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Peer-Mediated Sandplay and Symbolic Play in Children with Autism Spectrum Disorder

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Peer-Mediated Sandplay and Symbolic Play in Children with Autism Spectrum Disorder

by

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DISSERTATION

Submitted in partial fulfillment for the degree of
Doctor of Psychology in the Department of Clinical Psychology
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The undersigned have examined the dissertation entitled:

**PEER-MEDIATED SANDPLAY AND SYMBOLIC PLAY IN CHILDREN
WITH AUTISM SPECTRUM DISORDER**

presented on December 18, 2015

by

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PEER-MEDIATED SANDPLAY AND SYMBOLIC PLAY

Dedication

I dedicate my dissertation to my wonderful family and friends who provided me with the support and love I needed to make it through my graduate studies and the process of completing this dissertation. I want to thank my parents, Eric and Katrina Adley, for their unwavering support and for always being there when I need them. I also dedicate this dissertation to my partner Joshua Gargiulo, who was my rock throughout the process of completing my study. I would not have been able to complete this without his love and encouragement. I would like to thank my sister and brother-in-law, Erin and Jason Topolewski, and my grandparents for being there for me. I need to extend my gratitude to my best friend Jennifer Rheaume for her inspirational motivation. Lastly, I would like to thank my Cleveland family for always providing me with the feeling of love and belonging. A huge thank you to the friends who have provided me with self-care activities to help me through this process.

PEER-MEDIATED SANDPLAY AND SYMBOLIC PLAY

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Abstract

This manuscript describes an exploratory study that assessed whether play with typically developing peers increased the use of symbolic play in children with Autism Spectrum Disorder (ASD). A version of a sandplay intervention previously investigated by Lu, Petersen, Lacroix, and Rousseau (2010), and modified to include peer-mediated play was used. The intervention explored the effects of sandplay with typically developing peers on engagement in symbolic play by children with ASD. A multiple-case intervention design was used with three children with ASD with varying degrees of severity in functioning. While use of symbolic play by two of the children did increase from baseline with the introduction of the peer-mediated sandplay intervention, these effects were inconsistent. Furthermore, only one of the children demonstrated a continued increase in symbolic play at the follow-up phase. While the results of the intervention are inconclusive, these results necessitate further investigation into this method of intervention for children with autism spectrum disorder, specifically in regard to ASD severity. Theoretical and treatment implications are offered, as well as directions for future research.

Keywords: Autism Spectrum Disorder (ASD), Autism Spectrum Disorders (ASDs), symbolic play, sandplay, play intervention, novice players, expert players, play act, pretend play, severity of Autism Spectrum Disorder

Peer-Mediated Sandplay and Symbolic Play in Children with Autism Spectrum Disorder

Chapter 1: Literature Review

The need for effective intervention strategies for children diagnosed with Autism Spectrum Disorder (ASD) has become increasingly clear in recent years due to the astonishing increase in the prevalence of this diagnosis. The CDC released a report in 2007 that stated one in 150 US children has ASD, with an annual increase of 10 to 17 % for this population (Epp, 2008). In response to the concern for the adaptability of youth with ASD, urgency exists among mental health professionals, clinical researchers, and academic providers to develop interventions and programs that address the characteristic impairments of this group of children in ways that improve functioning and build necessary skills. From these efforts, a wide range of clinical training workshops, individual therapies, and social skills and play therapy programs have been developed to address the needs of this population of children (Epp, 2008).

Impairments of ASD

In the *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition (DSM-5), Autism Spectrum Disorder (ASD) is characterized by deficits in social interaction and communication, as well as restricted, repetitive patterns of behavior, interests, or activities (American Psychiatric Association, 2013). Individuals diagnosed with ASD exhibit these deficits to varying degrees with a three-tier severity classification. Individuals classified at Level 3 need “very substantial support” as they have severe deficits in both verbal and nonverbal social communication, significant inflexibility of behavior, and difficulty coping with change resulting in severe impairment in functioning. Individuals classified at Level 2 need “substantial support” as they have marked deficits in verbal and nonverbal communication and inflexibility in behavior, which interfere with functioning, however these deficits are less severe than in Level 3.

Lastly, individuals classified at Level 1 need “support” as they have deficits in social and communication skills, as well as inflexibility in their behavior, that cause noticeable impairments in functioning, but these deficits are less severe than in Levels 2 and 3 (American Psychiatric Association, 2013, p. 52).

Social deficits include trouble with social-emotional reciprocity, underdeveloped use of eye gaze and body language, inability to form peer relationships, and a lack of spontaneous social sharing. Children on the autism spectrum display impairments in social communication, trouble beginning and maintaining conversations, and use of stereotyped language. Repetitive patterns of behaviors include a restricted range of interests, behaviors, and activities where children can become “stuck” on particular topics or interests, demand routines and rituals, and engage in stereotypic motor movements (American Psychiatric Association, 2013). Prior to the publication of the DSM-5 (American Psychiatric Association, 2013), these deficits were referred to as the Pervasive Developmental Disorders or PDDs, which included Autistic Disorder, Asperger’s Syndrome, and Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS; American Psychiatric Association, 2000).

Another hallmark of children with ASD is their difficulty enacting imaginative play (Baron-Cohen, 1987; Charman & Baird, 2002), affecting their ability to play in the same manner as their typically developing peers. As stated in the DSM-5 diagnostic criteria, the behavior of these children is characterized by a “lack of shared social play and imagination (e.g., age-appropriate flexible pretend play)” (American Psychiatric Association, 2013, p. 54). Children with ASD thus have trouble using pretend or symbolic play defined as “the capacity to purposefully engage in imaginative activity or advanced pretense” (Wolfberg & Schuler, 2006, p. 185). Much of the current research on treatment strategies for children with ASD has focused

on the potential efficacy of play-based interventions to target the inability to engage in spontaneous pretend play experienced by this population (Terpstra, Higgins, & Pierce, 2002).

Clarification of Terms

The term *play intervention* will be frequently used to refer to any method implemented to increase play development (or the attainment of play skills), specifically in children with ASD. As used here, play intervention is thus not the equivalent to the term *play therapy*, as play therapy is defined as the use of play to solve psychological problems (Diantoniis & Yawkey, 1984).

Sandplay is a creative form of therapy developed in the 1940s by Jungian therapist Dora Kalff as a way to work with children in a nonverbal manner. The sandtray, which is a tray filled with sand, water, objects, and figurines, is used as a therapeutic medium for clients to symbolically express their thoughts and emotions through play. Clients can therefore work through internal conflicts in a safe, external space (Green & Gibbs, 2010) in a way that engenders imaginative and symbolic expressions (Lu, Petersen, Lacroix, & Rousseau 2010). Past studies have investigated the effectiveness of sandplay as a treatment for mental health concerns in children and adolescents (Draper, Ritter, & Willingham, 2003; Cunningham, Fill, & Al-Jamie, 1999; Flahive & Ray, 2007; Green & Gibbs, 2010; Shen & Armstrong, 2008); however, except for the Lu et al. study described below, there is a dearth of literature that investigates the use of sandplay as a play intervention for ASD.

Contents of Literature Review

The literature review addresses the following topics: the development of play in general; the relationship between play, social interaction, and communication skills; the type of play impairments evidenced in children on the autism spectrum; past research on play interventions;

and the importance of typically developing peer models for children with ASD.

Theories of Play Development

The play impairments characteristic of children with ASD are a crucial point of intervention to increase functioning. Before the problems with play and intervention strategies are discussed, it is imperative to address the broader literature on the importance of play in development. Theories about the role of play in the development of typical children, summarized below, include the theories of Vygotsky (1966; 1978) and Piaget (1962).

Vygotsky (1966; 1978) supported that play is a fundamental activity crucial for the development of symbolic capabilities, interpersonal skills, and social knowledge in children. Accordingly, play assists the development of many important skills children must acquire to function in the social world. Through play, children create meanings and understandings of the skills, values, and knowledge that are central to their culture and functioning as adults (Vygotsky, 1966; 1978).

In his theory of play, Piaget (1962) outlined incremental steps that typically developing children move through in their development of play. He stated that play begins at birth with imitation of caregivers and then develops into three main forms of play: (a) practice play of the sensorimotor stage, (b) symbolic play, and (c) games with rules. In the imitation stage (birth to 24 months) the child first imitates basic sounds and movements leading to the mimicking of complex gestures and speech. In the sensorimotor stage, practice or ritualistic play occurs, which is where the child repeats an act over-and-over to see if the same response will reoccur. Piaget stated that symbolic play begins to emerge at about 18 months as imitation of nonhuman objects occurs, such as pretending to be a dog. Further in this developmental stage, symbolic play arises, which incorporates using other things to symbolize an object, or pretending an object is there

when it is not. At about the age of two, more advanced symbolic (or pretend) play emerges, which will dominate play until about age five, where the child will create make-believe scenarios for themselves, such as pretending a swing is a rocket ship or creating an imaginary friend (Singer & Revensen, 1996). Symbolic play, also referred to as pretend play, is defined as the “the capacity to purposefully engage in imaginative activity or advanced pretense” (Wolfberg & Schuler, 2006, p. 185).

Parallel play develops during the preschool years, according to Piaget (1962), when children begin to sit next to a peer while they each play with their own toys and interact in minimal ways, such as through narration of what they are doing. The next stage of play development occurs around age seven and continues to age 11. During this stage, children begin to play games with rules, and this later becomes the world of play for adults (such as sports and board games). Games may be passed down and learned from older children or may be created from previous symbolic play to now include cooperative play with rules. During this stage, children typically form groups in which to play games and all of the children agree upon the rules. It is common for these games to involve competition (Singer & Revensen, 1996).

These theories of play development by Vygotsky (1966; 1978) and Piaget (1962) create a backdrop for the importance of play as a driving force for the development of crucial areas of competency for children to function in the world. Through play, children learn communication, social skills, cognitive flexibility, experimentation with roles, and an understanding of emotional expression crucial to interacting with others and participating in their environment (Wolfberg, 1996). However, as Hobson, Lee, and Hobson (2009) suggest, play is much more complicated than previous theories addressed, as the development of play arises from a complex interrelation of factors. Hobson (1993) proposed that symbolic play in typically developing children hinges on

a foundation of self-awareness and perspective-taking. Therefore, children's ability to engage in the creation of pretend play is tied to their ability to understand that different people have different understandings of objects and events (Hobson et al., 2009). In addition, children need to have an understanding of emotions and be able to identify with others when they exhibit feelings. Hobson and colleagues proposed the above theory of the development of pretend play in typically developing children, which can be used to explain the deficits present for children with ASDs. Children on the autism spectrum have difficulty identifying with and understanding the perspectives of others, as well as understanding that they themselves have flexible thoughts and feelings (Hobson et al., 2009). Thus, children with ASDs have "limited capacity to generate and introduce the kinds of pretend meanings that are essential to play" (Hobson et al, 2009, p. 13).

The Relationship of Play, Communication, and Social Interaction

As previously mentioned, research has consistently shown a developmental link among play, communication, and social skills (see discussion in Wolfberg & Schuler, 2006). The acquisition of play skills does not develop in a step-by-step path or independently from other areas of development. Play is linked to emerging abilities in language, cognition, emotion, and social interaction and all of these skills impact the others (Bloom & Tinker, 2001; Vygotsky 1966; 1978).

Specifically, functional and symbolic play have been shown to be associated with communication skills in autistic children, with higher developmental levels of play correlated with higher levels of language development (Mundy, Sigman, Ungerer, & Sherman, 1987). Controlled studies have supported the benefits of play interventions at increasing the level of communication skills. Training of symbolic play by an adult has been shown to not only increase play abilities, but also significantly improve language in preschool children diagnosed with

autism (Kasari, Paparella, Freeman, & Jahromi, 2008). Peer communication, play behaviors, and joint attention in children with ASD have been shown to increase through improvements in social interaction with social communication skills training (Walberg & Craig-Unkefer, 2010). Additionally, the link between play and communication skills has been demonstrated by Whyte and Owens' (1989) investigation of the effects of a social communication intervention on the play of children with autism. This study found that symbolic play was positively correlated with language abilities, specifically comprehension and expressive aspects of communication for both autistic and normally developing children.

Research has demonstrated the link between play development and the acquisition of social interactional skills, with evidence that children with ASD who have peer interaction problems also have difficulty with play (Lord & Magill, 1989). Furthermore, these play deficits exhibited by children with ASD impact their ability to interact with peers and form friendships due to their lower rates of meaningful play behaviors and play initiations (Lord & Magill, 1989). Literature has shown that children with ASD express desire for friendships (Daniel & Billingsley, 2010; Frankel & Whitman, 2011), although this is at a much lower rate than typically developing peers (Bauminger & Kasari, 2000). Importantly, research has shown that friendships act as a protective factor in the functioning of children with autism (Bauminger, Shulman, & Agam, 2004), particularly friendships with typically developing peers (Bauminger et al., 2008). However, development of peer relationships is difficult for children with ASD (Daniel & Billingsley, 2010). Specifically, children with autism are less likely to initiate interactions with typically developing peers; when they do initiate interactions, their peers are less likely to respond due to the vague approaches that the autistic children use (i.e., peers cannot tell that they are making a social approach; Lord & Magill-Evans, 1995).

Not only are children with ASD hindered in their play due to their deficits in appropriate social skills, but their play development can also be impacted by not having access to opportunities to play with peers. Typically developing children may be discouraged from initiating interaction with children with ASD due to their lack of response, or children with ASD may not have as much access to typically developing peers due to classroom placement. This diminished access to peers, therefore impacts the ability for children on the autism spectrum to learn from peers who have developed play skills (Charlop & Walsh, 1986). As Wolfberg and Schuler (2006) state, social difficulties are exacerbated when children with ASD are excluded from their peers. They found that the more that autistic children are isolated from the play culture of their peers, the greater their social impairments become due to lack of exposure to the relevant play material of their cohort. Additionally, the longer children on the spectrum are isolated from their peers, the greater their social deficits can become, creating a self-perpetuating loop (Wolfberg & Schuler, 2006). As such, play has been supported as a predictor of social functioning for individuals on the autism spectrum, as children who engaged in fewer age-appropriate play acts exhibit more developmentally delayed social interactions (Manning & Wainwright, 2009).

Understanding the function of play as propelling forward a child's development in social and communication areas sheds light on the importance of improving the play of children with ASD through intervention (Wolfberg & Schuler, 2006). Due to the important role that play has in the development of social and communication skills, it is crucial for children on the autism spectrum to hone their play abilities to improve their interactional skills. Therefore, play can be seen as an important key to intervening with this population to improve social functioning.

Impairments in Symbolic Play

Children with ASD exhibit “a lack of varied and imaginative play” (American Psychiatric Association, 2000; Charman & Baird, 2002, p. 289). Symbolic play in children with autism is typically absent, and when these children do use pretend play, the content and variation are restricted (Libby, Powell, Messer, & Jordan, 1998). In comparison to their peers, children with ASD play in a detached and impoverished way. The flexible and interactive pretend play of typically developing children is not present in children on the spectrum (Wolfberg & Schuler, 2006).

Explanations for Lack of Symbolic Play

Although there have been many speculations about why children with ASD do not develop play behaviors in the same manner as their typically developing peers, especially in regard to symbolic pretend play, it still remains unclear why impairments in play are a significant part of the presentation of autism spectrum disorder (Jarrod, 2003). The factors that have been identified include: flexibility, social-emotional motivation, executive functioning, perspective-taking (Theory of Mind), and language impairments (Charman & Baird, 2002; Hobson et al., 2009; Honey, Leekam, Turner, & McConachie, 2006; Lam & Yeung, 2012; Rutherford & Rogers, 2003). Other theories include lack of generativity (the ability to create novel acts; Jarrod, Boucher, & Smith, 1996), creativity, imagination (Craig & Baron-Cohen, 1997; Hobson, et al., 2009), and joint attention (Charman, 1997). Furthermore, lack of social reciprocity and delays in symbolic representation have been suggested to influence the development of symbolic play (Wolfberg, & Schuler, 1993)

Weak central coherence, or the inability to weave together details to construct an entire understanding, is another deficit that has been shown to influence the symbolic play of children

with ASD (Lam & Yeung, 2012). Brown and Murray (2001) suggested that children with ASD struggle with play because they may not understand the nonliteral parts of play. In the practical realm, children with ASD frequently display difficulties in motor planning, and fine and gross motor movements, which may impact their ability to play (Mastrangelo, 2009). Problematic behaviors frequently associated with ASD, such as impulsivity, compulsiveness, problems with organization and flexibility, and anxiety, also appear to inhibit productive play (Grandin, 1995; Peeters, 1997).

Children with ASD tend to spend free time isolated, engaged in repetitive activities, and preoccupied with certain objects or unusual interests. The play of children with ASD is based on manipulation or sensory exploration rather than symbolic or functional play like their typically developing peers (Wolfberg & Schuler, 2006). Research has also suggested that the lack of imaginative play in children with ASD springs from their repetitive play behaviors, as repetitive behaviors and impoverished play are frequently present for children with ASD but not for typically developing peers. Repetitive play seems to interfere with spontaneous play because these behaviors are more compelling for the child (Honey et al., 2006; Peeters, 1997). Novel play acts may be difficult for children with ASD to produce because they tend to become “stuck” in repetitive play behaviors (Brown & Murray, 2001), engage in repetitive self-stimulation (stereotype play; Lang et al., 2010), and exhibit rigidity in maintaining a routine (Honey et al., 2006), all of which restrains imaginative play.

Brown and Murray (2001) suggest that the simple motivating factor that compels children to play—because it is fun—should not be taken for granted in the process of play development. Thus, play may not be as intrinsically motivating for children with ASD as it is for their typically developing peers, possibly due to disinterest or because play is difficult for them.

Theory of Mind. Theory of Mind (ToM) is the ability to perceive and/or understand the thoughts, feelings, and intent of other people. Typically, ToM develops during the preschool years (Peterson, 2014). Research has shown that typically developing children tend to almost always fail false belief tasks (tests that infer how people will behave based on wrong information) at age three, but rarely fail these tasks at age five (Wellman, Cross, & Watson, 2001). The National Research Council (2001) supported that children with autism spectrum disorder have difficulty with ToM. Therefore, children with ASD lack ToM and are unable to deduce the mental states of other people (Mastrangelo, 2009). ToM research with children with ASD has found that they struggle to understand knowledge, empathy, deception, humor, teasing, and beliefs (Brown & Whiten, 2000). In a review of the performance of children with ASD on false belief tests, Happé (1995) found that most children on the spectrum still fail these tasks well into middle childhood, and sometimes even their teens. This review suggested that to pass false belief tests, children with ASD need to have reached the chronological age of 13 and have a verbal mental age of at least nine (Happé, 1995). In a more recent study, Hoogenhout and Malcolm-Smith (2014) found that ToM appears to improve over time in children with high-functioning Autism but does not appear to do so in children with low-functioning autism. These skills appear to not only be delayed for lower functioning children with ASD, but also appear to deviate from the typical developmental trajectory of ToM (Hoogenhout & Malcolm-Smith, 2014).

The ToM model appears to lend support for the hallmark difficulties for children on the autism spectrum (i.e., social, language, and imaginative impairments; Steele, Joseph, & Tager-Flusberg, 2003). Additionally, ToM deficits appear to impact play for these children. Leslie (1987) found that these deficits interrupt the development of pretend play in children with

ASD due to their inability to assign pretend identities to objects (such as pretending a banana is a phone) while still holding onto the real-world representation of the item. Likewise, Baron-Cohen (1987) found that children with ASD were much less likely to produce symbolic play, but had no differences from typically developing peers in their use of functional play. Again, differences appeared to rest in the inability to engage in metarepresentation skills in pretend play linked to ToM. As stated by Mastrangelo (2009), this model suggests that due to lack of ToM, pretend play skills will also be lacking in children with ASD, which was specifically supported by Rutherford and Rogers (2003) who found that higher ToM scores in children were linked with richer use of imaginative play.

Importance of Play Interventions

Research has begun to show that children with ASD are actually much more capable of play in both symbolic and social ways than has previously been believed (Boucher & Wolfberg, 2003). As proposed by Wolfberg and Schuler (2006), the deficits seen in children on the Autism spectrum may actually be due more to their lack of access to and support in peer play rather than the impairments inherent to the ASD diagnosis.

Children on the spectrum benefit from support to help them learn how to interact with their peers (Wolfberg & Schuler, 2006). Play interventions that have empirical support are important tools for clinicians to effectively address communication and social deficits when working with children with ASD. The improvement of play skills, particularly the imaginative nature of symbolic play, is crucial to the development of social interaction and communication deficits for children on the autism spectrum. Through improving play skills, which in turn aid communication and social interaction, children with ASD may be better able to engage with their peers (Liber, Frea, & Symon, 2008).

Types of Play Interventions

The following is a review of past research findings on play interventions, specifically peer-mediated methods, and will address these modalities: social pragmatic family interventions (Keen, Rodger, Doussin, & Braithwaite, 2007), virtual reality tools (Herrera et al., 2008), preteaching of skills, script training, video modeling, and pivotal response training (Terpstra et al., 2002). The results of these studies will be summarized briefly as a way to support the inclusion of typically developing peers in play interventions, and a more extensive review concerning the use of peer models/tutors will follow.

Keen et al. (2007) investigated a social pragmatic family intervention using structured teaching of social skills in the family context (i.e., family members were taught to facilitate and instruct the pre-school aged autistic child to use social communication and symbolic play skills). Although parents reported some changes in communication and symbolic play skills, independent observers did not rate significant improvements. Parents may have been more aware of minute changes or they may have had a biased perspective and intervention may not have been effective (Keen et al., 2007). Virtual reality technology has also been tested as a way to teach children with autism pretend play skills with less than promising results. Herrera and colleagues (2008) found that virtual reality play scenarios led to increases in symbolic play in their case studies of two autistic children in structured intervention sessions, however these skills did not generalize to natural settings.

Preteaching play skills, when a child with autism is taught play skills by an adult and then prompted to use those skills in a play group (Terpstra et al., 2002), has been shown to increase scripted pretend play (replication of the play skills taught), however, spontaneous play is only rarely observed in the autistic children after this intervention. In the instances where children

were able to replicate play, only small degrees of maintenance and generalization were seen, although not to a significant level (Sherratt, 2002). Script training, the teaching of specific play phrases by an adult (Terpstra et al., 2002), indicates that play scripts are learned and later used in free play by autistic children, however, improved play is not typically generalized to spontaneous and novel play acts (Thomas & Smith, 2004). Play scripts have also been implemented using adult-directed training and a time-delayed approach (the child is taught to imitate play sequences within 10 seconds of the adult completing the action). In this model, autistic children are taught to initiate play and use social communication statements to continue play with a peer. Children with autism have been shown to successfully engage in multiple-step play sequences, however, Liber and colleagues (2008) reported that only one of the autistic children (ages 5-9 years) in their study exhibited an increase in symbolic play. Qualitative reports from caregivers also suggested a small degree of generalization of peer-play initiation and communication (Liber et al., 2008).

In video modeling (VM), autistic children are shown videos of an adult demonstrating play skills with the assumption that through mimicking these behaviors, the children will develop play. Results indicate that children with autism tend to imitate the play behavior they have watched in the videos, however, generalization and maintenance have not been clearly supported in natural settings (Boudreau & D'Entremont, 2010; MacDonald, Clark, Garrigan, & Vangala, 2005; Sancho, Sidener, Reeve, & Sidener, 2010; Taylor, Levin, & Jasper, 1999). More recently Sani-Bozkurt and Ozen (2015) investigated using peer versus adult models and supported the effectiveness of both. Additionally, they found that the play skills gained from the VM were maintained by the children on the spectrum and generalized to different settings, people, and toys (Sani-Bozkurt & Ozen, 2015).

Pivotal Response Training (PRT), originally created as a language intervention, is a behavioral treatment that uses an autistic child's natural environment to create learning situations to teach and improve skills. Key behaviors are taught to a child, and then these behaviors are cued in natural settings when appropriate. One behavior at a time is focused on, with the child earning the natural reward from engaging in the appropriate skill. For example, if a child appears interested in a puzzle, he or she is cued to ask for the puzzle. The child is not able to play with the puzzle until he or she has produced the desired verbalized request. Although originally created to teach language skills, PRT has been modified to teach play behaviors (Terpstra et al., 2002). In one study of PRT, where the experimenter cued play behavior, results indicated that this method can be effective at teaching children between the ages of 4 and 7 years-old diagnosed with autism to carry out complex play acts, including instances of symbolic play. Six of the seven autistic participants displayed some generalization of learned play skills to new toys, settings, and their parents, however, they continued to perform better in the treatment setting with the experimenter and toys used during training. Play acts were not generalized to interactions with peers. Five of the children displayed a decrease in play skills at follow-up compared to posttest, although they still completed more play-acts than before treatment (Stahmer, 1995).

In a comparison of VM (with an adult model) and PRT (implemented by an experimenter) to investigate the effects on play behavior in children with autism, between ages 3 and 6 years old, both interventions yielded a greater number of play actions during a follow-up observation (as compared to before treatment) completed in a training setting with the training toys. During the follow-up in the training environment, PRT led to a greater increase in completed play acts than VM. A follow-up observation was also completed in a generalization

environment (i.e., a classroom) using the same toys, during which PRT resulted in more play actions in the generalization environment than before treatment, however, this was not found for VM. Generalization to play with peers was not assessed in this study. The follow-up observations were completed as soon as the participant had demonstrated mastery of the training play acts, therefore the maintenance of skills over time was not assessed (Lydon, Healy, & Leader, 2011).

In response to Stahmer's (1995) suggestion that inclusion of peers in training may have increased effectiveness and generalization to natural play settings (i.e., peer-play), PRT has also been adapted so that typical peers can implement cues in play interactions to increase an autistic child's use of positive play behaviors (Terpstra et al., 2002). In one study of the efficacy of PRT, two children (ages 7 and 8) with autism engaged with 8 typically developing peers to improve interactional skills. The peer tutors facilitated, narrated, and reinforced appropriate social and play behaviors using multiple cues (Pierce & Schreibman, 1997). Pierce and Schreibman found that peer-implemented PRT improved play-related language abilities and toy variation, with generalization to new toys, environments, and playmates, and maintenance three-months post-intervention for both of the children diagnosed with autism.

The play interventions addressed above aimed to increase play skills such as play initiation, play sequences, play variation, and use of pretend play acts. Investigations of these interventions have shown mixed results with many of the approaches leading to an increase in the number of play acts within the confines of the treatment setting, with only minimal support for maintenance and generalization to other settings, toys, and (adult) playmates. Peer-directed PRT (used to increase language abilities related to play and toy variation) displayed the most effective generalization to environments, playmates, and toys, as well as significant maintenance

at three-months follow-up (Pierce & Schreibman, 1997), however symbolic play was not targeted. These findings point to the use of typically developing peers in the implementation of play interventions to increase effectiveness (as measured by maintenance and generalization). Therefore, this methodology appears to increase the likelihood that the learned play skills are maintained and used by the autistic child in other settings with novel toys, and with untrained peers. Current research on play interventions has taken heed of these findings, as the use of peer models is frequently included in play intervention research (Terpstra et al., 2002).

Inclusive Educational Programs for Children with ASD

The education literature on inclusive classrooms has exhibited the benefits of interaction with typical peers for children with ASD and lends support to the use of peer-tutors in social and play interventions. The current trend in education is to mainstream children with ASD with their typically developing peers, with the view that they will benefit socially from these interactions (Whitaker, 2004). This trend has been particularly impacted by the passage of P. L. 94 – 142 (Education of All Handicapped Children Act) in 1975, coded in 2004 as P. L. 108 – 446 (the Individuals with Disabilities Education Act; IDEA), that pushed for less segregated educational settings for children with autism (McHale & Boone, 1980; Public Law 108 – 446, n.d.). Research on inclusive educational programs points to the developmental benefits of mainstreaming children with ASD with typically developing peers (Bass & Mulick, 2007; Stahmer & Ingersool, 2004; Theodorou & Nind, 2010; Whitaker, 2004). Although children with ASD are in mainstream classrooms, they typically receive extra supports to aid the development of crucial social, communication, and play skills (McHale & Boone, 1980). Lord and Hopkins (1986) uphold the developmental benefits of inclusion with normally developing children, even without social interaction training.

The literature on inclusive classrooms supports that the interaction between students with ASD and typical students provided by mainstreaming can lead to relationships that facilitate social and communication development due to the interpersonal demands placed on the children with ASD and the opportunity to observe the behavior of typically developing peers (Smith Myles et al., 1993). Children with ASD have been shown to gain significant developmental strides in communication and play skills, with many demonstrating age-appropriate play, through participating in a regular classroom curriculum with typically developing peers (with two hours of communication skills training a week; Stahmer & Ingersoll, 2004; Theodorou & Nind, 2010). The use of peer-mediated play interventions has been investigated in an inclusive classroom setting, specifically using a visual key strategy to cue pre-school age autistic children to initiate play behaviors. With this intervention, the four children with autism increased their initiation of play behaviors however, it is unknown whether these skills generalized to times when cues were not provided (Nelson et al., 2007).

Studies have found that children with ASD are more likely to engage in spontaneous play behaviors in the presence of typically developing children than children with other developmental delays. This has been found in the presence of both younger and same-age typical peers (Bednersh & Peck, 1986). In comparing the interactions of autistic children when they were only with other autistic children to when they were with typical students, developmental benefits were seen in the presence of typically developing peers (Smith Myles et al., 1993). Similarly, when higher-functioning autistic children engaged with normally developing peers, as opposed to children with lower-functioning autism, their play was more developmentally appropriate due to the feedback from the normally developing children about socially acceptable interaction styles (Smith et al., 2002).

Wolfberg's Integrated Play Group Model

Pamela Wolfberg's (2003) Integrated Play Groups® (IPG) model is one of the most widely used models of structuring productive interaction between typically developing peers and children with ASD. The IPG model is described as an "adult-facilitated peer mediation" as peers are used to facilitate play with the guidance of adults (Bass & Mulick, 2007, p. 730). In an IPG, social interaction, communication, and play occur between typically developing peers and children on the autism spectrum in a structured play environment. Through this intervention, children with autism increase their developmental social and play skills through interactions with more skilled peers (Wolfberg, 2003). In an investigation of the effectiveness of the IPG model with three children with autism, the program enhanced play behaviors of all of the child participants. Symbolic play was also seen in two of the three children at the end of the intervention phase. The integration of typically developing peers allowed for the children with autism to be exposed to more advanced levels of play than they had developed on their own. The autistic children could then imitate and practice these more sophisticated styles of play to attain a wider range of play skills (including symbolic play). Generalization of play skills to other settings (home and school) was supported, as well as associated language improvements. It was not explicitly stated whether play skills generalized to play with other peers besides the typically developing IPG playmates. Although a follow-up probe was conducted after the completion of the IPG, the maintenance of improved play behaviors and communication skills was not assessed at a further follow-up time (Wolfberg & Schuler, 1993).

Peer-Mediated Play Interventions

In support of a peer-mediated approach. The involvement of typically developing peers in play interventions for children with ASD has been indicated as a key component to

effective skill acquisition by literature on inclusive classrooms and the IPG model. Intervention research has supported the importance of interaction with peers in the development of play skills, and ultimately social skills and mutual friendships (through teaching emotional intimacy, social competence, and prototypes for relationships), a function that adult interaction has not proven to fulfill (Hartup, 1979; Hartup & Sancilio, 1986; Parker & Gottman, 1989). Specifically, studies have shown that play interactions developed between children with ASD and adults do not generalize to play with peers (National Research Council, 2001). Peer interaction impacts a child's ability to relate to other people, regulate emotional experience, and understand social situations (Hartup, 1979). Pierce and Schreibman (1997) give the following rationales for using peer-mediated interventions: peers are part of the natural social settings, peers may be more effective at teaching age-appropriate activities, and generalization and maintenance of behaviors may be more likely with a natural playmate. Peer-mediated approaches take the form of group interventions, peer-tutors, and sibling-teachers (Bass & Mulick, 2007), with varying degrees of adult facilitation.

Peer-mediated play interventions: Continuum of adult-facilitation. Play situations with typically developing peers have been implemented by a number of researchers to investigate whether gains made during these interventions would generalize to other peer settings, however, many have not demonstrated effectiveness (Lord & Hopkins, 1986; Odom & Strain, 1984). Research suggests that part of the variance in effectiveness of play interventions hinges on the extent of adult-facilitation that peers receive, with research suggesting that less adult direction leads to more effectiveness. The National Research Council (2001) has suggested that peer-mediated interventions may not generalize because the methodologies include too much adult-directed control during the treatment. Past research on play treatments using peers,

has highlighted that adult facilitation of peer interaction may prove to be a hindrance to the effect of peer-centered interventions, as too much adult-facilitation impedes the generalization of learned skills to natural play settings, that by nature are devoid of adult direction. Adult-directed play interventions, or the use of highly structured step-by-step behavioral reinforcement methods, inherently interferes with the spontaneous nature of peer play, thus the peer-mediated interventions that have been successful have very little adult interference during their implementation (National Research Council, 2001). For this reason, play interventions have begun to use fewer adult-directed practices and instead have turned to natural approaches where children with ASD are exposed to peer-play with limited adult interference. Interventions of this nature have established quantitative and qualitative improvements in play, social interaction, and language (Wolfberg & Schuler, 2006).

Directive versus natural peer-mediated play interventions. Like the continuum of adult facilitation, peer-mediated interventions also vary in how directive the strategies are (i.e., behavior cueing from the peers or more naturalistic play). Lord (1984) makes a critical statement that in directive behavioral intervention strategies using peer tutors, such as in peer-implemented PRT (Pierce & Schreibman, 1997), the skills learned typically only generalize to play with unfamiliar peers if the other peers have also been trained to interact with the autistic children. Generalization of play behaviors to untrained peers is much less likely. There is evidence to suggest that skills do not generalize to play with untrained peers due to the “intrusive” means (such as behavioral prompts) used to facilitate play (Lord, 1984). Roeyers (1995) also suggests that interventions that establish a directive role for peers (either directly teaching or reinforcing behaviors) can increase interaction between the autistic child and peer-tutor, however, this can interfere with spontaneous play and communication with untrained peers.

In response to research that has pointed to the intrusive nature of directive peer-implemented interventions, Whitaker (2004) investigated a naturalistic peer approach. Whitaker's intervention targeted the development of joint play skills in nine children with "severe" autism between the ages of six- and seven-years old. The typical peer tutors, between the ages of 11 and 12 years old, were provided with simple interactional coaching techniques to support successful shared play and communication, which included a single session of training with the directions to "see if you can get N to play with you" (Whitaker, 2004, p. 216). Peer-tutors were instructed also to remain close to their autistic partner, join into their partner's play, and "make it fun" (Whitaker, 2004, p. 217). Peer tutors successfully maintained shared play with the autistic children, however, only minimal improvements were seen in communication of requests made by the autistic children, and there were no apparent effects on joint attention. Importantly, the typically developing peers reported that their role as a peer tutor was rewarding. Whitaker recommends that future intervention studies situate peer tutors in a slightly more proactive role, such as using attention-directing behaviors (i.e., narration and gestures).

Present Study

The current study sought to extend the previous research conducted by Lu, Petersen, Lacroix, and Rousseau (2010). Lu and colleagues used an action-research approach to investigate a sandplay intervention to facilitate imaginative play, symbolic representation, and communication in a classroom of 25 children ranging from 7 years to 12 years of age with autism and PDD. The study consisted of 23 boys and 2 girls with a range of developmental levels, as well as comorbid motor coordination and hearing problems. The children participated in 10 weekly 30-minute sandplay sessions during which they were instructed to create a scene in a sandtray using an array of figurines and objects. Each student had his or her own sandtray and

constructed a scene with the help of one adult—either one of the researchers, teachers, or special education aides. The sandplay was adult-guided in that the adult used narration, mirroring, and offers of additional figurines/objects to facilitate the child's play in the sandtray as needed. The adult then aided the child in their explanation of the constructed scene through prompts about the time, place, plot, and ending of the scene they had created.

Qualitative data about developmental level of symbolic play, communication, and social interaction were collected via observation grids, teacher reports, and pictures of the completed sandtray scenes. From a content analysis of the data gathered before and after the sandplay intervention, the researchers found that all of the children developed further in their play skills. The three children who demonstrated sensory and tactile play at the beginning of the intervention developed some functional play (such as rolling a bus back and forth). All four of the children that displayed functional, or presymbolic play, prior to the play sessions, were able to move towards the beginnings of symbolic play with short pretend play actions (e.g., duck drinking from a bowl). Six of the children that originally engaged in ritualistic presymbolic play were able to develop more flexible storylines and symbolic themes. Seven of the participants that displayed a small degree of symbolic play at the beginning of the intervention were able to develop their symbolic play skills even further to carryout richer, more elaborate stories. Lastly, five of the children in this study who had previously demonstrated an ability to act out a cohesive story in the sandtray were able to enrich their symbolic play even further by acting out in depth stories with detail, drama, and emotions. Children from this last group would even occasionally include other peers in their coherent storylines. All of the children that exhibited presymbolic expression at the outset of the study were able to progress to the beginning stages of symbolic play, while all the children that already had some degree of symbolic play at the start of the study developed

more cohesive and detailed storylines. In addition, all the children displayed some gains in social and communication skills through narrating their sandtray scenes to peers (with cues from adults).

Lu and colleagues (2010) supported sandplay as an effective intervention for children with ASDs, producing greater use of symbolic play (and correlated improvements in social interaction and communication skills). However, these researchers acknowledged that further research is needed to investigate the effects of sandplay on symbolic play level as their study is the first to assess the use of a sandtray intervention with this population. Lu and colleagues specifically suggested that symbolic play might be particularly enhanced through “watching or interacting with peer models” (p. 63). Therefore, it is essential to further assess whether a play intervention using sandtrays can effectively increase symbolic play in this population of children, especially when the intervention is engaging in sandplay with typically developing peers.

The present study sought to extend Lu and colleagues’ (2010) investigation of the effect of sandplay on the symbolic play skills of children with ASD by using peer-implemented, rather than adult-facilitated, play as they suggested that the effectiveness of their intervention may be improved through play with typically developing peers. Based on the research findings summarized above, the current study used peer-mediated play with minimal adult-facilitation and natural (non-directive) implementation (e.g., Hartup, 1979; Hartup & Sancilio, 1986; Lord, 1984; National Research Council, 2001; Parker & Gottman, 1989; Pierce & Schreibman, 1997; Roeyers, 1995; Whitaker, 2004). The children with ASD will be referred to as “novice players” and the typically developing peers will be referred to as “expert players” (Yang, Wolfberg, Wu & Hwu, 2003).

Research Question and Hypotheses

This study examines this research question:

Does sandplay with typically developing peers increase symbolic play in children with ASD?

My hypotheses for this study are:

1. Children with ASD would demonstrate an increase in their use of symbolic play after the introduction of the interactive sandplay intervention with typically developing peers.
2. Gains in symbolic play would be maintained after the intervention ceased (i.e., during the follow-up phase).

Chapter 2: Method

Participants

Children with ASD. Three children with ASD were recruited by advertising at local Autism awareness groups and forums in the Cleveland, OH area. The participants needed to be between six and eight years old, therefore being older than the developmental period of symbolic play (2 to 5 yearsold), but within the suggested age range recommended by Wolfberg (2003) for IPGs. Parents of the participants reported that their child was previously diagnosed with ASD. To further provide support for a diagnosis of ASD, the parents of the participants completed the Social Communication Questionnaire (SCQ), a 40-item parent-report screening measure that assesses symptoms of ASD (Rutter et al., 2003). The SCQ has been shown to be reliable and have significant item-validity and discriminant validity to differentiate between children who have ASD and those who do not meet criteria for the diagnosis (Rutter, Bailey, & Lord, 2003). Parents also completed Part IV of the Integrated Play Groups Play Questionnaire (Wolfberg, 2003) to provide information about their child's current level of symbolic play prior to inclusion in the study. Children were included in the current study if by parent-report they had a diagnosis of an ASD, the score on the SCQ met the cutoff to support a diagnosis, and they currently had difficulty engaging in or did not engage in symbolic play per parent report.

Additional questionnaires. During the course of the study, the parents of the children diagnosed with ASD completed the Theory of Mind Inventory (ToMI; Hutchins, Prelock, & Bonazinga, 2010) and the Adaptive Behavior Assessment System – Second Edition (ABAS-II). The ToMI is a 42-item parent-report questionnaire that measures a wide range of ToM competencies using statements with which parents respond about their child's abilities to understand the beliefs, intents, knowledge, and wants of themselves and others on a 20-point

continuum with specific points of ‘definitely not,’ ‘probably not,’ ‘undecided,’ ‘probably,’ and ‘definitely’ (Hutchins, Prelock, & Bonazinga, 2012). A composite ToMI score is generated as well as subscale scores (Early ToM, Basic ToM, and Advanced ToM) that provide information about the child’s development and competency in ToM skills. Research on reliability of the ToMI indicates strong test-retest reliability, internal content consistency, and criterion-related validity (Hutchins et al., 2010).

The Adaptive Behavior Assessment System – Second Edition (ABAS-II; Harrison & Oakland, 2003) is a behavioral rating that assesses adaptive skills and is typically used to characterize daily living skills in individuals with intellectual and developmental disabilities. The parents of the children with ASD completed this questionnaire by indicating the frequency of each behavior by circling either 0 (Is not able), 1 (Never), 2 (Sometimes), or 3 (Always). The ABAS-II assesses 10 adaptive skill areas in 3 domains; the Conceptual Domain consisting of Communication Skills, Functional Academics, and Self-Direction; the Social Domain consisting of Social Skills and Leisure Skills; and the Practical Domain consisting of Self-Care, Home or School Living, Community Use, Work (for adults and working-age youth), and Health and Safety. Reliability data for the ABAS-II suggests a high degree of internal consistency in the items, strong test-retest reliability, and equal reliability for assessing individuals with different levels of adaptive functioning. Additionally, the ABAS-II has also shown significant validity in the use of theory in the development of items, high degree of construct validity, and significant concurrent validity between the ABAS-II and other measures of adaptive, intellectual, and academic functioning. Additionally, convergent and discriminant validity has been supported, as the ABAS-II has been found to distinguish between individuals with and without disability (Harrison & Oakland, 2003).

Novice player 1. Bobby is a 6-year-old Caucasian boy who diagnosed with Regressive Autism at age 4. Under the DSM-5 diagnostic features of ASD, he could be considered to fit Level 3 severity, as he requires substantial support. He lives with his biological parents and two younger brothers in a middle-class suburb. He exhibits severe language impairments that impact his ability to communicate, his expressive and receptive vocabulary is limited, and he rarely speaks to people except to meet his needs. Additionally, Bobby does not initiate social interactions and rarely responds when others attempt to interact with him. Bobby struggles to engage with peers and typically ignores them. He is not aggressive and does not engage in acting out behaviors or tantrums. Stereotyped and repetitive behaviors as well as sensory seeking are also prominent for him. He repeats segments of TV programs, bounces, runs back and forth, squints his eyes, hums, avoids certain textures, and requests to be squeezed by his parents. Bobby requires a significant level of support at both home and school. Bobby attends an integrated Kindergarten class where he spends most of his day in a small “structured language” class and attends specials (art, music, gym, and technology) with typically developing peers. Bobby is served by an Individualized Education Program (IEP). He receives Occupational Therapy (OT) and Physical Therapy (PT) at both school and outside of school. Per parent report, Bobby did not exhibit any pretend play prior to the beginning of the study and only collected toys to line-up.

ABAS-II. To assess his adaptive functioning, Bobby’s mother completed the ABAS-II, Parent Form. The ABAS-II assesses overall adaptive daily living skills. His mother reported a General Adaptive Composite score of 49, which is Extremely Low, and below the 0.1 percentile rank. Bobby’s Conceptual composite score was 57 as endorsed by mother, is Extremely Low, and is at the 0.2 percentile rank. Two domains that comprise the Conceptual skill area,

Communication and Functional Academics, were Extremely Low while Self-Direction skills were in the Borderline Range. Bobby's Social composite score of 60 was in the Extremely Low range with a percentile rank of 0.4. The two skill domains, Leisure and Social, which comprise the Social Composite were also in the Extremely Low range. Likewise, his mother's reports indicated that Bobby's skills on the Practical composite score were again Extremely Low, with a score of 46 and a percentile ranking of less than 0.01. The domains of the Practical composite score, Community Use, Home Living, Health and Safety, and Self-Care, were all in the Extremely Low Range. Overall, Bobby's mother reported on the ABAS-II that he struggles significantly with a range of adaptive skills, and these deficits greatly impact his functioning in daily living. These results support his ASD presentation as he displays extreme communication and social deficits and requires extensive support at both home and school.

ToMI. On the ToMI, Bobby's mother reported that overall his ToM skills are very low, as his composite score was below the 10th percentile for his age. Likewise, his scores on the Early ToM, Basic ToM, and Advanced ToM all fell below the 10th percentile suggesting that these abilities have not developed age-appropriately. With this being said, Bobby's scores indicated that he has the most competency in Early ToM (subscale mean = 14.29). His mother specifically reported that he has a rudimentary understanding of emotions and initiation of joint-attention and exchanges. Bobby's score on the Basic ToM subscale (mean= 6.32) suggests that these skills are more delayed than the early foundations for ToM as he struggles to comprehend false-belief and mental-states. Lastly, Bobby appears to have not reached later development of ToM, which typically occurs between the ages of 7 and 9 years old (Hutchins et al., 2012), as his score on Advanced ToM (subscale mean = 1.06) suggests, however this is in-line with his current chronological age of 6.

Novice player 2. Jason is a 7-year-old Caucasian and Hispanic boy who diagnosed with Asperger's Syndrome when he was 2 years old. He lives in a middle-class suburban area with his biological parents and younger sister. He appears to meet criteria under the features of ASD in the DSM-5 for Level 2 of severity as he requires substantial support at home and school. Jason exhibits deficits in both verbal and nonverbal communication such as lack of eye contact, narrow use of words (very simple and short statements), and limited initiation of and response to interaction with adults and peers. His mother reported that he prefers to be alone and rarely interacts with other children unless they are playing videogames. In addition to these problems with language and social skills, Jason also has a restricted range of behaviors and interests such as playing videogames, Legos, and watching infomercials. He engages in self-stimulatory behaviors (wringing wrists and flapping his hands). He is sensitive to smells, dislikes certain food textures, and hates tight clothing. Jason attends an autism-specific school specializing in Applied Behavior Analysis (ABA) and he requires support at home and school. He has a behavioral health counselor at school, as well as one-on-one support from a special education aid. An ABA interventionist provides therapy in the home. His mother reported that prior to the beginning of the study Jason did not exhibit any pretend play, but that he would occasionally engage in other activities with peers with prompting from adults.

ABAS-II. Jason's mother completed the ABAS-II, Parent Form to provide information about his adaptive functioning. His mother reported a General Adaptive Composite score of 63, which is Extremely Low, and at the 1st percentile. Jason's Conceptual composite score of 67 as endorsed by his mother is Extremely Low and at the 1st percentile rank. Two domains that comprise the Conceptual skill area, Communication and Self-Direction, were Extremely Low, while Functional Academic skills were in the Borderline Range. Jason's Social composite score

of 61 was in the Extremely Low range with a percentile rank of 0.5. The two skill domains, Leisure and Social, that comprise the Social Composite were also in the Extremely Low range. Furthermore, His mother's reports indicated that Jason's Practical composite score of 75 was in the Borderline Range, falling in the 5th percentile. The domains of the Practical composite score were as follows: Community Use was Extremely Low, Home Living was Average, and Health and Safety, and Self-Care, were both in the Borderline Range. Therefore, on the ABAS-II, Jason's mother reported that his development of adaptive skills has been significantly impacted. These delays affect his daily functionally, specifically in social and communication skills, however with supports he can be somewhat successful at home and school with supports.

ToMI. Jason's mother indicated that his ToM competencies were under-developed with a composite mean of 7.40, which is below the 10th percentile. Furthermore, all subscales fell below the 10th percentile suggesting delayed skills in Early, Basic, and Advanced ToM. Despite his delays, his mother indicated that he has the most competency in Early ToM (subscale score = 10.60) as he is able to recognize affect and can initiate and respond to joint attention sharing. However, she reported that Jason struggles to understand beliefs and ways of knowing (Basic ToM subscale mean = 9.79). Furthermore, Jason has developed very few of the abilities in later ToM, suggested by his score on Advanced ToM (subscale mean = 3.20), as he has not developed more complex social judgment, sarcasm, empathy, or humor.

Novice player 3. Lenny is an 8-year-old Caucasian boy who diagnosed with Asperger's Syndrome when he was 7 years old. He lives in a middle-class suburban area with his biological parents. Under the DSM-5 diagnostic features of autism spectrum disorder, he could be considered to fit Level 1 of severity as he requires very little support. Lenny has difficulty initiating interactions and when he does interact, he does so in atypical ways. He struggles with

back-and-forth communication or discussing topics outside of his interests (videogames, Legos, and action figures) and makes unsuccessful attempts to develop friendships. Additionally, Lenny has trouble transitioning between tasks such as pausing his videogame to do another activity. Lenny exhibits self-stimulatory behaviors such as rocking and flapping his arms, and certain smells bother him. He is in a regular education 3rd grade classroom and does not receive any support at school. Lenny engages in speech therapy to address stuttering, group social skills therapy, and music therapy. In addition to ASD, Lenny has also been diagnosed with attention deficit hyperactivity disorder (ADHD). His mother reported that he interacts with peers but struggles to engage in cooperative pretend play.

ABAS-II. In order to capture information about his adaptive functioning, Lenny's mother completed the ABAS-II, Parent Form. His mother reported a General Adaptive Composite score of 80, which is Below Average, and at the 9th percentile rank. Lenny's Conceptual composite score of 89 is also Below Average, falling at the 23rd percentile. Two domains that comprise the Conceptual skill area, Communication and Self-Direction, were in the Average Range, while Functional Academic skills were Below Average. As reported by his mother, Lenny's Social composite score was 98, in the Average range, and at the 45th percentile. Within this domain, Leisure skills were in the Average Range, while Social skills were Below Average. Lenny's Practical composite score of 77 was in Borderline Range and at the 6th percentile. Per the report of his mother, Lenny's skills in the domains of the Practical composite score varied. She reported that his Community Use and Health and Safety abilities were Average, while Self-Care was Borderline and Home Living was in the Extremely Low Range. Overall, Lenny's mother reported on the ABAS-II that he has some age-appropriate abilities such as communication skills, self-direction, understanding of safety, and the capability to engage in the community.

However, his social functioning, academics, and functioning at home are impacted by his deficits.

ToMI. On the ToMI, the responses of Lenny's mother did not indicate overall concerns with ToM delays as his composite score did not fall in the clinically significant range (below the 10th percentile), however, her responses indicated that he had not fully developed all the Early ToM competencies age-appropriately (subscale mean = 16.14; below the 10th percentile). She identified that he may struggle with affect recognition, intentionality, and responding to joint attention. Lenny's mother did report that he had developed skills in the Basic ToM (subscale mean = 17.98; 25th percentile) and Advanced ToM (subscale mean = 11; percentile 11th) suggesting that he can understand mental states, false beliefs, physiologically-based behavior, and aspects of complex social judgment.

Typically developing peers. Two typically developing peers were recruited through my own personal connections. These peers were ages 9 and 10 so that they were old enough to be able to contend with the demands of the intervention (consistent with Whitaker, 2004). The parents of the typically developing children also completed the Social Communication Questionnaire (SCQ; Rutter et al., 2003) to rule out the presence of an ASD and Part IV of the Integrated Play Groups Play Questionnaire (Wolfberg, 2003) to ensure that they had developed symbolic play.

Expert players 1 and 2. Luke is a 9-year-old boy who lives with his mother and grandmother. Victor is a 10-year-old boy who lives with his parents and younger sister. They are both from a middleclass suburb. Luke and Victor are cousins who regularly engage in play together. Per parent report, their scores on the SCQ were within normal range and they had developed symbolic play as indicated by responses on the Integrated Play Groups Play

Questionnaire (Wolfberg, 2003).

Compensation of Participants

All of the child participants (both the novice and expert players) received a gift certificate in the amount of \$20 for Toys R Us and their family received a Visa gift certificate in the amount of \$50.

Design/Intervention

The current study sought to explore if sandplay with two typically developing peers would increase the use of symbolic play in novice players. Each child with an ASD engaged in sandplay with the two peer tutors, as researchers have recommended using a higher ratio of typically developing peers to autistic children during play interventions so that the child with an ASD can be exposed to play between typical peers (Wolfberg, 2003; Yang, Wolfberg, Wu, & Hwu, 2003).

A multiple case design was used for this study, with each participant with an ASD as a single-case. Therefore, data was gathered for each of the three children on the autism spectrum. An intervention design was used where there was a baseline phase, intervention phase, and then a follow-up phase. Each of the children with ASD (novice players) played with both of the typically developing peer tutors at the same time (expert players). The novice players did not interact (i.e., they were not in the testing situation at the same time).

The baseline phase consisted of one 24-minute session for each of the novice players. During this phase, each novice player was observed in sandplay with the pair of expert players to assess his baseline level of symbolic play with the study materials. In this phase, the expert players casually played with the toys and sand in the sand tray. Therefore, the expert players handled the materials and spoke with each other about the materials, however, they did not

engage in pretend play. The expert players only engaged with the novice player to the extent that the novice player initiated (i.e., they did not ignore the novice player, but they did not make overt efforts to facilitate joint play).

After the baseline level of symbolic play was gathered during the baseline phase, the intervention phase began. During the intervention phase, the pair of expert players attempted to engage the novice player in sandplay and demonstrated symbolic play. In this phase, the interaction of the expert players changed to include the treatment elements (i.e., facilitation of engagement and demonstration and narration of symbolic play). The expert players actively attempted to engage the novice player in joint play, completed symbolic play acts (thereby serving as models), and narrated the pretend play. Each of the novice players participated in four 24-minute sessions (one session per week) of the sandplay intervention with the expert players. During the sandplay intervention phase, the researcher provided very little direction beyond facilitation of play when needed (i.e., directed the novice player to play with the expert players and reminded the expert players to teach the novice player how to use pretend play).

One week after the four sessions of the intervention phase, one 24-minute follow-up session was conducted. During this session, the expert players again engaged the novice players like they did during the baseline phase (i.e., the treatment elements were ceased and the expert players again only minimally engaged with the novice player). As previously mentioned, novice players had separate sessions and did not interact with each other. Therefore, each child with ASD participated in a total of six 24-minute sessions. Each session was videotaped for later coding.

Training of the Expert Players

The training of the expert players for the intervention incorporated Whitaker's (2004)

explanation of “see if you can get (your partner with an ASD) to play with you” (p. 216) and included his suggestion of training the peers to use attention directing behaviors (implemented here as narration of play). The expert players were also instructed to remain close to the novice player, join in with their play, and “make it fun” (Whitaker, 2004, p. 217). Prior to beginning the sandplay sessions, the two expert players participated in a 120-minute training session. During this training session, the expert players were educated about ASD and the current study in developmentally appropriate detail. The expert players were educated about the symptoms of ASD so that they were somewhat familiar with how the novice players might present in social and play situations (Whitaker, 2004). They were also briefed about the procedure for the study (i.e., about the progression through the baseline, intervention, and follow-up phases).

I instructed the expert players about how to play with the novice players during the baseline and intervention phases. Specific training for the follow-up phase was not needed, as the conditions were identical to the baseline phase. In the instruction about the baseline phase, the typically developing children were taught how they should interact with each other and the child with an ASD. They were instructed to play with the materials and interact with each other in a casual way. The expert players were told to move figures around in the sandtray and manipulate the sand while talking with each other about the items or the sand. However, they were instructed to not complete symbolic play acts. I demonstrated these conditions using the study materials (i.e., sandtray and figures). The expert players were coached to engage with the novice players to the extent that they tried to initiate and join in the play (i.e., they were directed to not intentionally engage the novice player, however, they were not to ignore any advances made by the novice player). After the training and demonstration, the expert players practiced how they should behave during the baseline phase. When it was clear that the expert players understood

what was required during the baseline phase, the requirements for the intervention phase were taught.

The expert players were instructed in how to interact during the treatment (facilitate joint play, engage in symbolic play, and narrate the pretend play acts). The object of the intervention session was described to the expert players by the following statement, “Teach your group member how to use pretend play and do your best to get him to play with you. Use your imagination and tell your group member about how you are pretending and playing with the sandtray materials. Remember that you have your partner (the other typically developing child) to help you with this task.” I discussed the different types of pretend play that they could teach their novice partner using demonstrations of the symbolic play acts of the Framework for Observing Children’s Developmental Play Patterns (Wolfberg & Schuler, 1993). I demonstrated the different types of pretend play acts: (a) object substitutions, (b) attribution of absent or false properties, (c) imaginary objects as present, and (d) role-playing scripts. After each example, the I checked in with the expert players to see that they understood the different types of pretend play. The second part of the intervention task was then presented to the peer tutors, which was the narration of their pretend play acts (i.e., clearly articulating for the novice player what the pretend play theme is). When it was clear that the expert players understood this part of the task, I provided a demonstration of joint pretend play and verbalized the pretend play as expected of them. The expert players then practiced and demonstrated their understanding of the tasks for the intervention phase using the materials.

Sandplay Materials

A sandtray according to Kalff’s (1980) dimensions was used (19.5 inches x 28.5 inches x 2.75 inches). These particular dimensions are supposed to fit with the child’s field of vision,

while the frame serves to demarcate a safe space. The sand acts as a soothing medium that stimulates the sense of touch, smell, and sight. Figurines such as miniature humans and animals (realistic and fantastic), trees, houses, automobiles, and food items were provided along with miscellaneous objects such as marbles (Lu et al., 2010).

Setting

The sandplay sessions took place in the psychological services office of OhioGuidestone in Brook Park, OH. The office had a desk with a computer, a table where the sandtray and toys were set up, and chairs around the table where the participants could sit if they desired.

Data Collection

Measure of symbolic play. Each session was videotaped and coded later by the primary researcher using a modified part of the Framework for Observing Children's Developmental Play Patterns (Wolfberg & Schuler, 1993) to measure the dependent variable (i.e., symbolic play). The frequency of engaging in symbolic play by each novice player was rated throughout each sandplay session (number of symbolic play acts). A play act was defined as a distinct period of play with a clear beginning, middle, and end. It represented a change from a previous activity, theme, or behavior (i.e., clear distinction between one play act and another; Wolfberg, 2003). To address reliability of coding, my research assistant also viewed and coded a third of the sessions (alternating 8-minute segments). The research assistant was a master's level counselor with experience working with children and coding play in research. The criteria for symbolic play were clearly defined by the observational framework (Wolfberg & Schuler, 1993), so both coders understood what behaviors were to be counted as symbolic play acts and which were not. A symbolic play act was defined as any act that was "advanced pretense, make-believe, and imaginary" such as "object substitution, attribution of absent or false pretense, imaginary objects

as present, and pretend play scripts (role-playing)” (Wolfberg, 2003, p.9). Additionally, the primary researcher coded how long the novice player engaged in symbolic play during each session (length of time in symbolic play) by timing how long each play act was and adding these together for each session. Since the research assistant had only coded a third of the videos, the primary researcher’s play acts were used to compute time in play. This coding method was used to capture additional information because the number of separate play acts may have decreased as the play acts became longer (i.e., role-playing scripts).

Chapter 3: Results

Interrater Reliability

To measure interrater reliability, the number of symbolic play acts identified by the primary researcher and the research assistant were compared using a Kappa coefficient. The Kappa of 0.437 ($p < .001$) suggests a moderate agreement between the primary researcher and research assistant.

Measures of Symbolic Play

To assess the effect of the intervention, both the frequency of symbolic play acts produced by each novice player and the length of time they engaged in symbolic play during the baseline, intervention, and follow-up phases were compared to evaluate the pattern and stability of symbolic play. The frequency of symbolic play use was depicted using a line graph (one for each child with an ASD), which was used for visual inspection of the effect of the intervention. The magnitude of change was analyzed as changes in means and levels among the phases. Changes in means among the phases addresses the average rate of play, while changes in level is the shift in play from the end of one phase to the beginning of the next. Additionally, the rate of change was analyzed through inspection of changes in slope or trend across the sessions, and through an evaluation of latency of change, or the speed at which the rate of pretend play changed between phases (Kazdin, 1982; Kazdin, 2003).

Novice player 1 Bobby.

Number of play acts. In visually analyzing the frequency of Bobby's use of symbolic play (number of play acts; see Figure 1), only minor changes over the course of the sessions can be seen. In respect to the magnitude of change across the baseline, intervention, and follow-up phases, there were changes in the mean at each phase shift (B = 0, I = 4, and F = 2) suggesting a

slight shift in the average rate of number of play acts among phases. Bobby did not exhibit any symbolic play acts at baseline (Session B = 0 play acts), which was consistent with his expected use of pretend play as reported by his mother at recruitment. At the introduction of the peer-mediated play intervention (represented by I1), the level of symbolic play acts shifted up (increase to 2 play acts). The level of symbolic play acts remained the same between the end of the intervention phase (I4 = 2) and the follow-up phase (F = 2). This suggests Bobby's use of pretend play acts increased immediately upon the initial introduction of the peer-mediated play intervention and his use of pretend play acts was maintained from the end of the intervention to the follow-up phase. Upon analysis of rate of change, measured by slope and latency of change, the effects of the intervention are not as consistent. Over the course of the first three intervention sessions, the number of play acts that Bobby produced had an accelerating trend (session I1, I2, and I3), however there was a decrease in the number of play acts in which he engaged during the fourth intervention session (I4), falling from 7 acts at I3 to 2 acts at I4. In regards to latency of change, the change between the baseline phase and the intervention phase occurred at a moderate rate, whereas there was no change between the end of the intervention phase and the follow-up phase. There is variability among the data points, suggesting that Bobby's use of pretend play acts varied over the course of the sessions. He appeared to make gains in his use of pretend play until the fourth session when his production of symbolic acts declined, however, his use of pretend play during this fourth session was still slightly higher than during his baseline session. He also maintained his level of pretend play acts from the end of the intervention phase to the intervention phase as illustrated by the frequency of play acts.

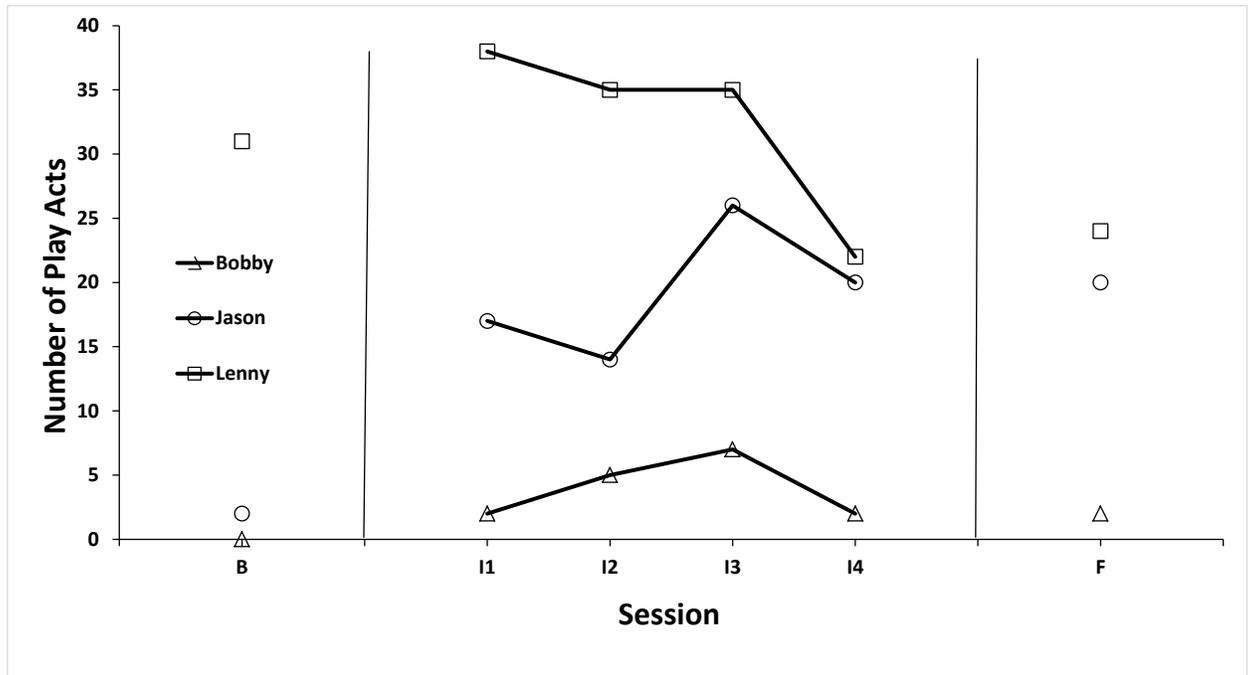


Figure 1. Results from the coding of the number of play acts.

Time in play. In addition to visually analyzing a graphic representation of the frequency of pretend play (number of play acts), the amount of time that Bobby spent using symbolic play during each session was also used to assess the effectiveness of the intervention (see Figure 2). Of importance to note here is that Bobby struggled to remain engaged for the full 24-minutes during each session and requested to leave early at all meetings. The length of the sessions were as follows: B was 22 minutes, I1 was 21 minutes, I2 was 12 minutes, I3 was 23 minutes, I4 was 12 minutes, and F was 12 minutes. Upon visual analysis of the amount of time that Bobby engaged in symbolic play, the change among phases and sessions appeared to be much smaller. The amount of time he engaged in play during a session only ranged from 0 seconds to 23 seconds during the course of the study. There was a minuscule change in level between the baseline phase and the intervention phase, however this was only an increase of 6 seconds.

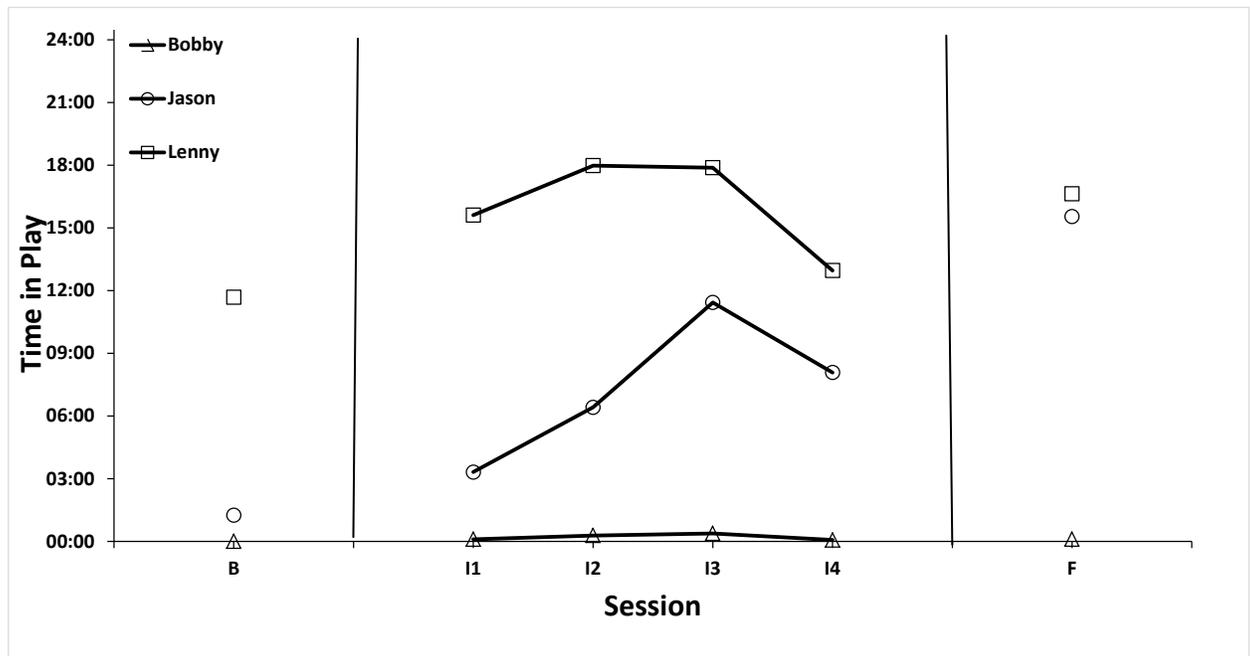


Figure 2. Results from the coding of the amount of time engaged in play

The level remained similar between the intervention and follow-up phase as it had in the frequency of play acts (I4 = 4 seconds and F = 6 seconds). As graphed, the slope or trend of the data appears to be neither accelerating nor decelerating and the latency of change between phases is almost imperceptible.

Novice player 2 Jason.

Number of play acts. Jason's frequency of play acts displayed variance over the course of the study (see Figure 1). In the visual inspection of the magnitude of change across the phases, Jason appeared to make some gains in symbolic play, however these gains were not consistent. There was a shift in his average rate of performance as evidenced by the mean of the number of play acts across the phases (B = 2, I = 19.25, and F = 20). Additionally, there was a significant change in level between the baseline and first intervention session from 2 to 17 play acts, suggesting an impact of the peer-mediated intervention. The level did not change between the

intervention phase (I4 = 20) and the follow-up phase (F = 20) suggesting that he maintained his use of symbolic play after the intervention was withdrawn. In evaluating the rate of change for Jason's use of symbolic play acts, the variability appeared to impact the visual representation of effectiveness. Although there was a significant shift in the amount of play (latency of change) between the baseline and first session of intervention phase, suggesting an impact of the change in conditions, the slope or trend during the intervention phase was unclear. There was a slight decrease in the number of play acts between the first and second intervention sessions (I1 = 17 and I2 = 14). Then Jason's use of pretend play increased at the third intervention session (I3 = 26) and decreased at the last session (I4 = 20).

Time in play. Upon visual inspection of the time that Jason spent in symbolic play, the effects of the peer-mediated intervention appeared stronger, but still inconsistent (see Figure 2). In regards to magnitude of change, there were significant changes in means across the phases (B = 1 min 15 seconds, I = 7 minutes 20 seconds, and F = 15 minutes 33 seconds). There was a change in level at the introduction of the intervention as well, shifting from 1 minute and 15 seconds at baseline to 3 minutes and 19 seconds at the first intervention session. Additionally, there was a significant change in level of symbolic play between the last intervention session (I4 = 8 minutes and 5 seconds) and the follow-up phase (F = 15 minutes and 33 seconds) suggesting maintenance of symbolic play skills after the intervention was ceased. As in the frequency of Jason's use of symbolic play acts, the length of time he engaged in symbolic play also varied over the course of the study. This, in turn, impacted the conclusions that can be drawn by a visual inspection of the rate of change. There was a slower shift in performance (latency of change) between the baseline phase and the intervention phase, and a very quick shift in performance between the last session of the intervention phase and the follow-up phase.

Additionally, the slope or trend accelerated quickly over the course of the first three intervention sessions (I1 = 3 minutes and 19 seconds, I2 = 6 minutes and 25 seconds, and I3 = 11 minutes and 26 seconds). However, there was a decrease in the amount of time Jason spent engaged in symbolic play in the last intervention session (I4 = 8 minutes and 5 seconds).

Novice player 3 Lenny.

Number of play acts. When analyzing the graphical representation of frequency of play acts (see Figure 1), one can see that Lenny initially displayed a much higher use of symbolic play acts during the baseline session than predicted based on the report of his mother at recruitment, as he began the study with significant use of symbolic play (B = 31 or 31 play acts in 24 minutes). In the evaluation of the magnitude of change, there were only slight changes in the means between the phases (B = 31, I = 32.5, and F = 24), with a small increase between the baseline and intervention phase and a decrease between the intervention phase and the follow-up. There was a small positive shift in level between the baseline (B = 31) and the introduction of the intervention (I1 = 38), as well as between the last intervention session (I4 = 22) and the follow-up session (F = 24). In regards to rate of change, there was a decelerating slope or trend over the course of the intervention sessions, suggesting that Lenny engaged in fewer different pretend play acts. There was a very small latency of change between the phases as well, suggesting imperceptible changes between changes in conditions.

Time in play. Upon visual inspection of the amount of time Lenny spent using symbolic play, the results suggest very little change in pretend play (see Figure 2). Again, Lenny engaged in more pretend play than predicted at baseline (11 minutes and 41 seconds). There was a substantial shift in the means between the baseline phase and intervention phase (B = 11 minutes and 41 seconds and I = 16 minutes and 6 seconds) suggesting a change in the average rate of

performance. Furthermore, the means were close between the intervention phase (I = 16 minutes and 6 seconds) and follow-up phase (F = 16 minutes and 38 seconds). There were shifts in level between the baseline (B = 11 minutes and 41 seconds) and introduction of the intervention (I1 = 15 minutes and 37 seconds), as well as between the end of the intervention phase (I4 = 12 minutes and 58 seconds) and the follow-up phase (F = 16 minutes and 38 seconds). In evaluating the rate of change, there was a moderate latency of change between the baseline session and the first intervention session, but a significantly quick change between the fourth intervention session and follow-up session. Due to the variability in data points over the intervention phase, a slope was difficult to capture. There was an accelerating trend across the first three intervention sessions; however there was a decrease in the amount of time Lenny had engaged in symbolic play between the third intervention session to the fourth intervention session.

Chapter 4: Discussion

The goal of this exploratory study was to extend Lu and colleagues' (2010) investigation of the effect of sandplay on the symbolic play skills of children with ASD by using a peer-implemented intervention. The specific hypotheses were that the novice players would demonstrate an increase in their use of symbolic play after the introduction of the interactive sandplay intervention with typically developing peers. Additionally, it was hypothesized that these gains in symbolic play would be maintained after the follow-up phase.

While Bobby did display an increase in use of symbolic play from baseline, this was not to a very significant extent. He moved from producing no symbolic play acts during the initial session to producing a few acts, however he engaged in this play only briefly. Conversely, Jason appeared to display a larger increase in symbolic play over the course of the study, however this increase was not consistent. Importantly, Jason's use of symbolic play acts and the length of time he was engaged in symbolic play increased with the introduction of peer-mediated intervention. The number of play acts he produced varied somewhat over the course of the intervention phase, and the length of time spent in symbolic play increased systematically until the final intervention session when there was a decrease in the number of acts and the amount of time engaged in pretend play. While Jason appeared to display a decrease in the amount of symbolic play used in the fourth intervention session, he did seem to maintain these gains in symbolic play at follow-up. Although Lenny entered the study with more symbolic play than predicted and initially responded well to the introduction of the peer-mediated intervention, these gains were not consistently maintained over the course of the study.

Overall, Bobby and Lenny did not appear to respond as much as Jason did to the intervention. Bobby displayed minuscule changes in his use of symbolic play over the course of

the study, and changes over time were almost imperceptible. Likewise, the changes in Lenny's play during the study did not support the intervention having an effect. Over the course of the study, Lenny's use of pretend play acts appeared to decrease, while the time he spent in symbolic play increased only slightly between baseline and follow-up. Conversely, Jason appeared to respond to the intervention as his use of symbolic play significantly increased from baseline, however his level of symbolic play varied over the course of the intervention, decreasing substantially in the fourth intervention session. Also in support of a favorable response, Jason's level of symbolic play remained higher than baseline at the follow-up phase.

Levels of Functioning: ABAS-II and ToMI

The degree to which play changed over the course of the study was different for each of the three novice players and may be linked to their level of functioning. Bobby, the lowest functioning child with the most severe symptoms of ASD (matching symptom criteria of Level 3; American Psychiatric Association, 2013), appeared to experience the least amount of benefit from the play intervention. Although he did exhibit play acts, he engaged very briefly in pretend play. These play acts tended to be stereotyped repetitions of previously prompted, simple play acts taught by the expert players (e.g., such as making the dragon fly) rather than spontaneous generation of pretend play. In examining his level of functioning as reported by his mother on the ABAS-II and the ToMI parent questionnaires it is apparent that he exhibited severe delays in both his adaptive functioning and Theory of Mind that impacted his social abilities, as well as his abilities to engage in pretend play. His significant deficits in social and communication abilities appeared to impact his ability to attend to and participate in the play sessions as he frequently ignored the expert players, struggled to communicate with them, and displayed very little interest in engaging in joint play with them. Additionally, due to his deficits in understanding emotions,

false-beliefs, and metacognition of ToM skills, his play suffered significantly as he was unable to produce symbolic play themes.

Jason appeared to exhibit the most robust response to the peer-mediated play intervention, as his use of symbolic play developed over the course of the study. Jason moved from producing simple pretend play acts for a short amount of time during the baseline session, to engaging in prolonged joint pretend play with the expert players that he initiated in the follow-up session. In comparison to Bobby, Jason exhibited a higher degree of functioning and these skills appeared to translate to him being able to participate to a more extensive degree in the play sessions. Jason's symptoms of ASD appeared to meet criteria for Level 2 of severity suggesting that while substantial supports were needed to address social and communication concerns, he had less developmental delays than Level 3 (American Psychiatric Association, 2013). As reported by his mother on the ABAS-II and ToMI, Jason had delays in social and communication skills, however he could be somewhat successful at home and school with supports. His mother also indicated that while his ToM was delayed, he was able to recognize affect and could initiate and respond to joint attention sharing. These skills appeared to manifest themselves in Jason being better able to engage with the expert players, join their play, and initiate shared pretend play during the sessions. His abilities to understand very basic ToM concepts appeared to allow for him to engage in more developed, longer play schemes with interacting characters.

Lenny was the highest functioning of the three children with ASD as his symptoms seemed to fit the criteria for Level 1 severity (American Psychiatric Association, 2013). Although he did not experience any communication difficulties beyond stuttering, he had significant social deficits that impacted his ability to interact with peers. While he expressed

interest in peers and interacting with them, he struggled to appropriately initiate social exchanges and participate in cooperative joint play. Although, Lenny entered the play study with significantly more developed use of pretend play than anticipated, he struggled to join the play of the expert peers and jumped from one play scheme to another. Over the course of the study, Lenny seemed to be able to engage in more developed and longer play schemes with greater symbolic meaning, more developed characters, and displays of emotion, however this was inconsistent over the course of the play study. The response of Lenny's play to the peer-mediated intervention fell in line with his mother's report on the parent questionnaires. On the ABAS-II, she identified that he had some age-appropriate abilities such as communication skills, self-direction, and the capability to engage in the community, which appeared to help him in being able to communicate with the expert players and engage in the play sessions. However, she also identified that Lenny's adaptive social functioning was delayed, which was apparent in his struggle to appropriately interact with the expert players. In regards to ToM abilities, Lenny appeared to have the most developed skills as his mother identified that he could understand mental states and some aspects of complex social judgment, which was evident in his play.

Implications of Results

Although Lu and colleagues' (2010) found that sandplay appears to be an effective intervention for children with ASD in producing greater use of symbolic play, this was much less convincing in the current exploratory study. There were mixed results for all three novice players in both the number of play acts produced and the length of time they engaged in symbolic play. Although there was some change in pretend play over the course of the study for two of the novice players (Bobby and Lenny), their responses do not suggest a strong impact of the intervention. However, the third novice player, Jason, did appear to benefit to some degree from

the intervention as his use of pretend play acts and the time he was engaged in play increased over the course of the sessions. His performance was still inconsistent and the overall gains were not dramatic.

While the results of this study do not specifically support that this peer-mediated sandplay method increases the use of symbolic play in children with ASD, the modest increases in pretend play in the participants do necessitate additional investigation into this method. For example, based on this very small sample of participants, it is possible that peer-directed play interventions may be most effective for children in the moderate range of the spectrum (i.e., Level 2; American Psychiatric Association, 2013). Further assessment of developmental skills, such as the severity of deficits in adaptive functioning and theory of mind as included in the present study, may also provide additional information about which children benefit most from this method.

Limitations

There are limitations to the present study that need to be acknowledged. One such limitation was related to the validity concerns of the fourth intervention session being scheduled on Memorial Day. This appeared to significantly affect the children's behavior as the children were out of their typical routine. The children were off from school that day and were all returning from a long weekend of outdoor family activities. All of the children appeared tired and struggled to engage in the task. Changes in routine may have been especially disruptive for the participants with ASD as many children with ASD struggle with broken routines.

Additionally, the typically developing peers needed more prompts to continue to implement the intervention and engaged in less symbolic play than during other sessions, providing fewer teaching examples. During this session, Bobby was exhausted and did not engage with the

sandtray as he had during other sessions (i.e., pushing the sand around or dumping figures into the sandtray). Instead, he spent most of the session with his head down with the exception of the brief time that the expert players prompted him to join their play and he responded. Likewise, Jason appeared to be anxious and exhibited self-stimulatory play in the sandtray rather than engaging in symbolic play as he scooped sand with a shovel and poured it out for an extended period of time. Lenny came into the fourth session preoccupied with the videogame he had been playing during the holiday and proceeded to engage the expert players in conversation about this game rather than engaging in play as instructed. He spent much of the session focused on conversation about the videogame, and became frustrated with the expert players when they attempted to shift his focus to pretend play. Ultimately, Lenny's frustration manifested itself in him struggling to regulate his emotions, which also affected his production of pretend play. Holding the session on a school day when the participants had their typical schedule may have been preferable.

Additionally, the Framework for Observing Children's Developmental Play Patterns (Wolfberg & Schuler, 1993) was found to not accurately capture the changes in play during this study as role-playing scripts were counted as one play act despite their duration. Even as the scripts became more developed and lasted longer, they still were only considered to be one play act with a beginning, middle, and an end. Thus, the representation of symbolic play as time engaged in pretend play seems to better capture the development of these skills over time for the participants in this study. While the use of an observational grid is a common practice in play studies (see Wolfberg & Schuler, 1993; Lu et al., 2010), there is not currently a standardized measure of play (Pierucci, Barber, Gilpin, Crisler, & Klinger, 2015). The development of effective observational measures will be necessary to strengthen future research in this area.

Furthermore, adjusting the length of the study may have provided more robust findings and led to a stronger design. Having additional baseline, intervention, and follow-up sessions to track the level of symbolic play may have provided stronger evidence of the impact of the intervention. Multiple measurements of symbolic play would have provided a better sense of the stability or instability of the levels of play. For example, there are confounding variables in the baseline phase, such as being new to the situation of the study, which could have impacted the level of play expressed by the participants. Likewise, incorporating additional intervention sessions might have provided a stronger intervention and more data points, which may have provided a clearer picture of the association between the intervention and the level of play (Morgenthal, 2015). This may be particularly important due to the diagnosis of the children, as ASD is associated with inflexibility, a reliance on routine, and resistance to change. Not only would the children with ASD have been able to have more time to adjust to the intervention, but having a higher number interventions sessions may have provided more impact of the treatment due to longer time spent in the play sessions. Additionally, their social deficits may have impacted their ability to become comfortable enough to adequately learn from their typically developing peers. Therefore, in taking their symptoms into account, having a longer intervention phase may have provided children on the spectrum with a greater opportunity to develop pretend play skills, and might also have helped reduce the impact of confounding variables. More frequent sessions, such as multiple meetings a week, may have also produced a greater effect. In addition, including multiple follow-up sessions and/or a follow-up session further out from the cessation of the intervention would have allowed for a more reliable measure of the maintenance of gains.

The development of play may have been impacted by other confounding variables

outside of my awareness that were difficult to account for such as life events, outside interventions, and maturation. This is particularly important given the small number of participants. For instance, all three of the participants with ASD had external supports at home and school that may have been impacting their use of play. In addition, the participants chosen for this study may have not been the best candidates for this intervention. The study may have yielded different results if the severity of ASD were controlled, if the children were different ages, had more developed ToM, were female and so on. Likewise, specific characteristics of the peer tutors may have also affected the outcome of the study. Follow-up measurement of the use of symbolic play in naturalistic settings with peers would have provided interesting data about the generalization of skills gained to “real-world” settings. Due to this being an exploratory study laying the groundwork for further investigation of effectiveness and practical use, the generalization of the results is difficult to address.

Future Directions

With the above limitations taken into account, the present study can still be seen as necessitating further investigation into this method of intervention for children with ASD. While changes in the use of pretend play were very minor, two of the three children exhibited no symbolic play prior to the start of the study, and all of the children engaged in some symbolic play during the sessions. This suggests that this intervention could be effective under the right circumstances. The findings in the current study, in addition to the data from Lu and colleagues (2010) suggest that sandplay may be an effective intervention for some children with ASD. Further examination of the peer-mediated sandplay intervention is needed with a larger group of participants and over a longer period of time. Additionally, using a more specific measure of symbolic play, possibly one that accounts for development of longer play schemes, may act as a

more concise assessment of play development. As was found here, taking into account the amount of time spent in pretend play provided information essential to measuring the level of play. Future investigation of level of functioning would also provide more information for the applicability of this intervention for children with ASD. Although exploratory, the results in the present study may hint that the greatest benefits of this approach could be for children with moderate ASD. A study that includes a larger sample of children at differing levels of functioning could provide more evidence about this finding.

Taken together, the present study provides an exploration of a potential intervention that may be a successful addition to treatment to address delays in the development of symbolic play of children with ASD. As presented here, this peer-mediated sandplay approach suggests that this method could potentially increase symbolic play. In looking at these results through a clinical lens, using these approaches of narrating play in the sandtray may also be applied in therapy with children with ASD to develop pretend play skills. The importance of play in the development of a range of skills, such as communication and social functioning, lends support to the inclusion of this as a crucial aspect of treatment. Additional investigation into play interventions for children with ASD is much needed and has promise to produce fruitful information to make treating ASD more effective.

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