that the FAIR-T may have limited convergent validity with analog functional analyses, though results are not conclusive. One driving force behind the current study was the need to identify efficient means of conducting functional behavior assessments within schools which often face limited time, resources, and trained personnel. However, based on the results of the current study, it is not recommended that

practitioners rely heavily on the results of the FAIR-T to drive treatment decisions. More research is needed on this and other approaches, such as the effectiveness of the FAIR-T when used in conjunction with descriptive methods, to analyzing behavior within the schools in order to balance time and resources while creating effective behavior plans for our students in need.

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Appendix A

FAIR-T Code Sheet

*As attention is often delivered in conjunction with those variables that maintain escape-driven behaviors and those behaviors maintained by access to preferred items or activities, when attention is identified along with escape OR access, attention will be considered the secondary function.

Attention Maintained

- _____ The behavior results in peer attention (C-1d)
- _____ The behavior results in teacher attention(C-1e)
- _____ The behavior occurs more often when a specific person is in the room AND the behavior results in attention from that person (A-11 & C-1e)
- _____ The behavior occurs more often when a specific person is absent from the room AND the behavior results in attention from that person (A-12 & C-1d/e)
- _____ *Are there any behaviors that usually precede the problem behavior* (A-13)
- _____ *Is there anything you could do that would ensure the occurrence of the behavior* (A-14)
- _____ *Are there any events occurring in the child's home that seem to precede the occurrence of the behavior at school* (A-15)

Escape Maintained

- _____ The behavior occurs more often during a certain type of task AND the behavior results in a termination of that task (A-1 & C1b)
- _____ The behavior occurs more often during easy tasks (A-2)
- _____ The behavior occurs more often during difficult tasks (A-3)
- _____ The behavior occurs more often during certain subject areas (A-4)
- _____ The behavior occurs more often during new subject material (A-5)
- _____ The behavior occurs more often when a request is made to stop an activity AND the behavior occurs more often when a request is made to begin a new activity (A-6 & A-7)
- _____ The behavior occurs more often when a request is made to begin a new activity (A-7)

- _____ The behavior occurs more often during transition periods AND when a request is made to begin a new activity (A-8 & A-7)
- _____ The behavior occurs more often when a specific person is in the room AND the behavior results in the removal of that specific person's attention (A-11 & C1f)
- _____ The behavior occurs more often in certain settings AND the behavior results in termination of task (A-16 & C1b)
- _____ The behavior results in the termination of task (C1b)
- _____ Teachers have stopped presenting student with a task as a result of the problem behavior (C-2)
- _____ *Are there any behaviors that usually precede the problem behavior* (A-13)
- _____ *Is there anything you could do that would ensure the occurrence of the behavior* (A-14)
- _____ *Are there any events occurring in the child's home that seem to precede the occurrence of the behavior at school* (A-15)

Access to preferred item or activity

- _____ The behavior occurs more often during a certain type of task AND the behavior results in access to that task (A-1 & C1a)
- _____ The behavior occurs more often when a request is made to stop an activity but NOT when a request is made to begin a new activity (A-6 & A-7)
- _____ The behavior occurs more often during transition periods AND the behavior results in access to a preferred activity AND/OR reward (A-8 & C1a/C1c)
- _____ The behavior occurs more often when the student's request has been denied (A-10)
- _____ The behavior results in access to a preferred activity (C1a)
- _____ The behavior results in rewards (C1c)
- _____ *Are there any behaviors that usually precede the problem behavior* (A-13)
- _____ *Is there anything you could do that would ensure the occurrence of the behavior* (A-14)
- _____ *Are there any events occurring in the child's home that seem to precede the occurrence of the behavior at school* (A-15)

Unidentified

_____ The behavior occurs under conditions necessary for *attention, escape* AND *access*- functions

Qualitative Questions

These questions may offer information on the function of the behavior. The category into which these questions fall will depend on the answers provided by the teachers. Answers will be placed into the best-suited category (these are the responses that are italicized).

- Are there any other behaviors that usually *precede* the problem behavior (A-13)
- Is there anything you could do that would *ensure* the occurrence of the behavior (A-14)
- Are there any events occurring in the child's *home* that seem to precede the occurrence of the behavior at school (A-15)

Appendix B

Parent Consent to Participate in a Research Study

Convergence of Outcomes between the Functional Analysis Informant Record for Teachers (FAIR-T) and Analog Functional Analysis

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?

Your child's data is being requested as part of a research study about behavioral assessment methods. You are being invited to take part in this research study because you have sought services for your child at the Arizona Centers for Comprehensive Education and Life Skills and your child demonstrates behaviors that affect his/her ability to successfully engage in the school setting. If you volunteer your child to take part in this study, you will be one of about 8 people to do so.

WHO IS DOING THE STUDY?

The person in charge of this study is Laura Pierce, a doctoral student in the University of Kentucky Department of Educational, School, and Counseling Psychology. She is being guided in this research by H. Thompson Prout, Ph.D. There may be other people on the research team assisting at different times during the study.

WHAT IS THE PURPOSE OF THIS STUDY?

By doing this study, we hope to learn more about the relationship between behavioral assessment methods that utilize teacher interviews and those that involve direct interaction with children, such as the functional analysis procedures used at ACCEL. As we learn more about methods of behavioral assessment, we hope to determine the most efficient means of conducting such assessments.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?

You should not sign this consent form to release your child's data in this study if you are not a legal guardian to the child being served at this center, if you are a foster-parent to the child being served at this center, if your child is not between the ages of 4 and 17, or if you know your child is pregnant.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The behavioral assessment, which is part of your child's typical educational process, will be conducted at the Arizona Centers for Comprehensive Education and Life Skills (ACCEL) by ACCEL staff. The data from this behavioral assessment will be reviewed by the investigator, Laura Pierce, should you release this data. Neither you nor your child will have to do anything outside of the normal procedures at ACCEL.

WHAT WILL YOU BE ASKED TO DO?

Neither you or child will be asked to do anything outside of the normal procedures at ACCEL. It is standard procedure for ACCEL staff to video behavioral assessments, therefore, you are being asked to allow the investigator to view those videos. Additionally, you are being asked to allow the investigator to communicate with your child's teacher regarding your child's behavior in the classroom. Your child's education, behavioral assessment, and intervention will not be altered in any way by this study.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

To the best of our knowledge, the things your child will be doing have no more risk of harm than he/she would experience in everyday life.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

Your child will not get any personal benefit from taking part in this study. Your willingness to take part, however, may, in the future, help society as a whole better understand this research topic.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering. If you decide not to take part in this study, your decision will have no effect on the quality of care, services, etc., you receive.

IF YOU DON'T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?

If you do not want to be in the study, there are no other choices except not to take part in the study.

WHAT WILL IT COST YOU TO PARTICIPATE?

There are no costs associated with taking part in the study.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?

You will not receive any rewards or payment for taking part in the study.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?

We will make every effort to keep private all research records that identify you to the extent allowed by law.

Your child's information will be reported with his/her teacher's interview data as a case study. Your child will not be personally identified in these written materials. We may publish the results of this study; however, we will keep your child's name and other identifying information private

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. Your child's video will be viewed by the investigator. The investigator's copy of the video will be destroyed immediately upon completion of data collection from the videos. A copy of the video and results of the behavior assessment may remain at ACCEL as part of their standard operating procedures and as part of your child's educational records. ACCEL's use of your child's video is not linked in any way to this research study. Any identifying information, such as names, will be stored on a password-protected computer until it is destroyed. The principal investigator will be the only person with access to identifying information outside of ACCEL staff who have access to this information naturally.

We will keep private all research records that identify you to the extent allowed by law. However, there are some circumstances in which we may have to show your information to other people. For example, we may be required to show information which identifies you to people who need to be sure we have done the research correctly; these would be people from such organizations as the University of Kentucky.

CAN YOUR TAKING PART IN THE STUDY END EARLY?

If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. You will not be treated differently if you decide to stop taking part in the study.

The individuals conducting the study may need to withdraw your child from the study. This may occur if members of ACCEL are unable to collect the necessary behavioral assessment video for any reason, or if your child's teacher prefers not to participate in the study. Should you withdraw your child, or should the researchers need to withdraw your child, there will be no consequences.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, Laura Pierce at (919)744-9992, laura.pierce@uky.edu. Additionally If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428. We will give you a signed copy of this consent form to take with you.

Child's Name _____ Teacher _____

Child's Identified Disability _____

Signature of person agreeing to take part in the study

Date

Printed name of person agreeing to take part in the study

Appendix C

Teacher Consent to Participate in a Research Study

Convergence of outcomes between the Functional Analysis Informant Record for Teachers (FAIR-T) and Analog Functional Analysis

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?

You are being invited to take part in a research study about behavioral assessment methods. You are being invited to take part in this research study because you are employed as a teacher at the Arizona Centers for Comprehensive Educational and Life Skills, where behavioral assessments are often conducted. If you volunteer to take part in this study, you will be one of 8 or fewer people to do so.

WHO IS DOING THE STUDY?

The person in charge of this study is Laura Pierce, a doctoral student in the University of Kentucky Department of Educational, School, and Counseling Psychology. She is being guided in this research by H. Thompson Prout, Ph.D. There may be other people on the research team assisting at different times during the study.

WHAT IS THE PURPOSE OF THIS STUDY?

By doing this study, we hope to learn more about the relationship between behavioral assessment methods that utilize teacher interviews and those that involve direct interaction with children, such as the functional analysis procedures used at ACCEL. As we learn more about methods of behavioral assessment, we hope to determine the most efficient means of conducting such assessments.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?

There are no explicit reasons why you should not take part in this study, aside from personal preference. In order to discuss a child's behavior with you, we will obtain parent permission.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The research procedures will be conducted at ACCEL. You will be asked to participate in one interview lasting approximately 45 minutes using video conferencing. ACCEL will provide you with this technology if you do not already have it. Additionally, you will be asked to complete a brief follow-up questionnaire. Interviews will be arranged according to your schedule.

WHAT WILL YOU BE ASKED TO DO?

You will be asked to provide information regarding the behavior of one or more of your students' behavior in the classroom. This information will be gathered by the principal investigator (Laura Pierce) through the Functional Assessment Informant Record for Teachers using interactive video conferencing. Investigators will then compare the information gathered through this interview with results of formal behavioral assessments conducted at ACCEL. You will then be asked to complete a brief follow up questionnaire regarding the results and interview process.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

You will not get any personal benefit from taking part in this study. Your willingness to take part, however, may, in the future, help society as a whole better understand this research topic.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering. Participation or non-participation in this research study has no effect on your employment at ACCEL.

IF YOU DON'T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?

If you do not want to be in the study, there are no other choices except not to take part in the study.

WHAT WILL IT COST YOU TO PARTICIPATE?

There are no costs associated with taking part in the study.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?

You will not receive any rewards or payment for taking part in the study.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?

We will make every effort to keep private all research records that identify you to the extent allowed by law.

Your information will be reported with your student’s data as a case study. Neither you nor your student will be personally identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information private.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. Your name will not be included on the interview, but you will be assigned an identification number (e.g. Teacher 1), which we will link to the information we obtain on your student using his/her identification number (e.g. Child 1). Any identifying information will be stored on a password-protected computer.

We will keep private all research records that identify you to the extent allowed by law. However, there are some circumstances in which we may have to show your information to other people. For example we may be required to show information which identifies you to people who need to be sure we have done the research correctly; these would be people from such organizations as the University of Kentucky.

CAN YOUR TAKING PART IN THE STUDY END EARLY?

If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. You will not be treated differently if you decide to stop taking part in the study.

The individuals conducting the study may need to withdraw you from the study. This may occur if you are not able to complete the interview for any reason, or if your student’s parents decide to withdraw the child from the study. Should you withdraw, or should the researchers need to withdraw your child, there will be no consequences.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, Laura Pierce at (919)744-9992, laura.pierce@uky.edu. Additionally If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428. We will give you a signed copy of this consent form to take with you.

Signature of person agreeing to take part in the study

Date

Printed name of person agreeing to take part in the study

Name of [authorized] person obtaining informed consent

Date

Demographic Information

What is your highest degree _____ Field _____

Years teaching _____ Years at current placement _____

Have you received any formal training in Applied Behavior Analysis (e.g. classes, supervised training)?

Appendix D

Recruitment Email

Dear XXXXXX,

You are receiving this email because you are being invited to participate in a research study on behavioral assessment methods in school-aged children. This study is being conducted by Laura Pierce at the University of Kentucky with the cooperation of the Arizona Centers for Comprehensive Education and Life Skills as part of her doctoral dissertation. Should you agree to participate in this study, you will be asked to complete an interview lasting approximately 45 minutes regarding one of your students. If more than one of your students is selected to be in this study, you will be asked to complete one interview for each student. Interviews will be collected using interactive video technology, and will be scheduled according to your availability. The data collected through this interview will then be compared to the student's behavioral assessment data collected by staff members at ACCEL. Once all data is collected, you will be asked to complete a brief follow-up questionnaire.

Your participation in this study will provide the researcher with valuable information that will help to further our knowledge of behavioral assessments in school-aged children. Participation in this study is completely voluntary and, should you agree to participate, you may withdraw at any time.

If you may be willing to participate in this research, please respond to this email alerting the researcher. You will then be provided with a consent form by a member of the ACCEL staff as well as a self-addressed, stamped envelope in which to return the form. If you are not willing to participate in this research, please respond to this email alerting the researcher. If you do not participate in this study, it will not affect you in any way.

If you have any questions or comments, please feel free to contact:

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VITA

LAURA ELIZABETH PIERCE

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May 2013	Ed.S. in School Psychology	University of Kentucky Lexington, Kentucky
December 2007	M. S. in Education	University of Kentucky Lexington, Kentucky
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PROFESSIONAL PUBLICATIONS

Pierce, L.E., Gibson, J.L., Pennington, R. C., Ault, M. J., Griffen, A.K., & Stenhoff, D.M. (2009). CD instructor manual for Special education in contemporary society: An Introduction to exceptionality. Thousand Oaks, CA: Sage.

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