EFFECTS OF TEACHING MOTHERS OF CHILDREN WITH AUTISM

JOINT ATTENTION BIDS IN KOREA

by

SEOYOUNG SHON

(Under the Direction of Cynthia O. Vail)

ABSTRACT

Joint attention is an important early social-communicative skill, in which children with autism mainly exhibit deficits. This study examined the effectiveness of Korean mothers' training with joint attention skills regarding their children's contingent responses. The study was conducted with 3 dyads, each consisting of a mother and her child with autism in their home settings in Korea using a mixed method design. The results indicate that all 3 mothers increased their use of total joint attention bids, and their children with autism increased the percentage of their contingent responses as well as the number of contingent responses based on their mothers' joint attention bids during the intervention. The study replicated the importance of joint attention intervention in natural settings with familiar persons. In addition, the intervention for joint attention skills showed effectiveness across cultural settings. Based on systems theory perspectives, five systems as factors influencing the effectiveness of the intervention were generated beyond mother-child dyads: mother, family, informal support, formal support, and sociocultural system. Limitations and implications for future research applying joint attention intervention for children with autism are discussed.

INDEX WORDS: Autism, Joint attention, Home-based research, Parent teaching, Korean children with autism, Special education

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DEDICATION

I'd like to dedicate this dissertation to God of Alpha and Omega, who was the beginning and the end of my program and dissertation, and led me by His Words day by day.

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CHAPTER 1

INTRODUCTION

Joint attention is an important early social-communicative skill. Children engage their attention between adults and objects with mutual interest. Joint attention is presented when referential looking is used in triadic exchanges among children, adults, and objects (Klinger & Dawson, 1992). Joint attention has been divided into two forms: response and initiation. Children typically develop their joint attention skills as responding, coordinating, and initiating when they are around 1 year old. Observable behaviors that demonstrate joint attention include pointing, gaze shift, showing, giving, touching, and verbal comments (Zercher, Hunt, Schuler & Webster, 2001).

In addition, the purpose of joint attention gestures can be either *protoimperative* or *protodeclarative* (Isaksen & Holth, 2009). While *protoimperative* means that the gesture is requesting something, *protodeclarative* indicates a describing gesture, the purpose of which is to share attention. Therefore, actual joint attention should contain *protodeclarative* gestures, although the two purposes are sometimes mixed. Research indicates that joint attention is a critical component in social, communication, cognitive, and language development. In particular, several studies have demonstrated the importance of joint attention for language development at an early age. Joint attention influences both current and later language development (Charman et al., 2003; Loveland & Landry, 1986; Mundy, Sigman, & Kasari, 1990). Tomasello and Farrar (1986) found that joint attention was associated with an increase in vocabulary.

Autism is a pervasive developmental disorder with a primary characteristic of deficits in social skills and communication, such as eye contact, joint attention, imitation, and sharing affection in early childhood. Although developing infants usually develop their joint attention skills when they are 1 year old, this is rarely the case for children with autism. Research supports the hypothesis that children with autism have deficits in joint attention compared with children in other groups (Charman et al., 1997; Kasari, Sigman, Mundy, &Yirmiya, 1990; McArthur & Adamson, 1996; Morgan, Maybery, & Durkin, 2003). Kasari et al. found that children with mental retardation looked at their adult partners' faces significantly more than typically developing children and children with autism, and children with autism spent significantly more time unfocused than the other groups. Similarly, joint attention for children with autism has been found to be only half that for children with developmental language disorders (McArthur & Adamson, 1996). Charman et al. (1997) also found that children with autism gaze switched less than children with developmental delay or typically developing children, and those children with autism looked at the examiners less than the typically developing children. Loveland and Landry (1986) found that children with autism and developmental language delay differed significantly in percentage of correct responses to all joint attention tasks.

Mundy et al. (1990) found that joint attention was a significant precursor of language development for children with autism, but not for children with mental retardation. The lack of joint attention may delay later development of social interaction between children with autism and other children, and also impede their acquisition of functional language. Therefore, several researchers have emphasized the importance of joint attention intervention at an early age (Charman et al., 2003; Hwang & Hughes, 2000a). Hwang and Hughes suggested joint attention

intervention for preverbal children to "minimize obstacles to the learning of language and social interaction skills" (p. 341).

Although research on joint attention has focused mainly on either assessment of the skill for children with autism or the relationship between language development and the skill, recent studies have paid attention to intervention methods needed to teach the skill (Rocha, Schreibman, & Stahmer, 2007). Before 2005, intervention studies focused on several social skills together including joint attention skills and were conducted in unnatural settings with unfamiliar persons. However, joint attention studies have blossomed since 2005, and now tend to focus on only joint attention skills, including response and initiation of joint attention, are conducted in natural settings such as homes and classrooms, and use familiar persons such as mothers, siblings, or teachers as mediators (Isaksen & Holth, 2009; Jones, 2009; Jones, Carr, & Feeley, 2006; Kasari, Freeman, & Paparella, 2006; Rocha et al., 2007; Schertz & Odom, 2007; Taylor & Hoch, 2008; Tsao & Odom, 2006).

However, even recent intervention studies still use drilled-techniques or behavioral strategies to intensively train only joint attention skill. Intensive intervention may show increases in joint attention skill. However, because joint attention is a social relationship, which naturally occurs during interaction with people familiar to the child, joint attention skill should be improved in a child's natural relationships between an adult and the child. To achieve actual joint attention which includes *protodeclarative* gestures, children need to learn joint attention for the purpose of sharing attention for fun with people familiar to them. Therefore, to complement the actual purpose of joint attention, this study will teach parents joint attention skills as well as play techniques rather than directly teaching children with autism.

Teaching parents to promote their children's development is an effective strategy. Research has shown the effectiveness of parents teaching the development of various skills, even in a short time period (Koegel, Symon, & Koegel, 2002). It can help parents feel more confident and can reduce stress on their children with disabilities. It also increases parents' sensitivity to their children's behaviors or activities, which are correlated with later communication skills (Siller & Sigman, 2002). As Schertz and Odom (2007) suggested, outcomes of joint attention intervention through play and interaction between parents and children with autism are more valuable because they help parents "to envision both the child's potential and their own abilities as ongoing mediators of their children's learning" (p. 1572).

The current study was conducted in a different culture, in which no previous joint attention intervention has been conducted. Although the joint attention skill might be considered a universal development across cultures and time, joint attention and related social communicative development appear different in different cultures. Previous comparative research has shown that mothers from the Asian culture used less joint attention, conversation, nouns, elaborative speech, and child-directed style during interactions with their children (Dennis, Cole, Zahn-Waxler, & Mizuta, 2002; Fernald & Morikawa, 1993; Sung & Hsu, 2009; Vigil, 2002). Therefore, interventions in different cultures should be undertaken with caution. In order to understand joint attention in a different culture, as well as to examine the effectiveness of joint attention, this study employed a mixed method design and triangulation of qualitative and quantitative data.

The purpose of this study was to examine the effectiveness of three Korean mothers' training with joint attention skills regarding their children's contingent responses, using a multiple probe design, and to explore in depth the factors that influenced the intervention of

mother-child dyads. Four research questions about the effect of the intervention were addressed as follows:

(1) Will three mothers increase their use of joint attention bids during playtime with their young autistic children?

(2) Will the mothers' use of joint attention intervention have an effect on the children's contingent joint attention response?

(3) Will the mothers increase their use of each joint attention bid and affect the children's contingent joint attention response?

(4) What factors affect joint attention interaction between mother and child dyads?

CHAPTER 2

LITERATURE REVIEW

Review of Joint Attention Literature

Search Procedure. First, a computer search of the Educational Resources Informational Clearinghouse (ERIC), Psychological Information (PsycINFO), and Psychological Articles (PsycARTICLES) databases was conducted for the years 1986 through 2014, using six descriptors, both individually and combined. These descriptors included *joint attention, autism, eye gaze, children, infant*, and *preschool*. Additionally, names of leading scholars in joint attention studies were used, including Kasari, Schreibman, Odom, and Jones. Finally, an archival search of relevant journals (e.g., Journal of Autism and Developmental Disorders) from 1986 through 2014 was conducted.

An article was chosen for evaluation if it met the following criteria: (a) the article was based on a research investigation; (b) joint attention was one of the dependent variables; (c) the target population was infant, toddler, preschooler, or preverbal children with autism; and (d) the article was published in a peer-reviewed journal. Twenty-eight articles met these criteria. To identify possible factors in the studies, reviewed articles were analyzed according to the following variables: participants, setting, target behaviors, measurement, and results.

Studies of joint attention deficits in autism. Almost every eligible study included 10 to 20 children, ages 1 through 5 in each group (Charman et al., 1997; Kasari et al., 1990; Leekam, Lopez, & Moore, 2000; McArthur & Adamson, 1996; Morgan et al., 2003). Two studies included relatively high number of children: Paparella, and his colleagues (2011) included 53

children; Wong and Kasari (2012) included 55 children. Most researchers used the same sample size for the experimental and control groups. However, Leekam et al.'s second study used a different sample size for each group, and Paparella and his colleagues added a longitudinal design.

For comparison with children with autism, researchers chose groups of children with mental retardation, developmental delay, and normal development. McArthur and Adamson (1996) chose children with developmental language disorder as a control group. The control groups were matched to children with autism on two more criteria such as mental age, chronological age, IQ, social class, expressive language age and nonverbal ability. Interestingly, Kasari et al. (1990) matched on maternal education, but did not explain why that criterion was chosen. Although gender is an important block factor, only Morgan et al.'s study (2003) considered it as a criterion.

Most of the identified studies were conducted in the laboratory. Wong and Kasari (2012) observed children in public preschool special education classrooms. Leekam et al.'s second study (2000) and Morgan et al. (2003) assessed children in a quiet room in a regular setting. The target children interacted with or were examined by the experimenters, although the place was familiar. A caregiver sat with the child in two of the studies, but did not play an active role. The experiments proceeded with toys while the child sat on a chair or in a play setting.

All of the literature focused on social and communication skills, and had more than one target behavior that involved joint attention: joint attention (8), play (3), communication (2), affect expression (2), imitation (1), and central coherence (1). Joint attention indicators, such as head turning, gaze switching, blocking, teasing, looking, pointing, touching, and commenting, were specifically coded. All studies used direct observation as an assessment method. In

Morgan et al.'s study (2003), two tests (the Preschool Embedded Figures Test and the Pattern Construction Subscale of the Differential Ability Scale) were conducted to assess central coherence. Most authors have supported the hypothesis that children with autism have deficits in either initiation or response joint attention, compared with children in other groups (Charman et al., 1997; Kasari et al., 1990; McArthur & Adamson, 1996; Morgan et al., 2003; Wong & Kasari, 2012). In Kasari et al.'s study, the children with mental retardation looked at the adult's face significantly more than the typically developing children and children with autism, and the children with autism spent significantly more time unfocused than the other groups. In addition, the typically developing children displayed significantly more positive affect with the adults in the communicative context of joint attention than in the context of requesting. The children with autism displayed uniformly low percentages of positive affect with the adult during joint attention and requesting acts. The children with mental retardation displayed uniformly high percentages of positive affect toward the adult during joint attention and requesting acts. One study showed that joint attention for children with autism was only half that of children with developmental language disorder (McArthur & Adamson, 1996). Charman et al. (1997) also found that children with autism gaze switched less often than did the other groups, and that children with autism looked at the tester less often than did the typically developing children in both the blocking and teasing tasks. Paparella and his colleagues (2011) discovered that the timing and order of joint attention skill acquisition in children with autism was different from those of typically developing children.

Contrary to other results, there was no significant difference in the number of attention bids received by children with autism and with developmental delay, as well as the number of attention bids in mutual gaze in the first study by Leekam et al. (2000). Interestingly, the

children with autism in the low IQ group had significantly faster responses, when children with autism were divided into high and low IQ groups.

Studies of joint attention and language development. Four studies were examined for interaction between joint attention and language development (Charman et al., 2003; Loveland & Landry, 1986; Mundy et al., 1990; Siller & Sigman, 2008). The sample sizes ranged from nine to 28 children. Children with autism were compared with children with developmental language delay (DLD), mental retardation, and pervasive developmental disorder (Charman et al., 2003; Loveland & Landry, 1986; Mundy et al., 1990). Siller and Sigman (2008) only focused on the children with autism and studied longitudinal change in the language abilities related to joint attention. The children's ages ranged from 20 months to 8 years. One study (Loveland & Landry, 1986) included children older than the ages described in the selecting criteria because the children with autism had older chronological age when matched with mental age (the mean was 5 years) and mean length of utterance (MLU; the mean was 1.94).

The control groups were matched with children with autism according to nonverbal IQ, nonverbal mental age, language age, or MLU (Charman et al., 2003; Loveland & Landry, 1986; Mundy et al., 1990). Assessments used in all the studies were conducted with an unfamiliar experimenter in the laboratory. In Charman et al.'s (2003) study, the caregiver could be present in the lab, perhaps because the participants were infants. Siller and Sigman (2008) also collected data on mother and child interaction during their home visits. All studies assessed participants' language abilities as well as social communication skills including joint attention. In addition, social behavior, requesting, imitation, play, and goal detection were examined. Joint attention skills that were coded included gaze shifting, pointing, showing, tapping, and looking. Siller and Sigman (2008) collected two kinds of joint attention behaviors for children with autism --

initiations and responses of joint attention, as well as mothers' verbal and nonverbal behaviors. Direct observation was used in the three studies as an assessment method. To assess language development, Mundy et al. (1990), Charman et al. (2003), and Siller and Sigman (2008) administered the Reynell Developmental Language Scales and conducted longitudinal studies 12 to 22 months apart.

Loveland and Landry (1986) found that children with autism and developmental language delay differed significantly in percentage of correct responses to all joint attention tasks. Language-plus-gesture tasks were more difficult than gesture-only tasks for the children with autism, but not for the children with DLD. Correct production of *I/you* was significantly correlated with number of spontaneous initiations for the autistic group. There were significant correlations between the number of different joint attention behaviors and MLU for the DLD group but not for the group with autism.

In Mundy et al.'s (1990) study, the children with autism showed fewer joint attention behaviors than did the language group with mental retardation and the mental age group with mental retardation. All of the groups displayed a similar increase in joint attention behavior scores throughout the follow-up period. In the relationship between joint attention and language, the results showed that joint attention was a significant predictor of language development in the autistic group. In the language control group with mental retardation, initial language level and mental age were significant predictors of language development.

Siller and Sigman (2008) supported the idea that language abilities of children with autism were related to children's responsiveness to others' bids for joint attention and parents' responsiveness to their children's interest and activity, rather than being related to initial

cognitive development or language skills. Particularly, children's responses to joint attention bids were the strongest predictor for following language development.

Studies of joint attention intervention. Sixteen studies were reviewed for joint attention intervention (Hwang & Hughes, 2000; Isaksen & Holth, 2009; Jones, 2009; Jones et al., 2006; Kasari et al., 2006; Krstovska-Guerrero & Jones, 2012; Naoi, Tsuchiya, Yamamoto, & Nakamura, 2008; Rocha et al., 2007; Schertz & Odom, 2007; Taylor & Hoch, 2008; Tsao & Odom, 2006; Warreyn & Roeyers, 2013; Whalen & Schreibman, 2003; Wong, 2013; Wong, Kasari, Freeman, & Paparella, 2007; Zercher, Hunt, Schuler, & Webster, 2001). Most of the studies included two to five children with autism for their interventions. Four studies included a relatively high number of participants: Warreyn and Roeyers included 36 children; Wong included 33 children; Wong et al. included 51 preschoolers; Kasari et al. included 58 children.

The participants were mostly between 2 and 4 years old. Because joint attention is a relatively basic skill for social communication, the studies targeted toddlers or preschoolers. Interestingly, Zercher et al. (2001) included 6-year-old twin brothers with autism, and four studies (Naoi et al., 2008; Taylor & Hoch, 2008; Tsao & Odom, 2006; Warreyn & Roeyers, 2013; Wong, 2013) included various age ranges of children who were between 3 to 8 years old.

Ten studies included familiar people, in addition to children with autism, as interactive partners or mediators in order to implement the interventions (Isaksen & Holth, 2009; Jones, 2009; Jones et al., 2006; Kasari et al., 2006; Rocha et al., 2007; Schertz & Odom, 2007; Tsao & Odom, 2006; Warreyn & Roeyers, 2013; Wong, 2013; Zercher et al., 2001). These familiar people were mothers, siblings, peers, or teachers. Three out of ten studies used parent-implemented or sibling-mediated interventions in which the children's parents or siblings were taught joint attention skills, rather than teaching the autistic children directly (Rocha et al., 2007;

Schertz & Odom, 2007; Tsao & Odom, 2006). However, unfamiliar persons such as researchers or graduate students administered trainings and interacted with children with autism in the other five studies (Hwang & Hughes, 2000; Naoi et al., 2008; Taylor & Hoch, 2008; Whalen & Schreibman, 2003; Wong et al., 2007).

Most of the studies conducted interventions in natural settings, such as homes, classrooms, or community settings. However, five studies (Kasari et al., 2006; Naoi et al., 2008; Rocha et al., 2007; Whalen & Schreibman, 2003; Wong et al., 2007) conducted their interventions in labs or clinics. While their intervention was conducted in a clinical setting, Rocha et al. (2007) also examined whether two of the three parents generalized these skills to their homes. All of the studies included joint attention, either as the only target behavior or as one of the social skills. Seven studies focused solely on joint attention skills (Isaksen & Holth, 2009; Jones, 2009; Jones et al., 2006; Roch et al., 2007; Schertz & Odom, 2007; Taylor & Hoch, 2008; Whalen & Schreibman, 2003). The other eight studies included other social skills such as eye contact, imitation, smiling, symbolic play, social interaction skills, or language, in addition to joint attention (Hwang & Hughes, 2000; Kasari et al., 2006; Krstovska-Guerrero & Jones, 2012; Tsao & Odom, 2006; Warreyn & Roeyers, 2013; Wong, 2013; Wong et al., 2007; Zercher et al., 2001). Most of the studies examined initiations or responses of joint attention as dependent variables. Specifically, joint attention behaviors included pointing, showing, giving, and coordinated joint looks. However, Jones (2009) focused only on initiations of joint attention, and Rocha et al. (2007) targeted only responses of joint attention, although initiations were also analyzed.

Most of the studies incorporated single subject, multiple baseline design across participants or phases. Three studies (Kasari et al., 2006; Wong, 2013; Wong et al., 2007) used

the randomized controlled method, in which participants were randomly assigned to each intervention. Three studies analyzed the data pre- and post-intervention (Kasari et al., 2006; Warreyn & Roeyers, 2013; Wong, 2013), and Wong et al. (2007) divided the intervention into acquisition and generalization phases for the target skills. Schertz and Odom (2007) used a mixed method research design, which included both single subject design and qualitative methods. For qualitative data, they collected audiotaped parent-researcher discussions and parent notes.

The studies incorporated either rigid or naturalistic behavioral strategies, such as prompting or reinforcement, into joint attention intervention. Three studies (Isaken & Holth, 2009; Kasari et al., 2006; Wong et al., 2007) were based on the Applied Behavioral Analysis (ABA) approach. Although these studies stated that they were using an ABA approach, most studies employed several behavioral techniques, such as Discrete Trial Training (DTT), Pivotal Response Training (PRT), and naturalistic behavioral techniques. Six studies used combinations of DTT and PRT (Jones et al., 2006; Krstovska-Guerrero & Jones, 2012; Rocha et al., 2007; Warreyn & Roeyers, 2013; Whalen & Schreibman, 2003; Wong, 2013). In addition, Taylor and Hoch (2008) used a prompting hierarchy, prompt delay strategies; Hwang and Hughes (2000) used contingent imitation, natural reinforcement, expectant look, and environmental arrangement; and Zercher et al. (2001) utilized peer coaching strategies. Uniquely, Schertz and Odom (2007) emphasized a relationship-based approach, in which parents played a main role in creating activities and encouraging their children's social participation in their natural environment, rather than teaching specific or divided behavioral techniques.

Similar results showed across the studies. All of the studies showed that the joint attention skills of all participants improved during and after training. Taylor and Hoch (2008)

indicated that the participants increased and mastered the response component of joint attention after intervention, although some of their participants had already been engaging in simple joint attention skills prior to the instruction. Rocha et al. (2007) effectively increased the occurrence of five types of joint attention bids across all parent participants, as well as across all child participants. As compared to the control group, children in the joint attention group initiated more and responded more to joint attention, and also generalized with their caregivers in Kasari et al.'s (2006) and Wong's (2013) studies.

Jones et al.'s (2006) study, which examined acquisition of joint attention skills as well as language improvement through the intervention, showed that all participants mastered both responses to and initiations of joint attention, extended the skill to novel toys, and maintained the skill, although the rate varied among participants. In addition, the number and variety of participants' vocalizations increased. Hwang and Hughes (2000) found that increases in joint attention were generally less pronounced than increases in eye contact or motor imitation among participants. During follow-up sessions, increases in joint attention were more modest. In contrast, Zercher et al. (2001) found that, of the three social skills, the number of joint attention skills increased the most, and continued to be more stable and higher than symbolic play and language, after training. This different result might be due to the types of the other social skills measured. That is, eye contact and motor imitation, used by Hwang and Hughes, were lower-level skills than joint attention, but symbolic play and language in Zercher et al.'s study were higher level skills. Two studies showed that training was effective for both response to and initiation of joint attention (Isaken & Holth, 2009; Whalen and Schreibman, 2003). However, two studies showed different results in terms of initiation training and follow-up sessions. Whalen and Schreibman indicated that the initiation training showed less increase than response,

did not have an effect on one child, and was not maintained for the follow-up session, whereas Isaken and Holth showed that both response and initiation joint attention training were maintained in the follow-up test.

Schertz and Odom (2007) presented that, quantitatively, two out of three toddler participants demonstrated joint attention skills after the intervention. Qualitatively, parents reported five indicators of progress, which mirrored trends in the qualitative results: the intervention mediated the children's progress; the children's progress facilitated reduced aggression; physical activity motivated children to interact; simplifying the presentation of the parent's face facilitated focusing on faces; and turn-taking activities based on face-to-face play promoted joint attention better than play with toys.

Review of Parent Training Literature

The presence of a child changes parents' lives. Becoming a new parent is not an easy job. Novice parents look for help, support, and resources to raise their children. One way to help these parents is parent education. The general term parent education is described as "instruction on how to parent" (Fine, 1980, p. 5). That is, in parent education, experts help to provide parents with something that parents need, such as information, awareness, and skills, in order to help them become better parents for their children. Therefore, depending on the topic, parent education embraces an extremely wide range of trainers, contexts, fields, methods, and target populations. The list of parent education topics is extensive, from children's feeding or nutrition, to interaction between parents and children, to advocating for children's rights. The experts who can present those various topics, therefore, are diverse, and include other parents who have similar concerns, therapists, and lawyers. Parent education is conducted in a variety of forms, including individual or group intervention in diverse settings such as labs, hospitals, schools, and

homes. Although the targets are parents, parents range from teen mothers to parents who have teens, fathers, foster parents, and parents with intellectual disabilities.

The presence of a child with disabilities changes parents' lives even more. Parents can experience feelings of grief, guilt, denial, and acceptance (Gallagher, Fialka, Rhodes, & Arceneaux, 2002). Children with disabilities impact not only their parents' feelings but also their circumstances such as financial concerns and time constraints. Their feelings and circumstances can make their lives burdensome or stressful. Many parents slowly start learning, adapting to their circumstances, and coping with their feelings. However, they often continue to suffer stress, anxiety, and depression as they raise their children (Fleischmann, 2005). Parents often look for help, support, and resources to reduce their burdens.

For these reasons, parent education is a critical part of early childhood special education (ECSE). Mahoney and colleagues (1999) have defined parent education as "the process of providing parents and other primary caregivers with specific knowledge and childrearing skills" with goals of "teaching parents strategies to assist children in attaining developmental skills, helping parents manage children's behavior in the course of daily routines and enhancing parents' skills in engaging their children in play and social interaction" (p. 131). Parent education in ECSE implies not only provision of parenting knowledge, but also improvement of children's development (McCollum, 1999). Consequently, parent education in ECSE has focused more on employing professionals, such as therapists, special education teachers, and interventionists, to teach specific skills or techniques which can improve children's development. Several studies have shown that parent education, which played an important role as a facilitator in the interactions between parents and their children, was effective for children with various disabilities, improving, generalizing, and maintaining their development, as well as reducing the

distress and increasing the confidence of their parents. The term *parent education* can be used interchangeably with *parent training* or *parent-mediated intervention.*

Numerous studies have been published on parent training or parent-mediated intervention over the past half century. Lundahl, Risser, and Lovejoy (2006) counted 430 studies examining parent training outcomes published in peer-reviewed journals between 1974 and 2003. As the number of studies of parent training shows, parent-mediated interventions are "the most frequently and rigorously studied of the psychosocial interventions for children" (Long, Edwards, & Bellando, 2009, p. 81). For this literature review, a computer search of the Education Resource Information Center (ERIC), PsycINFO, and Academic Search Complete databases was conducted for 1990 through 2009. Several descriptors were used individually and combined: *parent education, parent training, parent-mediated, children, disability*, and *early intervention.* However, a large number of studies were found, as Lundahl et al. (2006) previously presented. Although several criteria such as limited years, participant children's ages, and study or journal type were employed to narrow down the search results, the studies could hardly be categorized and organized. Therefore, studies conducted for literature review and meta-analysis are the primary focus of this section. Four literature-review or meta-analysis papers were found (Gavidia-Payne & Hudson, 2002; Lundahl et al., 2006; Matson, Mahan, & LoVullo, 2009; Singer, Ethridge, & Aldana, 2007). In order to support those articles, several studies that examined the effectiveness of parent training were secondarily chosen across various disabilities and target subjects.

Lundahl et al. (2006) and Singer et al. (2007) conducted a meta-analysis of parent training and intervention studies for children with disabilities. Lundahl et al. selected 63 studies from a total of 430 in which parent training for children who showed disruptive behaviors was

conducted. The meta-analysis compared behavioral and nonbehavioral parent training, evaluated the effectiveness of posttraining and follow-up data, and analyzed the variability of effectiveness across participants and training characteristics. The results showed that there was no difference of effectiveness between behavioral parent training and the nonbehavioral program; however, behavioral parent training was more often conducted for younger children than was the nonbehavioral program. Two factors, parents' socioeconomic status and training methods, influenced the effects of parent training. That is, training was more effective with parents from middle class families than with economically disadvantaged families, and more effective in individual settings than in group settings. There was difficulty in analyzing follow-up effects since few studies examined long-term follow-up data.

Also conducting meta-analysis, Singer et al. (2007) reviewed literature on interventions for parents of children with developmental disabilities, which were related to intellectual disabilities or other cognitive disabilities, and examined their effectiveness related to participants' distress. Seventeen out of 274 studies were included for the meta-analysis. In the synthesis, the demographic data of the studies showed that autism was the main disability examined, and participants were primarily White and middle-class mothers with high school or college degrees. Few studies included participants from low-income or minority ethnic groups, recent immigrants, or fathers. The interventions in the studies were divided into three categories: behavioral parent training intervention focusing on teaching specific skills for interacting with their children; cognitive behavioral training intended to teach parents coping skills; and multiple component treatment. Overall, the studies consistently showed the effectiveness of interventions as well as a reduction in parents' distress; particularly, the multiple component treatment studies were shown to be more effective than the other two types of training.

Gavidia-Payne and Hudson (2002) and Matson et al. (2009) reviewed literature related to parent training for children with disabilities. Gavidia-Payne and Hudson's study examined literature to investigate supports in interventions as well as in assessments for children with intellectual disabilities and disruptive behaviors and their parents. As a part of their paper, the authors presented the literature on parent training. They divided the interventions for supporting parents of children with behavioral problems into five categories: parent training, adjunctive supports, stress management, marital therapy, and problem-solving training. The authors also stated that the benefits of interventions were influenced not only by the type of intervention, but also by the characteristics of the staff.

Matson et al. (2009) reviewed the methods and the mode of parent training for children with developmental disabilities in previous studies. Most reviewed studies were based on ABA, but involved various methods and modes of parent training. In particular, studies used operant conditioning, in which training involved prompts, reinforcement, and consequences, formal training programs, such as the Parent Plus Program and the Stepping Stones Triple P (SSTP), and structured training manuals. In addition, the modes of studies involved various formats of training, ranging from individual to group training. The reviewed studies also employed different kinds of training strategies, and concluded that the verbal instruction with modeling from strategies was most effective.

In addition to the review articles mentioned above, several studies were chosen secondarily and examined to support the primary articles. Because parent education or training has been shown to be an effective method for improving outcomes for children, parent training has been used across disabilities, target subjects, and areas. Most studies focused on children with autism or developmental disorders, with one exception, which focused on children with ADHD

(Pisterman, Firestone, McGrath, Goodman, Webster, Mallory, & Goffin, 1992). The purposes of parent training are to improve the relationship between parents and their children with disabilities, to intervene in their children's inappropriate behaviors, and to reduce parents' stress (Singer et al., 2007). Parent training is considered an effective method for increasing children's development, as well as for generalizing and maintaining it (Ingersoll & Dvortcsak, 2006; Matson et al., 2009).

Koegel, Bimbela, and Schreibman (1996) examined and compared the effects of two different parent training programs in the home setting: individual target behaviors (ITB) and pivotal responses (PRT). Seventeen children with autism and their families who participated in the study were divided into two groups. Four interactional scales (level of happiness, interest, stress, and style of communication) before and after training were coded during dinnertime. The parents in both conditions were educated with manuals, videotape, in vivo examples, and in vivo feedback. The results showed that PRT had positive effects on all four scales, whereas ITB training had no significant effect.

More recently, Koegel et al. (2002) examined the effects of parent education programs on families. These parent education programs taught procedures using the pivotal concept of motivation to increase the expressive communication of children with autism. The multiple baseline study across participants was conducted with five families who resided in areas that were distant from the autism center where the interactions took place. During the intervention, the families were provided instruction, modeling, and feedback at the center. For the follow-up, distal interaction included the use of videotapes of interactions between parents and their children in the natural home environment. The results showed that parents increased their use of

the techniques and exhibited more positive effects and children improved their expressive communication. Also, the increases were maintained when they went home.

Ingersoll and Dvortcsak (2006) examined how parent training could be included in ECSE for children with autism spectrum disorders (ASD). For the pilot, the researchers trained nine families of children with ASD. The training provided parents with direct and indirect teaching strategies based on naturalistic intervention techniques in order to improve children's social-communication skills. The training was conducted in a group format and included three interspersed parent coaching sessions for 9 weeks. In addition to parent training, teachers were trained in a workshop about parent training and actual practices in parent group sessions. After the training, parents' knowledge about techniques was improved, and they were satisfied with their training, especially with the parent coaching. Teachers showed positive attitudes about the training as well.

Barlow, Powell, Gilchrist, and Fotiadou (2008) examined the effectiveness of the Training and Support Program (TSP), in which parents of children with disabilities, mostly including cerebral palsy and autism, were trained by therapists. They divided 169 participants into an intervention group and control group according to their motivation on psycho-educational interventions. Parents participated in the training once a week for 8 weeks. The TSP provided parents with messages, which a therapist taught while working with a parent-child dyad. The results showed that the parent training was effective on generalized self-efficacy (GSE), parental self-efficacy (PSE), and depressed mood. In particular, parents in the intervention group showed improved satisfaction with life, health, and perceptions about their children's mobility and sleeping.

Interestingly, Pisterman et al. (1992) investigated the effectiveness of parent training intended to improve the compliance and task speed of preschoolers with ADHD. They divided 57 families into treatment (immediate treatment) and control (delayed treatment) groups. For the intervention, the authors conducted 12 group-training sessions for compliance, which were based on behaviorism and included reinforcement, time-out, and shaping. The results showed that the intervention influenced improvement of child compliance and parents' skills and dyad interaction, but not child attention.

As studies have shown, parent education is a valuable and essential part in ECSE in several ways. The meta-analysis and literature-review studies showed that hundreds of papers have focused on parent training including various fields, disabilities, types of disabilities, and target subjects. The studies also showed the effectiveness of parent training on outcomes. In particular, parents learned, maintained, and generalized the skills they had been taught. Furthermore, they eventually reduced their stress and improved their children's development and well being through parent training. Clearly, parent training is one of most effective methods that professionals can apply.

Notwithstanding this, researchers and professionals should be cautious in generalizing the effect of parent training. Many studies focused on children with developmental disorders or problem behaviors, rather than physical disabilities or other disabilities. Also, most studies examined parent training in order to eliminate children's problem behaviors based on a behavioral theoretical framework, rather than to improve families' general well being or family dynamics. Although a large number of studies were conducted on parent training, most studies selected participants from White middle-class backgrounds, rather than selecting participants across various ethnic groups or socioeconomic classes. Few studies examined immigrants or

minorities (Singer et al., 2007). As Lundahl et al. (2006) presented, participants from economically disadvantaged classes received the fewest benefits from parent training, and parent training was least effective for these parents.

Therefore, professionals should keep in mind that every parent may not receive as many benefits as they expected. Professionals need to provide parent training that considers children's disabilities and parents' situations, preferences, and concerns. In addition, since contemporary ECSE focuses on collaboration or partnership with families rather than training parents, professionals need to think of the family as a whole and understand family dynamics rather than looking at individual family members. Parent training, which usually focuses on mothers, could be extended to fathers, grandparents, and siblings who interact with children with disabilities (Symon, 2005).

Professionals in ECSE regard themselves as educators for children with disabilities, but pass over opportunities to educate adults. Because parent training is one important medium for teaching children with disabilities, ECSE practitioners should regard themselves as adult educators of the parents of the children they serve. As for adult educators, practitioners should be trained in interpersonal skills with parents and adult education training techniques in order to "systematically help parents or other caregivers learn skills needed to enhance or accelerate young children's development" (Dinnebeil, 1999, p. 163).

Review of Literature Related to Cultural Difference in Interaction

As shown in the review of literature on joint attention, joint attention occurs within interactions between two people, usually a parent and a child. In addition, joint attention is related to and influenced by play and language styles. With the purpose of understanding joint attention with participants from different cultural backgrounds, literature on the characteristics of

parents' interaction, play, and language in the Asian culture was examined. To this end, comparative studies or studies conducted in the Asian culture were searched. The findings suggest that different cultural values might influence parent-child interactions, joint attention, and referential speech styles.

Compared to Western culture, Asian culture is generally distinguished by two characteristics. First of all, East Asian culture, including the Chinese, Japanese, Korean, and Taiwanese cultures, is greatly influenced by Confucianism. Confucianism predominantly influences education, politics, and society in Korea, and "serves as a key to understanding Korean culture" (Chan & Lee, 2004, p. 234). Confucianism emphasizes the five virtues of humanity, morality, proper conduct, wisdom, and trustworthiness of men in order to maintain a healthy society and form "proper" human relationships (Chan & Lee, 2004). In addition, Confucianism emphasizes the preservation of one's own family line, so that it influences interdependence among members of a family and a society (Fujinaga, Rhee, Naito, & Akiyama, 1996).

Furthermore, security between parents and children is important because children are the keys to preserving the family. According to Confucianism, children should respect, obey, and be responsible to their parents, elders, and ancestors, because an individual's identity, pride, and morality stem from one's own family (Bernstein, Harris, Long, Iida, & Hans, 2005; Fujinaga et al., 1996). Chinese immigrant mothers evinced a more parent-directed and less child-directed style (Bernstein et al., 2005). Vigil (2002) also showed that Chinese immigrant mothers directed their infants' attention more, while British mothers were more likely to follow their infants' direction. Similar characteristics have been observed in Korean-speaking mothers, who were more likely to direct their children's attention by introducing a new object. In addition, Korean

mothers used simple and directive referential speech to describe objects, rather than elaborative descriptive speech (Sung & Hsu, 2009). Korean-speaking mothers used more verbs and focused on relationship promotion for their referential speech, while English-speaking mothers used more nouns and focused on information communication (Gopnik, Choi, & Baumberger, 1996; Sung & Hsu, 2009).

One comparative study showed that U.S. mothers had more conversations that emphasized individual experiences, acted more as playmates and used joint attention, maintained more physical distance, showed more positive emotions, and made more positive responses to child accomplishment. In contrast, Japanese mothers had more conversations that emphasized shared experiences, showed more divided attention, and maintained social role distinctions during free play tasks (Dennis et al., 2002). Fernald and Morikawa's (1993) study showed that Japanese mothers used more social expressions, including greeting, exchange, and empathy routines, whereas American mothers used more objects and nouns, although both mother groups showed similar linguistic styles, including simplifying or repeating language for their infants.

The other main difference between Asian and American cultures is the approach to communication. With their collectivist philosophies, Asian cultures are considered high-context cultures, within which "meaningful information is either in the physical context or internalized in the listener, and the speaker's true message is generally camouflaged in the context of the situation" (Cho & Gannotti, 2005, p. 2) rather than transmitted verbally. High-context cultures value nonverbal communication, particularly silence (Chan & Lee, 2004). Due to the values of cooperation, harmony, accommodation, connection, and mutual satisfaction, parents in Asian cultures often educate their children to show "reluctance to contradict, criticize, disappoint or otherwise cause unease or discomfort in another" (Chan & Lee, p. 272). According to Chan and

Lee, these differences in communication style are often misinterpreted as ambiguity, deceitfulness, or dishonesty by people in the U.S., which is considered a low-context culture valuing explicit and open dialogue.

Bernstein et al. (2005) demonstrated that Chinese immigrant mothers did not show their children's positive involvement and sensitivity to their children's cues because Chinese culture does not value overt affection or emotional expression directly to children. Although both South American and Asian cultures are considered to value collectivism, Asian culture, which is also perceived as being highly contextual, evinces different social behaviors. For example, Bornstein and Cote (2001) showed that Japanese American mothers engaged less in social behavior with their infants, such as speaking to them and providing them with toys or books, than South American mothers.

In addition to considerations of intercultural variability, intracultural factors should not be ignored. Although people share similar cultures and values, they may nevertheless exhibit different behaviors. That is, depending on gender, history, region, or disability, each person may develop his or her own unique characteristics. Even among Asian cultures, Chinese infants were less likely to smile and cry, while Japanese infants were similar to European infants in terms of emotional expression (Camras et al., 1998). Bernstein et al. (2005) showed the unexpected result that Chinese children were the most noncompliant of any group.

Chen and McCollum (2001) suggested that parent-child interaction be examined for differences or similarities between children with and without disabilities within the same culture. Their study showed that Taiwanese mothers of children with Down syndrome focused more on the cognitive and physical benefits and outcomes of parent-child interaction, while their counterparts with typically developing children emphasized social and academic readiness

outcomes more. In addition, the mothers of children with Down syndrome considered themselves to be facilitators or caregivers during interaction, whereas the mothers of typically developing children thought of themselves as directors, or as having an available presence (Chen & McCollum). This dissertation study was conducted in different cultural contexts – Korea -- so that joint attention could be interpreted differently from how it has been interpreted in most studies conducted in the Western culture. In addition, the researcher should be cautious to apply interactions between parents and typically developing children to interactions between parents and their children with disabilities within the same culture.

CHAPTER 3

THEORETICAL FRAMEWORK

When we go to a theater and watch a play, we look through binoculars to see the characters more closely. As we watch the play with binoculars, we can specifically watch characters' clothes, gestures, and even facial expressions. However, since we are focusing on characters, usually main characters, with our binoculars, we might miss what we really need to see, such as the general flow of the play, the connection between the characters and the audience, and scene changes. Even though we can see the main characters' facial expressions, these expressions could be interpreted differently from the initial intentions characters want to deliver, with different surrounding characters, in different sceneries, or by different audiences. In order to truly understand the play, we also need to consider the historical and situational background of the play in relation to our present time and cultural background as audiences, rather than narrowly focusing on what we can see through binoculars.

We need to continue to search out better theories, which provide us with lenses when trying to examine and understand a person's development and life. Worse, we examine a person not with binoculars but with a microscope, magnifying our view a thousand times and trying to see everything we cannot see. For example, when we look at our hands through a microscope, our hands could not function as hands, as they appear to be only a mass of germs. Similarly, current theories have been so specifically focused that they fail to examine a person as a whole. We tend to insist that our theories are accurate even if what we examine is partial rather than complete.

As Bertalanffy (1965) proposed, "the theory will have shown its value if it opens new perspectives and viewpoints capable of experimental and practical application" (cited by Becvar & Becvar, 1999, p. 5). Systems theory provides researchers with the ability to see the "wood and the trees" at the same time, which means "the ability to view system events through a close-up lens and through a wide angle lens simultaneously" (Gibson, Leonard, & Wilson, 2004, p. 350). Hanson (1995) also explained that systems theory goes beyond debates among current theories, as the theory begins "with a point of departure, nonsummativity, which stated that the whole was greater than the sum of its parts" (p. 9). Systems theory amalgamates current theories and helps to view a person as a whole. Systems theory started from general systems theory and has expanded into various fields, changed and modified according to each field to which it is applied. However, the main concepts, principles, and philosophy remain congruous with general systems theory.

General systems theory was conceived by Ludwig von Bertalanffy (1901-1972), who was initially a biologist but is now known mainly as a pioneer of systems theory. He named his theory "a general science of wholeness" (as cited in Connors & Caple, 2005, p. 94). He emphasized "the necessity of regarding the living organism as an organized system and defined the fundamental task of biology as the discovery of the laws of biological systems at all levels of organization" (Bertalanffy, 1981, p. xv). He viewed the world and the universe as a great system and believed that every biological system in the universe was interconnected and could be explained in its place (Bertalanffy, 1968). Human beings, especially, constitute a unique system, and are the most complex and significant system in the universe. His theory is currently considered as "part of a third wave of scientific theories" (Connors & Caple, 2005, p. 95). Bertalanffy's perspectives on the universe and human beings formed a bridge between the

sciences and human beings and expanded into several related theories, including family systems theory, chaos theory, group systems theory, developmental systems theory, dynamic systems theory, and ecological theory. These theories have influenced a wide range of disciplines, including mathematics, economics, sociology, anthropology, family therapy, and counseling. Bertalanffy's theory has recently been renewed, redeveloped, and spotlighted in the education and developmental psychology fields. While general systems theory provided a general framework, the various other disciplines modified and focused on different dimensions of the metaphor in order to fit it into their contexts and contents. However, their core assumptions and concepts were consistent with the general systems theory.

The theoretical framework of this dissertation is primarily influenced by Bertalanffy's general systems theory, but it is also guided by family systems theory. Family systems theory was derived from the general systems theory in order to understand the dynamics of families, and was developed by several scholars, including Bateson, Bowen, and Broderick. Family systems theory as a theoretical framework has deeply affected interventions in family therapy and family counseling, as well as marital and family communications and interactions (White & Klein, 2008). When Bowen observed families in a clinic setting, he found that they had the characteristics of a system which Bertalanffy had presented, because changes in one member in a family influenced all members of the family and the family itself (Papero, 1990). In addition, Dunst's works (1985) on early intervention were based on systems theory in the special education field. Dunst and Trivette (1988) suggested extending beyond interactions between dyads as well as individual characteristics of the mother and child.

The research based on systems theory in this dissertation also focuses on the dynamics of the interactions between family members and children with disabilities. Therefore, family

systems theory also provides useful implications for how to apply systems theory to and interpret families with children with disabilities.

The next portion of this dissertation consists of three sections: the definition of systems theory, the main assumptions of systems theory, and key concepts of systems theory. Each section provides explanations of three components with applications to family or disability.

Definition of Systems Theory

Bertalanffy (1967) defined general systems theory as "a discipline concerned with the general properties and laws of systems" (p. 69). Systems theory provides perspectives that are a matter of systems, and this concept is explained below in the Key Concepts section. Briefly, holistic property and interconnectedness with circuit causality within the system and in its own contexts are attributes in systems theory. In addition, there is a hierarchy of systems within and beyond systems. Bertalanffy (1968) included mentalities, symbols, values, and cultures, which had been disregarded as nonscientific areas, as systems, and regarded them as real entities in the cosmic hierarchy of order. Therefore, his systems theory was often called "integrative, relational metatheory," "metascience," "psycho-physically neutral," or "natural philosophy" which emphasized mental, biological, and historical factors and made a bridge between the sciences and humanities (Bertalanffy, 1967, 1968; Lerner, 2006). The theory also has multidisciplinary perspectives, which extend views "from intrapersonal and interpersonal sources to broader contextual influences" (Arthur & McMahon, 2005, p. 215).

Systems theory has often been paralleled with cybernetics or bioecological theory. Cybernetics is "the study of the self-regulating properties of systems" (Hanson, 1995, p. 40). That is, a human being is considered an active rather than a passive entity, able to control oneself and to "reflect upon one's self-worth in a view of merit tied to group definition" (Hanson, p. 41).

Therefore, the feedback and patterns of human beings are important in cybernetics. The bioecological theories of Bronfenbrenner, influenced by systems theory, focused particularly on person- and context-relational processes and developed a hierarchy of ecological systems to interpret dynamic interactions between a person and context (Bronfenbrenner, 2005).

The systems theory encompassed these two theories, rather than being equated with them. Bertalanffy (1967) proposed that cybernetics might constrain human beings, an open system, into a closed system, because it limited a living organism to the circulation of feedback. Systems theory is useful for describing complexity and diversity (Arthur & McMahon, 2005). It "should embrace dynamic interaction between many variables, maintenance in change of component elements, growth, progressive differentiation, mechanization and centralization, increase in the level of organization and the like" (Bertalanffy, 1967, p. 69). Family systems theory is an application of general systems theory to the field of family studies, rather than a revision of systems theory, and it uses the same framework as systems theory to view families in general.

Main Assumptions of Systems Theory

Systems theory makes several important assumptions, three of which, in particular, make it unique and valuable, providing a foundation of concepts and implications.

Wholeness. The most important assumption in systems theory is wholeness (Lambie, 2000; Roberts, 1994). Wholeness understands things not as sums of their parts but as greater than the sums of their parts. "Wholeness is ongoing process and outcomes of input, output, feedback, equifinality and multifinality" rather than initial products of systems (Hanson, 1995, p. 23). That is, in the process of adding things together, a system as a whole becomes greater than the sum of its elements. In other words, a system emerges when subsystems or elements act together that were not seen in those elements apart (Hanson, 1995). A family is a good example.

A family is not just defined as a group of people, family members. It is more than a group because members interact with each other in the family so that the family develops its own uniqueness as a family system. In order to understand a system, interactions inside the system should be examined as well as each element.

In addition, Bertalanffy suggested that the universe was one big system, which tied together all human beings as a whole. Therefore, understanding a system should be also connected with the outside of the system, contexts of the system, which could be called a "suprasystem" which includes environments, values, cultures, history, etc. That is, the system itself is also a subsystem of a larger network of systems (Becvar & Becvar, 1999). For the example of family, Becvar and Becvar suggested that "to understand each family, one must study how that family is in relationship with other families in their broader societal and cultural contexts" (p. 7). That is, the context of a family needs to be examined, in addition to interactions between family members, patterns of the family, and each family member's characteristics.

Interrelatedness. All systems are interconnected with other systems. Systems are connected not simply with cause and effect linear lines, but webbed with several interactions. That is, systems are not unilateral but circulated. Systems reciprocate inputs and outputs among themselves. In order to explain one condition or system, the system should be examined according to whole circumstances which are interconnected with it, rather than by causes and effects (White & Klein, 2008). A system cannot be explained only by elements or its subsystems which are components of the system, but also must be examined by the relationships among these components (Roberts, 1994). Dunst (1985) also contended that "social units do not operate in isolation but affect one another both directly and indirectly so that changes in one unit or subunit reverberate and impact upon other units" (p. 171). The concept of interrelatedness is a

shift from our old perspective, which emphasized breaking a condition down to investigate its cause, to new perspectives that focus on the recursive and repetitive procedure of a condition.

Human beings, as active and open systems, continuously interface with other human beings and environments from birth to death. Lerner (2006) presented the idea that ongoing interaction between biology and contexts across time made each person individually distinct and unique. As for disability, Bertalanffy (1981) argued that a perspective that views only simple causality in a disability (e.g., schizophrenia discussed in his book) prevented thinking of "the variety of etiological factors and the diverse course and prognosis" (p. 33). Lerner (2006) also stated that "genes, cells, tissues, organs, whole organisms, and all other extraorganism levels of organization composing the ecology of human development are fused in a fully coacting, mutually influential and therefore dynamic system" (p. 10). These statements present a new insight into disabilities, one in which they are dynamically coacting ongoing products of the genes, individual characteristics, values, and cultures in which one is involved. Therefore, disabilities need to be questioned and interpreted in an ongoing process between etiology and its values, as well as in a more comprehensive etiological manner.

Context. As previously stated, the location of a system is important because a system's behavior and its environment mutually affect each other (White & Klein, 2008). That is, "behaviors are embedded in inextricably linked contexts, such that their particular nature may be knowable only within their native context" (Hanson, 1995, p. 20). Becvar and Becvar (1999) also emphasized the importance of context in systems theory, arguing that a change of contexts led to a change in the interactions within a system, so that activities or behaviors should be understood according to their given contexts.

Bertalanffy (1968) presented the idea that societal, cultural, and historical circumstances around a system should also be regarded as real entities, suprasystems, which are included in an immense system, the universe. According to Bertalanffy, systems are interrelated with each other and arranged in a hierarchical order in the universe. In this regard, Hanson (1995) defined context as "the emergent whole of any system of two or more parts" (p. 20). Therefore, a human or family system should be examined in relation to broader societal, cultural, and historical systems as well as other human or family systems.

Bertalanffy (1968) regarded contexts as spatial and temporal schemes. That is, history and culture are particularly important contexts, with which a human or family system experiences ongoing interaction. Bertalanffy described history as "sociocultural evolution" (p. 59). He argued that history also had laws, like biology or science, but while science was a "nomothetic" endeavor, history was an "idiographic" endeavor. That is, the laws of history were related to facts or processes, whereas the laws of science were related to physical laws, repetition, or recurrence. History was also related to current societal flow such as social policy. Lerner (2006) emphasized the importance of culture in human development. He considered diversity "a strength of individuals" as well as "an asset for planning and promoting means to improve the human condition" (p. 11).

Bronfenbrenner's bioecological theory comprehensively organized ordered levels of system to interpret the relationship between person and context. The concept of "Ecological levels" refers to hierarchy among systems, from the smallest or central circle to the outer circles. Bronfenbrenner (2005) divided the ecological levels into four levels: microsystem, mesosystem, exosystem, and macrosystem. Swick and Williams (2006) added chronosystem to these four levels of systems. The microsystem is an individual's initial and immediate experiences, like

family and home. The mesosystem is the connection among microsystems, and "permeates our lives in every dimension" (p. 372). That is, microsystems within the mesosystem are interrelated and communicate among each other for an individual in the center. Exosystems are those systems that are not directly related to an individual, but nevertheless influence him or her. A macrosystem is a "powerful source" that broadly influences individuals' lives, such as a culture, policy, or social value. A chronosystem is the "historical context" in which an individual is placed. The further outside the circle is, the less direct influence it tends to have on an individual.

Key Concepts of Systems Theory

Because systems theory emphasizes interactions among systems and systems in context, the concepts dealt with in systems theory are distant from terms that focus on the self (such as ego, self-motivation, self-esteem, and self-control) or on linearity (such as cause, effect, and control) (Becvar & Becvar, 1999). The concepts used in systems theory might be unfamiliar and have different meanings than we expect. Of the many concepts in systems theory, those discussed below are the most important for the application to my dissertation study.

System. The first and foremost core concept is "system." System is distinguished from "collection." Whereas a collection is a sum of noninterchangeable parts -- either separate or together -- a system is beyond the sum of its parts, which change when they are together in one system (Bertalanffy, 1981). Bertalanffy (1981) defined a system as "a complex of elements in interaction, these interactions being of an ordered nature" (p. 109). A system is "a set of objects together with relationships between the objects and between their attributes" (Hall & Fagan, 1956, cited by Broderick & Smith, 1979; cited by Broderick, 1993), or "any two or more parts that are related, such that change in any one part changes all parts" (Hanson, 1995, p. 27). Systems have the attributes explained in the Main Assumptions section, above. Systems are

holistic properties that are interconnected with circuit causality within each system and in the system's own contexts. Therefore, the elements or subsystems within a given system share similar characteristics.

In addition, there is a hierarchy of systems within and beyond systems. Laszlo (1972) discussed how what is considered a system from one perspective can be considered a subsystem from another (as cited in Massoudi, 2006). Systems within a system are called subsystems, and those beyond systems are called suprasystems. Bertalanffy (1967) considered the universe to be a big system, but also considered culture or history to be a super-individual system, which was different from a living system, but had similar characteristics to systems in terms of its existence, progress, and circuit. Therefore, a living system or family system is a subsystem within a bigger system such as culture, history, and the universe. The concept of suprasystem was most comprehensively developed in ecological theory by Urie Bronfenbrenner (2005), who emphasized person- and context-relational processes. He developed integrated, multilevel ecological systems from microsystem, mesosystem, and exosystem to macrosystem, with a living system, the human being, which is explained above in the context category.

Bertalanffy (1968) considered human beings to be a unique system, as well as the most complex and significant system in the universe. He considered them unique because they developed "towards more improbable states, towards increase of differentiation and higher order of matter" so contrarily to other systems (p. 47). Living organisms are active agents, so they actively play with rather than react to stimuli. The organism creates the world around it. Even if there were no stimulus, a human being would still be actively working (Bertalanffy, 1981). That is, human beings keep cognitively processing inputs they have received as well as actively

receiving information which they organize according to their own perceptions and send as outputs (Bertalanffy, 1968).

As for family, Chibucos and Leite (2005) presented the family as a system in which family members interacted with each other and shared interdependence as well as similar patterns and attributes. Similarly, Pinkus (2006) defined a family as a "collective entity with its own multiple histories, experiences, supports and pressures" (p. 159). In family systems theory, members of a family system are considered subsystems. Likewise, a family is also a subsystem of various suprasystems, such as an extended family, culture, and universe. Lambie (2000) presented the term "extrafamilial subsystem," which was adapted from ecological theory. The extrafamilial subsystem is connected to and interacts with the family subsystem by conferring cultural values or offering family support to "provide assistance and exchange of resources, a source of social and recreational activities and emotional support" (p. 58).

Boundaries. The second essential concept of systems theory is "boundaries." A boundary is defined as "a border between the system and its environment that affects the flow of information and energy between the environment and the system" (White & Klein, 2008, p. 158). A living organism is not a passive being, but an active one; that is, a human being actively receives stimuli, transforms them, and reacts or expresses them as one's own. Boundaries play the role of a screening or filtering door when a system interacts with other systems or information through inputs and outputs. With boundaries, a system distinguishes its own subsystems or elements from information in other systems or environments. A system might interact more inside of the system rather than outside of the system due to boundaries (Broderick & Smith, 1979). A system makes its own values and identity through filtering information from outside to inside through its boundaries. That is, boundaries serve to both closely connect

members together and make them independent (Pinkus, 2006). Bertalanffy (1981) divided boundaries into simple spatial boundaries and dynamic boundaries, which are not fixed and, therefore, cannot be simply observed.

The boundaries in family systems theory play the roles of "redundant patterns of behavior, which characterize the relationships within that system and values which are sufficiently distinct as to give a family its particular identity" (Becvar & Becvar, 1999, p. 15). Inside of boundaries, a system has the characteristic of "self-generation" -- Becvar and Becvar called it autopoiesis, which means "the processes within various systems, or the ways that the parts relate, that create a particular unity according to which we recognize it as a certain kind of system" (Becvar & Becvar, p. 37). That is, each family builds its own values and identity, and is discernable from other families through boundaries. As a family establishes its boundaries, it limits the quantity and characteristics of inputs. Members in a system produce and develop their own system.

Through boundaries, systems become either closed or open depending on degree of permeability. Open systems are "maintained in import and export, building-up and breaking-down of material components" and remain "constant in time but processes are going on and the system never comes to rest," while closed systems do not exchange with their environment and "eventually reach a state of equilibrium where the system remains constant in time and processes come to stop" (Bertalanffy, 1981, p. 112). Humans as well as families are considered open systems. They keep working to get inputs from and deliver outputs to other systems. However, the degree of permeability is different for each human or family. If a family is more open to inputs, it might not be distinguished from other families or environments, whereas if a family is more closed to inputs ("too rigid") it might be easily distinguished and separated from other families and environments. As Becvar and Becvar (1999) stated, "the concept of boundary

implies a hierarchy of systems in which there is both separateness and connectedness" (p. 16). They suggested that a system continually screens inputs for compatibility with its own values, so that the system maintains its own identity. Therefore, systems that share similar cultures or environments might be more open to each other, but systems that are in unfamiliar environments or systems show more rigidity. Acculturation provides a good example of explaining an immigrant family's boundaries. When immigrant families face unfamiliar languages, values, and cultures, they might typically present more closed boundaries until the inputs are compatible with their own values and cultures. Pinkus (2006) suggested that professionals' sensitivity to these family rules helps families let down their boundaries.

Positive and negative feedback. Hanson (1995) defined feedback as "the ability of a system to reintroduce output as input" (p. 60). The term *feedback* is an especially important concept in cybernetics (Bertalanffy, 1981). The feedback process plays the role of making a system indicate and guide itself (Hanson, 1995). There are two types of feedback: positive and negative. This concept of positive and negative feedback is distinguished from that presented in behavioral theory – they do not mean positive reinforcement and negative punishment.

Either positive or negative feedback is decided in relation to context (Hanson, 1995). In systems theory, positive feedback means "deviation-amplifying mechanism," which indicates action occurred after change. Negative feedback is a "deviation-dampening" mechanism, which plays a role in maintaining existing states. That is, "positive feedback leads to change while negative feedback leads to no change" (Hanson, p. 60). As both communication and silence deliver meanings, both positive and negative feedback provide direction for a system. Bertalanffy (1981) provided another caution on feedback. Although feedback is an important scheme in systems theory, feedback often leads a living system to be closed "with respect to

energy and matter" (p. 116). A living system transcends the feedback loop and is open to work dynamically.

Pinkus's (2006) study showed the importance of feedback on developing relationships between parents and professionals. He argued that current relationships between parents and professionals are influenced by parents' personal styles of interactions as well as previous relationships with other professionals.

Homeostasis, morphostasis, and morphogenesis. Another important concept to apply is equilibrium, which is also called homeostasis. Homeostasis means that systems have traits of stabilization and balance in spite of the flow of input and output. It is "the construct which describes a system's tendency toward stability or steady state" (Becvar & Becvar, 1999, p. 22). Another concept, morphostasis, is similar to homeostasis. Morphostasis adds another dimension to homeostasis in "the fact that it connotes stability in the context of change" (Becvar & Becvar, 1999, p. 22). The final concept, morphogenesis, not spotlighted in systems theory, is an important concept, which acknowledges that systems change due to input, output, and feedback even though their goal is stability. Morphogenesis described "the system-enhancing behavior that allows for growth, creativity, innovation and change" (Becvar & Becvar, 1999, p. 22).

Therefore, systems should be analyzed in terms of both morphostasis (homeostasis) and morphogenesis. It is worthwhile to explain both concepts together, because they cause systems to develop dynamically in constant flux (Roberts, 1994). Bertalanffy (1981) argued that homeostasis is not enough to explain a living system and its activities, which dynamically control themselves, grow, and extend. Like a living system, a family system needs all three schemes. Because a family system allows change as well as governing rules through

morphogenesis and morphostasis, the family system can be more impregnable, creating a balance between morphogenesis and morphostasis.

Equifinality. Bertalanffy (1968) explained that with equifinality "the same final state or goal may be reached from different initial conditions or in different ways" (p. 45). The term *equifinality* is related to the basic concepts of feedback. It is the characteristic of a system, which results in one final state through feedback processes in spite of several different stimuli (Hanson, 1995). Equifinality implies that a human or family system has kept its equilibrium or tried to be stable in spite of dynamic interactions as an open system (Becvar & Becvar, 1999).

The term *equifinality* helps us focus on a current condition itself rather than the reasons for a condition. In other words, a system needs to be considered "the organization of the ongoing interaction in that family at the present time" (Becvar & Becvar, 1999, p. 21) rather than origins or history of the system, because the current processes and interactions of a system make its final state different from its initial state. In addition, Hanson (1995) suggested that "the content of the patterns that lead to equifinal processes may thus involve looking at various elements of assumed patterns in targeted context" (p. 65). That is, a researcher should possess knowledge about the system and the elements of the system that make the event or behavior the same in spite of several different stimuli, in order to understand events or behaviors.

Rules. The final concept is rules. In spite of a system's dynamics and interconnectedness, a system has laws. Laws are constructed in intentional or unintentional, implicit or explicit, and distinctive or shared traditions.

According to Lerner (2006), "All people are like all other people, all people are like some other people and each person is like no other person…there are idiographic differential, and nomothetic laws of human behavior and development" (p. 7). Lerner's ideas indicate that a

system develops both unique and shared laws as it interacts with other systems and environments. In particular, the term *rules* is essential in family systems theory. Rules in a family system refer to certain repeated behavior patterns. These patterns are important in family life (Pinkus, 2006). Chibucos and Leite (2005) suggested that rules work "to prescribe family members' behavior, roles, patterns of authority, expression of emotion and communication" (p. 280). In addition, rules are developed and function within a system as well as between systems.

Discussion

Systems theory provides researchers with new perspectives on approaches to and analysis of their studies. First of all, its holistic perspective embraces all areas, from science and psychophysics to culture and history. The assumption of wholeness goes beyond the debates of current theories "by freeing theoretical debate from assumptive paradox" (Hanson, 1995, p. 9). This approach shifts the point of view from dualism to unity and from schism to integration. Consequently, research based on systems theoretical framework is required to consider multiple approaches, methods, and areas. As it mingles with multiple approaches and considers them, it widens the angle of view to embrace them as if they were in one system. However, wholeness is not the same as universalism. Rather, it emphasizes diversity, variety, and plasticity. Bertalanffy (1968) suggested that according to systems theory, "no world view is ultimate truth or ultimate reality -- every one is a perspective or an aspect, with all-too-human limitations owing to man's natural cultural bondage" (p. 47).

Lerner (2006) specifically suggested how research focused on systems perspectives should proceed in terms of methodology. The methodology should contain "a triangulation…both qualitative and quantitative approaches" (p. 13) as well as use diversity-sensitive measures in terms of change, participants' variables, and contextual variables.

Therefore, research ideally needs to triangulate both qualitative and quantitative approaches, preferably including a longitudinal approach for change sensitivity as well as indicating the background of the research, such as the participants' background as well as the cultural and historical background that might influence or be influenced by the research (Lerner, 2006). In addition, Dunst (1985) suggested "both broader-based measures of program effectiveness as well as more ecologically relevant outcome measures" (p. 181).

Another essential view in systems theory is its emphasis on reciprocal process, rather than on a cause and effect linear view. Orr and Gussak (2005) suggested that systems perspectives involve an "understanding of the connectedness, relationships and context of its component" (p. 163). Therefore, research focused on systems theory should examine the ongoing process of how systems in the research interconnect with other systems and contexts and develop, rather than only exploring outcomes. In the view of systems theory, the results of research should be greater than outcomes -- research should not be analyzed as if outcomes are all, but should instead include the dynamic process of conducting the research. In addition, when a family is examined, each family member needs to be connected with other members, and the family should be connected with other families.

The researcher is not an exception. When the researcher becomes involved in a study, the dynamics of the system change. In addition to changing the dynamics of a system, the researcher brings his or her personal experience and frame of reference to the study, and the study is filtered through the researcher's perceptions. In this sense, research cannot be objective, but is always subjective (Becvar & Becvar, 1999). Therefore, the dynamics between the researcher and family members must be taken into account.

Finally, systems theory emphasizes diversity and complexity. The theory is a good framework for understanding and explaining different cultural contexts. By considering its contexts, research could widen the angle of its lens. Not only does research need to consider relationships and procedures between systems, it also should point out how and where the system is located, along with the social systems that impact it (Arthur & McMahon, 2005). However, systems theory does not ignore the role of biological characteristics. Rather, the innate characteristics of a human being can be actively developed and mutually interact with contexts (Lerner, 2006).

Lerner (2006) argued that "problems or deficits constitute only a portion of a potentially much larger array of outcomes of relationship between individual and context…problems are not inevitable and they are certainly not fixed in a person's genes" (p. 12). As such, disability is only one of many characteristics that a person could potentially acquire across his or her lifespan through interacting with his or her contexts, rather than a preset problem. Systems theory appreciates the complexity of individuals with disability and the environmental factors that are relevant for the development of individuals in contexts. The theory balances contextual influences and individual experiences and describes influences from multiple systems of influences while highlighting the unique needs of individuals (Arthur & McMahon, 2005).

Although systems theory is a useful integrated metatheory, it is not an absolute truthperfect theory. In addition, as Becvar and Becvar (1999) stated, it is impossible "that any person ever totally comprehends or understands a theory in exactly the same way as any other person" (p. xii). A researcher with a true systems perspective should extend its theoretical

framework while continuing his or her studies, rather than treating her interpretation as perfect or complete. A researcher's application of the systems theory needs to be considered an open system.

CHAPTER 4

METHODS

Participants

Three mother and child dyads participated in the study. The child participants were chosen according to the following criteria: formally diagnosed with Autism Spectrum Disorder (ASD); nonverbal or communicating with physical gestures; currently taking no medication related to the children's behaviors; and receiving no interventions in regard to social skills at the beginning of the study. The three mothers, who were taught joint attention skills, were selected based on their availability to interact with their children in their own homes, their eagerness to interact with their children, and their willingness to participate in the study. The researcher received approval from the Institutional Review Board (IRB) to conduct the study. Participants were required to sign informed consent forms, parental permission forms, and a minor informed assent form in order to participate in the study; this allowed the children to participate, the parents to receive the training, and the researcher to record the sessions and interviews in the participants' homes. Moreover, the participants were informed that they had the right to withdraw from the study at any time and for any reason. The forms were provided to participants in the Korean language. All videorecorded and audiorecorded data were kept in an encrypted and password protected file and stripped of individually identifiable information. Only the main researcher had access to them. Additionally, pseudonyms were linked to the specific participants' names, locations, and schools to protect their identities.

All of the participants lived in Seoul or in the suburbs of Seoul, and spoke Korean as their primary language. Seoul is the capital of Korea, one of the largest metropolitan areas in the world, and includes 20% of the South Korean population (about 10.1 million people), which is almost twice the population density of New York city. They seemed to belong to the lower and middle class based on their income and ownership of the apartment, because the middle class was defined as those receiving over 5 million won per month for salary, having an apartment measuring at least 99 square meters without debt, possessing a midsize car, having more than 100 million won in bank deposits and traveling at least once a year according to criteria of middle class in Korea. The mothers were initially interviewed to provide basic information about their children with autism and about themselves. Specifically, information about their children included age, gender, their birth histories, past and current education settings, therapies or interventions they had received, diagnosis history, and their communication and interaction types and levels. Basic descriptive information for the mothers was elicited, including family relations, age, occupation, household income, education level, and the amount of time they typically interacted with their children per day. Tables 1 and 2 provide descriptive information obtained in the first interview with each mother.

Table 1.

Characteristics of Children

Child name	Juho	Jiha	Kyungin
Chronological age (months)	49	75	50
Diagnosed age (months)	28	58	40

Gender	Male	Male	Male
Education setting	Special private preschool	Inclusive daycare center	Inclusive daycare center
Therapies	Speech, sensory integration, special physical therapies	Speech, special physical, sensory integration, Horse therapies	Speech, sensory integration, special physical therapies

Table 2.

Characteristics of Mothers

Mother name	Haseon	Seungyeon	Soojin
Age (years)	31	40	33
Education level	Associate degree	Bachelor degree	Bachelor degree
Family relation	Father, mother, child, older sister, aunt	Father, mother, child, younger sister	Father, mother, younger brother, grandmother
Interaction time per day	30 min	10 min	30 min
Husband's occupation	Office manager in an oriental medical clinic	Officer in a trade business office	Claim adjuster
Income (dollars/month)	About $4,500	About $4,500	About $3,500

Dyad 1: Juho and Haseon. Juho was 49 months old at the beginning of the study. He was officially diagnosed with Autism Spectrum Disorder (ASD) at the age of 28 months by a doctor at the university hospital on the northwest side of Seoul. The diagnosis assessment showed his language development was equivalent to 9-month old age, although other areas of development were normal or a little delayed. His mother, Haseon, said that she did not have any difficulties during pregnancy and delivery. He was born full term at 40 weeks, breastfed, and reached his development milestones on time. She claimed that he was engaged with her, started cooing and babbling at 6 months, looked at a camera as she had his picture taken, and could speak six to seven words before 18 months of age. Juho's mother remembered that he was a very sensitive and difficult child to bring up and had late responses to his name. From 18 months of age, Juho didn't respond to his name, suddenly lost his words and social skills like smiling and greeting, and spent inordinate amounts of time spinning a wheel on a toy car.

After diagnosis, Juho received speech, sensory integration, and cognitive therapies for 10 months and attended an inclusive daycare center for 2 months. However, he stopped the therapies and the daycare center once he developed a malignant lymphoma in his left eye, and fought against the cancer for 1 year. One month before the study was conducted, he started adjusting to a new private special education preschool located in the southeast of Seoul and started speech, sensory integration, and special physical therapies.

Juho was occasionally able to form one phoneme, such as pronouncing the [q] sound as in "*baqui*" in Korean meaning a wheel when he saw wheels on vehicles, or the [pp] sound to express "*appa*" (dad) or "*ppang*" (bread). He inaccurately spoke "umma" (mom), "anyoung" to express greetings "hi" and "bye," and "a-ya" which means "no" or "sick" in Korean. However, his verbal expressions were too inaccurate or rare to understand what he wanted. Juho mostly

communicated with physical gestures or manipulation, such as pulling an adult's hand or clothes, or tapping an object he wanted rather than vocalizing. He expressed his feelings by crying, smiling, and acting charming. He was able to make eye contact, often liked to interact with his mother and sister, and could turn his head since hearing his name.

Juho lived with his father, mother, 7-year-old sister, and an aunt who was his mother's younger sister in an apartment located in the southeast of Seoul. Haseon, Juho's mother, was 31 years old and had an Associate degree from a junior college. She was a full-time caregiver and spent the most time with Juho and his sister after school. Although staying with him all day, Haseon reported she had only about 30 minutes each day to have direct interactions with Juho

Juho's father, 39 years old, worked as an office manager in an oriental medical clinic. Like other Korean fathers, he spent most of his time at work, and irregularly interacted with Juho for 10 minutes per day. Juho's older sister was 30 months older than Juho, and a first grade student in a public elementary school. Juho's aunt was not married yet and had lived with them to assist Haseon and sometimes to take care of Juho and his sister when the parents had to go out.

Dyad 2: Jiha and Seungyeon. Jiha was the oldest boy among the child participants. He was 75 months old when the study began. He was born at 40 weeks gestation and had a minor injury in his scalp due to forceps delivery. Seungyeon, Jiha's mother, reported that he had been brought up docilely and didn't suspect any problems other than that his speech was delayed at 24 months. Soon after his 2-year-younger sister was born, Jiha demonstrated self-injurious behavior and cried all day. He was seen by a child psychiatrist who identified the problem as emotional attachment issues and regression. The assessment indicated he exhibited a language development equivalent age of a 1-year-old and poor fine motor skills. Since he was 30 months

old, Seungyeon had tried various kinds of therapies, including aroma therapy, Berard therapy, Chinese acupuncture, auditory integration training, and play and sensory integration therapies. Nevertheless, his development did not improve. Finally, when he was 58 months old, Jiha was formally diagnosed by a child psychiatrist as having Autism Spectrum Disorder.

Jiha, at 3 years old, had been in a special daycare center for 2 years, and he was in an inclusive daycare center located in the northeast of Seoul at the time of the study. He received speech, cognitive, music, special physical, sensory integration, and horse therapies at the beginning of the study.

Jiha was able to verbally imitate his mother's vocal modeling of one word or one simple sentence. However, his pronunciation was not accurate and only his mother understood what he imitated. He was unable to form his own words yet. Instead, Seungyeon stated that Jiha usually communicated with gestures and physical manipulation, such as pointing or bringing out what he needed or pulling an adult's hands. He was not interested in interacting with his peers or his sibling, but interacted with adults, especially with his mother. Jiha was able to make eye contact, smile, and laugh a lot.

Jiha lived with his father, mother, and younger sister in an apartment in the northeast suburban area of Seoul. His mother, Seungyeon, was 40 years old and possessed a 4-year college degree. She was a full-time caregiver and spent the most time with Jiha. Because she couldn't drive by herself, she used public transit to go to Jiha's school which took about 1 hour from her house. Jiha's therapies were spread out around Seoul. Seungyeon reported she didn't have energy after coming home and usually interacted with him for 10 min per day.

Jiha's father was 38 years old, and worked in a trade business office. He commuted to the northwest of Seoul so he didn't have time to interact with his children during the weekdays.

Instead, he spent time with the children while hiking a mountain near their house or taking Jiha to his therapies instead of Seungyeon. Jiha's sister was 2 years younger than he. She attended a daycare center near the house, and stayed there until her mother came. Seungyeon's older sister lived in the same apartment and sometimes helped her by picking up her daughter and making some food.

Dyad 3: Kyungin and Soojin. Kyungin was 50 months when the study began. His mother, Soojin, reported no difficulties during pregnancy and delivery. However, she suspected Kyungin was different because he wandered unlike other children in a community center where he was taught and played with his mother. He didn't say any words and made eye contact when he was 18 months old. At the age of 24 months Kyungin started attending a home daycare center, and soon after his teacher recommended visiting a child psychiatrist to see if there was any problem in his development. The doctor identified he had an attachment problem with his mother and recommended play therapy. However, he stopped the therapy after 5 months due to Soojin's second pregnancy. Since Kyungin didn't improve in language development at all during her second pregnancy, Soojin visited three different hospitals seeking a diagnosis. He was finally diagnosed with autism at the age of 40 months by a child psychiatrist in the municipal hospital in Seoul.

Kyungin had been in the home daycare setting for 10 months, and for 8 months in an early learning classroom, which was similar to a self-contained classroom in the U.S. The early learning classroom had three to four children with disabilities with one therapist as a teacher, and was managed under a psychiatrist in a neuropsychiatry hospital. Kyungin had had hyperbaric oxygen therapy to address his sensory issues. He was in the inclusive daycare center located in

the southeast of Seoul, and received speech, sensory integration, and special physical therapies at the beginning of the study.

Kyungin made a repetitive vowel sound like [eeeee] as a self-stimulating sound, or a consonant sound like [kk] without any known meaning. He was sometimes observed humming to himself. He typically communicated with gestures and physical manipulation, such as whining or pulling an adult's hand. Otherwise, Soojin presumed what he wanted in accordance with his behaviors. Kyungin was able to make eye contact, express his feelings by crying and laughing, and turn his head when his name was called.

Kyungin lived with his father, mother, younger brother, and grandmother who stayed for 4 to 5 days a week in an apartment in the southeast of Seoul. Soojin, Kyungin's mother, was 33 years old and had a bachelor's degree from a 4-year college. She was a full-time caregiver and spent the most time with Kyungin and his brother. She reported interacting with directly him for 30 minnutes per day.

Kyungin's father was 31 years old, and worked as a claims adjuster in an insurance company. Soojin stated he rarely spent time with his children during the weekdays and played or went outside with the children only on Saturdays. Kyungin's younger brother was 1 year old and stayed at home. Soojin's mother stayed in Soojin's house to assist Soojin in taking care of the children and preparing meals for 4 to 5 days a week. Soojin's mother then would go back home to spend weekends with Soojin's father.

Settings

The study took place in participants' natural settings: their homes. The video data were mostly recorded in their living rooms, the setting selected by the mothers. Although the size of the living room in each family's apartment was different, it was the most spacious place to play

in each house and the most familiar place in which each mother interacted with her child. The living room commonly contained a sofa, cushions, a TV, an air conditioner, and children's toys on one side. Due to spaciousness, the living room also included big toys like a slide, toy furniture, a trampoline, and even a swing. Additionally, there was a play mat on the floor.

The mothers' training sessions and interviews were conducted wherever they felt was convenient and comfortable. They chose either their homes or cafés near their homes or their children's schools. In order to determine whether parents could generalize joint attention bids across settings, generalization data were collected on the playgrounds near their houses where they often brought their children to play when they had time.

Materials and Equipment

Toys and materials were chosen collaboratively by the researcher and the mothers based on the researcher's general knowledge of toys children enjoy, the mothers' initial interviews, and observations of the children's play and toy preference. The items were drawn from their homes and were sequentially classified into five sets, ranging from high interest to neutral interest. Each set contained several similar toys or materials from the same class in order to facilitate each joint attention bid. In each session, one toy was randomly chosen from each set by the researcher or the mother for a total of five toys. Table 3 presents five sets of toys and materials used for the dyads in the study. For generalization data collection, any items with which the mothers could interact in the playgrounds, such as sand, rocks, a swing, a rocking horse, and a seesaw, were accepted for the study.

Table 3.

Toy/Material Sets

	Set 1	Set 2	Set 3	Set 4	Set 5
Dyad 1	Vehicles	Blocks	Hanging pictures	Books	Puzzles
Dyad 2	Balls	Blocks	Puzzles	Vehicles	Sound-producing toys
Dyad 3	Books	Puzzles	Kitchenware toys	Small figures	Blocks

An I-pad and an audio recorder were used for video- and audio-recording the sessions and interviews for data collection. The I-pad was held by the researcher and manipulated to capture the children's contingent responses. A couple of materials were produced for the training sessions. Print material provided in the Korean language described the definition, the importance, and the bids of joint attention, along with playing tips for increasing mother-child interaction. To facilitate the understanding of the print material, the researcher gave a presentation through PowerPoint in Korean for each mother.

Dependent Variables

The dependent variables were (a) the number of initiations of three kinds of joint attention bids made by the mothers per minute, including giving, manipulating, and pointing, and (b) the percentage of correct contingent responses their children made to each bid, such as gaze

shifting, commenting, or manipulating toys. Table 4 presents definitions of three joint attention bids and children's contingent responses.

Table 4.

Definitions of Joint Attention Bids and Responses

Skill	Definition	Behavioral Description
Giving	Parent's bid	Parent places a toy in the child's hand or lap, or creates contact.
	Child's contingent response	Child gazes at, comments about, or engages with the presented toy for a couple of seconds.
Manipulating	Parent's bid	Parent touches, taps, or places a toy within the field of vision of the child.
	Child's contingent response	Child gazes at, comments about, or engages with the presented toy for a couple of seconds.
Pointing	Parent's bid	Parent points to a toy.
	Child's contingent response	Child follows the direction of the finger, gazes at, comments on, or engages with the presented toy for a couple of seconds.

Recording Procedures

An event recording system was used to record joint attention skills. The researcher recorded every time a mother initiated and her child contingently responded within the total observation period. This system yielded the rate at which the behaviors occurred. The researcher specifically coded the number of joint attention bids made by the mother, types of

joint attention bid, and whether the children responded contingently. Data collection forms divided into min intervals were used to record all responses, joint attention bids, and the children's contingent responses (see Appendix A). Data were collected during a fifteen-min interval on average. Because the length of the observation period varied slightly across dyads and sessions, the number of joint attention bids and the children's contingent responses per minute were calculated.

General Procedures

The multiple probe design employed in the study consisted of three conditions: baseline, intervention, and follow-up. Between baseline and intervention conditions, two training sessions were conducted to teach mothers joint attention bids. The study was conducted in the living room in each participant's house. Free play interaction between dyad members was recorded by I-pad for 15 min on average. In each session, five toys or materials were randomly chosen from the five sets of toys described above. A free play session was usually conducted for each dyad 1 or 2 days a week when it was convenient for the participants. Sessions for Dyad 1 were mostly carried out in the afternoon on Mondays or Tuesdays, for Dyad 2 in the afternoon on Wednesdays or Saturdays, and for Dyad 3 in the afternoon on Tuesdays and Wednesdays. However, appointments for sessions were sometimes changed to accommodate the participants' schedules, children's moods, or mothers' health conditions. Overall, the study was conducted for 5 months, with 14 sessions for Dyad 1, 17 sessions for Dyad 2, and 15 sessions for Dyad 3. The intervention sessions were conducted for each dyad 1 to 2 days a week for 15 min a day according to participants' convenience and the children's conditions.

Baseline procedures. Baseline data were collected for four sessions for Dyad 1, six sessions for Dyad 2, and six sessions for Dyad 3. Sessions were conducted 1 to 2 days a week

for 15 min a day. At least three consecutive baseline probes were conducted immediately prior to intervention for each dyad. Each mother was asked to play with her child as she typically did, using the five selected toys and materials which were randomly chosen from the five sets (see Table 3). The mothers knew the purpose of the study, which was provided on the forms they signed; however, they did not know the specific bids for joint attention before the training. Each dyad played in the living room and was recorded by I-pad as they naturally interacted. The training session began when participants showed stable or decelerating baseline data in three consecutive sessions.

Training procedures. In the training phase, mothers were taught joint attention bids. The training was independently conducted in participants' homes or where they felt comfortable based on their schedules for two 45-min sessions. The training included the following steps: providing written information that explained joint attention and asking mothers to look through it; giving a presentation through PowerPoint in which the information was more specifically provided with pictures; practicing with mothers along with in-vivo examples; modeling the joint attention bids with the children; and coaching the mothers to use the bids with their children (Koegel et al., 1996; Shon, 2006). In the first training session, the mothers were provided with written information that explained specific joint attention bids. The researcher taught the definition and the importance of joint attention bids for children with autism and reviewed the bids with in-vivo examples. The researcher gave a presentation through PowerPoint with pictures to make the mothers better understand five joint attention bids: giving, touching, showing, pointing, and eye gaze. Although eye gaze among joint attention bids was not focused in this study due to technical restrictions on video recording, mothers were taught to understand joint attention bids and to use the skills later. The researcher informed the mothers that the study

focused on only four joint attention bids and excluded eye gaze. Because joint attention bids involve eye contact, the mothers were asked if their children could make eye contact and they were taught how to make eye contact with their children if necessary (Whalen & Schreibman, 2003).

Along with joint attention bids, the mothers were taught naturalistic play techniques that help increase joint attention and facilitate play and interaction. The techniques included how they acted, talked, reinforced, and responded as well as how they provided play environments, as presented in Appendix B. As Jones and Carr (2004) suggested, exclamatory verbalizations, such as "Wow" and "What a cool toy!" or an exaggerated smile or funny face were encouraged to provide natural social reinforcement. Prior to the end of the first training session, the researcher answered any questions the mothers had.

In the second training session, the mothers reviewed the four joint attention bids via the written information. The researcher modeled the joint attention bids with naturalistic play techniques with the children in order to show the mothers more specifically and vividly how to initiate each joint attention bid, how to prompt the correct response, and how to reinforce the child's contingent response naturally (Rocha et al., 2007). The mothers practiced each joint attention bid with their children and were coached with feedback from the researcher. The training sessions were concluded once the mothers demonstrate the ability to use all joint attention bids without the researcher's prompting.

Intervention procedures. The intervention procedures were conducted as soon as the training sessions were completed. The intervention started with the first dyad, moved to the second dyad once the intervention data of the first dyad increased and were stable, and moved to the third dyad once the data of the second dyad increased and were stable. Ten sessions,

including eight intervention sessions and two follow-up sessions, were conducted for Dyad 1; eleven intervention sessions for Dyad 2; and nine intervention sessions for Dyad 3. The intervention sessions were conducted in the living room as were the baseline sessions. Prior to each intervention session, the researcher or the mother randomly chose a toy from each set, for a total of five items. If necessary, the researcher showed video clips previously recorded, reviewed the bids, and prompted the mothers to play. The dyads started playing once five toys were presented. Because the study emphasizes natural interactions, if the children brought out items other than the five previously selected items and interacted with their mothers using the joint attention bids, the researcher counted the joint attention bids and recorded interactions involving the other items with an explanation. In addition, the dyads were not forced to keep playing for at least 15 min, although the mothers were asked to play with their children for about 15 min during the intervention condition. If the child lost interest in playing with his mother or with the toys, the observation was stopped.

Generalization procedures. Generalization sessions were planned in order to examine whether three parent-child dyads could generalize joint attention bids with different materials across settings. The playgrounds for generalization probes were selected based on the family's weekly routines, proximity to their apartments, how frequently they visited, and the children's familiarity with the playgrounds. The number of generalization sessions conducted were one for Dyad 1, two for Dyad 2, and one for Dyad 3 during baseline sessions. The researcher had no choice but to discontinue generalization sessions during intervention sessions because the mothers were unwilling to go outside due to hot and humid weather or the long rainy season during summer in Korea. The generalization data were withdrawn from the results.

Follow-up procedures. In order to examine whether the parents maintain the skills over time, follow-up data were collected within two sessions for the first dyad until the second and third dyad mastered all three joint attention bids. The follow-up data were analyzed with the intervention data.

Experimental Design

A mixed methods research design was employed in order to examine the effects of teaching mothers to use joint attention bids. The mixed methods design could "serve purposes not achievable through quantitative or qualitative methodologies carried out alone, including complementarity, defined as enhancement through exploration of overlapping or related data" (Schertz & Odom, 2007, p. 1565). In this study, a combination of single subject method design and qualitative research design was implemented.

First, a single subject multiple probe design was implemented as a quantitative method. Single subject design allowed repeated observations through careful attention to changes, as well as examination of systematic effectiveness of the experiment or intervention. Because it emphasized systematic observation in a timely manner, the design was more objective, accurate, and effectual on individual progress than group comparison, which examines causal relationships by comparing several groups at once (Sealander, 2004). In addition, "This design has the advantage of controlling for developmental maturation and exposure to the intervention setting" (Rocha et al., 2007, p. 157). Therefore, the single subject design was appropriate for this study because joint attention was an acquired skill that could not be reversed or withdrawn (Tawney & Gast, 1984), but constantly observed once it was developed.

Data were collected for each dyad during baseline, intervention, and follow-up conditions. Enough baseline data were collected to examine children's levels of contingent responding to

joint attention bids before the intervention. After examining baseline data using visual analysis for trends and changes, the intervention started from the first dyad. After the data of joint attention bids in the intervention indicated a therapeutic effect and were stable in the first dyad, the second dyad began the intervention. After the data for the second dyad indicated a therapeutic effect and were stable, the third dyad began the intervention. Follow-up sessions were conducted periodically for the first dyad until the intervention was completed for the third dyad.

Additionally, the study used qualitative methodology to enhance the researcher's understanding of the participating mothers' experiences naturally and comprehensively. Specifically, interviews with the three mothers were conducted. A research interview is purposeful conversation between the interviewer and the interviewee focusing on the research at hand. Kvale (2007) defined the research interview as "an inter-view where knowledge is constructed in the inter-action between the interviewer and the interviewee" (p. 1). Different from everyday conversation, interviews allowed the mothers in the current study to convey their experiences or perceptions in their own words (Kvale). Indeed, the "interview is a uniquely sensitive and powerful method for capturing the experiences and lived meanings of the subjects' everyday world" (Kvale, p. 11).

The semi-structured interview, which "comes close to an everyday conversation" (Kvale, 2007, p. 11), was used for the study. Through the interview process, the researcher could make sure that the mothers deeply thought about and expressed their own views related to the research with questions and probes. Two or three interviews were conducted with each participant, one or two before and one after the follow-up condition. The first interview was comprised of two parts. One part was designed to elicit basic information relating to the participants, as well as the

children's preferences for toys or materials explained in the Methods chapter. In the other part, the researcher asked the mother how she and other family members had lived while raising the child with autism, what difficulties she had in interacting with the child, what support or what needs she had, and what she felt her child needed in order to interact or communicate with others. The interview after the follow-up condition included questions about what she felt about her involvement in the study. The researcher particularly asked whether there were any differences after the study in terms of interaction, children's social-communication skills or language, and what changes the mothers or children experienced in their lives.

In addition to interview data, every session was observed and anecdotally noted as secondary data in order to collect contextual information and to record the researcher's thoughts. The contextual information included the children's conditions, toys used in each session, any special occurrences with the children or their families, and what the mothers talked about with the researcher. The latter was especially relevant as the researcher took Jiha and Seungyeon from Jiha's daycare center to their home for each session, because Seungyeon couldn't drive. Seungyeon and the researcher had conversation in a manner similar to the semi-structured interview for 30-40 minutes during each trip. The conversation was sometimes written in notes for secondary data.

Reliability

The researcher was the primary observer. A secondary observer was hired and trained for reliability purpose. The secondary observer was a graduate student who just earned a Master's degree in the early childhood education department at a university in Korea and wrote her thesis about young children with disabilities. Although she had knowledge about autism, she was taught about joint attention by the researcher in steps similar to those used in the mothers'

training. Specifically, the researcher taught the reliability data collector the definition and kinds of joint attention using the written information and in vivo examples in the training protocol. The secondary observer observed the training video clips and recorded each joint attention bid and a child's contingent response by using the data collection form the primary researcher used. The secondary observer also practiced with initial baseline sessions until 100% interobserver agreement across the sessions was attained. An additional training by phone or face to face meetings was implemented midway through the study when reliability decreased. Interobserver agreement was independently collected for 24% of all sessions across dyads and conditions by two observers using the point-by-point method, and was measured according to minute intervals. The second observer collected data for 11 of 46 total sessions. Interobserver agreement was calculated according to following formula: number of agreements divided by the number of agreements plus disagreements times 100.

Interview Procedures

The mothers' interview data, collected in one or two sessions before and one after the follow-up condition for each mother, were used to examine the validity and credibility of the results. Each interview lasted about 1.5 to 3 hours and was audio recorded. The interviews were conducted in the Korean language. Collected interview data were first transcribed verbatim but in a reduced form without intonations and gestures in the Korean language.

The interview data were organized into categories and analyzed for emergent themes. The interview data were analyzed based on the systems theoretical framework. The categorized data were translated into English. The second observer who checked interobserver reliability

also helped with the translation because she held a Bachelor's degree from Canada and was competent in both Korean and English. Both qualitative and quantitative data were triangulated to strengthen the credibility of the conclusions.

CHAPTER 5

RESULTS

This chapter includes a presentation of results of the study based on the research questions: effects of training on the three mothers' joint attention bids, effects on the children's contingent responses according to the mothers' bids, and effects on the three dyads' use of each joint attention bid. In addition, the results of reliability data collection are presented as well as qualitative data in terms of themes based on systems theory in order to improve the credibility and validity of the quantitative data.

Reliability

Interobserver agreement data were independently collected for 24% of all sessions across dyads and conditions using the point-by-point method. Mean agreement on mothers' bids was 96.6% with a range of 86.7 % to 100%, and mean agreement on the children's responses was 90.6% with a range of 66.7% to 100%.

Specifically, mean agreement on the mothers' giving bids was 98.7% with a range of 92.9% to 100%, mean agreement on the mothers' manipulating bids was 95.9% with a range of 80% to 100%, and mean agreement on the mothers' pointing bids was 100%. Mean agreement on the children's responses to giving bids was 97% with a range of 85.7% to 100%, mean agreement on children's responses to manipulating bids was 89.9% with a range of 63.2% to 100%, and mean agreement on children's responses to pointing bids was 100%.

Effects on Mothers' Total Joint Attention Bids

The results of each mother's total joint attention bids per min across all sessions are shown in Figure 1. All three mothers increased their use of total joint attention bids during intervention phases in terms of mean and median values.

The three mothers showed variable but accelerating trend lines in total bids per min during intervention. There was a 10% overlap for Dyad 1 between Juho and Haseon, a 36% overlap for Dyad 2 between Jiha and Seungyeon, and a 100% overlap for Dyad 3 between Kyungin and Soojin in the total bids per min between baseline and intervention conditions.

Haseon displayed an average of 3.43 joint attention bids per min and a median of 3.34 bids per min with a range of 2.62 to 4.4 bids per min during the baseline condition. The bids increased to an average of 6.29 bids per min and a median of 6.26 bids per min with a range of 3.9 to 8.16 bids per min during the intervention condition.

Seungyeon demonstrated an average of 4.99 joint attention bids per min and a median of 5.24 bids per min with a range of 3.54 to 6.36 bids per min in the baseline condition. She increased to an average of 6.59 bids per min and a median of 6.83 bids per min with a range of 4.88 to 8 bids per min during intervention.

Soojin used an average of 6.36 joint attention bids per min and a median of 5.86 bids per min with a range of 3.75 to 11.2 bids per min during the baseline condition. She increased to an average of 7.10 bids per min and a median of 6.79 bids per min with a range of 4 to 11.05 bids per min during intervention.

Effects on Children's Contingent Responses

Figure 1 also shows graphic displays of the results of each child's contingent responses per min to joint attention bids across the sessions. Three children increased their contingent

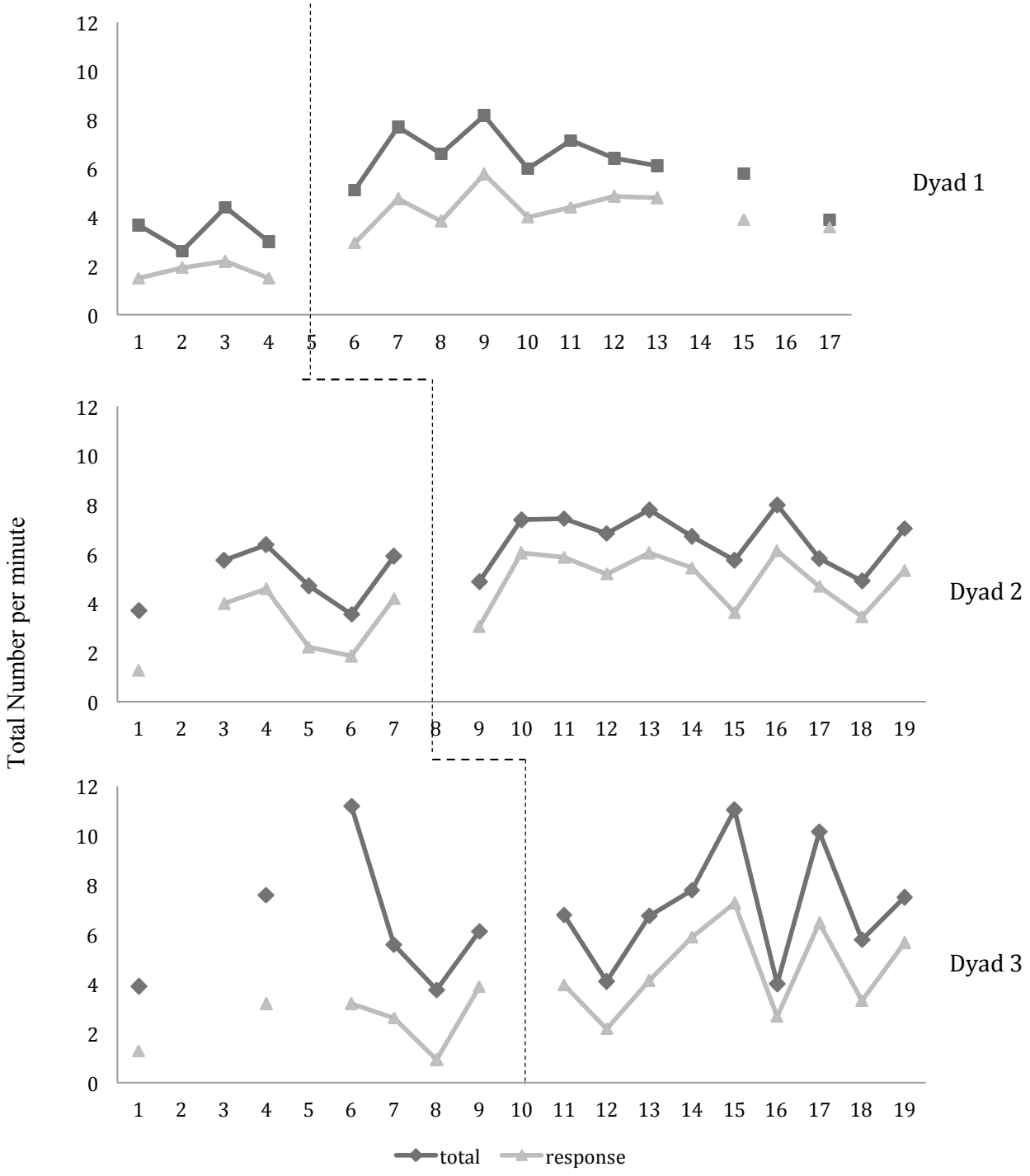

Figure 1. Dyads' Total Number of Joint Attention Bids and Contingent Responses per Minute across Sessions

responses based on their mothers' joint attention bids in the intervention phase. The percentages of the contingent responses are show in Figure 2. The children increased their percentages of contingent responses based on their mothers' joint attention bids as well as increasing the quantity of their contingent responses.

All the children demonstrated accelerating trend lines in the total number of responses per min during intervention. There was a 0% overlap in the total numbers of responses per min between baseline and intervention conditions for Dyad 1. There was a 27% overlap for Dyad 2 and a 33% overlap for Dyad 3 in the total number of responses per min between the two conditions (Tawney & Gast, 1984).

Juho demonstrated an average of 1.78 responses per min and a median of 1.72 responses per min in the baseline condition. He increased his responses to an average of 4.29 per min and a median of 4.2 responses per min in the intervention condition. The range of his responses was from 1.5 to 2.2 responses per min during the baseline condition and from 2.95 to 5.76 responses per min during intervention.

Jiha demonstrated an average of 3.02 responses per min and a median of 3.12 responses per min during the baseline condition. He increased his responses to an average of 4.99 responses per min and a median of 5.35 responses per min during intervention. The range of his responses was from 1.28 to 4.57 per min during the baseline condition and from 3.05 to 6.12 responses per min during intervention.

Kyungin demonstrated an average of 2.51 responses per min and a median of 2.91 responses per min during the baseline condition. He increased them to an average of 4.61 per min and a median of 4.13 per min during intervention. The range of his responses was from 0.92 to 3.87 per min during the baseline condition and from 2.18 to 7.26 per min during intervention.

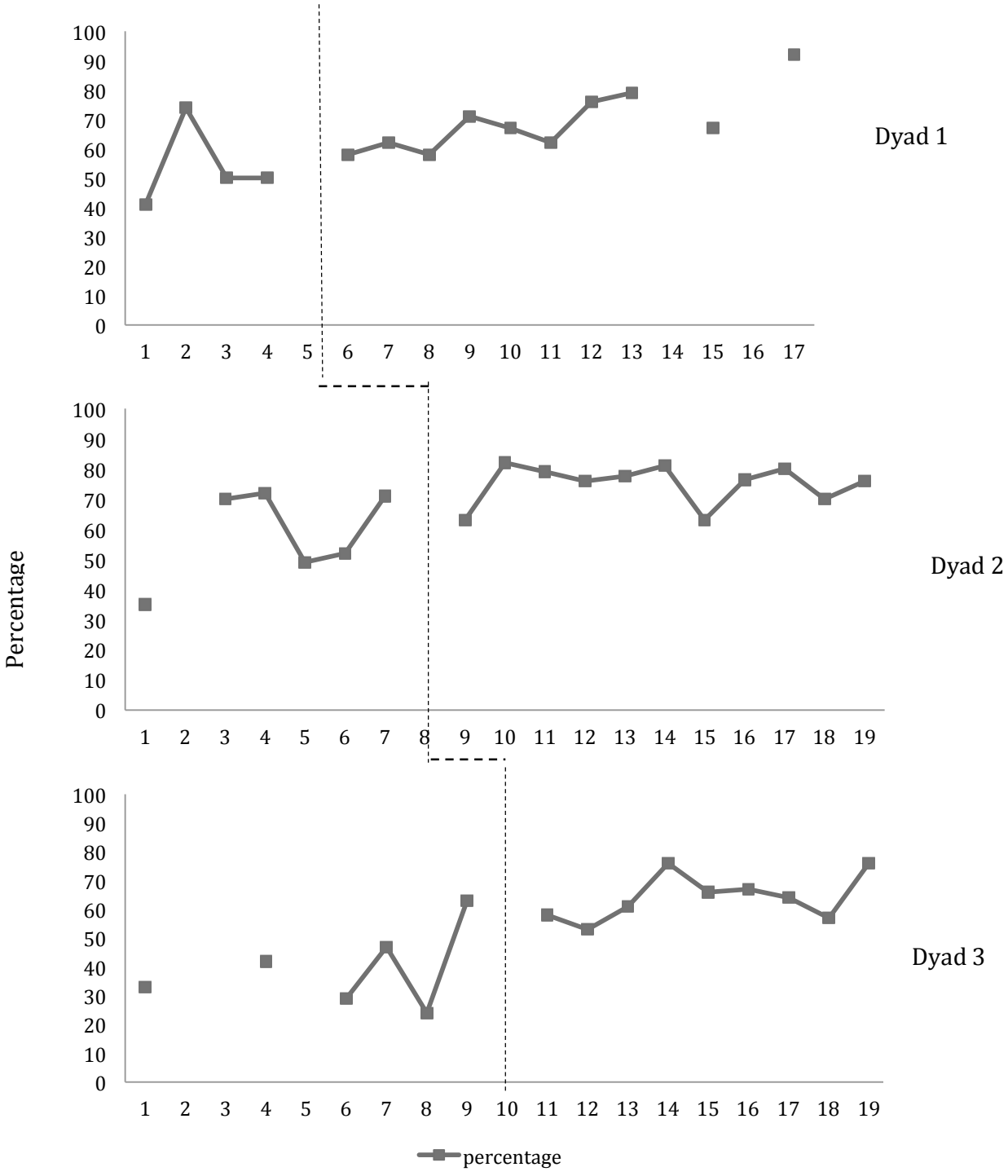

Figure 2. Percentage of Children's Contingent responses across Sessions.

Percentages of mothers' bids to which the children contingently responded are shown in Figure 2. In Dyad 1, Juho increased his contingent responses from 53.75% in the baseline condition to 69.20% in the intervention condition. In Dyad 2, Jiha increased from 58.17% in the baseline condition to 74.91% in the intervention condition. In Dyad 3, Kyungin increased from 39.67% in the baseline condition to 64.22% in the intervention condition. As shown, children increased their number of contingent responses as well as total responses per min.

Effects on Three Dyads' Use of Each Joint Attention Bid

All three mothers showed similar results using manipulating bids. They used the manipulating bid most frequently in both baseline and intervention conditions and increased their use of it with training. However, use of the other bids was slightly different across mothers.

Haseon displayed the manipulating bid an average of 2.97 times per min and a median of 2.90 bids per min in the baseline condition and increased to an average of 4.97 bids per min and a median of 4.79 bids per min in the intervention condition. She used the giving bid an average of 0.34 times per min and a median of 0.31 bids per min in the baseline condition and increased to an average of 0.87 bids per min and a median of 0.75 bids per min in the intervention condition. She used the pointing bid an average of 0.11 bids per min and a median of 0.11 bids per min in the baseline condition. She increased to an average of 0.51 bids per min and a median of 0.44 bids per min during intervention.

As for the manipulating bid, Juho displayed an average of 1.52 responses per min and a median of 1.38 responses per min in the baseline condition and increased to an average of 3.34 responses per min and a median of 3.39 responses per min in the intervention condition. For the giving bid, he demonstrated an average of 0.27 responses per min and a median of 0.26

responses per min in the baseline condition and increased to an average of 0.69 responses per min and a median of 0.51 responses per min in the intervention condition. He also responded to the pointing bid an average and a median of 0 per min in the baseline condition. He increased to an average of 0.28 per min and a median of 0.24 per min during intervention.

Seungyeun displayed the manipulating bid an average of 3.41 times per min and a median of 3.38 times per min in the baseline condition. She increased to an average of 5.10 bids per min and a median of 4.83 bids per min in the intervention condition. She used the giving bid an average of 1.04 times per min and a median of 0.90 times per min in the baseline condition, and increased to an average of 1.23 bids per min and a median of 0.71 bids per min in the intervention condition. She used the pointing bid an average of 0.56 times per min and a median of 0.18 bids per min in the baseline condition. She slightly decreased to an average of 0.26 bids per min and a median of 0.09 bids per min during intervention.

As for the manipulating bid, Jiha displayed an average of 2.19 responses per min and a median of 2.38 responses per min in the baseline condition and increased to an average of 3.82 responses per min and a median of 3.58 responses per min in the intervention condition. For the giving bid, he demonstrated an average of 0.58 responses per min and a median of 0.41 responses per min in the baseline condition and increased to an average of 0.97 responses per min and a median of 0.63 responses per min in the intervention condition. He also responded to the pointing bid an average of 0.26 per min and a median of 0.12 per min in the baseline condition. He slightly decreased to an average of 0.20 per min and a median of 0.07 per min during intervention.

Soojin displayed the manipulating bid an average of 5.08 times per min and a median of 4.24 times per min in the baseline condition. She increased to an average 6.46 of bids per min

and a median of 6.38 bids per min in the intervention condition. She used the giving bid an average of 0.99 times per min and a median of 0.81 times per min in the baseline condition and decreased to an average of 0.33 bids per min and a median of 0.33 bids per min in the intervention condition. She used the pointing bid an average of 0.29 bids per min and a median of 0.3 bids per min in the baseline condition and increased to an average of 0.35 bids per min and a median of 0.32 bids per min during intervention.

As for the manipulating bid, Kyungin displayed an average of 1.72 responses per min and a median of 1.42 responses per min in the baseline condition and increased to an average of 4.17 responses per min and a median of 3.94 responses per min in the intervention condition. For the giving bid, he demonstrated an average of 0.69 responses per min and a median of 0.75 responses per min in the baseline condition and decreased to an average of 0.22 responses per min and a median of 0.2 responses per min in the intervention condition. He also responded to the pointing bid an average of 0.11 per min and a median of 0.07 per min in the baseline condition. He increased to an average of 0.25 per min and a median of 0.21 per min during intervention.

Percentages of children's contingent responses to their mothers' bid types were also calculated. Juho increased his contingent responses from 52.83% in the baseline condition to 69.01% in the intervention condition for the manipulating bid, from 75.68% to 81.85% for the giving bid, and from 0% to 66.51% for the pointing bid. Jiha increased from 60.6% in the baseline condition to 74.67% in the intervention condition for the manipulating bid, and from 49.05% to 75.01% for the giving bid. However, Jiha decreased his contingent responses from 64.12% to 57.41% for the pointing bid. Kyungin increased from 33.62% in the baseline condition to 63.48% in the intervention condition for the manipulating bid, and from 43.34% to

71.43% for the pointing bid. However, as for the giving bid, he decreased his contingent responses from 75.9% to 70.83%.

All the mothers used the manipulating bid most frequently across conditions. Hasun and Seungyeon received the most contingent responses from their children by using the giving bid across conditions. The manipulating bid yielded the second most contingent responses and the pointing bid the third. However, Soojin received the most contingent responses from Kyungin by using the giving bid in the baseline condition, but the pointing bid yielded more contingent responses in the intervention condition.

Influencing Factors

This study aimed to examine the effectiveness of Korean mothers' intervention with joint attention skills regarding their children's contingent responses and to explore the factors that influenced effects of the intervention on mother-child dyads. To investigate influencing factors, Dunst and Trivette (1988) suggested extending beyond interactions between dyad members as well as individual characteristics of the mother and child. To examine the realistic effectiveness of the intervention, the results of the study should be examined with broader perspectives, such as how the intervention influenced and was influenced directly and indirectly in the nested contexts. Five factors suggested below in Figure 3 were adapted from the Dunst article (1985) in which an ecological map was presented with seven circles. The five factors shown in Figure 3 are mother, family, informal support, and formal support factors (from Dunst's model) plus the sociocultural system factor. Because the study focused on mothers trained and interviewed rather than children with autism, the mother factor was located in the central circle, and interconnected with family, such as child with autism and husband kin, such as mother's siblings, parents, and in-laws; social organizations including online and offline parent support group and

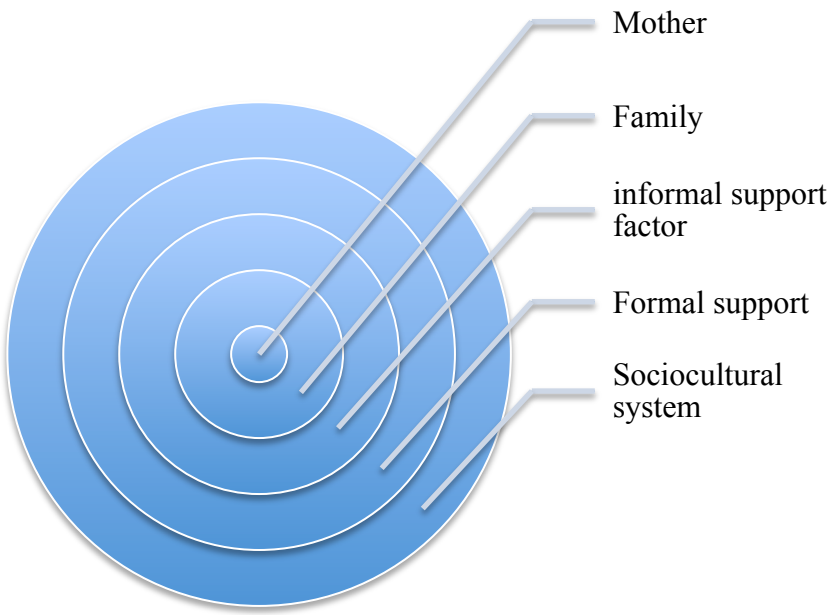

Figure 3. Ecological Map of Factors

church; human services, such as doctors, therapists, and the researcher; and the sociocultural system.

Mothers' intra-factors. The presence of a child with disability changes a mother's life. Mothers may experience feelings from grief, guilty, or denial of acceptance (Gallagher, Fialka, Rhodes, & Arceneaux, 2002). Although they slowly start learning, adapting their circumstances, and coping with their feelings, they may continuously suffer stress, anxiety, and depression as they raise their children (Fleischmann, 2005). The mothers who participated in the current study also had experiences with health issues related to stress, guilty feelings, and self-helplessness.

Emotional and physical health. The first factor that is interconnected with the current intervention was mothers' physical and mental difficulties. All three mothers indicated that they had been experiencing in their physical and mental conditions while raising their children with autism. They were, indeed, physically sick during the study and had to miss 1 or 2 weeks during data collection, one for herpes zoster and another for gastritis. The three mothers kept expressing that they were physically and mentally fatigued as they kept their children with autism on track.

> What I realized after going through therapy these days is that Juho and I get extremely tired. (Haseon, 12/23/2013)

> Since it's our fourth year of treatment, Jiha and I are physically fatigued… It needs to be me who keeps strong, and this is really important… It's not always easy to stay strong. I get physically fatigued, I sometimes argue with my husband… explode and take it upon my children although I really ought not to do so. (Seungyeon, 1/8/2014)

I was told by the oriental medical doctor that I wasn't naturally physically weak but became weak due to stress and insomnia. (Soojin, 12/12/2013)

Locus of control. Locus of control indicated how individuals believe they can control events occurring in their lives. It was divided into internal locus of control and external locus of control. Individuals with internal locus of control think they can control events by relying on their own abilities, whereas individuals with external locus of control believe that events occur by something or someone other than themselves, like other individuals or fate or coincidence. The mothers in this study had experienced confusion, helplessness, and feeling out of control when they first faced their children's disabilities.

When I first realized that Juho had autism, it was really shocking. It was more shocking than cancer. Cancer has a therapy manual and there is an end to it, but autism, there is no cure. (Haseon, 5/2/2013)

I didn't know anything about autism, so I was afraid of looking after Jiha. I didn't know what to do. I was reliant on what the therapist did and copied her at home… I wasn't able to read Jiha's mind but was too busy trying to implement all the information I gathered. (Seungyeon, 6/3/2013)

I tend not to rely on others and instead plan things on my own independently and apart from Kyungin's problem, I tend to handle matters on my own. But because Kyungin becomes a disabled child, I don't know what is right. I have no experience, and there's no one around me who has raised a child like Kyungin… If it was my problem, I would

have handled it myself, but it's more difficult because it's my child and I don't know what he's thinking. (Soojin, 4/30/2013)

However, the mothers tried to rely on their own abilities to interact with their children and play the role of mother as they were undergoing events with their children with autism, as the following interview transcripts show:

> It's really important for the mother to try hard at home… The child improves just as much as you believe in him. This makes me feel stronger because Juho is much better than last year… He is my child… He spends the most time with me so although in the beginning it might seem as if it would be best to take him to the famous clinic, considering cost and the time spent in between, it might be the best for the mother to spend time with the child. (Haseon, 12/23/2013)

> As time passed by, I tried to really interact with Jiha and play with him, and this changed him quite a bit. Now I observe other children receiving treatment, and instead of blindly following I first ask myself whether it would fit my child. Say I followed 80-100% of what people recommended. Now I independently think their information before taking action. (Seungyeon, 1/18/2014)

> With respect to Kyungin, I was confused and troubled up until last year, but now I have begun to accept it. It's ok if our family can support him and as long as we are happy, right? (Soojin, 12/12/2013)

Family factors. The factors of family members directly interconnected with the study. The factors included relationship with child with autism and with husband.

Relationship with child with autism. The factor of relationship with their children with autism directly interrelated with the effectiveness of this study. The mothers said they kept reflecting on their past experience in order to find the cause of their children's disabilities after their diagnosis of autism. Haseon and Seungyeon thought autism might be due to incidents they experienced. Soojin said she felt self-accusation because she couldn't give Kyungin the appropriate stimuli as she raised him.

> When I first realized that Juho had autism… I began to think of all the wrong things I did. I wanted to go die or kill myself for several months thinking that it was my entire fault… Then cancer was discovered in his eye. I asked whether it was related but was told it wasn't. [The physician] said that the eye cancer was developed from Juho's lachrymal gland. I think that his cancer might have affected his development and autism. (Haseon, 5/2/2013)

> When I was pregnant, I was under a bit of stress because my mother was severely sick… I also had a tough time giving birth. While performing extraction, a scratch was made on the scalp of Jiha because of forceps delivery so he didn't cry right away. I wondered if his autism was from the forceps delivery though a doctor told me there was no connection. (Seungyeon, 6/3/2013)

> I suffered from severe depression. When Kyungin was little, I hated the sound of television and radio and thus kept them turned off. I just wanted it to be quiet when it

was a period for a child's brain cells to be active. There must have been a lack of stimulation for Kyungin. One thing I did wrong was that I thought kids all love Pororo [famous Korean TV show character to infants and preschoolers] and thus turned it on for Kyungin who then was totally absorbed by it. I was supposed to take him to places to stimulate him. (Soojin, 4/30/2013)

The mothers said they were confused with mixed feelings about their children with autism. In the next interview transcripts, the mothers expressed compunction on one side, hatred on the other side.

There are times when I think of Juho as a burden. Sometimes I don't feel very attached. But then he got cancer, and at that time I really thought that he was born to make me suffer... I thought that if you have to suffer and go to the hospital, it might be better for you to die for my sake and your sake. He regressed, so I thought what's the point of living like this. (Haseon, 5/2/2013)

Thinking that with all this effort Jiha at least needs to come half way made it more difficult all of a sudden. Although he is my child, I'm trying my best and giving up my life for Jiha but he is still not listening to me or getting any better. (Seungyeon, 6/3/2013)

I was most despondent when I was pregnant with my second child because Kyungin was not getting better at all... It is the most difficult part that Kyungin is not able to follow any motion. (Soojin, 4/30/2013)

Despite this sense of hopelessness, the mothers still kept their aspirations for their children. They, most of all, made their children talk. The mothers thought that they should keep

stimulating their children and giving them various experiences. In fact, during data collection period, the mothers continuously took their children to places where their children could experience climbing, camping, enjoying an amusement park, dabbling in water, and so on. Nevertheless, the mothers constantly felt pressure that they couldn't do enough for their children.

> When [Juho] was suffering from side effects of chemotherapy, he never told me… If he was like normal children, he would have told me that he was in pain and that he wanted to eat something, but Juho only chose from what I gave to him… Because he cannot communicate, this makes me hopeless… I hope he can talk. I wonder what his voice would sound like. Even in my dreams I dreamt him talking twice. Even if it was a dream, it felt so good. For him to speak, that is my first priority… It's really important for the mother to try hard at home. The child improves just as much as you believe in him. This makes me feel stronger because SJ is much better than last year. (Haseon, 5/2/2013)

> Jiha expresses his anger because he can't express himself linguistically... It would be meaningful if I could keep strong this year and Jiha can show progress. If I'm not lazy, when I play with him, he is able to play along. But the problem is that I keep putting off playing with him because I'm tired, and a week shortly passes by. (Seungyeon, 1/8/2014)

> Even if it was basic communication, if he could just say, "yes," "no," "this one," it would have made life so much easier and less stressful for him. Last year we realized that if we don't change, Kyungin couldn't change either. Since a little while ago, I have begun thinking that I should play with Kyungin and let him experience as many things as

possible in the given circumstances. However, I've kept giving excuses and haven't been able to do anything about it. (Soojin, 4/30/2013)

Relationship with husband. Relationship with their husbands was an important factor influencing the effects of the intervention. Two mothers, Haseon and Seungyeon, built conjugal ties and were satisfied with their husbands. They expressed their husbands were the most supportive people when raising their children with autism. These couples discussed how they should raise their children with autism with one accord. These mothers depended on, felt sorry for, appreciated, and had sympathy on their husbands, although they were at first or sometimes annoyed by their husbands' busyness. Their husbands also showed empathy for their wives' situations.

My husband is someone who supports me… My husband and I are drinking friends at home. When we first discussed the issue of [Juho's] autism, he said it was his entire fault--that made me feel sorry. In the beginning, I was upset with my husband. Now we have gone through the transition period… If there is something new, it might get difficult. However, when Juho was going through chemotherapy, we relied on each other… [My husband] feels sorry because I need to take care of Juho most of the time. I feel sorry for [my husband] because he is busy and tired but tries to make money… and [I am] thankful at the same time. So even though I'm going through a hard time, we rely on each other. Because of Juho's condition my husband is going through much and so am I. (Haseon, 5/2/2013)

At first, my husband didn't really say much. He never talked about [Jiha's autism] in a negative way. He said that Jiha didn't have autism and that he would be normal… My

husband is busy at work so I am a little dissatisfied these days. He tries his best to play with the kids during weekends though… When fathers meet each other, they give my husband a hard time, saying that because my husband is too nice to the kids, their wives complain by comparing their husbands with my husband… When he has time, he takes Jiha to the clinic and during the summer he took Jiha camping every weekend. So he is really good when it comes to helping in such a way. Family helps the most. It's not like my husband is not helping, it's because he is busy. (Seungyeon, 6/3/2013)

One mother, Soojin, was dissatisfied with her husband. She spent most of time talking about her husband during the first interview. She expressed that she had had a hard time from the beginning of marriage, and she had lost confidence in her husband. She indicated herself as mental head of the household because she couldn't share her feelings and Kyungin's situations with her husband, and because she should make decisions on her own. She said she was more stressful due to her husband, rather than Kyungin.

[My husband] has never tried anything for me since we got married. He only avoids the situation and keeps silent… the cycle keeps repeating and we lose trust in each other… Right now, I feel that my problem with my husband is greater than that with Kyungin. Even though we discuss things, my husband doesn't know anything but cares about how much therapy costs. I just take care of things on my own. I am the psychological head of the family. (Soojin, 4/10/2013)

Additionally, Soojin felt Kyungin's autism was due to the marriage between her and her husband. She even thought that her husband's behavior was similar to Kyungin's.

When he was a child, my husband was slow in being able to talk for the very first time and that trait is somewhat similar to Kyungin's… When you look at my husband, he is

not normal. He has no sense of caring for someone else. No matter how many times I tell him, he is unable to understand… I blame myself Kyungin was from the combination between my husband and me. (Soojin, 4/10/2013)

Informal support factors. Several informal support factors were identified. The participants received support from extended families, other mothers of children with disabilities, and community.

Relationship with extended families. All three mothers directly received physical support from extended family members. Although the extent of help was different, the support from extended family members was essential to the mothers to raise their children with and without disability. The supports were all on the maternal side of the families and played similar roles as extra helping hands, such as picking up or taking care of the other child, and preparing meals without receiving any reward. Haseon lived with her younger sister, Seungyeon and her older sister resided in the same apartment building, and Soojin received help from her mother, who stayed with her during weekdays.

The one who really helps is my sister. Last weekend, it was my husband's birthday and because my sister took care of Juho, we went out on a date. (Haseon, 5/2/2013)

My sister lives in the same apartment building as us so she helps taking care of our second child. My sister is interested in my son. She talks to Jiha whenever she visits. She touches his hands and feet and tells him to greet her. (Seungyeon, 6/3/2013)

My mother helps out a lot physically. She spends her time at my place except the weekends, and my father tells her to do so as well… Kyungin really needs his

grandmother. I need her especially in the morning. Although I tell her to come only 2 or 3 days a week, she feels that's not enough and Kyungin also wants her. My mother is physically fatigued and when I look at my father it doesn't seem right. It seems that he looks much older than before. Kyungin is their first grandchild and he means a lot to them. My mother is the person who gives me the most support. (Soojin, 4/10/2013)

The physical support these mothers received from their extended family members did not necessarily provide the mothers with emotional support they needed. Seungyeon and Soojin expressed that they were sometimes emotionally depressed and uncomfortable by having their extended family members even though they appreciated their help.

My sister tells me that my son has autism and that it can't be helped. So I need to bear with it. This makes me feel depressed at times. (Seungyeon, 1/8/2014)

My relationship with [my mother] is a love-hate relationship… If it was just for me, it's better if she doesn't come, or perhaps if she comes every once in a while. But because she is there all the time, I keep arguing with her and I have to show some parts of me that I don't want to reveal to her, especially my husband's. It's really hard for me to be stuck in the middle between the two of them. (Soojin, 12/12/2013)

Haseon uniquely expressed her appreciation of her in-laws, who provided emotional and financial support for her. Haseon was particularly inspired by a sister-in-law, who had a 20-year-old son with autism, and raised him successively.

My mother-in-law is really nice; so are her daughters and son… My mother-in-law gave my husband money without any reason. Being the youngest in the family, there are perks.

> His sisters often give us money.... His second sister's son has autism. His autism was very serious. It must have been even more difficult back in her days. Back then, there must have been fewer clinics and they would've been more expensive. She sold her jewelry to treat her child and studied special education. She educated him firmly so he can cook, eat, and do the laundry. I realize one thing: the mother's ability dictates the child's ability when I look at her. (Haseon, 5/2/2013)

Support from the community. Social support groups can make their members strongly tied one another, if they have similarities in background, attitudes, and experience (Ye, 2006). The three mothers built relationships online and offline with other mothers, who had children with disabilities, and met with them in the schools and Internet support groups. They built strong bond with the members of their support groups. Seungyeon and Soojin were affiliated to mother support groups, such as an offline community, which was built autonomously by mothers who had children with disabilities in the same school. They met with other mothers more than once a week, released stress, shared their feelings and struggles, exchanged information, and succored what they needed from one another.

> Jiha used to attend a special daycare center where approximately 10 other children like him attended. The support community started as those children's mothers and I accidently had lunch together and chatted with each other, laughed, cried, and finally bonded and created a gathering. Those mothers and I are in the same boat. We all feel frustrated and because we are going through pain together, we can understand each other. I received much help from mothers with respect to making a welfare card [for the financial support from the government based on their income] because they told me how

to make one. All these things made it easier for me because it would've been difficult for me to get one all by myself. (Seungyeon, 6/3/2013)

With respect to clinical sessions, it is much better to consult with other mothers from the inclusive daycare who are able to share real experience and information. There are surprisingly many mothers who are in the same situation as I am. And this makes me feel better, knowing I'm not alone. Free time to me merely means spending time with peer mothers or friends and having lunch together… meetings with these mothers do seem to help a lot because they let us release stress… It was these mothers who changed my attitude… Everyone's circumstance is different, but I think it's important who you meet because the resulting influence might be very different. (Soojin, 12/1/2/2013)

In addition, Haseon and Soojin were members of the same online support group called "Geobugi" meaning "tortoise" in Korean, in which only mothers of children with autism spectrum disorders could join, share their feelings and struggles, and exchange information. According to Amichai-Hamburger and McKenna (2006), the Internet became an important tool to create effective interpersonal and intergroup contacts, in which people could produce a secure environment and decrease anxiety. Studies have also shown that online support groups helped parents decrease depression, anxiety, and stress as well as have emotional support and build ties (Bragadottir, 2008; Drentea & Moren-Cross, 2005; Fleischmann, 2005).

The three mothers revealed that they frequently attended online group sessions at first, but only occasionally went in after they collected the information they needed. Unlike the online support groups, mothers in the offline support groups kept in contact for quite a while.

> The moms at Tortoise's cafe (Internet support group) say that they call their children tortoises and other children without disabilities hares because while slower than hares tortoises still are able to move along… I remembered there was a post on Tortoise's cafe that autism might be a result of an immunity problem from the father's side. The poster stated that you should show the post to any in-laws who blame you for your child's illness… I don't frequently visit Tortoise's cafe these days. Before, I used to log on all the time. [Now] I pretty much already know what's being posted and I'm not going to switch to another clinic [based on the information posted on the cafe]. (Haseon, 12/23/2013)

> Many gatherings exist, such as Internet cafes for mothers, so those mothers can give helpful guidance, although only 80% of their advice might be helpful while the other 20% might be a result of extreme anxiety. In the beginning I read the posts in the Internet cafes everyday as if I was addicted, and this made me impatient. Internet café makes me depressed although I used to frequently log in. (Soojin, 12/12/2013)

Seungyeon explained that she exchanged information for her son with mothers in the same clinic before attending the offline support group. The mothers provided effective therapies that they heard about or did.

> I've been exchanging information with other mothers ,who go to the same clinic, and share positive clinical experiences. Back then if I heard positive results from a mother, then I should use the same therapy to my child, thinking that because it worked on some other child, it would work on mine… I used to actively search for therapy that worked on other children and tried everything but to no avail. (Seungyeon, 6/3/2013)

Other than mother support groups, Haseon and Seungyeon didn't participate in community events. However, Soojin kept her relationship with church members, who she said were just like family members because she and her mother had been involved in the church for a long time. The church members helped with general advice for her family and made her keep devotion.

> Church members in a similar age group and my family spend most of time together every Sunday… Kyungin also plays well because the church is very familiar to him… Sometimes church members give my husband and me advice to help keep in good conjugal relationship, and it helps [me] understand my husband… As I observe parents at church who have children with disabilities, I realize that I would grow as a parent if I stay with God. In the beginning, I often blamed God and asked why this happened to me… but now I think that had I left God after blaming him for everything, then things would have been so much worse and Kyungin would have been abandoned. So as I look at the parents at church I tell myself that there is nothing but prayer. (Soojin, 4/10/2013)

Formal support factors. The formal support factors included relationship with professionals as well as participating in the research. The mothers doubted their children's diagnoses and effectiveness of therapies they had received. The mothers expressed their changes before and after the study.

Relationship with professionals. The professionals the three mothers had met included doctors, teachers, therapists, and the researcher. First, the mothers doubted if doctors' diagnoses were credible. Children in Korea were usually diagnosed by a child psychiatrist in a university hospital rather than by a psychologist in a center. The doctors whom these mothers met usually diagnosed conditions as emotional attachment problems between mother and child in the first

visit. Diagnosis of attachment problems made mothers feel guilty because it meant mothers didn't give their children enough love. In addition, psychiatrists asked mothers what disability they want to be diagnosed for their children when they visited again to inquire about why their children did not improve.

> When I went to a university hospital, I asked the doctor to give me a diagnosis for Juho and specifically told him to use the word autism. If my child was diagnosed as autism [rather than developmental delay], the government provided more welfare money. (Haseon, 5/2/2013)

> When Jiha was 27 months old… he had shown regressive behavior since his sister's birth and had revealed emotional attachment issues… [It] seems that his progress is much slower than that of his peers although he does seem to improve slowly… When Jiha was four, the doctor asked me what disability I thought he had and I told him autism… I wondered whether the doctor's diagnosis was accurate. He doesn't even give a clear diagnosis. He asked me what sort of condition my child has. Because I told him Jiha had autism, the doctor diagnosed him as having autism. (Seungyeon, 6/3/2013)

> Pediatricians believed that Kyungin had an attachment disorder rather than autism… [His] facial expression was always depressed and stiff so they told me that it was a problem of attachment. (Soojin, 2013/4/30)

In addition, the three mothers mostly talked about therapies their children received. The mothers considered that their job was to take their children to the therapy center and leave them

there instead of working with therapists to learn about therapies. The mothers thought that therapies were not as effective as they expected in terms of time, cost, and generalization.

> I felt that after taking Juho to a therapy session, I feel that I've done my job and now I can rest. (Haseon, 12/23/2103)

> Therapists say that Jiha has improved in this or that way but in my opinion whatever treatment I chose, he would've improved this much anyway. When he is with his therapist, he does very well. However, when he is out with me, it's not the same… When he is with his friends, it's also hard, and generalization is very difficult. Despite the treatments, I felt as if he was not showing much improvement. (Seungyeon, 1/8/2014)

> Play therapy [that Kyungin started as soon as he was diagnosed] wasn't anything special. I wondered why I had to pay 50,000 won (equivalent to 50 U.S. dollars) for each visit. Cognitive therapy wasn't suitable for Kyungin either because he was too young for it, which I didn't know at the time… [Sometimes], I think, because it is the time when Kyungin is getting drowsy, it might not be useful at all... Kyungin is probably just used to the language therapy, and I think the therapy might not be helpful at all… I would have thought of therapies as something that works… I wonder what I have been doing… [It] isn't cheap… Places for coaching parents are good in my opinion. Therapies are just a one-off thing. (Soojin, 12/12/2013)

Participation in the study. Interviews were conducted before and after the intervention. The mothers expressed what they thought about their participation in this study, and how it positively changed their perception of play and interaction style with their children.

Participating in this study, I felt that attachment was required between the mother and the child. Other therapies don't have such. First of all, I let the child do what he likes and then make eye contact and stay next to him. This has become basic for me. Juho didn't sometimes pay attention, then I sighed and asked myself why my child had to be like this. But as this goes on, it seems that Juho is recognizing his mother's presence and tries to look at me. Now looking at the same thing as I do and being with me has become a basic thing to do for him, so he sometimes would look at what I am doing and ask. Juho can't talk, but now his interaction has increased and he can imitate a bit, so he has improved in such regards. (Haseon, 12/23/2013)

Frankly speaking, I completely relied on the therapists… I didn't know how to play with the child so I contemplated a lot. It was a one-way action where I would push the child on a swing. It was not really an interaction. But as playing with Jiha, I started to ask questions to Jiha and make decisions based on what he wants… I thought that it would be impossible to play with him by using a toy and that playing was for children under 12 months. It seemed difficult to play with the child [with autism] because he liked to play alone… because he had a different way of playing from other children of his age… Toys seemed useless for him because he had his own way of playing on his own… but now that you coach me… If he was able to focus for 5 minutes (before the study), now he can do so for a longer period, 30 minutes, 1 hour, and even after you have left. Sometimes, he comes with the object and asks me to play with him when he wants to… I feel more confident of playing with him. (Seungyeon, 1/8/2014)

> I really felt good because I could play and pay attention to Kyungin at least for 10 minutes. After coming home, I used to let the time slide by [before the study]… [During the study], you recorded and watched so I could concentrate on playing with him. (Soojin, 12/12/2013)

Sociocultural system factors. Culture has been defined as "patterns of representations, actions, and artifacts that are distributed or spread by social interaction" (Markus & Hamedini, 2007, p. 11). It was established on language and history, that is "symbolically mediated experiences with the behavioral practices and historically accumulated ideas and understandings of particular communities" (Shweder et al., 1998, p. 719). Regarding the relationship between culture and person, Bruner (1996) argued: "Nothing is culture free but neither are individuals simply mirrors of their culture" (p.14).

Interconnection in Korean culture: Confucianism and high context. Confucianism is predominant as political and social philosophy in Korea. Confucianism focuses on five principles: humanity, morality, proper conduct, wisdom, and trustworthiness (Chan & Lee, 2004). In addition, one communication style in the Korean culture influenced by Collectivism is high context, in which meaningful information is indirectly expressed through physical context or internalized in the listener (Cho & Gannotti, 2005) with the value of silence rather than direct verbal expression. In these characteristics of Korean culture, society emphasized relationships with others, harmony, cooperation, mutual satisfaction, parents' love, and respect for those who are older, such as teachers or parents.

Several factors show that the three mothers, who participated in this dissertation study, were influenced by their culture. First, signs used for the significant autism diagnosis, such as joint attention and eye contact, are not necessarily considered important in Korea as they are in

the US. According to studies exploring cultural differences in joint attention and eye contact, Asian American children made less eye contact with adults than European American children (Wilder, Dyches, Obiakor, & Algozzine, 2004), and middle-class European American mothers and infants engaged face to face twice more than middle-class Japanese mother and infants (Rogoff, 2003). The mothers in this study didn't state their difficulties with eye contact or turning head to look as their major concerns. Instead, the mothers expressed their eagerness to make their children speak. In terms of gesture, people in high contexts express their intention through facial expression or nonverbal communication (Cho & Gannotti, 2005). However, in Korea using one's gestures constantly might be considered to be standing out and thus not desirable because of importance of group harmony. In fact, Haseon shared that encouraging her son to use hand gestures and joint attention with gestures appeared an awkward behavioral intervention during the training sessions.

Moreover, the parent-teacher relationship in Korea was regarded as a hierarchical relationship rather than an equal partnership. The participating mothers usually suppressed their feelings and were unwilling to speak even though they were unsatisfied with their children's therapists or clinics.

> The word on the street was that Daechidong's sensory motor clinic is famous so people needed to wait for a couple months in order to attend, but I was able to get in after begging. It's been 10 months since we've been attending, but I am yet to find any progress. (Seungyeon, 6/3/2013)

> I depend a lot on what the therapist has to say. It is difficult to adjust to the therapy hours

and sometimes I think that because Kyungin is drowsy it might not be useful at all. (Soojin, 4/30/2013)

In terms of interrelationship, the mothers believed their mood and feelings could influence their children.

> When I'm doing it with Jiha, it's not entertaining… He is influenced by my emotions so when I'm happy he is happy and, when I'm unhappy, he is also unhappy. Our emotions are connected. (Seungyeon, 1/8/2014)

In addition, Korean society showed another side of inter-connectedness. The mothers shared how even strangers interfered and asked questions about their child's behaviors, such as why he sat in the stroller although he appeared to be at an age when he didn't need it anymore, why he didn't talk, or why he made noises when she used public transportation. In the cultural context where there is a blurred boundary between the public and the private, the purpose of therapy seems to seamlessly cross the boundary. In addition, the mothers seem to worry about their appearance in the judgmental eyes of others.

> Someone once said that the purpose of therapy is to not show one's illness and be able to live seamlessly with others. They say therapists who think about limits are not good while those who say, "Just believe in me," are not good either. (Haseon, 12/23/2013)

> When their children are drooling, [some of] their mothers are dressed in brand-named clothes. Mothers who have such children are more likely to wear flashy outfits. They wear heels, fur, do stylish hairdos, and wear expensive handbags. They are trying to show others that despite their children, they still want to look good. I can understand them. (Haseon, 5/2/2013)

Attitude on education. The virtue of humanity is a basis for Korean parent-child relationships, in which parents give their children love and children requite with filial piety. As stated earlier, Korean mothers might feel more stressful and guilty while raising their children with autism in this cultural background although all mothers in the world have similar difficulties. In addition, erroneous diagnoses, such as attachment issues from psychiatrists previously mentioned, may make mothers feel even worse, because good mothers should give their children endless love. Such diagnoses led mothers to believe that it is their faults if their children don't improve. Korean mothers show self-sacrifice and obsession to try every thing to fix their children. Several mothers of children with autism in Korea provide therapies with no evidence base, such as aroma therapy, Berard therapy, hyperbaric oxygen therapy, oriental herbal therapy, and even superstitious exorcism performance. Seungyeon stated she had done whatever someone said it worked:

> Apart from language and cognition therapy, I had him go through aroma treatment, Berard treatment, and auditory treatment for about 2 years and then stopped. (Seungyeon, 6/3/2013)

These mothers' attitudes toward their children's education are connected to all five virtues of Confucianism. In addition, Korean people strongly believe that their children's success in education is an important means of upward social mobility and thus push themselves and their children for better education and better performance (Gringer, 2007). People call this circumstance "education fever" in Korea. Korean parents pay high attention to education. The spending by Korean families for their children's private, supplementary education was the

highest among 34 nations in the Organization for Economic Co-operation and Development (OECD), which was three times more than the average of OECD education spending (Yoon, 2014).

Mixed with guilty feelings and education fever in Korea, the three mothers have spent their family earnings on private therapies. They believed their children needed something special and thought therapy or treatment was more valuable than special education in early childhood education programs?. For example, Seungyeon irregularly sent Jiha to a daycare center due to schedules of therapies, although the biggest concern that both the mother and I knew was his difficulty in communicating with or playing with peers. Mothers spent a lot of money for therapies for their children. Although the Korean government provided welfare (equivalent to about 120-150 U.S. dollars) in accordance with their incomes, it is a very small part of their actual spending. Many of them spent over 1000-2000 dollars per month for their children. Moreover, professionals established several clinics to earn money. There were early intervention clinics managed by psychiatrists like special private daycare centers by hiring therapists as teachers. The tuition for the clinics was at least 1200 dollars per month. Seungyeon and Soojin both said they had sent their children to such expensive clinics before.

> I spent more than 2 million won [about 2000 dollars] per month. (Seungyoen, 6/3/2013)

> Before Juho got sick, I used to think that because I was spending over one million won [1000 dollars] per month, it wasn't necessary for me to actively play with Juho in order for him to get better. Now I don't think that way as much. There are two mothers who spend over 2 or 3 million won [2000-3000 dollars] per month, but their children haven't improved much. (Haseon, 5/2/2013)

> I think Kyungin needs a different education approach from those for other [typically developing] children. Woonjin program (a home-visit literacy program) is not the right approach for Kyungin, and he needs a therapeutic approach. (Soojin, 4/30/2013)

Their ability to send their children for therapies was directly related to their financial situation. Although the incomes of the three participating families were similar and all could be categorized as middle-class, Haseon thought that she didn't have enough money while Soojing thought money was the only support that kept her going.

> Since we don't have money, other mothers and I sometimes think that we should have bought a house for our child under his name, instead of spending it all on his treatment. (Haseon, 12/23/2013)

> The thing that keeps me going is money. This is because without money I can't provide therapy for Kyungin and realistically my faith also helps me emotionally. But in the end if I can't provide something because of lack of money, it would be very stressful. (Soojin, 12/12/2013)

CHAPTER 6

DISCUSSION

The purpose of this study was to examine the effectiveness of Korean mothers' training with joint attention skills in increasing their children's contingent responses. More specifically, four research questions included (a) if three mothers would increase their use of joint attention bids with their children, (b) if the mothers' use of joint attention intervention would have an effect on the children's contingent joint attention responding, (c) if the mothers would increase their use of each joint attention bid and affect their children's rates of contingent joint attention responding, and (d) what factors influenced joint attention interaction between mother-child dyads.

Findings

Overall, the results showed that the three mothers increased their use of total joint attention bids during the intervention phase. The children with autism increased their contingent responses based on their mothers' joint attention bids during the intervention. They increased both the percentage of their contingent responses based on their mothers' joint attention bids and the quantity of contingent responses. All three mothers showed similar results when manipulating bids. They used this bid most frequently in both baseline and intervention conditions and increased their use of it throughout the study. However, use of the other bids differed slightly across mothers.

The results of the study were similar to those in the researcher's master's thesis (Shon, 2006), in which partners such as a mother, a babysitter, and a sister were taught joint attention

bids for a child in a home setting in the US. In addition, the study expands the research literature on intervention for joint attention for children with autism (Hwang & Hughes, 2000; Whalen & Schriebman, 2003; Zercher et al., 2001). The current study replicated the importance of joint attention intervention while conducting it in a different culture. Because joint attention is a universal gesture that allows infants and toddlers to develop social interaction skills and that positively influences current and later language development, this intervention for joint attention skills showed effectiveness across cultural settings. The participating mothers had unconsciously used the gestures while interacting with their children during the baseline phase, although one mother stated that intentionally using joint attention gestures looked like awkward movements during a training session. The participating children showed deficits in joint attention skills during intervention. However, they increased referential responses contingently according to their mothers' initiation of joint attention bids as well as total number of responses to joint attention bids.

The effectiveness of using each joint attention bid was similar to the results of the researcher's master's thesis (Shon, 2006). All the mothers used the manipulating bid the most frequently across conditions. Hasun and Seungyeon received the most contingent responses from their children by using the giving bid across conditions. The manipulating bid yielded the second most contingent responses, and the pointing bid yielded the third highest number of contingent responses. However, Soojin interestingly received the most contingent responses from her son, Kyungin, by using the pointing bid during intervention, although Kyungin emitted the most contingent responses to the giving bid in the baseline phase. In addition, Dyad 2 (Seungyeon and Jiha) showed a decrease in the mother's use of the pointing bid and in the child's responses to it, and in Dyad 3 (Soojin and Kyungin) the mother decreased her use of the

giving bid and her son's rate of responding to those bids also decreased. In contrast, Dyad 1 (Haseon and Juho) increased all three bids and responses to them. This could be explained by the fact that the incidence of giving and pointing bids was not relevant enough to analyze. All the dyads demonstrated on average less than one bid and one response per minute.

The goal of the intervention was to increase the number of each bid provided between baseline and intervention phases. However, the use of each bid was related to its function. Depending on what toy they used and how they operated it, the bid could be differently used in each dyad interaction. When people initiate joint attention to increase the partner's interest, they usually use manipulating bids the most, such as touching, showing, or operating the object of joint attention. To use a giving or pointing bid, distance between mother and child serves as an important factor. For example, if a child is in close proximity to his mother and a toy is in her hand, it may be difficult to use the pointing bid. Therefore, it may be an awkward request if the mother is asked to use more pointing or giving bids in the natural environment. In this study, although the mother could start the intervention by moving a toy further away from the dyad and try the pointing bid, it was hard to keep moving toys away from the dyad to effectively use the pointing bid. In addition, the study was conducted in the living rooms in the dyads' apartments, which were not as big as a living room in a house in the U.S. and contained several other pieces of furniture that could not be moved out during sessions. As a result, the pointing bid was less used.

Furthermore, the pointing bid should be redefined according to the distance between mother, child, and a toy. Distance between a mother's pointing gesture and a toy or distance between a toy and a child's eye changed the quality of the joint attention skill. For example, if a mother pointed to a book located near enough to touch, it was more likely a manipulating bid

rather than a pointing bid. Pointing to something a short distance away is different from pointing to something further away.

For the interobserver reliability, the agreement was relatively high with 96.6% mean agreement on mothers' total bids and 90.6% mean agreement on the children's total responses, based on a total 24% of all sessions. However, the data were variable, ranging from 63.2% to 100% mean agreement. The lowest interobserver reliability was 63.2% mean agreement on children's responses to the pointing bid. Disagreement on children's contingent responses to the pointing bid could explained by the low incidence of the pointing bid and confusion regarding following children's eye gaze corresponding to mothers' pointing which indicated relatively more distant than for giving and manipulating bids.

Calculation of the percentage of overlapping data (POD) provided some objectivity to the intervention outcomes. In Dyad 1, Haseon's performance showed a 10% overlap and Juho's performance a 0% overlap between baseline and intervention conditions, which presented the intervention for Dyad 1 as highly effective. In Dyad 2, Seungyeon showed a 36% overlap and Jiha a 27% overlap between baseline and intervention conditions, which caused the researcher to deem the intervention as minimally effective for mother and moderately effective for the child. In Dyad 3, Soojin showed a 100% overlap and Kyungin a 33% overlap between baseline and intervention conditions, which resulted in the researcher's determination that the intervention was ineffective for the mother and minimally effective for the child. As Meindl and Cannella-Malone (2011) explained, a low POD score may have resulted from a strangely high single point in the baseline data, because POD was calculated by comparing data in the intervention phase to the single highest point in the baseline phase. In spite of ineffectiveness and minimal effectiveness in Dyad 3, Kyungin increased his contingent responses from 39.67% in the

baseline condition to 64.22% in the intervention condition as well as the number of his responses across phases. Moreover, diverse levels of effectiveness of the intervention among the dyads may be explained based on the qualitative analysis discussed below.

Parent-mediated intervention has been regarded as an important intervention method as parents became partners through learning specific skills and increasing their self-confidence and sensitivity to their children's behaviors (Siller & Sigman, 2002). In particular, teaching social skills, such as joint attention through natural reciprocal interaction, should be eventually used with children's familiar close family members, peers, and neighbors, so that parent-mediated intervention may be considered a worthy method in terms of skills generalization and maintenance (Schertz & Odom, 2007). Using parent-mediated intervention is not a one-off thing; rather, parents keep using the skills once they have been taught. The intervention "led to the development of strong emotional attachment, which, in turn, increases the motivation of the young child to attend to and learn from the mother" (Bronfenbrenner, 1999, p. 359). Eventually, effective parent-mediated intervention would support parent strengths as well as knowledge, making them effective as professionals' partners. In addition to conducting the study with familiar people, this dissertation study was carried out in natural settings, the participants' living rooms in their apartments. The natural setting may have strengthened the likelihood of skills generalization and maintenance.

Based on systems theory perspectives, factors influencing the effectiveness of the intervention were examined. Previous discussions of the results within single subject research methodology could be assimilated to the use of binoculars. Although the results were examined in relation to effectiveness by comparing types of bids, performance data, and participants, the examination could be situated within systems theory perspectives. Particularly, the study was

conducted in a different culture so the qualitative analysis founded on systems theory, which provided the ability to examine the "wood and the trees" at the same time, was critical (Gibson et al., 2004). Because autism spectrum disorder research has recently attracted attention on family focused intervention, future research is called using qualitative methods, with which multifaceted issues were captured, and examining both positive and negative factors related to family functioning based on family systems theory (Cridland, Jones, Magee, & Caputi, 2013).

From the results of interviews with the three participating mothers in this study, five systems were demonstrated as factors: mother, family, informal support, formal support, and sociocultural system. The results supported concepts and assumptions in systems theory as presented in Chapter 3. Each system as a whole was interconnected and formed hierarchically with other systems (White & Klein, 2008). Mother as a central system actively played with organized systems, kept cognitively processing inputs she had received as well as actively receiving information which she organized according to her own perceptions and sent as outputs (Bertalanffy, 1968; Magnavita, 2012). In addition, she has been growing through input, output, feedback, equifinality, and multifinality in an ongoing process (Hanson, 1995), or in other words through differentiation and integration (Magnavita, 2012). With large input of a child's diagnosis of autism, each system allowed input and change which is called *morphogenesis* in addition to trying to adjust with its own rules or patterns to acquire equilibrium called *morphostasis* (Becvar & Becvar, 1999).

In terms of boundary, a border between a system and its environment, each mother as one system made her own boundary. She filtered the flow of information, transformed, and reacted as her own in her boundary (White & Klein, 2008), although participants were all in the same sociocultural system, had similar families, informal and formal support systems as well as the

Korean culture had its own boundary compared to other cultures. Through boundaries, systems become either closed or open, according to degree of permeability. The mother system was more open to mothers who had struggles similar to theirs relative to their children with autism. They shared their feelings more with mother systems, whereas they were less open with professionals.

Context, in which systems are situated, is an important concept of systems theory. Each system is embedded in its native context and reciprocally influenced (Hanson, 1995; White & Klein, 2008). In the current study, acknowledging sociocultural factors, such as macrosystem, was critical to understanding each family's patterns, thoughts, and relationships. Change of context leads to a change in the interaction within a system so activities or behaviors should be understood according to their given contexts (Becvar & Becvar, 1999). Korean culture, Confucianism, and high context in communication style deeply impact each system. Emphasis on parent-child relationship, harmony and interrelation with others, and respect for ancestors and educated people has deeply influenced Korean people, family, community, government, and culture. This study showed each system as interconnected with the context. These Korean mothers considered joint attention or eye contact not as important as in other countries (Rogoff, 2003; Wilder et al., 2004). They felt guilty and were blamed themselves because of their cultural emphasis on parents' love for their children. They built hierarchical relationships with professionals and were often inquired by strangers due to their children's behaviors. The mothers provided their children with interventions or therapies, which had no evidence base, not considering costs.

Dunst and Trivette (1988), who quantitatively researched the determinants of interaction and play styles between caregiver and child with and without at-risk of disabilities by using

social systems theory, showed that interaction is influenced by mothers' emotional and physical health, intra-family support, availability and satisfaction with informal support as well as parent education level, family SES, child developmental quotient, and diagnosis. In addition, ability to effectively raise their children is related to the role demands, stresses, and supports from both within and outside the family unit (Dunst & Trivette). Furthermore, another study quantitatively corroborated that mothers of children with autism showed more depression than mothers of children with other developmental disabilities (Weitlauf, Vehorn, Taylor & Warren, 2012). The mothers' depression was related to parenting and partner relationship satisfaction.

In the current study, the mothers had first expressed confusion, helplessness, and physical fatigue because they couldn't control their children and their lives on their own and gradually tried to rely on their own ability to raise their children. As intra-family support, relationships with their husbands influenced the interaction between the mothers and their children. Haseon and Seungyeon built conjugal ties. They expressed satisfaction, appreciation, and empathy within their marital relationships. On the other hand, Soojin stated she couldn't share her feelings and knowledge with her husband, and made decisions on her own even though she didn't know what was best for her child. She additionally expressed that she sometimes argued with and endured her mother although her mother was helpful for their children. Therefore, she was more stressful and alone within her family. This difference in Soojin's relationships with her husband and her mother may have influenced intervention effects in this study.

In Korea, extended family support, as informal support, is powerful in helping parents raise their children with autism. A child is regarded as "as a product of all the generations of his or her family" (p. 259), who has a duty of continuing family name to the next generation as well as played a role of connection of their extended families (Kim et al., 2014). Someone who could

give an extra hand helps mothers actively manage their children. Although Korea has become westernized and nuclear families are prevalent, Korean families are still physically and emotionally interconnected with their extended families. All the mothers in the current study received physical support from extended family members at a short distance away. These supports were from the mothers' side of the family, rather than from the fathers' side.

In addition, offline or online social support groups, as another informal support, gave their members strong ties as they shared their feeling and struggles, exchanged information, and demonstrated empathy. The offline support group built by mothers in the same school provided more emotional attachment to one another, whereas the online support group involved more information sharing -- although mothers were very dependent on it at first. However, two of the mothers (not Soojin) had only extended family and support groups as an informal support system, not neighbors, co-workers, or old friends in changed circumstances.

Like other relationships in intrafamily systems, mothers' relationships with their children with autism were directly interrelated with the effectiveness of this study. The mothers all felt guilty about their children as they reflected on their past to find the cause of autism or what they had done wrong, and they had confused and mixed feelings about their children. The mothers were eager to make their children talk and tried as much as they could with pressure.

As a formal support factor, mothers had relationships with doctors, teachers, therapists, and the researcher. Mothers usually regarded themselves as consumers who needed to find good therapies or clinics rather than partners in relationship with professionals. Although they were doubtful about their professionals, they believed teaching or treating was not their job.

In addition, erroneous diagnosis of autism as an attachment problem prevented the children with autism from receiving appropriate early intervention for autism. Through the study,

mothers changed their perceptions of play and interaction style with their children with autism, and started perceiving themselves as important partners of their children.

Limitations and Implications

It should be noted that the results of this study may have been impacted by the limitations of procedural reliability. Procedural reliability played an important role in determining treatment fidelity. Because most of the training sessions were conducted in public places like cafés, the mothers were reluctant to be video recorded in front of other people. However, a form with the key training procedures was prepared and checked by the researcher as she conducted the training sessions. This checklist somewhat ensured that the researcher trainer followed procedures in a consistent and precise manner.

Another notable limitation of the study was lack of generalization and follow-up data. Generalization and follow-up procedures were planned in order to examine whether three parent-child dyads could generalize and maintain joint attention bids across settings and time. For generalization sessions, playgrounds were decided based on the family's weekly routines, closeness to their apartments, how frequently they visited the playgrounds, and how familiar the children were with the playgrounds. Although data were collected in the baseline phase, the generalization procedures were discontinued during intervention sessions because the mothers were unwilling to go outside due to hot and humid weather or the long rainy summer season in Korea. The generalization data were withdrawn in the results. Follow-up data were collected during two sessions for only the first dyad until the third dyad mastered the target skills. Considering this limitation, future studies should contain enough data for generalization and follow-up sessions so that they can verify effects of joint attention during generalization and follow-up conditions.

There was a limitation in the context given to this study. The context was a natural setting that emphasized natural occurrence and family convenience, with advantages of generalization of the skills they were taught and comfort to both mother and child. Therefore, it was hard to control independent variables such as toys and furniture other than five toys hierarchically chosen, size of the living room, and scheduled time. Those variables might have had an impact on data variability. For future studies, it is recommended that data be collected by considering the context in consistent manner.

This study focused only on joint attention gesture bids including giving, manipulating, and pointing bids and analyzed the effectiveness of bids as well as children's responses to them, although eye gaze or verbal comments in joint attention skills would also be good dependent variables to analyze in order to examine the effectiveness of joint attention skills for children with autism. In particular, modest gestures while interacting with others were regarded as appropriate attitude, whereas exaggerated gesture, exclamation, or loud laughter were considered as shallowness. Therefore, future studies conducted within the Asian culture might consider including eye gaze and verbal comments in joint attention skills.

There might be subjective, taken-for-granted or exaggerated expressions or interpretations associated with qualitative data, although in the current study the researcher, as an insider of the same culture, benefitted from understanding the participants' cultural background and building rapport with the mothers based on common experiences. In addition, the researcher interviewed only mothers so she couldn't obtain multiple interpretations of the context and other systems. The mothers' interviews could be subjective relative to her position. Future studies should include other systems, such as husband or external family member, to add and reveal more complexities in the qualitative data analysis, contexts, and systems. In addition, western-

based research has been dominant in interaction intervention and communication. As the current study showed, communication or interaction between mother and child was profoundly related to their culture. Future research needs to investigate through cross- cultural studies or use of other cultural backgrounds or settings how culturally relevant interventions should be implemented for families from different cultures in the field of special education.

Conclusions

This study extends previous studies in joint attention intervention for children with autism, in joint attention intervention in different cultural settings, especially in the Asian culture or Korean culture, in parent-mediated training, in natural-based research, and in analysis of intervention effects within mixed method research designs, indicating the effectiveness of teaching mothers joint attention bids to engage their children with autism in Korea. Using a mixed method of quantitative and qualitative data analysis captured participants' real life beyond interaction based on systems theory.

This study was a first step in addressing the effectiveness and influencing factors of joint attention intervention in another culture. There was a study conducted in Japan, in which joint attention skill was taught in laboratory with unfamiliar clinician, and cultural factors were not considered at all (Naoi et al., 2008). Effectiveness of parents' intervention for joint attention revealed commonalities and differences across different cultural settings. Despite various differences in cultural characteristics, interaction with joint attention skills was observed in both American and Korean cultural settings. Each native culture was important in human development, considering diversity "a strength of individuals" as well as "an asset for planning and promoting means to improve the human condition" (Lerner, 2006, p. 11). One of the most important aspects of intervention for children with autism is working and establishing

partnerships with families. The field of education has emphasized collaboration with families from diverse backgrounds, and calls for further studies on the family paradigm. Particularly, the intervention focused on family functioning as a dynamic and interrelated system was effective for families from diverse cultural backgrounds (Xu, 2007). Therefore, researchers should keep investigating various interventions across cultural settings with caution, providing practitioners and other researchers with deep insights into cultures. Korean researchers should also examine and develop culturally relevant interventions for children with autism.

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APPENDIX A

CONSENT FORM

CONSENT FORM

I, _____, agree to participate in a research study titled "Effects of Teaching Mothers of Children with Autism Joint Attention Bids in Korea" conducted by Ms. Seoyoung Shon, from the Department of Communication Sciences and Special Education at the University of Georgia (010-6236-4020) under the direction of Dr. Vail, Department of Communication Sciences and Special Education, University of Georgia (1-706-542-4578). I understand that my participation is voluntary. I can refuse to participate or stop taking part at anytime without giving any reason, and without penalty or loss of benefits to which I am otherwise entitled. If I decide to withdraw from the study, the information that can be identified as mine will be kept as part of the study and may continue to be analyzed, unless I make a written request to remove, return, or destroy the information.

The purpose of the study is to determine whether teaching mothers specific joint attention bids helps them communicate with their children diagnosed with an Autism Spectrum Disorder (ASD) or a significant developmental delay in the social domain. Joint attention is a communication skill where children are able to share attention about interesting objects. By engaging in specific joint attention bids, such as giving, showing, pointing, and eye gazing, mothers may be able to help their children with autism build communication skills, primarily responsiveness to others.

I am eligible to participate in this study if I am between 25 and 35 years old and if my child is diagnosed with an Autism Spectrum Disorder or a significant developmental delay in the social domain.

If I volunteer to take part in this study, the researcher will come to my house for 30-minute video-recorded sessions two to three times a week for three to six months. During these training sessions, the researcher will work with my child and me to increase my ability to engage in joint attention bids through different types of joint attention. This activity will take place in my home at times convenient for my family. The researchers will also ask me to participate in two video-recorded interviews about my child's diagnosis of autism, communication skills, and my experience with the research intervention. Each interview will last approximately one hour and take place at the beginning and end of the study.

The researcher will help me learn how to use joint attention skills effectively so that I may better communicate with my child. The researcher also hopes to learn something that may help other caregivers learn joint attention skills and communicate better with their children with autism in the future.

As I will be asked questions about my pregnancy and my child's diagnosis of an Autism Spectrum Disorder or other developmental delay, I may experience some mild psychological and social discomfort. The researcher will work with me to assure that I am comfortable and I will be able to refuse to answer any questions and stop the interview at any time.

No individually-identifiable information about me, or provided by me during the research, will be shared with others without my written permission, except if required by law. While it is not the aim of the research to obtain reportable information, if something occurs during the home visits which indicates that a child is being harmed or abused, the researcher will report the event to the appropriate authorities and the research records (including the video-recordings) could be subpoenaed by a judge. All individually identifiable data will be stored in a password protected file. If the research is presented in a professional setting or published, a pseudonym will be used in

place of my name in any published work for my protection. All data files will be stripped of my and my child's identifiable information once data collection is completed. The audio/video recordings will be destroyed immediately following transcription.

The investigator will answer any further questions about the research, now or during the course of the project.

I understand that I am agreeing by my signature on this form to take part in this research project and understand that I will receive a signed copy of this consent form for my records.

_____	_____	_____
Name of Researcher	Signature	Date

Telephone: _____
Email: _____

_____	_____	_____
Name of Participant	Signature	Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu.

The University of Georgia

동의서 (Consent Form)

본인, _____,은(는) The University of Georgia 의 특수교육학과 교수 베일 박사(Dr. Vail)와 박사과정 학생 손서영의 박사 연구 논문 “한국에서 자폐 범주성 장애를 가진 유아 어머니의 함께 주목하기(joint attention) 훈련 효과”에 참여할 것을 동의합니다. 본인은 이 연구에 자발적으로 참여합니다. 즉, 본인은 어떠한 불이익 없이 연구에 참여하는 것을 거절할 수 있고 언제든지 아무 이유없이 그만둘 수 있습니다. 만약 본인이 연구를 그만두기로 결정할 경우, 본인과 관련된 자료는 지우거나 돌려받거나 없애기를 요청한 경우가 아니면 연구의 한 부분으로 유지될 수 있으며 분석될 수 있음을 허락합니다.

본 연구의 목적은 자폐나 사회성부문에 발달지체로 진단받은 아이들과 그 어머니 들이 어머니들이 배운 함께 주목하기 훈련을 통해 의사소통하는데 도움이 되는지를 알아보는데 있습니다. 함께 주목하기는 의사소통 기술로 아이들이 관심있는 물건에 대해 관심을 공유하는 기술입니다. 구체적인 함께 주목하기 시도 기술로서 건네주기, 보여주기, 가리키기, 눈으로 응시하기 훈련을 통해 어머니들은 아이들과 의사소통 기술, 특히 그들의 연계 반응을 향상시킬 수 있습니다.

본인의 나이는 현재 30 세와 45 세 사이이며 자녀는 자폐 혹은 사회성 면에서 발달지체로 진단받았기에 이 연구에 참여할 수 있습니다.

본 연구에 참여하면 연구자는 본인의 집으로 3 에서 6 개월동안 일주일에 두세번씩 방문하여 30 분동안 본인과 자녀의 놀이 장면을 비디오로 촬영을 할 것입니다. 훈련 기간동안에는 연구자는 본인에게 다양한 함께 주목하기 시도 기술들을 사용하도록 가르쳐줄 것입니다. 이 훈련은 본인의 편의에 따라 편한 장소에서 이루어질 것입니다. 또한, 연구자는 두 번정도 에게 자녀의 진단과 의사소통 수준, 연구를 통한 경험등을 본인에게 인터뷰 요청을 할 것입니다. 각각의 인터뷰는 약 한시간 정도 연구의 처음과 끝에 이루어질 것입니다.

연구자는 효과적으로 함께 주목하기 기술 사용 방법을 가르쳐줌으로써 본인은 자녀와 의사소통을 효율적으로 할 수 있을 것입니다. 또한, 이 연구를 통해 다른 자폐아를 가진 부모들이 함께 주목하기 기술을 배우며 자녀들과 의사소통 기술을 향상시키는데 도움이 될 것입니다.

본인은 인터뷰 중에 임신기간과 자녀의 진단에 관한 질문을 받을때 심리적으로 불편할 수도 있습니다. 연구자는 본인이 편한 상태에서 대답을 하고 불편하면 언제든지 인터뷰 질문에 대답을 하지 않거나 인터뷰를 중단할 수 있다는 것을 설명할 것입니다.

연구를 하는 동안 본인의 혹은 본인에 의해서 제공된 개인정보는 법에서 요구하지 않는한 본인의 동의없이 다른 사람에게 보여줄 수 없습니다. 본 연구를 진행하는 중에 혹시 집을 방문했을 때 아이가 학대를 받았을 경우 연구자는 알맞는 기관에 보고할 수 있고 비디오 촬영 및 관련 연구 자료는 법의 집행을 위해 이용될 수 있습니다. 모든 개인 정보 자료들을

비밀번호로 보호된 파일 안에 보관될 것입니다. 만약 연구가 발표되거나 출판될 경우, 개인의 보호를 위해 본인의 이름은 가명으로 대치될 것입니다. 본인이나 자녀를 인식할 수 있는 정보와 관련된 모든 데이터 파일들은 연구 자료 수집이 끝난 후 삭제될 것입니다. 녹음이나 비디오 촬영된 자료들도 분석되어진 후 즉시 파기되어질 것입니다.

연구에 관해 질문이 있으시면 언제든지 연구자에게 연락하시면 대답해 드릴 것입니다.

나는 이 양식에 서명함으로써 이 연구에 참여할 것을 동의하며 이 동의서의 사본을 제공받을 것입니다.

_____	_____	_____
연구자 이름	서 명	날 짜
_____	_____	_____
부모 이름	**서 명**	**날 짜**

두장에 사인을 하시고 하나는 본인 보관용이며 나머지는 연구자에게 돌려주십시오.

연구 참여자로서 나의 권리에 관련하여 질문이나 문제가 있을 경우 The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail irb@uga.edu 로 연락해 주십시오.

APPENDIX B

PARENTAL PERMISSION FORM

PARENTAL PERMISSION FORM

I agree to allow my child, _____, to take part in a research study titled, "Effects of teaching mothers of children with autism joint attention bids in Korea," which is being conducted by Ms. Seoyoung Shon under the direction of Dr. Vail, from the Department of Communication Sciences and Special Education at the University of Georgia. My child's participation is voluntary which means I do not have to allow my child to be in this study if I do not want to. My child can refuse to participate or stop taking part at any time without giving any reason, and without penalty or loss of benefits to which she/he is otherwise entitled. If I decide to withdraw my child from the study, the information that can be identified as my child's will be kept as part of the study and may continue to be analyzed, unless I make a written request to remove, return, or destroy the information.

- The purpose of the study is to determine whether teaching mothers specific joint attention bids helps them communicate with their children diagnosed with an Autism Spectrum Disorder (ASD) or a significant developmental delay in the social domain. Joint attention is a communication skill where children are able to share attention about interesting objects. By engaging in specific joint attention bids, such as giving, showing, pointing, and eye gazing, mothers may be able to help their children with autism build communication skills, primarily responsiveness to others.

- My child is eligible to participate in this study if he/she is diagnosed with an Autism Spectrum Disorder or significant development delay in the social domain, is between 2 and 5 years old, and is not currently taking any medication related to his/her behaviors and is not receiving any intervention for social skills at the beginning of the study.

- If I allow my child to take part, the researcher will come to my house for 30-minute video-recorded sessions two to three times a week for three to six months. During these sessions, the researcher will work with my child and me to increase my child's responsiveness to joint attention bids using different types of play. This activity will take place at my home at times convenient for my family. The researcher will also ask permission to review and make copies of any psychological evaluations or medical records that are related to my child's diagnosis of an Autism Spectrum Disorder or significant development delay which may be provided by my child's day care center and/or me.

- By taking part in this research, my child may learn how to better communicate and respond to others using joint attention skills. The researcher hopes to use the findings from this research to learn something that may help other children with autism learn joint attention skills to increase their ability to communicate with their families.

- If my child has any performance anxiety, he/she may experience mild discomfort as he/she is asked to complete a series of video-recorded tasks. If my child feels uncomfortable, he/she can quit at any time.

- Any individually-identifiable information collected about my child will be kept confidential, unless otherwise required by law, and the video will not be made in public. While it is not the aim of the research to obtain reportable information, if something occurs during the home visits which indicates that a child is being harmed or abused, the researcher will report the event to the appropriate authorities and the research records (including the video recordings) could be

subpoenaed by a judge. All individually identifiable data and audio/video recordings will be stored in a password-protected file. Pseudonyms will be used in place of my child's name in any published work for the protection of my child's identity. All data files will be stripped of my child's identifiable information once data collection is complete. The audio/video recordings will be destroyed immediately following transcription.

The researcher will answer any questions about the research now, or during the course of the project, and can be reached by telephone at 010.6236.4020 or email at ssy75@uga.edu. I may also contact the professor supervising the research, Dr. Vail, at 1.706.542.4578 or cvail@uga.edu.

I understand the study procedures described above. My questions have been answered to my satisfaction, and I agree to allow my child to take part in this study. I have been given a copy of this form to keep.

I give my permission for the researchers to review and make copies of any psychological evaluations and/or medical records that are related to my child's diagnosis of an Autism Spectrum Disorder or significant development delay which will be provided by my child's day care center.
Circle one: YES/NO _____ Initial

I give my permission for the researchers to review and make copies of any psychological evaluations and/or medical records that are related to my child's diagnosis of an Autism Spectrum Disorder or significant development delay which I will provide to the researchers.
Circle one: YES/NO Initial _____

_____	_____	_____
Name of Researcher	Signature	Date

_____	_____	_____
Name of Parent	**Signature**	**Date**

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your child's rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail irb@uga.edu.

The University of Georgia

부모 동의서 (Parental Permission Form)

본인은 본인의 자녀, _____,가(이) The University of Georgia 의 특수교육학과 교수 베일 박사(Dr. Vail)와 박사과정 학생 손서영의 박사 논문 “한국에서 자폐 범주성 장애를 가진 유아 어머니의 함께 주목하기(joint attention) 훈련 효과”에 참여할 것을 허락합니다. 본인의 자녀는 자발적으로 이 연구에 참여합니다. 즉, 어떠한 불이익 없이 연구에 참여하는 것을 거절할 수 있고 언제든지 아무 이유없이 그만 둘 수 있습니다. 만약 본인의 자녀가 그만두기를 결정했을 경우, 아이에 관한 자료를 제거하거나 돌려받거나 없애기를 요구하지 않는 한 아이와 관련된 자료는 연구의 일부로 쓰이는 것을 허락합니다.

- 본 연구의 목적은 자폐나 사회성부분에 발달지체로 진단받은 아이들과 그 어머니들이 어머니들이 배운 함께 주목하기 훈련을 통해 의사소통에 도움이 되는지를 알아보는데 있습니다. 함께 주목하기는 의사소통 기술로 아이들이 관심있는 물건에 대해 관심을 공유하는 기술입니다. 구체적인 함께 주목하기 시도 기술로서 건네주기, 보여주기, 가리키기, 눈으로 응시하기 훈련을 통해 귀하는 귀하의 의사소통 기술을 향상시키며, 특히 자녀의 연계 반응을 향상시킬 수 있습니다.

- 본인의 자녀는 만 2 세에서 5 세 사이로 자폐 혹은 사회성 면에서 발달지체로 진단받았으며, 현재 행동 수정을 위한 어떠한 약도 복용하지 않으며, 본 연구를 시작하는 시점에 다른 사회 기술 훈련을 받고 있지 않습니다.

- 본 연구에 참여하면, 연구자는 본인의 집으로 3 에서 6 개월동안 일주일에 두세번씩 방문하여 30 분동안 본인과 자녀의 놀이 장면을 비디오로 촬영을 할 것입니다. 훈련 기간동안에는 연구자는 본인에게 다양한 함께 주목하기 시도 기술들을 사용하도록 가르쳐줄 것입니다. 이 훈련은 본인의 편의에 따라 편한 장소에서 이루어질 것입니다. 또한, 연구자는 본인이나 어린이집을 통해 자녀의 진단과 관련된 심리 검사 자료나 병원 자료를 요청할 수도 있습니다.

- 본 연구에 참여함으로써 본인의 자녀는 의사소통하는 방법을 배우거나 함께 주목하기 기술에 반응하는 방법을 배울 것입니다. 또한, 이 연구를 통해 다른 자폐아과 그 가족들이 함께 주목하기 기술을 배우며 그들의 의사소통 기술을 향상시키는데 도움이 될 것입니다.

- 본 연구에 물리적인 위험 부담은 없지만, 비디오 촬영을 하면서 사소한 불편함을 경험할 수도 있습니다. 만약, 자녀가 불편해하면 언제든지 그만둘 수 있습니다.

- 본인의 자녀와 관련된 개인 정보자료의 기밀 유지는 저희에게 무엇보다 중요합니다. 개인 자료는 법에서 요구하지 않는 한 비밀로 유지될 것이며 비디오 자료는 공공의 장소에서 촬영되지 않을 것입니다. 본 연구를 진행하는 중에 혹시 집을 방문했을 때 아이가 학대를 받았을 경우 연구자는 알맞는 기관에 보고할 수 있고 비디오 촬영 및

관련 연구 자료는 법의 집행을 위해 이용될 수 있습니다. 모든 개인 정보 자료과 녹음 및 비디오 촬영 자료들은 비밀번호로 보호된 파일 안에 보관될 것입니다. 만약 연구가 발표되거나 출판될 경우, 개인의 보호를 위해 자녀의 이름은 가명으로 대치될 것입니다. 본인이나 자녀를 인식할 수 있는 정보와 관련된 모든 데이터 파일들은 연구 자료 수집이 끝난 후 삭제될 것입니다. 녹음이나 비디오 촬영된 자료들도 분석되어진 후 즉시 파기되어질 것입니다.

연구와 관한 질문은 언제든지 연구원 손서영 (010.6236.4020 또는 ssy75@uga.edu)이나 책임 교수 Dr. Vail(1.706.542.4578 또는 cvail@uga.edu)로 연락할 수 있습니다.

본인은 연구와 관련된 절차들을 이해하였습니다. 본인은 연구에 관하여 질문하고 만족할 만한 답변을 들을 기회를 가졌습니다. 이에, 본인의 자녀가 되어졌고 연구에 참여할 것을 허락합니다. 나는 보관용으로 이 부모 동의서를 제공받았습니다.

체크하세요: 예/아니오　　사인:

본인은 연구자가 어린이집을 통해 자녀의 자폐나 발달지체 진단과 관련된 심리 검사 자료나 병원 자료를 열람하거나 복사하는 것을 허락합니다.

체크하세요: 예/아니오　　사인:

본인은 연구자가 본인을 통해 나의 아이의 자폐나 발달지체 진단과 관련된 심리 검사 자료나 병원 자료를 열람하거나 복사하는 것을 허락합니다.

_____	_____	_____
연구자 이름	서 명	날 짜
_____	_____	_____
부모 이름	**서 명**	**날 짜**

두장에 사인을 하시고 하나는 본인 보관용이고 나머지는 연구자에게 돌려주십시오.

연구 참여자로서 본인의 권리에 관련하여 질문이나 문제가 있을 경우 The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail irb@uga.edu 로 연락해 주십시오.

APPENDIX C

DATA COLLECTION SHEET

Data Collection Sheet

Observer: Dyad:

Date: Session: Time (Total Min.):

Min.	Bid 1	Bid 2	Bid 3	Total
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
Total				

Key: +: correct -: Incorrect/no response

Bids	Rate (no./min)	Correct		Incorrect		No response	
1		N	%	N	%	N	%
2		N	%	N	%	N	%
3		N	%	N	%	N	%
Total		N	%	N	%	N	%

Commets:

APPENDIX D

JOINT ATTENTION TRAINING MATERIALS

Joint Attention

❖ What is joint attention?

- It is joint interests, interest sharing, attention together (based on terms used by Korean special education professionals)
- It is early developing social-communicative skill
- It is interaction in which two people share attention with respect to interesting objects or events

❖ Why is joint attention important?

- Natural social interaction is an essential skill for children with autism
- Improve social development and communicative skills and help a child attend to objects/environment
- Related to current and later expressive language ability and increase vocabulary size
- Play important role in encouraging a child to guess another's mind, play imaginative play, or use complex expressions

❖ Four kinds of joint attention bids

1. Giving: place a toy in a child's hand or lap, or create contact between the child's hand or foot with toy
2. Touching: touch or tap a toy
3. Showing: place a toy within the field of the vision of the child
4. Pointing: point to a toy

(Eye gaze: shift between a child and a toy)

❖ Some additional play tips that may help joint attention increase

- Respond to your child's behavior as if he intends to interact with you
- New bids should either be directed at toy he is engaged with or to introduce new toy when he has lost interest
- Follow a child's lead
- Make eye contact first
- Use excited voice
- Try natural prompt
    - Call his name to receive his attention
    - Make his chin smoothly turn toward you if a child doesn't look
    - Reinforce with praise, hug, smiling, or playing together if a child jointly interacts
- Say words along with the joint attention bid
    - Use simple word or sentence, if possible
    - Extend child's word
- Play environment
    - Play where the child is not distracted and get down to a child's eye level
    - Play with five target toys that are intermixed from high interest to neutral interest (but if the child is interested in another toy or material, it is possible to try with it)

함께 주목하기 (Joint Attention)

❖ 함께 주목하기란?
- 공동 관심, 관심 공유, 공동주의, 함께 주의하기라고도 해요.
- 생의 초기에 전형적으로 발달하는 사회적-의사소통 기술이에요.
- 사물이나 사건에 대한 주의를 타인과 공유하는 상호 작용이에요.

❖ 왜 함께 주목하기가 중요한가?
- 자연스럽게 나타나는 사회적 상호작용 기술로 특히 자폐적 성향을 가진 아이들에게 꼭 필요한 기술이에요.
- 사회성 발달과 의사소통 기술 향상시키고 사물이나 환경에 참여하도록 유도해요.
- 현재 수용 언어와 표현 언어 능력과 관련이 되며 이후의 언어발달과 어휘력 증진에 영향을 미쳐요.
- 이후에 출현하는 더욱 복합적인 표현언어나 상징놀이, 또한 상대방의 마음을 추측하는 데도 중요 역할을 해요.

❖ 4 가지의 함께 주목하기
1.주기: 아이의 손과 같은 신체에 물건을 건네주거나 접촉시켜 상호작용
2.건드리기: 물건을 건드리거나 쳐서 상호작용
3.보이기: 아이의 시야에 물건을 보여주어 상호작용
4.가리키기: 물건을 손가락으로 가리켜 상호작용
(시선 주기: 물건에 시선을 옮겨 상호작용)

❖함께 주목하기을 향상시킬 수 있는 놀이 기술들
- 아동의 행위가 마치 상호작용을 의도한 것처럼 반응
- 아동의 놀이에 부모가 개입하거나 흥미를 잃었으면 새 장난감을 제시
- 아동이 이끄는 대로 따라하기
- 아동의 차례에 멈춰서 아동의 반응 기다리기
- 눈맞춤을 먼저하기
- 소리나 표정을 과장되고 흥미롭게 표현
- 자연적 촉진 시도
  - 아이 이름을 불러 아이의 주의 끌기
  - 보지 않을 경우 턱을 살짝 돌려주기
  - 반응을 보이면 말로 응답하기, 칭찬, 안아주기, 미소, 놀이로 화답
- 함께 주목하기 기술과 더불어 말 반복 사용하기
  - 단순한단어 한 단어나 짧은 문장 사용 (되도록 명사 사)
  - 말 확장하기
- 놀이 환경
  - 되도록 아이의 주의가 산만해지지 않은 곳, 아이와 같은 눈높이가 되는 환경

– 주로 5 가지 장난감을 가지고 놀도록 시도하며 좋아하는 것과 아닌 것을 섞어서 놀이 (단, 아이가 다른 물건에 관심을 보일 때 다른 물건으로 시도 가능)

함께 주목하기

함께 주목하기 (Joint Attention)

- 공동 관심, 관심 공유, 공동주의, 함께 주의하기
- 생의 초기에 전형적으로 발달하는 사회적-의사소통 기술
- 사물이나 사사건에 대한 주의를 타인과 공유하는 상호 작용

함께 주목하기의 중요성

- 꼭 필요하고 자연스러운 사회적 상호작용 기술
- 사회성 발달과 의사소통 기술 향상
- 현재 수용 언어와 표현 언어 능력와 관련
- 어휘력 발달에 영향
- 이후에 출현하는 더욱 복합적인 표현언어, 상징놀이, 마음 추측에도 중요 역할
- 사물이나 환경에 참여하도록 유도
- 특히, 자폐적 성향을 가진 아이들에게 필요한 기술

함께 주목하기 종류

1. 주기: 아이의 손과 같은 신체에 물건을 건네주거나 두고 상호작용
2. 건드리기: 물건을 건드리거나 쳐서 상호작용
3. 보이기: 아이의 시야에 물건을 보여주어 상호작용
4. 가리키기: 물건을 손가락으로 가리켜 상호작용
5. 시선 주기: 물건에 시선을 옮겨 상호작용

놀이 기술

- 아동의 행위가 마치 상호작용을 의도한 것처럼 반응
- 아동의 놀이에 부모가 개입하거나 흥미를 잃었으면 새 장난감을 제시
- 아동이 이끄는 대로 따라하기
- 아동의 차례에 멈춰서 아동의 반응 기다리기
- 눈맞춤을 먼저하기
- 소리나 표정을 과장되고 흥미롭게 표현

- 자연적 촉진 시도
  - 아이 이름을 부르기
  - 보지 않을 경우 턱을 살짝 돌려주기
  - 반응을 보이면 말로 응답하기, 칭찬, 안아주기, 미소, 놀이로 화답
- 함께 주목하기 기술과 더불어 말 반복 사용하기
  - 단순화된 한 단어나 짧은 문장 사용
  - 말 확장하기
  - 되도록 명사 사용
- 놀이 환경
  - 되도록 아이의 주의가 산만해지지 않은 환경 제공
  - 아이와 같은 눈높이가 되는 환경
  - 주로 5가지 장난감을 가지고 놀도록 시도
  - 단, 아이가 다른 물건에 관심을 보일 때 다른 물건으로 시도 가능