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The Efficacy of a Literature-Based Social Communication Intervention on Teacher Report of Sociability for Children with Language Impairment

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The Efficacy of a Literature-Based Social Communication Intervention on
Teacher Report of Sociability for Children
with Language Impairment

Mnisa Lyn Harlow

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Master of Science

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ABSTRACT

The Efficacy of a Literature-Based Social Communication Intervention on Teacher Report of Sociability for Children with Language Impairment

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Master of Science

Recent research indicates that children with language impairment (LI) often experience difficulties with social communication. Although the empirical basis for general social communication intervention is growing, information documenting the efficacy of these interventions for children with LI remains limited. The purpose of this study was to examine the effectiveness of a social communication intervention on teacher perceptions of sociability in five elementary-aged children with LI. The intervention focused on the presentation and use of children's stories to target aspects of emotion understanding. The two sociability subscales of the Teacher Behavior Rating Scale (TBRS), impulse control/likeability and prosocial behavior, were used as variables with which to measure teacher perception. Pre and post intervention measures of teacher ratings were taken and compared for each participant. Results indicated that four of the five participants received higher ratings for prosocial behaviors following treatment, with two participants scoring within typical range for their age. Two participants remained stable in their pre and posttreatment scores for impulse control/likeability, one participant increased in their ratings, and two of the participants had a decline in posttreatment scores for impulse control/likeability. This study revealed noteworthy improvements in prosocial behaviors in children with LI, even while problems with impulse control remained or increased. This was to be expected considering the intervention focused on emotion understanding which leads to prosocial behavior, whereas the intervention did not focus explicitly on impulse control. Implications of these results were discussed and suggestions for further research were offered.

Keywords: language impairment, social communication, emotion understanding, sociability, intervention, school-age children

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DESCRIPTION OF THESIS CONTENT AND STRUCTURE

This thesis, *The Efficacy of a Literature-Based Social Communication Intervention on Teacher Report of Sociability for Children with Language Impairment*, is part of a larger research project, and all or part of the data from this thesis may be published as part of articles listing the thesis author as a co-author. An annotated bibliography is presented in Appendix A and Appendix B contains the results of the Clinical Evaluation of Language Fundamentals-5 (CELF-5) administered to the participants.

Introduction

Children with language impairment (LI) may present with difficulties in other areas of development in addition to deficits in linguistic form and content. Recent research demonstrates that many children identified with LI also have problems with aspects of social communication (Brinton & Fujiki, 2014). Social communication is “The intersection of language and social behaviors observed during peer interactions...that is, the verbal and nonverbal behaviors children display as they approach peers, maintain conversations, and resolve conflicts during peer interactions” (Timler, Olswang, & Coggins, 2005, pg. 171). Deficits in social communication often lead to behaviors that result in problematic social outcomes. One well-documented social problem experienced by children with LI is withdrawn behavior. Children with LI often display greater levels of reticent behavior, experience peer exclusion, and participate in solitary play more than their typically developing peers (Fujiki, Brinton, Morgan, & Hart, 1999; Hart, Fujiki, Brinton, & Hart, 2004). The effect of withdrawal, however, might be mediated if children were highly sociable in those instances when they did interact with peers (Hart et al., 2004). The development of sociability in children with LI has received less attention in research than its counterpart, withdrawal. Sociability is defined by Cheek and Buss (1981) as the tendency to affiliate with other people and to prefer the company of others to solitude. Sociable interactions are marked by playing cooperatively, comforting, offering help, controlling one’s emotions, and participating in social conversation. The current study is part of a larger project designed to examine an intervention to improve the social communication skills of children with LI. The goal of this thesis was to describe the effectiveness of the social communication intervention on teacher perceptions of sociability in children who participate in the treatment.

Social Communication Problems in Children with LI

Several studies have documented that children with LI encounter problems with a variety of social and interactive tasks. The problems these children experience include gaining access to on-going interactions (Brinton, Fujiki, Spencer, & Robinson, 1997; Liiva & Cleave, 2005), participating in cooperative groups and learning activities (Brinton, Fujiki, & Higbee, 1998; Brinton, Fujiki, Montague, & Hanton, 2000), negotiating with peers (Brinton, Fujiki, & McKee, 1998), and resolving conflicts (Timler, 2008).

Children with LI who have difficulty with these tasks often experience poor social outcomes. For example, these children may encounter peer rejection (Mok, Pickles, Durkin, Conti-Ramsden, 2014), fewer friendships (Fujiki, Brinton, Hart, & Fitzgerald, 1999), and decreased friendship quality (Durkin & Conti-Ramsden, 2007). Children with LI may also be rated by teachers as having poorer social skills and more behavior problems than typical classmates (Bakopoulou & Dockrell, 2016). In addition, children who experience difficulties with social and interactive tasks may also demonstrate adverse social behaviors such as withdrawal and reduced sociability.

Social Behaviors in Children with LI

Withdrawal. As indicated earlier, children with LI often demonstrate withdrawn behavior in school settings (Fujiki, Brinton, Morgan et al., 1999; Hart et al., 2004; Wadman, Durkin, & Conti-Ramsden, 2008). There are three subtypes of withdrawn behavior that have been studied in children with LI. These include solitary-passive withdrawal, reticence, and solitary-active withdrawal (Coplan, Rubin, Fox, Calkins, & Stewart, 1994).

Children who demonstrate solitary-passive withdrawal tend to play away from the group or are engaged in other constructive activities while playing alone (Asendorpf, 1991). Children

with LI have occasionally, but not consistently, been observed to participate in solitary-passive behaviors (Fujiki, Brinton, Morgan et al., 1999; Hart et al., 2004). Although this subtype is generally not considered problematic, Fujiki, Brinton, Morgan et al. (1999) found that solitary-passive withdrawal was negatively correlated with sociable behaviors.

Reticence includes behaviors such as being unoccupied or staring at others without interacting (Hart & Robinson, 1996). In contrast to solitary-passive withdrawal, reticence is demonstrated by children who want to participate in activities with peers, but often play alone due to fear or anxiety. Asendorpf (1991), however, suggested that the subtypes of reticence and solitary-passive withdrawal may present as one behavior as a child grows older, with both behaviors being characterized by fear and anxiety. Hart et al. (2004) also confirmed correlations between reticence and solitary-passive withdrawal. Reticent behavior can be problematic for children with LI because it has been linked to peer rejection (Rubin, Coplan, & Bowker, 2009).

Solitary-active withdrawal is characterized by repetitive sensorimotor activity and solitary dramatic play (Asendorpf, 1991). Children demonstrating this type of withdrawn behavior may present with unusual motor movements, such as repetitive hand movements. They may also engage in activities in the same vicinity of their peers without interacting directly with other children. For example, the child may pretend to repair an oven in the midst of other children playing house without actually interacting with their peers or contributing to the group play. Solitary-active withdrawal is not as common as the other subtypes of withdrawn behavior, however, it is considered to be a problematic behavior as it often leads to peer rejection (Coplan et al., 1994).

Sociability. As indicated, children with LI encounter a range of social problems including withdrawal. However, when contrasted with the withdrawn subtypes mentioned,

sociability provides a more comprehensive understanding of the social behaviors experienced by children with LI. Sociability, as mentioned earlier, is characterized by interactive behaviors such as playing cooperatively, comforting, attentiveness, controlling one's emotions, and contributing to social conversation. As with withdrawn behavior, researchers have identified subtypes of sociability. The subtypes of sociability include impulse control/likeability, hereafter referred to as likeability, and prosocial behavior (Fujiki, Brinton, Hart et al., 1999; Hart et al., 2004). The purpose of the current study was to monitor the two subtypes of sociability in order to determine if the implementation of a social communication intervention involving children with LI would result in changes of teacher perceptions of sociability in those children participating in the intervention.

Likeability refers to conforming and friendly behaviors such as emotional impulse control and cooperative play. Likeability describes a child's ability to receive criticism well and display leadership skills. Likeability is also reflected in a child's level of acceptance, such as how much peers like to be with the child and how well they receive the child into ongoing play or other activities (Fujiki, Brinton, Hart et al., 1999).

Prosocial behavior includes comforting, sympathizing, helping, and sharing during social interactions (Radke-Yarrow, Zahn-Waxler, & Chapman, 1983). Studies have found that children with LI experience problems with prosocial behavior. Hart et al. (2004) suggested that the severity of LI was correlated to the child's level of prosocial behavior. It was also suggested that severe difficulty with receptive or expressive language was predictive of lower prosocial ratings. This outcome is not surprising considering many prosocial behaviors involve language comprehension and expression.

Several studies have suggested that children with LI are rated as less sociable by teachers (Bakopoulou & Dockrell, 2016; Brinton et al., 2000; Fujiki, Brinton, Morgan et al., 1999; Fujiki et al., 2004, Hart et al., 2004). This research demonstrated that children with LI differ in social competence in relation to their typically developing peers. A variety of factors may contribute to the child's level of social competence. For example, deficits in language comprehension and expression constitute one important factor, although other factors may be at play as well. One factor receiving increased attention in children with LI is emotional competence. Research exploring relationships between social communication and emotional competence will be discussed in the following section. Lastly, an intervention addressing specific aspects of emotional competence for children with social communication problems is proposed.

Social Communication and Emotional Intelligence

Effective social communication is influenced by a number of factors including language processing, pragmatics, and social cognition. An aspect of social cognition that is critical to a child's social interactions is emotional competence. As Denham noted, "children who understand emotion better also have more positive peer relations" (Denham, 1998, p. 14).

Emotional competence, also referred to as emotional intelligence, is defined as "the ability to perceive and express emotions, to understand and use them, and to manage emotions so as to foster personal growth" (Salovey, Detweiler-Bedell, Detweiler-Bedell & Mayer, 2008, p. 535). It has been established in the literature that children with poor social outcomes often experience difficulty with emotional intelligence (Denham, 1998; Denham, von Salisch, Olthof, Kochanoff, & Caverly, 2002). Recent research recognizes that children with LI may also have challenges with features of emotional intelligence including regulating, expressing, and

understanding emotions (Brinton & Fujiki, 2005). These basic components of emotional intelligence are crucial for social and academic development.

Children with LI may experience difficulties with various aspects of emotional intelligence including interpreting emotion expressed by prosody (Boucher, Lewis, & Collins, 2000; Fujiki, Spackman, Brinton, & Illig, 2008). Fujiki et al. investigated the ability of children to use prosodic cues to identify emotions. The study involved presenting children with LI and their chronologically age-matched peers with a short narrative read by actors to express *anger*, *sadness*, *happiness* and *fear*. The children were then asked to identify the conveyed emotion. The children with LI performed significantly lower than their typical peers in identifying the emotion expressed in the passage, with *fear* being the most difficult to identify. Fujiki et al. concluded that difficulty in understanding emotion conveyed by prosody may be indicative of deficits in emotion understanding.

Children with LI may also have difficulty inferring emotions conveyed by facial expressions (Spackman, Fujiki, Brinton, Nelson, & Allen, 2005; Merkschlager, Amorosa, Kiefl, & Martinius, 2012). For example, Merkschlager et al. asked a group of 24 children with LI and a group of 24 typically developing children to identify emotions conveyed in the facial expressions of actors shown in 13 different silent movie scenes. When comparing the performance of children with LI to those of their age-matched controls, the children with LI scored significantly poorer than their normally developing peers. The researchers concluded that difficulty with nonverbal expressions of emotion was closely associated with LI.

Another aspect of emotional intelligence studied in children with LI is their ability to understand emotion elicited in specific situations (Ford & Milosky, 2003; Ford & Milosky, 2008; Spackman, Fujiki, & Brinton, 2006). For example, Ford and Milosky explored the ability of

kindergarten children with LI and their typically developing peers to infer the emotional reactions of characters from story presentations. Results demonstrated that children with LI performed significantly lower than their peers. These children were also more likely to make valance errors, such as *happy* for *angry*, when the intended emotion was misidentified. Ford and Milosky concluded that the children with LI had difficulty integrating emotion understanding into social inferencing contexts concerning emotion.

Spackman et al. (2006) extended Ford and Milosky's (2003) study to older, school-aged children with LI. Participants were presented with stories in which the main character elicited emotions such as *happy*, *sad*, *angry*, or *afraid*. The children were asked to identify the emotion of the main character based on the context of the situation and then explain why the character would experience that emotion. The results of the study replicated those previously found by Ford and Milosky; they discovered that children with LI were significantly less accurate and sophisticated in inferring emotions when compared to their typically developing peers.

A relatively complex aspect of emotional intelligence recently explored by researchers is a child's ability to dissemble (hide) emotion in order to preserve a social relationship. Brinton, Fujiki, Hurst, Jones, and Spackman (2015) presented 10 hypothetical situations to 22 children with LI and their typically developing peers in which the main character experienced an emotion that for social purposes warranted hiding (e.g., eating a disliked casserole provided by the neighbor). The children were then asked what the character felt, what the character should say, and what the character's parents would want him/her to do. During a second task, the children were presented with four naturally occurring opportunities to dissemble emotions (e.g., receiving a disappointing prize for participation in the study). Although there was not a significant difference between the two groups of children with regard to their judgment of social rules

governing the given situations, the children with LI identified significantly fewer incidences in which it was appropriate to hide emotion. In the naturalistic scenarios, there was not a significant difference between the two groups of children in low-cost scenarios (those in which the child had nothing to lose by hiding emotion). In the high-cost scenarios (where hiding emotion meant loss of a desired prize), typically developing children dissembled emotions more often than the children with LI. These results indicated that children with LI may have difficulty understanding the impact expressing emotions can have on social interactions and personal relationships.

The studies reviewed above demonstrate that children with LI experience difficulty with various aspects of emotional intelligence. It is likely that these difficulties have a significant impact on the social communications and interactions of children with LI.

Social Communication Intervention for Children with LI

Although there is increasing evidence that children with LI demonstrate difficulties with social communication, including aspects of emotional intelligence, there are only a few studies that address the efficacy of interventions designed to address social communication. By way of illustration, an ad hoc committee of the American Speech-Language-Hearing Association conducted a systematic review of the literature and found only eight published studies addressing language use in social contexts, with only one addressing aspects of emotional intelligence (Gerber, Brice, Capone, Fujiki, & Timler, 2012). More recently, additional studies addressing social communication interventions have been completed (Adams, Lockton, Gaile, Earl, & Freed, 2012; Fujiki, Brinton, McCleave, Anderson, & Chamberlain, 2013). There is still an important need for additional studies in this area, however.

Fujiki et al. (2013) investigated the effectiveness of a social communication intervention designed to increase validating comments in children with LI. Validating comments were defined as statements directed at peers with the intent of encouraging further interaction (e.g., positive statements, information sharing, compliments on actions, comments of consolation, statements of encouragement, and social acknowledgements). Four participants were included in the study with three participants receiving 40 (15-minute) sessions and the remaining participant receiving 20 (30-minute) sessions. Results demonstrated varying increases in the production of validating comments across the four participants. One child made notable gains, two of the children made more modest gains, and one child demonstrated minor improvement. The intervention conducted by Fujiki et al. addressed emotional competence through the facilitation of positive interactions between children with LI and their peers.

Adams and colleagues (2012) at the University of Manchester conducted the first randomized control study examining a social communication intervention involving children with pragmatic language impairment (PLI). The intervention targeted three areas of social communication development including language processing, pragmatics, and social understanding (e.g., theory of mind). Participants in the study included 88 children, ages 6-11 years old, with a diagnosis of PLI. Of the 88 participants, 57 were randomly assigned to a treatment group and 28 were randomly assigned to a treatment-as-usual (control) group. Both groups received up to 20 sessions of intervention with each session being an hour in length. Results of the study demonstrated that those participating in the social communication intervention made significant gains in conversational ability compared to those in the control group. Likewise, teacher and parent ratings indicated perceived improvements in social communication, social skills, and language ability of those children in the intervention group.

Adams et al. concluded that positive results can occur within a relatively brief period of therapy when the intervention is designed to target the specific needs of the participant.

Although Adams et al.'s (2012) work is a significant contribution, it should be noted that there is still a need for research to be done in order to further investigate and develop effective social communication interventions. The current study is an investigation of an intervention targeting aspects of social cognition, specifically emotional intelligence. The purpose of the study is to examine one measure of the effectiveness of the social communication intervention on teacher perceptions of sociability in children with LI. This study will examine the pre and posttreatment ratings of the two subtypes of sociability, likeability and prosocial behaviors. Teacher perception is examined because teachers have considerable experience observing children interacting in social contexts.

Method

Research Design and Data Collection

This thesis was part of a larger project that examined the effectiveness of a social communication intervention for children with LI. The project employed a single subject, multiple baseline design. The focus of this thesis was to evaluate the impact of the intervention on teacher perceptions of sociable behaviors in children participating in the intervention. The Teacher Behavior Rating Scale (TBRS; Hart & Robinson, 1996) was administered to provide pre and posttreatment measures of the two subtypes of sociability, impulse control/likeability and prosocial behaviors.

Participants

Participants in the intervention were recruited with the assistance of the speech language pathologist of a local elementary school. At the time of identification, participants were

identified with LI and were receiving speech and language intervention in the school setting. All children received a pure tone hearing screening given by the school district audiologist or speech language pathologist with the results being unremarkable. Additionally, the school psychologist ruled out general intellectual disability for all participants. Children who had previously been characterized with attention deficits were included, however.

Standardized measures of language were administered to each participant. The Clinical Evaluation of Language Fundamentals-5 (CELF-5; Semel, Wiig, & Secord, 2013) was used to determine a core language score for each of the children, and the Children's Communication Checklist-2 (CCC-2; Bishop, 2003) was administered to document social communication difficulties. The results of these measures are presented in Table 1. The subtest scores for the CELF-5 are included in Appendix B.

To identify participants, the speech language pathologist reviewed all caseload files and identified those children receiving special services for LI in addition to having social communication deficits. Once appropriate participants were selected, the speech language pathologist contacted the families of the children in order to determine parents' interest in having their children participate. Parents who were interested in having their child take part in the intervention provided the speech language pathologist and researchers with written permission. Next, the researchers administered standardized testing, conducted informal assessments and probes, and began treatment. All intervention administered by the researchers was coordinated with the school speech language pathologist to ensure that the services provided were aligned with current IEP goals. A description of each participant is detailed below.

Table 1

Children's Communication Checklist-2 (CCC-2; Bishop 2006) and Clinical Evaluation of Language Fundamentals-5 (CELF-5; Semel, Wigg, & Secord, 2003) Scores

Instruments	Participants				
	MG	KJ	PW	JS	VA
CCC-2 ¹ Subtests					
Speech	1	<1	<1	25	1
Syntax	25	<1	16	50	2
Semantics	5	5	5	50	1
Coherence	1	37	9	9	<1
Initiation	37	2	50	37	9
Scripted Language	25	50	25	37	9
Context	16	16	9	25	5
Nonverbal Communication	5	5	9	16	<1
Social Relations	5	2	5	1	<1
Interests	37	50	25	37	5
GCC ² percentile	5	3	6	23	<1
SIDI ³	9	7	9	-6	1
CELF-5 ⁴					
Core Percentile	4	2	9	9	5

Note. ¹Children's Communication Checklist-2 (CCC-2). ²General Communication Composite. ³Social Interaction Difference Index. ⁴Clinical Evaluation of Language Fundamentals-5 (CELF-5).

MG (11:0 years; months). MG was a Caucasian female with a diagnosis of specific learning disorder (SLD) and LI. MG was enrolled in a mainstream classroom from kindergarten through 2nd grade with pull-out resource services provided. For her 3rd grade year, MG was placed in a small-group classroom for children with learning disabilities in order to receive more individualized instruction, however, she returned to a mainstream classroom in 4th grade. At the time of the study, she attended a mainstream 5th grade class with continued self-contained resource. She also received speech-language services on a pull-out basis. Her speech and language goals were centered on helping her participate effectively in social conversations and collaborations with others in addition to expressing her own thoughts and ideas clearly. MG's scores on the CCC-2 indicated difficulty on the nonverbal communication and social relations

subtests, as well as the structural areas of speech, semantics, and coherence. She produced a core score on the CELF-5 in the 5th percentile.

MG's clinician identified her as having solid communication skills at a basic conversational level; however, she struggled when there was pressure for greater conversational detail and social inferencing associated with higher-level communication. When MG was faced with conversational tasks that were beyond her current performance level, she compensated by dominating the conversation. The clinician also indicated that MG had difficulties picking up on social cues and nonverbal aspects of communication. MG's teacher commented that MG was motivated to interact with others and was cooperative, helpful, and well-mannered in class; however, her deficits in language skills caused her to sound immature compared to children her age.

KJ (10:2). KJ was a Caucasian male who qualified for special education services at the age of 6:2 due to LI. At the age of 6:6 he began receiving special education services in the areas of reading, writing, and math under the diagnosis of SLD. At the start of the study, KJ attended a mainstream 4th grade class with continued resource services. His speech and language services included intervention for articulation and language. KJ's scores on the CCC-2 revealed deficits in initiation, nonverbal communication, and social relations. His scores in the structural areas of speech and language fell below the 6th percentile indicating difficulties with speech, syntax, and semantics. His core language score on the CELF-5 was in the 2nd percentile.

According to his clinician, KJ's social conversations were often one-sided and off topic. He was motivated to interact socially if the topic accommodated his interests; otherwise he had difficulty responding appropriately to topics initiated by others. The clinician also commented that KJ demonstrated little to no ability to read social cues, struggled with social inferencing, and

had significant difficulty appreciating the perspectives of others. It was difficult for him to infer social cues within the context of pictures and stories, so more abstract interactions in the form of conversations and appropriate peer interactions were especially difficult. KJ's teacher commented that he demonstrated difficulties with staying on task, impulsivity, and monitoring his own inappropriate behavior. Students were often assigned to assist KJ with classroom tasks and to help monitor his behavior during various activities. Likewise, his mother reported that at home, KJ showed a short attention span, was easily overstimulated in play, overacted when faced with problems, and lacked self-control.

PW (9:11). PW was a Caucasian male with a diagnosis of LI and a previous diagnosis of attention deficit disorder (ADD). A school-based evaluation at age 9:1 resulted in a diagnosis of SLD and qualified PW for special education services in the areas of reading and math. At the beginning of the study, PW attended a mainstream 4th grade class with pull-out resource services in math and reading (3 hours maximum). He also received speech-language services with goals focused on articulation, resonance, and language. Scores on the CCC-2 indicated deficits in the context, nonverbal, and social relations subtests. The structural areas of speech and language were also problematic for PW with scores in the 5th percentile for semantics, 9th percentile for coherence, and below the 1st percentile for speech. PW produced a core language score on the CELF-5 in the 9th percentile.

PW's clinician noted that he had made progress and matured in his communication abilities over the past year, however, he continued to be passive in his communications. He struggled to initiate conversations with adults and peers and often allowed others to dominate the interaction. When adding to a conversation, he often spoke off topic or used pleasantries such as laughter to compensate for communication breakdowns or deficits in his language skills. The

clinician also reported that PW's speech sound errors made it difficult for others to understand him which may have contributed to his less confident and more passive interaction style. Similar to his clinician's report, both PW's teacher and mother stated that he enjoyed being around other children but had difficulty initiating interactions. They also indicated that he had trouble following directions and that he often had to be asked multiple times to complete simple tasks.

JS (8:0). JS was a Caucasian female with a diagnosis of LI. She also had a medical diagnosis of attention deficit hyperactivity disorder (ADHD). At the age of 4, an evaluation indicated significant delays in cognitive ability, social/emotional development, and expressive/receptive language. This qualified JS to attend a special needs preschool. When the study was initiated, JS was attending a mainstream 2nd grade class with resource services for reading as well as speech language therapy. Her communication goals in speech language therapy included improving both language and articulation skills. JS's scores on the CCC-2 revealed deficits on the social relations subtest with a score in the 1st percentile. In the structural areas of syntax and semantics she scored in the 50th percentile and she scored in the 25th percentile for speech. However, the structural area of coherence was comparatively lower with a score in the 9th percentile. She produced a CELF-5 core language score in the 9th percentile.

According to her clinician, JS had demonstrated improvement in basic communication competencies, overall cohesiveness, and her ability to recognize cause/effect relationships. However, higher level language tasks such as explaining and justifying others' perspectives, predicting outcomes, and producing detailed narratives continued to be difficult for JS.

According to JS's teacher, she had demonstrated some improvement in attention, behavior, and following tasks, however, she continued to have difficulties in these areas. She often required

extra motivational support and increased effort to complete tasks. Her teacher also indicated that positive, cooperative, and meaningful peer interactions were a challenge for JS.

VA (5:10). VA was a Caucasian male. He received early intervention services before the age of 3 years and was later assessed for special education services through an early childhood assessment center. The results of the evaluation showed that VA presented with significant delays in social/emotional development and expressive/receptive language which qualified him for enrollment in a special-needs preschool. After entering kindergarten, VA was reevaluated at age 5:4 and identified with LI and SLD which qualified him for special education services in the areas of math, writing, occupational therapy, and speech-language services. VA also received a medical diagnosis of ADHD. His communication services included both articulation and language (syntax and semantic) goals. On the CCC-2, VA received scores on or below the 9th percentile on every subtest. His CELF-5 core language score was in the 5th percentile.

According to VA's clinician, he often had difficulty expressing himself due to semantic deficits and syntax/morphological errors. He had difficulty participating appropriately in spontaneous communication exchanges. He demonstrated an ability to learn basic social interactions, but not without great effort. His communications were often self-focused and one-sided. The clinician also indicated that he had a limited attention span and often required redirection to complete speech tasks. VA's teacher noted that he demonstrated a desire to help and assist with tasks but would do so at inappropriate times. He also had a difficult time engaging in instruction, staying on task, and maintaining appropriate classroom behavior. VA expressed interest in engaging with other children but he was impulsive and would initiate interaction through rough play or other inappropriate behavior. VA's mother indicated that he

had difficulty interpreting facial expressions and nonverbal cues and struggled to respond appropriately to others' emotions.

Procedures

The intervention was administered by a graduate student clinician under the supervision of the school speech-language pathologist. The project was overseen by two university-based doctoral level speech-language pathologists who specialized in clinical research involving children with LI.

The treatment approaches and activities used with each child were designed to incorporate their IEP goal for social language intervention (Adams et al., 2012; Fujiki et al., 2013). Treatment sessions included stories to introduce and practice aspects of emotion understanding. Each participant met with the student clinician two times per week for 20 minutes for a total of 20 treatments sessions. All sessions took place in a quiet room at the child's elementary school. Each session was video recorded for later analysis.

Baseline. A single-subject multiple-baseline design was used for the larger study. A number of tasks probing aspects of social and emotional learning were administered in repeated sessions as a multiple baseline. These tasks were again administered in three sessions following the intervention. Other measures and tasks were administered once pre and posttreatment. The focus of the current study, the TBRS (Hart & Robinson, 1996), was administered once both pre and post intervention.

Intervention. The five participants met individually with the student clinician two times per week for a total of 20 sessions. Each session was comprised of a combination of the following components: story sharing, story enactment, and journaling. Story books that contained rich emotional content, strong story structure, and accessible language structure were

selected. For each story, concepts to be highlighted were identified. These included emotion knowledge (words, sources of emotion, etc.), prosocial behaviors, and language structures (e.g., complex sentence structures linking emotions to sources). Story sharing consisted of the clinician reading and discussing a storybook with the child. During the reading, the clinician followed a flexible script containing probes to highlight specified emotion concepts and words, prosocial behaviors, and structural elements (complex constructions). After completing the story, the child and clinician used toys and other appropriate objects to enact the story while emphasizing each character's emotions and perspectives. At the conclusion of each session, a journaling activity was used to review the story and highlighted emotions, capture the main points learned, and help the children relate what was learned to their own personal experiences. The activities used were developed to facilitate social and emotional learning, promote specific prosocial behaviors, and encourage participation in group interactions. All activities were designed to be accessible to children with impaired language abilities. Likewise, presentation of the stories was designed to include modeling of complex sentence forms in order to promote increased development of structural language skills.

Instrumentation: The Teacher Behavior Rating Scale (TBRS). The TBRS (Hart & Robinson, 1996) is an informal instrument that uses teacher ratings to measure a variety of social behaviors in children. This rating scale has been used to evaluate groups of typically developing preschool and elementary-age children as well as children with LI (Fujiki, Brinton, Morgan et al., 1999; Hart et al., 2004). It contains 161 items that measure subtypes of aggressive, withdrawn, and sociable behaviors (Fujiki, Brinton, Morgan et al., 1999). For the purpose of this study, a shorter 79-item version was used which included questions related to sociability. All items in the TBRS used a three-point scale (0-never observed, 1-sometimes observed, or 2-very

often observed) in order to compare the participant's current behavior to typical age-level expectations.

Although there are general limitations associated with using rating scales (Elliot, Gresham, Frank, & Beddow, 2008) including the possibility of rater bias (Phillips & Lonigan, 2010), the validity and reliability of the TBRS has been demonstrated (Fujiki, Brinton, Morgan et al., 1999; Hart et al., 2004). A summary of these data is provided below.

Psychometric Properties. The psychometric properties of the TBRS for elementary-school age children were described in detail in Hart et al. (2004). A factor analysis was used in Hart's study to ensure all items were grouped appropriately. To summarize, teachers completed questionnaires on 382 school-age children ranging in age from 6:4 to 12:6 ($M = 8:10$, $SD = 1:6$). After scrutinizing sociability items for those with (a) relatively little variance, (b) substantial cross-loadings ($>.40$), or (c) low item total correlations for factors derived in preliminary analysis, a final principal component analysis produced two reliable factors for sociability with eigenvalues greater than 1, accounting for 61% of the item variance. The resulting 13 items reflecting the subtypes of sociability were selected based on this evaluation.

Test-retest reliability was measured by having the teachers complete the TBRS a second time for 94 of the 382 children approximately four weeks after the first completion. A timeframe of one month between measures was demonstrated to be adequate enough to ensure the teachers were unlikely to remember their previous responses while also being brief enough to preclude any confounding developmental changes in the children between the two measures. All subscales were found to be temporally reliable with Pearson correlations on the sociability subscales of .74 for likeability and .71 for sociability.

Subscales. For this study, two subscales of sociability (likeability and prosocial) were used. Each subscale consisted of five questions. The questions were interspersed among 69 additional questions drawn from the TBRS as a whole, for a total of 79 items. The likeability subscale included items such as friendly and responsive behaviors, emotion impulse control, and cooperation during rough and tumble play (Hart et al., 2004). A sample item from this subscale stated, “Peers enjoy talking with him/her” (Hart & Robinson, 1996). The prosocial subscale reflected behaviors such as helping, sharing, and comforting others (Hart et al., 2004; Radke-Yarrow et al., 1983). A sample item from this subscale stated, “Comforts a child who is crying or upset” (Hart & Robinson, 1996).

Administration of the TBRS. The TBRS was administered to teachers as a pre and posttreatment measure of the two subtypes of sociability, likeability and prosocial behaviors. The participants were rated by their teachers before intervention was initiated (December 2015) and again after the intervention was completed (April 2016). The teachers filled out the 79-item questionnaire based on their observations of the child in the school setting. Teachers were aware that the children were currently enrolled in speech-language pathology services; however, they were unaware of the details of the intervention and which questions from the TBRS were being used for research. The written instructions given to the teachers were as follows:

This questionnaire is designed to measure how often a child exhibits different types of social behaviors. Understanding the development of social skills is important for promoting the educational and psychological well-being of students. Therefore, your careful response to each item is requested. Reflecting on your experience with children in this age group, read each item in this questionnaire and think about the child's present behavior relative to others you know or have known. Decide how often the child does

the things described. If you are not sure about a particular item, use your best judgment based on your knowledge of the child's personality (Hart & Robinson, 1996).

As previously stated, teachers completed the TBRS before the intervention was initiated and then again after treatment was complete in order to compare their pre and posttreatment ratings of sociability for the participating children.

Results

Once the data were collected, only the items of the TBRS relating to the two subscales of sociability were scored. The mean scores for each subscale were calculated by summing the ratings for each item in the subscale and dividing that total by the number of items.

It should be noted that a high score on the sociability subscales indicated high levels of observed sociable behavior. Due to the nature of this study ($n = 5$), the results for each participant were considered individually. Mean scores and standard deviations (*SD*) for typical boys and girls (ages 5-8 and 10-13) were drawn from the combined data of several past studies, including Fujiki, Brinton, Morgan et al. (1999) and Hart et al. (2004).

MG

The results of the pretreatment and posttreatment mean scores for the sociability subscales of the TBRS for MG are presented in Table 2. MG's initial score in impulse control/likeability (1.40) was within the typical range and showed no change when measured posttreatment. MG's prosocial rating improved slightly from 1.20 to a posttreatment score of 1.40 which placed her within the typical range for girls her age.

Table 2

MG Pretreatment and Posttreatment Mean Scores for Sociability Subscale on the Teacher Behavior Rating Scale (TBRS)

Subscale	Pretreatment	Posttreatment	Typical Mean ¹
Impulse Control/Likeability	1.40	1.40	1.72 (.33)
Prosocial	1.20	1.40	1.71 (.46)

Note. Possible range: 0 (never observed) to 2 (very often observed). Number in parentheses indicates standard deviation. ¹Mean scores for 28 older typical girls ages 10-13 (Fujiki, Brinton, Morgan et al., 1999; Hart et al., 2004).

KJ

KJ's mean ratings for pre and posttreatment administration of the sociability subscales of the TBRS are presented in Table 3. Both of KJ's sociable subscale scores showed a decline in ratings from pretreatment to posttreatment. His score for impulse control/likeability decreased from .20 to .00, likewise his prosocial score decreased from .40 to .00. Both pre and posttreatment scores were significantly below the mean for typical boys his age.

Table 3

KJ Pretreatment and Posttreatment Mean Scores for Sociability Subscale on the Teacher Behavior Rating Scale (TBRS)

Subscale	Pretreatment	Posttreatment	Typical Mean ¹
Impulse Control/Likeability	0.20	0.00	1.82 (.29)
Prosocial	0.40	0.00	1.38 (.45)

Note. Possible range: 0 (never observed) to 2 (very often observed). Number in parentheses indicates standard deviation. ¹Mean scores for 38 older typical boys ages 10-13 (Fujiki, Brinton, Morgan et al., 1999; Hart et al., 2004).

PW

Table 4 presents PW's pretreatment and posttreatment mean scores for the sociability subscales of the TBRS. His impulse control/likeability scores improved from .60 to .80, and his reported prosocial behavior ratings increased by more than 1.5 *SD* from .00 to .80. However, despite PW's increase in ratings pre and posttreatment, he continued to score more than 3 *SD* below the mean for impulse control/likeability and more than 1 *SD* below the mean for prosocial behaviors compared to typical boys his age.

Table 4

PW Pretreatment and Posttreatment Mean Scores for Sociability Subscale on the Teacher Behavior Rating Scale (TBRS)

Subscale	Pretreatment	Posttreatment	Typical Mean ¹
Impulse Control/Likeability	0.60	0.80	1.82 (.29)
Prosocial	0.00	0.80	1.38 (.45)

Note. Possible range: 0 (never observed) to 2 (very often observed). Number in parenthesis indicates standard deviation. ¹Mean scores for 38 older typical boys ages 10-13 (Fujiki, Brinton, Morgan et al., 1999; Hart et al., 2004).

JS

The pretreatment and posttreatment mean scores for the sociability subscales of the TBRS for JS are found in Table 5. JS's scores improved on prosocial behavior and remained stable for impulse control/likeability. Her observed prosocial behavior rose from .20 to .80. Although this was an increase of more than 1.5 *SD*, JS still performed below the typical mean range for girls her age. Her impulse control/likeability rating remained stable at 1.00 between pretreatment and posttreatment measures placing her more than 2 *SD* below the mean for girls ages 5 to 8 years.

Table 5

JS Pretreatment and Posttreatment Mean Scores for Sociability Subscale on the Teacher Behavior Rating Scale (TBRS)

Subscale	Pretreatment	Posttreatment	Typical Mean ¹
Impulse Control/Likeability	1.00	1.00	1.75 (.34)
Prosocial	0.20	0.80	1.74 (.47)

Note. Possible range: 0 (never observed) to 2 (very often observed). Number in parentheses indicates standard deviation. ¹Mean scores for 49 young typical girls ages 5-8 (Fujiki, Brinton, Morgan et al., 1999; Hart et al., 2004).

VA

VA's pretreatment and posttreatment mean scores for the sociability subscales of the TBRS are presented in Table 6. His prosocial behavior significantly improved from .00 to 1.20, an increase of more than 2 *SD*. VA's posttreatment scores for prosocial behaviors were within the typical range. At the same time, his impulse control/likeability rating fell from .60 to .20, a decrease of more than 1 *SD*. Both pre and post impulse control/likeability scores were well below the mean for typical boys his age.

Table 6

VA Pretreatment and Posttreatment Mean Scores for Sociability Subscale on the Teacher Behavior Rating Scale (TBRS)

Subscale	Pretreatment	Posttreatment	Typical Mean ¹
Impulse Control/Likeability	0.60	0.20	1.75 (.31)
Prosocial	0.00	1.20	1.50 (.41)

Note. Possible range: 0 (never observed) to 2 (very often observed). Number in parentheses indicates standard deviation. ¹Mean scores for 67 young typical boys ages 5-8 (Fujiki, Brinton, Morgan et al., 1999; Hart et al., 2004).

Discussion

Children with LI often experience difficulties with aspects of social and emotional learning, including reduced sociability. Studies have shown that severity of LI is correlated to a child's level of prosocial behavior (Hart et al., 2004). Moreover, children with LI who demonstrate poor prosocial behavior may experience greater emotional problems, have more difficulty developing peer relationships, and are often rated as less sociable by teachers (Fujiki, Brinton, Morgan, et al., 1999; Mok et al., 2014). This study examined the impact of a social communication intervention targeting social competence on teachers' perceptions of sociable behaviors in school-age children with LI.

Five children identified with social communication problems participated in this study. Although there was considerable variability among participants, all five presented with deficits in language processing as well as in social and emotional learning. Two of the children, JS, and VA, were also diagnosed with ADHD. In addition, two of those children, JS and MG, had participated in a very similar intervention previously. The intervention employed the use of storybooks to introduce and practice aspects of social and emotional learning, particularly emotion understanding. The TBRS was used to obtain pre and posttreatment teacher ratings for the two subtypes of sociability, impulse control/likeability and prosocial behaviors. The teachers' responses on the TBRS were examined for suggestions of change in association with this treatment.

Individual Findings

Each child participating in the study demonstrated a unique pattern of behavior during the course of the study. A discussion of those patterns of behavior for each child follows.

MG. At 11 years, MG was the oldest of the five participants. Her language and social interactional deficits were reflected in her CELF-5 and CCC-2 scores. Even though MG's teacher ratings for impulse control/likeability remained stable, teacher ratings for prosocial behaviors improved. Although her improvement in prosocial behaviors was modest, it was sufficient to shift MG from 1 *SD* below the mean to within the typical range.

Prior to participating in the current study, MG participated in the same intervention project a year earlier in which she received comparable treatment. Her previous experience with the intervention process influenced her approach to the current intervention. For example, she was eager to participate in most activities, but at times, she was resistant to other activities that she found difficult. Overall, however, she was cooperative, engaged, and participatory during each session. MG's teacher noted that she was social and interactive with others in spite of her communication difficulties and that her behavior and attention were appropriate for her age. These reports reflected the typical ratings MG received posttreatment for each of the sociability subscales.

KJ. KJ's CELF-5 and CCC-2 scores indicated marked deficits in social communication. On the TBRS, KJ was the only participant whose posttreatment teacher ratings decreased for both subtypes of sociability. His impulse control/likeability ratings were particularly low and dropped from 5 to 6 *SD* below the mean. His prosocial ratings dropped from 2 *SD* to 3 *SD* below the mean.

KJ's low ratings on the impulse control/likeability scale reflected concerns regarding his short attention span. In fact, his mother stated that it was her intention to have him tested for ADHD. KJ's teachers and other service providers also expressed concerns about his limited attention span, impulsivity, and difficulty regulating his behavior. He appeared to do better in

one-on-one settings, but he experienced increased difficulty monitoring his behavior in group settings. The school administration moved KJ to a different classroom with the intention of placing him in an environment that would be more conducive to his individual needs. However, it was still reported that his behavior remained difficult and disruptive, and this likely contributed to his decline in teacher ratings for both subscales of sociability.

PW. PW also presented with deficits in language processing and social and emotional learning as reflected in his CELF-5 and CCC-2 scores. Of all the participants, PW was the only participant to demonstrate an increase in posttreatment scores for both subtypes of sociability on the TBRS. His scores for impulse control/likeability increased nearly a standard deviation but remained well below the norm. Likewise, his scores for prosocial behavior increased from 3 *SD* below the mean to 1 *SD* below the mean.

PW was a new participant to the study. Although he was cooperative during treatment sessions, PW demonstrated difficulty initiating interactions, relating information to personal experiences, and narrating events.

JS. JS was one of two participants diagnosed with LI and ADHD. Her score on the CELF-5 (9th percentile) documented difficulties with language processing, but her score for the CCC-2 was in the 23rd percentile. Nevertheless, JS's teachers and SLP reported that she had difficulty with several aspects of social and emotional learning. JS's rating for impulse control/likeability was 2 *SD* below the mean and remained the same before and after treatment. Her prosocial behavior scores increased by 1.5 *SD* but remained 2 *SD* below the mean for typical girls her age.

This was JS's fourth semester participating in the study. Her GCC score on the CCC-2 was within typical range at the start of the current study demonstrating an increase in social

communication skills over time (e.g., in January, 2014, her GCC score was in the 4th percentile and increased to the 23rd percentile in January, 2016). Despite this increase, she continued to demonstrate an overall inconsistency in her social communication abilities thus qualifying for continued intervention. Moreover, JS's core language score on the CELF-5 remained below average (e.g., her core language percentile of 7 in January, 2014, rose slightly to the 9th percentile in January 2016) indicating persistent language deficits despite an increase in her GCC scores and her repeated involvement in the study.

JS had a history of variable behavior in the classroom and in her speech and language intervention sessions. In previous semesters of intervention she was frequently distracted and noncompliant. During the current study, however, JS was generally engaged, cooperative, and attentive although she would at times veer off topic in story sharing and enactments. However, she seemed to enjoy relating story content to personal experiences, and she demonstrated an increase in initiating social interactions. JS's teacher also noted an increase in sociable behaviors, but JS continued to demonstrate difficulty maintaining attention in class. These reports are consistent with JS's posttreatment scores for the two subtypes of sociability. Her difficulty attending in class may contribute to her stable scores for impulse control/likeability whereas her noted improvement in prosocial behaviors was reflected in her increase in teacher ratings for this subscale.

VA. VA was one of two participants diagnosed with LI and ADHD. He was also the youngest participant in the study. VA's language and social interactional deficits were reflected in her CELF-5 and CCC-2 scores, however, his posttreatment ratings on the TBRS demonstrated marked improvements in prosocial behaviors. VA's ratings for prosocial behaviors rose considerably from more than 3 *SD* below the mean to within the typical range for boys his age.

However, his ratings for impulse control/likeability were initially 3 *SD* below the mean and decreased to 5 *SD* below the mean post intervention.

VA was often eager and willing to participate, however, as the study progressed his behavior, attention span, and ability to focus worsened. An increase in behavioral difficulties was also evident in the classroom, and school personnel reported that VA was experiencing notable instability and disruption in his home environment which may have contributed to the challenging behaviors he demonstrated in the school setting. It is noteworthy, however, that even though VA's teacher reported a clear decline in attention and behavior, she also noticed improvements in his social interactions consistent with VA's posttreatment ratings of prosocial behavior on the TBRS. It appeared that although VA showed an increase in poor impulse control and likeability, his prosocial behaviors improved markedly.

General Implications

It was encouraging that teachers' ratings of prosocial behavior improved for four out of the five participants, MG, PW, JS, and VA. For PW and JS, ratings of prosocial behavior increased by more than 1.5 *SD*, and for VA, prosocial ratings increased by more than 2 *SD*. For MG and VA, prosocial ratings improved enough to place them within the typical range for their age. Research indicates that an increase in prosocial behavior often results in positive social outcomes for children with LI. For example, a longitudinal study by Mok et al. (2014) indicated that prosocial behavior was the factor most strongly associated with trajectory group membership. In other words, the children with higher levels of prosocial behavior and better pragmatic language experienced lower levels of emotional problems and had less difficulty developing peer relationships. Moreover, an increase in prosocial behavior may be suggestive of more global changes in social functioning experienced by these participants following treatment.

Teachers reported that all of the children (except MG) had difficulty with impulse control/likeability both before and after intervention. Following intervention, ratings for impulse control/likeability improved for only one participant, PW, and his rating remained 1 *SD* below the mean. For the other four children, ratings were stable or decreased. It may be the case for VA, JS, and KJ that lack of progress on this subscale reflected identified or suspected ADHD. In addition, external factors such as family instability may have influenced VA's ability to self-regulate and focus in the classroom. Teachers reported high degrees of problematic behavior in the classroom for VA, JS, and KJ, and these perceptions were undoubtedly reflected in their ratings on the impulse control/likeability scale. As Phillips and Lonigan (2010) suggested, when a child's negative behaviors demand more attention from the teacher than the positive behaviors, biased recall may occur. It is particularly noteworthy then, that for four of the five children, teachers reported improved prosocial behaviors even while problems with impulse control remained or increased. It should also be noted, that the intervention program focused explicitly on aspects of emotion understanding that lead to prosocial behavior, in contrast, the intervention did not focus explicitly on impulse control.

It remained a concern, however, that struggles with inattention and restlessness may have prevented the treatment from having a more positive impact on behavior. Positive changes in the area of impulse control/likeability are certain to have a positive effect on the quality of the social interactions these children will experience, however, individuals (like KJ, JS, and VA) who continue to demonstrate deficits in this area may experience difficulties with social tasks, peer friendships, and overall acceptance (Bakopoulou & Dockrell, 2016; Fujiki, Brinton, Hart et al., 1999).

Study Limitations and Recommendations

It is important to acknowledge that there were several limitations presented in this study that may have influenced final outcomes. For example, although the TBRS was a valid and reliable measure, it was still subject to some of the general limitations of rating scales (Elliot et al., 2008). Teacher ratings have many advantages, however, they still represent general impressions rather than actual online observations of behavior. In addition, ratings scales are vulnerable to various sources of error variance (including source variance, setting variance, and temporal variance). Ratings may be impacted by the unique impressions and belief systems of an individual rater. They may also be influenced by behaviors specific to certain settings or contexts, such as a school setting. Temporally, raters may be overly influenced by more recently occurring behaviors rather than assessing behavior as a whole. Thus, it may be beneficial in future studies to include data from other sources (e.g., comparisons with parental observations or other follow-up measures) in order to confirm whether the teacher ratings were a valid indication of the child's performance.

Moreover, it is possible that the teachers may have been influenced by the fact that the child was participating in a study and were predisposed to seeing positive changes in the child's behavior. However, it is also important to note that the teachers were not aware of the specific focus or goals of the study.

Limitations that arise from conducting research in the context of a school setting should also be considered. The small number of participants, short session duration, and limited number of sessions are all shortcomings that come with providing intervention in the schools. In this particular study, only five participants were included in the study. Sessions for the five participants were on average 20 minutes in duration, twice a week for the course of 10 weeks.

To increase treatment efficacy, future interventions may need to be more intense, both in terms in numbers of sessions and the duration of each individual session. This is especially important to consider when taking into account individual results and behaviors of the participants.

Different results may have been obtained if the treatment extended over a longer period of time with more intervention sessions.

Perhaps the most impactful limitation to recognize is the variability of the participants themselves. Both intrinsic and extrinsic factors can influence how a child responds to treatment and affect their potential outcomes. Variables such as medical conditions, behavior regulation, and home/life circumstances may disrupt progress and cannot always be controlled. For instance, two of the five participants were medically diagnosed with ADHD with another participant undergoing a possible diagnosis. At times these participants' difficulty attending to tasks and regulating their behavior interrupted the learning process. At least one participant experienced stressful and difficult situations in the home. These circumstances may have contributed to negative behaviors exhibited in the therapy room and classroom. It will be important for future research to take such factors into account to the extent possible.

Despite the various factors that may have limited the outcomes of the study, it is important to note that gains were still made. Most of the children who participated (4 of 5) were reported to demonstrate an increase in at least one area of sociability, with one participant (PW), demonstrating an increase in both areas measured. Likewise, the school speech language pathologist expressed her pleasure with the intervention program and shared her impression that she has seen growth in the children's language complexity, narrative abilities, and social communications. Two parents also reported noticing an increase in perspective taking and sociable behaviors. Although these impressions are anecdotal, it is encouraging that the general

impressions of the study were positive and that there was a desire for treatment to continue within the school setting. It also may suggest that the children generalized behaviors to a greater degree than what was reflected in their TBRS ratings.

Summary

This study examined the impact of a social communication intervention on teacher perceptions of sociability in children with LI. Teacher ratings on the TBRS were used to determine progress in the areas of impulse control/likeability and prosocial behaviors.

Although there was variability among participants (attributed to various intrinsic and extrinsic factors), all participants except one were reported to demonstrate an increase in at least one subtype of sociability, prosocial behavior, following the intervention. In addition, one participant increased in teacher ratings for both subtypes of sociability. These changes are suggestive of positive influences on social behavior resulting from the intervention. Suggestions on how to further increase intervention efficacy, control/minimize extraneous variables, and improve results were presented.

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Appendix A: Annotated Bibliography

Adams, C., Lockton, E., Gaile, J., Earl, G., & Freed, J. (2012). Implementation of a manualized communication intervention for school-aged children with pragmatic and social communication needs in a randomized controlled trial: The Social Communication Intervention Project. *International Journal of Language & Communication Disorders*, 47, 245-256. doi:10.1111/j.1460-6984.2012.00147.x

Purpose of the Study: The purpose of the study was to evaluate a manualized communication intervention for children with social communication needs. The intervention investigated, the Social Communication Intervention Project (SCIP), was the first randomized control study designed to examine a social communication intervention involving children with pragmatic language impairment (PLI). The intervention was based on the idea that therapy should be individualized according to each child's needs across three areas of social communication development, including language processing, pragmatics, and social understanding (e.g., theory of mind).

Method: Participants in the study included 88 children, between the ages of 6 and 11, with a diagnosis of PLI. Of the 88 participants, 59 were randomly assigned to a treatment group and 29 were randomly assigned to a treatment-as-usual (control) group. Both groups received up to 20 sessions of intervention with each session being an hour in length. Methods such as modeling, role play, and sabotage were included in the study. These activities were designed to be carried out during one-on-one therapy sessions, in the classroom, or at home. Teachers, parents, and others were encouraged to participate in the children's therapy sessions regularly as learning support assistants (LSAs). All therapy content and methodology were taken from an intervention manual. Outcome measures were taken pre-intervention, post-intervention, and six months following intervention.

Results: Outcome measures used included the CELF-4 Core Language Standard Score (CLSS), the Targeted Observation of Pragmatics in Children's Conversation (TOPICC), The Children's Communication Checklist (CCC), the Expression, Reception and Recall of Narrative Instrument (ERRNI), and a Parent-Reported Outcome (PRO) measure and Teacher-Reported Outcome (TRO) measure. The CELF-4 score and ERRNI did not show a significant intervention effect. Significant effects were found, however, on observed conversational abilities, for parent-reports of social behaviors and communications, and for teacher-reported ratings of classroom learning skills.

Conclusion: The study demonstrated that those participating in the social communication intervention made significant gains in conversational ability compared to those in the control group. Likewise, teacher and parent ratings indicated perceived improvements in social communication, social skills, and language ability of those children in the intervention. It was concluded that positive results can occur within a relatively brief period of therapy when the intervention is designed to target the specific needs of the participant.

Relevance to Current Work: This study exemplified the success that comes from having an intervention that is outlined and consistent, but also flexible enough to meet the needs of the individual. The social communication intervention in the current thesis followed the same

important principles outlined in this article and included components that are individualized to the needs of each participant.

Asendorpf, J. (1991). Development of inhibited children's coping with unfamiliarity. *Child Development, 62*, 1460-1474. doi:10.2307/1130819

Purpose of Study: This study investigated the subtypes of solitude used by children as coping strategies when responding to unfamiliar peers. These subtypes include: Solitary-Passive withdrawal, Solitary-Active withdrawal, and inhibited behavior (Reticence). The increase of these subtypes of social withdrawal over development into middle and late childhood was also considered.

Method: A sample of 87 children (between the ages of 4 and 8 years) participated in the study. The children were observed as they interacted with peers during dyadic free-play sessions. The Parental Inhibition Scale was administered to parents concurrently with the play sessions. The sessions were also videotaped and each participant's behavior was coded at 15-second intervals using Rubin's Play Observation Scale which measured: unoccupied solitary play, on-looking, parallel play, conversation, group play, adult orientation, aggressive exchanges, and transitional behavior between categories.

Results: Results of the study indicated that observed inhibited behavior and parental judgments of inhibition correlated with Solitary-Passive behavior. It was also noted that periods of social interaction became longer for children in the control group, but not for inhibited children. The children expressing inhibition actually showed shorter periods of social interaction at age eight than they did at age six.

Conclusions: Children demonstrating increased inhibition compared to their peers tended to shift toward longer periods of Solitary-Passive activity rather than longer periods of social interactional behavior. The authors suggested that Solitary-Passive withdrawal was associated with inhibition and lost its initial negative correlation with parallel play.

Relevance to Current Work: This study examined specific social interactional behaviors in children.

Bakopoulou, I., & Dockrell, J. E. (2016). The role of cognition and prosocial behavior in relation to the socio-emotional functioning of primary-aged children with specific language impairment. *Research in Developmental Disabilities, 49*, 354-370. doi:10.1016/j.ridd.2015.12.013

Purpose of the Study: This article investigated the idea that children with language impairment (LI) often experience difficulties with socio-emotional functions and poorly developed prosocial behavior. This was done by examining the social skills of elementary-aged children with LI in relation to socio-emotional functioning as rated by their teachers.

Method: The study included 42 children with LI, 42 of their aged matched peers (CA), and 42 younger children compared for receptive language ability (LA). Each of the children's

socio-emotional functioning and prosocial behavior was assessed by their teacher using the Strengths and Difficulty Questionnaire (SDQ). This 25 item questionnaire was designed to measure conduct problems, hyperactivity, emotional symptoms, peer relationship problems as well as prosocial behaviors such as positivity, helpfulness, and friendliness. Social cognition was measured using three experimental tasks, including labeling and identifying emotions, inferring the cause of emotions, and resolving conflicts.

Results: Results of the SDQ indicated that the children with LI were rated by teachers to exhibit higher levels of difficulty with socio-emotional functioning compared to national norms and both control groups (CA and LA). These scores indicated that children with LI experienced increased problems in the areas of conduct, hyperactivity, emotional symptoms, and peer relations while also experiencing poorer prosocial behaviors compared to their typical peers. Moreover, the children with LI performed significantly lower than both CA and LA group peers on all three experimental measures of social cognition.

Conclusion: These results supported the claim made in previous studies that children with LI experience difficulty with social competence. It was also found that social cognition and prosocial behavior, but not language ability, predicted teacher perceptions of behavioral, emotional, and social difficulties in children with LI.

Relevance to Current Work: This study supported the idea that children with LI often experience difficulties with social competence and functioning, thus it further emphasized the importance of implementing interventions that extend beyond just treating poor language skills.

Boucher, J., Lewis, V., & Collis, G. M. (2000). Voice processing abilities in children with autism, children with specific language impairments, and young typically developing children. *Journal of Child Psychology and Psychiatry*, 41, 847-857. doi:10.1111/1469-7610.00672

Purpose of the Study: The purpose of this study was to investigate the ability of children to use prosodic cues to identify emotions.

Methods: The study involved asking 19 children with Autism Spectrum Disorder (ASD) to match vocally conveyed emotions to photographs of facial expressions. A group of 19 typical children and 19 children with LI were included as controls. A total of four experiments were conducted to assess familiar voice-face and sound-object matching, familiar voice recognition, unfamiliar voice discrimination, and vocal affect naming and vocal-facial affect matching.

Results: The results of the study were unexpected. Researchers initially thought that children with ASD would produce considerably lower scores on the task than children with LI, and that the children with LI would produce scores similar to their typical peers. However, the children with LI performed significantly lower than their typical peers and the children with ASD in matching voice clips with pictures of facial expressions.

Conclusion: These results indicate that children with LI have difficulty with voice-face affect matching and vocal affect naming. The researchers concluded that further research on

interventions for children with LI specifically addressing emotional understanding and social processing in these areas investigated in greatly needed.

Relevance to Current Work: This study is beneficial in its ability to demonstrate that difficulties with language impairment (LI) extend beyond linguistic form and content to include difficulties with accurately matching vocally conveyed emotions to facial expressions. Emotion understanding of voice inflection and prosody in relation to the emotion being expressed is an important aspect of the social communication intervention outlined in the current thesis.

Brinton, B., & Fujiki, M. (2005). Social competence in children with language impairment: Making connections. *Seminars in Speech and Language, 26*, 151-159. doi:10.1055/s-2005-91712

Purpose of the Study: The purpose of this article was to discuss the complex nature of the connection between language deficits and social competence, consider factors that influence the social outcomes of children with language impairment (LI), and demonstrate how to facilitate language and social competence growth in children with LI through effective intervention.

Methods: The case studies of Joseph, an adolescent with LI, and Cari, a 6 year old identified with Asperger syndrome, were used to demonstrate the complexity of the relationship between LI and social competence as well as the importance of implementing an intervention that facilitates social functioning. Moreover, the authors explored factors that affect the relationship between language and social competence. Some of these factors include the extent and nature of the language impairment, emotion regulation, emotion understanding, social inferencing, and behaviors that inhibit effective social interactions.

Results: It was suggested that poor social and language skills, such as those experienced by Joseph and Cari, often result in negative social outcomes. These negative outcomes limit a child's opportunity for learning, establishing quality relationships, and their overall functioning. Thus, it is important to not only target language skills in children with LI, but also cognitive, social, and emotional areas across various contexts.

Conclusions: The authors concluded that traditional academic and language goals need to be coupled with goals focused on improving social communications in order to help children with LI establish and maintain relationships, learn more effectively, and fully improve their quality of life.

Relevance to Current Work: This article highlighted the complexity of the relationship between LI and social deficits and the importance of interventions that target both language and social skills.

Brinton, B., & Fujiki, M. (2014). Social and affective factors in children with language impairment. In C. A. Stone, E. R. Silliman, B. J. Ehren, & K. Apel (Eds.), *Handbook of language and literacy: Development and disorders* (2nd ed., pp. 173-189). New York, NY: Guilford Press.

Purpose of Work: The purpose of this chapter was to consider the social, emotional, and affective factors that are associated with children with language impairment (LI). The authors outlined research that investigated the difficulty children with LI experience in both social and language development.

Summary: Language impairment, social competence, and emotional intelligence all interact to influence social outcomes in children. It is understood that many social tasks that children must undergo in order to have successful social interactions are difficult to accomplish without typical language abilities. These social tasks include initiating interactions, integrating themselves into group play, and resolving conflicts. Moreover, additional factors such as the ability to read emotional cues and infer the emotional reactions of others also impact social outcomes. The authors also noted that children who struggle with social interactions will often continue to do so in adolescence and later life. Social difficulties experienced may include problems with social competence, socioemotional behaviors self-esteem, and perceptions of well-being based on reports about self-perception. Acquisition of literacy skill may also be affected due to language, social, and emotional deficits in children with LI.

Conclusions: This chapter described the various social communication deficits children with LI may experience and the effects these difficulties have on the social, emotional, and academic well-being of these children over time. It was noted, however, that children with LI vary in these deficit characteristics.

Relevance to Current Work: To effectively treat children with LI, it is important for clinicians and researchers to be aware of the social deficits and difficulties this population faces, as explained in this chapter.

Brinton, B., Fujiki, M., & Higbee, L. (1998). Participation in cooperative learning activities by children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 41*, 1193-1206. doi:1092-4388/98/4105-1193

Purpose of the Study: The purpose of the study was to investigate the extent to which children with specific language impairment (SLI) collaborate verbally and nonverbally in cooperative work tasks and to identify any individual patterns of interaction displayed by the children with SLI.

Methods: Fifty-four children between the ages of 5 and 12 participated in the study. Target subjects consisted of six children with SLI, six children matched for chronological age (CA), and six children with similar language skills (LS). The remaining participants played the role of interactional partners. The children were divided into 18 triads that consisted of one target subject and two partners matched by age and gender. Each triad of children was instructed to build a cardboard periscope while the interactions were video recorded for later analysis. Verbal and nonverbal behaviors were coded and analyzed (at 15-second intervals) in terms of two parameters, collaborative and non-collaborative group activity.

Results: Overall collaboration, verbal collaboration, and nonverbal collaboration were analyzed by groups (SLI, LS, and CA). The individual performance of each child was also

examined. If two or more children spoke about the same topic in a 15-second interval, the child was scored as being verbally collaborative during that interval. Likewise, nonverbal collaboration was analyzed by scoring the subject as collaborative if they performed activities associated with building the periscope within the 15-second interval. The mean percentage of collaborative intervals was found by calculating the percentage of 15-second intervals in which each child was collaborative. Comparisons were then made between the target children and their partners. Children with SLI demonstrated fewer verbal and nonverbal collaborative behaviors than their peers in the CA and LS triads who were highly collaborative. The SLI group was less effective in their verbal collaborations, however the difference did not reach statistical significance. The SLI group also retreated from nonverbal collaborative tasks more often than their peers.

Conclusions: Children in the CA and LS groups achieved high levels of cooperation as well as balanced levels of attention between participants. Interactions in triad groups containing children with SLI were highly variable. Four children in the SLI group were limited in their collaborative attempts and made minimal contributions verbally and nonverbally compared to their peers in the CA and LS group. The authors concluded that both the linguistic and social demands limited the inclusion of children with SLI in cooperative tasks.

Relevance to Current Work: This study supported the idea that not only the language demands but also social demands related to cooperative/prosocial behavior may limit children with SLI from accessing important peer interactions.

Brinton, B., Fujiki, M., Hurst, N. Q., Jones, E. R., & Spackman, M. P. (2015). The ability of children with language impairment to dissemble emotions in hypothetical scenarios and natural situations. *Language, Speech, and Hearing Services in Schools, 46*, 325-336. doi:10.1044/2015_LSHSS-14-0096

Purpose of the Study: A relatively complex aspect of emotional intelligence recently explored by researchers is a child's ability to dissemble (hide) emotion in order to preserve a social relationship. The aim of this study was to examine the ability of children with language impairment (LI) to dissemble emotions.

Method: The researchers presented 10 hypothetical situations to 22 children with LI and their typically developing peers. The various situations encountered by the main character in these scenarios caused him/her to experience an emotion that for social purposes warranted hiding (e.g., eating a disliked casserole provided by the neighbor). The children were then asked how the character felt, what the character should say, and what the character's parents would want him/her to do. During a second task, the children were presented with four naturally occurring opportunities to dissemble emotions (e.g., receiving a disappointing prize for participation in the study).

Results: Although there was not a significant difference between the two groups of children with regard to their judgment of social rules governing the given situations, the children with LI identified significantly fewer incidences in which it was appropriate to hide emotion. In the naturalistic scenarios, there was not a significant difference between the two groups of

children in low-cost scenarios (those in which the child had nothing to lose by hiding emotion). In the high-cost scenarios (where hiding emotion meant loss of a desired prize), typically developing children dissembled emotions more often than the children with LI.

Conclusion: The authors concluded that children with LI experienced increased difficulty compared to typically developing children in their ability to dissemble emotions in hypothetical scenarios as well as in high-cost scenarios related to natural situations.

Relevance to Current Work: This study provided readers with the insight that children with LI may have difficulty understanding the impact expressing emotions can have on social communication interactions and personal relationships.

Brinton, B., Fujiki, M., & McKee, L. (1998). Negotiation skills of children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 41*, 927-940. doi:10.1044/1092-4388

Purpose of the Study: The purpose of the study was to investigate how children with SLI responded to a task requiring negotiations and joint decision making within a group context. Specifically, the authors examined how frequently the children with SLI participated with the group, the number of negotiation strategies they produced, the self or other construal of their strategies, and the developmental level of those strategies.

Methods: Fifty-four children participated in the study and were divided into 18 triads (each group containing one target child and two partners). The target subjects consisted of six children with SLI, six chronologically aged matched peers (CA), and six children of similar language (LS) abilities. For the task, each child earned three poker chips. Then, as a group, the children were instructed to combine their earned poker chips to purchase a treat from a “snack shop” (ranging in price from four to nine chips). Interactions were videotaped for later analysis.

Results: The negotiation tasks were analyzed using a system patterned after Selman’s interpersonal negotiation strategies (INS) model. The negotiation abilities of children with SLI were compared to those of their CA and LS matched peers. Results indicated that children with SLI produced a similar amount of utterances to their group partners, however, they produced a significantly smaller percentage of the negotiation strategies produced by their triads. It was also noted that children with SLI used developmentally lower level strategies compared to their peers. In contrast, children in the CA group and the LS group did not perform differently from peers within their triad groups.

Conclusions: Children with SLI demonstrated increased difficulty in using age appropriate verbal, social, and interactional skills when participating in the negotiating task. The quality of their interactions was reduced by their immature and inflexible negotiation strategies. Thus, the social growth and acceptance of children with SLI may result from interventions that enhance personal expression, perspective taking, and facilitate the use of language in tasks such as interpersonal negotiations.

Relevance to Current Work: This study supported the idea that children with LI experience difficulties with tasks beyond language use. In this instance, children with SLI demonstrated difficulties with the social task of negotiating with peers.

Brinton, B., Fujiki, M., Montague, E. C., & Hanton, J. L. (2000). Children with language impairment in cooperative work groups: A pilot study. *Language, Speech, and Hearing Services in Schools, 31*, 252-264. doi:10.1044/0161-1461.3103.252

Purpose of the Study: The purpose of the study was to examine the way individual social-behavior profiles of children with LI affected their ability to participate within cooperative groups.

Methods: Six children identified with language impairment (LI) participated in the study. They ranged in age from 6 to 7 years. Each child with LI participated in four cooperative learning groups within the school setting. Within these groups, the children with LI interacted with two typically developing peers who were randomly selected. The cooperative work groups were structured so that the child with LI performed three different roles and participated in four different activities. All interactions, activities, and roles were varied so that the children with LI participated in a different activity, with a different role, and with different partners across the four interactions. The success of these interactions was analyzed by rating 15-second scans as good, fair, or poor. These ratings were used to determine the extent to which all of the children joined in and worked together toward a common goal. Also, a social profile for each participant with LI was obtained using the Teacher Behavior Rating Scale (TBRS). These profiles were examined with respect to each child's performance in the cooperative work groups.

Results: When examining the social profile of the six children with LI in light of the cooperative group interactions, it was discovered that the children with LI demonstrated a variety of social behaviors. The social behaviors identified included: aggression coupled with withdrawal, withdrawal, and typical social behavior. The aggressive and withdrawn behavior experienced by two of the participants impacted their overall ability to work cooperatively in groups. The two participants rated with higher levels of withdrawal worked more independently rather than collaboratively. The two children with typical social profiles benefited socially and structurally from the collaborative group context. Overall, the results indicated that the social profiles of the children with LI were a good predictor of the child's success in working with cooperative groups.

Conclusions: It is important for teachers as well as speech-language pathologists to consider social profiles in addition to language levels when facilitating cooperative groups that include children with LI. Having prior information regarding the social functioning and language abilities of children allows service providers and educators the opportunity to structure the best possible group experiences for children with LI.

Relevance to Current Work: The study demonstrated that one of the social implications faced by children with language impairment includes difficulties working and interacting with cooperative groups.

Brinton, B., Fujiki, M., Spencer, J. C., & Robinson, L. A. (1997). The ability of children with specific language impairment to access and participate in an ongoing interaction. *Journal of Speech, Language, and Hearing Research, 40*, 1011-1025. doi:10.1044/jslhr.4005.1011

Purpose of the Study: Children with specific language impairment (SLI) often fail to gain access to ongoing peer interactions which are important to their social development. The purpose of this study was to compare the attempts made by children with SLI, their language-similar peers (LS), and their chronologically age-matched peers to enter and participate in ongoing interactions.

Methods: A total of 54 children between the ages of 5 and 12 participated in the study. The children were grouped into eighteen triads consisting of one target subject and two partners. Target groups consisted of six children with SLI, six of their LS peers, and six of their CA peers. Procedure for the task comprised of having the two partner children interact in conversation and play for approximately ten minutes prior to introducing the target subject to the group. Once the target subject was introduced to the two partners, they were left to access the interaction. Each group was videotaped and the interaction was transcribed from the point when the target subject was introduced to the partners. Once successful access was achieved, the triadic interactions between subjects were examined.

Results: Results demonstrated that children with SLI varied in their ability to access interactions with their peers. For example, two children from the SLI group did not successfully access interaction while the remaining four subjects required varying amounts of time to access. Although four of the children with SLI who were successful in accessing interactions, they talked significantly less, were less collaborative, and experienced less inclusion than either of the partners within their triad. In comparison, children in the LS and CA groups were successful in accessing interactions and few significant differences were observed between the children in CA and LS groups and their partners.

Conclusions: It was found that language and social communication deficits often co-occur in children with SLI. As a result of this study, it was indicated that the children with SLI experienced greater difficulty with ongoing interactions and were less integrated into the interactions they did access. Based on these results, the authors suggested that intervention for children with SLI include consideration of language ability and social skills. Moreover, further research is needed to identify language and social behaviors that would help children with SLI access a variety of interactions across contexts.

Relevance to Current Work: This study demonstrated the difficulties children with LI have with accessing social interactions. These interactions are fundamental to their social development, especially in the areas of social and emotional intelligence which are discussed in this thesis.

Cheek, J. M., & Buss, A. H. (1981). Shyness and sociability. *Journal of Personality and Social Psychology, 41*, 330-339. doi:10.1037/0022-3514.41.2.330

Purpose of the Study: The purpose of the study was to investigate the relationship between shyness (the discomfort and inhibition that may occur in the presence of others) and sociability (a preference for affiliation or need to be with people).

Methods: The authors conducted two studies to investigate the correlations between shyness and sociability. In the first study, six self-report measures examining shyness, sociability, self-consciousness, self-esteem, and fear were given to 912 college-age students (340 males and 572 females). Each item was rated by the students on a scale that ranged from 0 (extremely uncharacteristic) to 4 (extremely characteristic). The second study was developed based on the results of first study (indicating that shyness and low sociability are distinct traits). The authors tested two hypotheses: (a) shy people are more inhibited, tense, and anxious in social contexts than unshy individuals, and (b) among shy people, the sociable ones are more inhibited, tense and anxious than unsociable individuals. To test these theories, the authors recorded interactions between subjects who were high or low in self-reported shyness and sociability.

Results: A factor analysis for the first study revealed a moderate negative correlation between self-reports of shyness and sociability ($r = -.30$) as well as different patterns of correlations between shyness and sociability with the other personality scales. The second study revealed that subjects in the shy-sociable group talked less, averted their gaze more, and engaged in more self-manipulation compared to the other groups studied (shy-unsociable, unshy-sociable, and unshy-unsociable).

Conclusions: Although the first study demonstrated a link between shyness and low sociability, the correlation was too weak to indicate that shyness and low sociability share one identity. It was concluded that shyness is something more than low sociability. These conclusions were strengthened by the results in the second study. The second study demonstrated that shyness and sociability independently affected how subjects behaved in social situations.

Relevance to Current Work: The study described and provided a definition for sociability as well as the relationship of sociability to other personality traits (such as shyness).

Coplan, R., Rubin, K., Fox, N., Calkins, S., & Stewart, S. (1994). Being alone, playing alone, and acting alone: Distinguishing among reticence and passive and active solitude in young children. *Child Development*, 65, 129-137. doi:10.2307/1131370

Purpose of the Study: The goal of the study was to examine the heterogeneity of withdrawn behaviors in children and the psychosocial mechanisms that underlie solitary behaviors. The withdrawn behaviors investigated included reticence, solitary-passive withdrawal, and solitary-active withdrawal.

Methods: Forty-eight preschool children (20 males and 28 females) participated in the study. The participants were divided into 12 quartets consisting of age-matched and gender-matched peers. The children were observed as they participated in five activities, including unstructured free play, a clean-up task, show-and-tell speeches, a ticket sorting task, and another session of unstructured free play. Behaviors during the play sessions were coded in 10-second

intervals using Rubin's Play Observation Scale. During the clean-up session, the amount of time each child spent off task was recorded. The show-and-tell speeches were coded for the duration of the speech episode and the percentage of time the child spent speaking. The ticket sorting task was coded for the percentage of time the participant spent off task. In addition, the participants' mothers completed the Colorado Temperament Inventory to assess maternal perceptions of the children's characteristics.

Results: The authors found that their results replicated previous research establishing the presence of multiple and independent forms of solitude in children. The results demonstrated that children who experience anxiety were more likely to exhibit reticent behavior but not solitary-passive or solitary-active withdrawal. It was also found that reticent behavior was associated with maternal ratings of shyness as well as the child's tendency to observe rather than participate in social interactions due to anxiety and fear. Although there was a low occurrence of solitary-active play, this type of activity was highly stable across play sessions and associated with maternal ratings of impulsivity. Passive withdrawal was not linked with anxiety, social wariness, shyness, or impulsivity.

Conclusions: The results of this study replicated and extended previous research on the types of withdrawn behaviors experienced by children. It was concluded that subtypes of withdrawal are not significantly interrelated, however there are various underlying mechanisms associated with withdrawal. It was also determined that solitude is not a significant criterion for identifying children as socially withdrawn, especially when considering the various types of active withdrawal. Also, it was suggested that the meaning of different forms of solitude changes with age so further research is needed to examine the developmental implications of withdrawn behaviors.

Relevance to Current Work: This work identified and described the three types of withdrawn behavior and discussed possible underlying motivations for these behaviors. Types of withdrawn behavior, such as reticence, are associated with negative social outcomes for children with language impairment.

Denham, S. (1998). *Emotional development in young children*. New York, NY: Guilford Press.

Purpose of Work: The purpose of the chapter was to review and discuss the goals and research related to emotional and social development of children.

Summary: The authors explained how social development tasks change across childhood and how social difficulties at each age help clarify the role of emotion at that stage. They also described how social tasks and aspects of emotional competence relate to social interaction and relationship building with parents, peers and friends. The authors reviewed existing research on how emotional competence relates to social competence across developmental stages. The authors concluded with suggested areas for further research.

Conclusions: As a child develops, the complex relationship between emotional and social competence becomes more pronounced. Thus, for children to develop competence in both, it is critical for children to develop skills in managing, expressing, and understanding emotion.

Relevance to Current Work: This work contributed to the idea that emotional and social competence are interdependent and play an important role in the social development of children, thus this should be an area of focus when considering social communication intervention for children with LI.

Denham, S., von Salisch, M., Olthof, T., Kochanoff, A., & Caverly, S. (2002). Emotional and social development in childhood. In P. Smith, & C. Hart (Eds.), *Blackwell Handbook of Childhood Social Development* (pp. 307-328). Malden, MA: Blackwell Publishers.

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Conclusions: As a child develops, the complex relationship between emotional and social competence becomes more pronounced. Thus, for children to develop competence in both, it is critical for children to develop skills in managing, expressing, and understanding emotion.

Relevance to Current Work: This work contributed to the idea that emotional and social competence are interdependent and play an important role in the social development of children, thus this should be an area of focus when considering social communication intervention for children with LI.

Durkin, K., & Conti-Ramsden, G. (2007). Language, social behavior, and the quality of friendships in adolescents with and without a history of specific language impairment. *Child Development, 78*, 1441-1457. doi:10.1111/j.1467-8624.2007.01076.x

Purpose of the Study: The purpose of this study was to examine the relationship between language abilities and quality of friendships in adolescents with specific language impairment (SLI) and their typically developing (TD) peers.

Methods: A total of 120 adolescents with SLI between the ages of 15 and 16 years old and 118 of their age-matched peers participated in the study. Social-emotional functioning of the participants was assessed using the self-report measure: Strengths and Difficulties Questionnaire (SDQ). The quality of friendships for each participant was measured using the Friendship and Social Relationships section of the Social-Emotional Function Interview (SEF-I). This section involved an in-depth interview which examined aspects associated with quality of social interaction in adolescents. Parents of the participants were also interviewed to gain additional information on the children's social interactions and friendships.

Results: The results of the study indicated that participants who exhibited problem behavior experienced poorer friendship quality compared to the participants who exhibited more prosocial behaviors. After considering the effects of nonverbal IQ, sociability, and behavior tendencies, results indicated that language abilities were associated with level of friendship quality. Also, comparing friendship quality between the SLI group and their TD peer revealed marked differences. It was found that although 60% of the adolescents in the SLI group reported having quality friendships, the TD participants enjoyed more quality friendships than those in the group with SLI.

Conclusions: Longitudinal analyses concluded that early language difficulties were predictive of poorer friendship quality in adolescent years. However, the same correlation was not evident for early emotional and behavioral difficulties. Moreover, the authors suggested that social deficits experienced by children with SLI may be due to their inability to infer the perspective of others. Thus, it was suggested that intervention targeting structural language skills may not be sufficient for when considering overall functioning of individuals with SLI.

Relevance to Current Work: This work indicated that social deficits are highly related to language difficulties and that early language difficulties may be predictive of poor social functioning throughout development.

Elliot, S. N., Gresham, F., Frank, J. L., & Beddow, P. A. (2008). Intervention validity of social behavior rating scales: Features of assessments that link results to treatment plans. *Journal of Assessment for Effective Intervention, 34*, 15-24.

Purpose of the Study: The purpose of the article was to review the distinguishing attributes of ratings scales compared to other assessment measures, the use of rating scales to measure social behaviors of children, and aspects of rating scale construction that promote internal validity.

Method: The authors examined the benefits of using ratings scales when considering children's social behaviors as well as the fundamental assumptions associated with their use. The authors also highlighted important considerations when constructing behavior rating scales, determining construct validity, considering response scaling, using normative and standardized data, and deciding which informants should complete the scale. Moreover, the authors outlined ways to build intervention validity and utility into rating scales and provided a framework for reporting assessment results that facilitates intervention design.

Results: The authors suggested using a multimethod assessment approach to increase accuracy of identification and classification decisions. One way to accomplish this is through the use of ratings scales which are effective in guiding intervention and evaluating intervention outcomes. However, rating scales are not without limitation. The precision of rating scales, when measuring behavior, is relative and not absolute. Also, rater judgments can be affected by the environment and raters' perspectives. The authors argued, however, that implementation of a pragmatic theory for problem solution, assessment of socially valid content, and utilization of a reporting framework aligned to known and effective intervention options can minimize limitations and promote intervention validity of rating scale measures. This was exemplified as

the authors discussed approaches used to develop the Social Skills Rating System (SSRS) which was later revised to be the Social Skills Improvement System (SSIS).

Conclusion: The authors concluded that data gathered from ratings scales are likely to have a high level of intervention validity when they are designed to effectively direct and guide the selection of interventions and evaluate the outcomes. The results obtained from rating scales can assist with important decision making when the measure is theoretically and psychometrically aligned to treatment plans. However, the authors suggested that best practices include using multiple methods of assessment in various contexts that are completed by several raters in order to compare results and obtain the most accurate outcome measures.

Relevance to Current Work: This article emphasized the benefits of using appropriately designed rating scales for assessing and guiding selection of intervention for children with social language impairments.

Ford, J. A., & Milosky, L. A. (2003). Inferring emotional reactions in social situations: Differences in children with language impairment. *Journal of Speech, Language, and Hearing Research, 46*, 21-30. doi:10.1044/1092-4388(2003/002)

Purpose: The purpose of this study was to explore the ability of kindergarten children with LI and their typically developing peers to infer the emotional reactions of characters from story presentations.

Method: The study involved a total of 24 children, 12 with LI and 12 of their chronically aged matched peers. During the study, children with LI and the control group were asked to label and identify pictures of facial expressions portraying the emotions *happy*, *sad*, *surprised*, and *mad*. Nine stories were then presented to the participants in one of three modalities: verbal, visual, or a combination of both visual and verbal. The children were asked to choose among the four pictured facial expressions when inferring the emotional reactions conveyed in the stories.

Results: Children with LI performed significantly lower than their peers when inferring emotions in relation to the stories presented. These children were also more likely to make valance errors, such as *happy* for *angry*, when the intended emotion was misidentified.

Conclusion: The researchers concluded that children with LI have difficulty integrating emotion understanding into social inferencing contexts concerning emotion.

Relevance to Current Work: This study contained evidence that children with LI differ from their typically developing peers in processing and inferring social information.

Ford, J. A., & Milosky, L. A. (2008). Inference generation during discourse and its relation to social competence: An online investigation of abilities of children with and without language impairment. *Journal of Speech, Language, and Hearing Research, 51*, 367-380. doi:1092-4388/08/5102-0367

Purpose of the Study: Using response time measures, the study examined whether typically developing children and children with language impairment (LI) made emotion inferences during the process of discourse comprehension. Several variables influencing emotion inferencing were also examined in addition to the relationship of these variables to social competence.

Methods: Two groups of preschool-age children participated in the study (16 with LI and 16 typically developing). A total of seven tasks were presented to each child, including a vocal response time measure, inferencing task, receptive language measure, nonverbal cognitive measure, confrontational naming measure, drawing task, and situations that cause emotions. The teacher of each child completed a questionnaire as a measure of social competence.

Results: As part of the inferencing task, the group of typically developing children named expressions significantly more slowly in the mismatched condition than in the matched condition, however, children with LI did not differ in response times between the two conditions. Results showed that language and vocal response time measures, confrontational naming, and emotion situation knowledge were linked to emotion inferencing ability. Results also indicated that the ability to draw facial expressions and make emotional inferences was significantly related to social competence.

Conclusions: It was found that the response time measures used were accurate in identifying inferencing abilities. For example, it was found that typically developing children made online emotion inferences while comprehending discourse, whereas children with LI did not make online emotion inferences during comprehension processes. Emotion inferencing was interrelated with discourse comprehension and social competence in children and additional factors also influenced these areas.

Relevance to Current Work: This study demonstrated that children with LI often experienced deficits with emotion inferencing.

Fujiki, M., Brinton, B., Hart, C. H., & Fitzgerald, A. (1999). Peer acceptance and friendship in children with specific language impairment. *Topics in Language Disorders, 19*, 34-48. doi:10.1177/0265659011419234

Purpose of the Study: This study investigated peer acceptance and friendships experienced by children with specific language impairment (SLI).

Methods: Eight elementary-aged children (seven girls and one boy) between the ages of 6 and 10 were included in the study. Each of the participants was identified with SLI and scored at least 1 *SD* below the mean on formal language assessments. To assess peer acceptance and friendships, a single examiner used peer socio-metric rating and reciprocal friendship nomination procedures. Pictures or lists of classmates were presented to the students who were then asked to rate classmates according to whom they liked to play with a lot, whom they kind-of liked to play with, or whom they did not like to play with. Following this activity, each student was then asked to name his or her three best friends in the class.

Results: For the socio-metric rating assessment, overall and gender-rating scores of acceptance were calculated for each child using a 3-point rating scale. Class means were also calculated. To determine mutual friendships among children with SLI and their classmates, each child's answers regarding their three best friends was compared to the answers of the other children in the class. For the peer acceptance measure, results indicated three of the eight participants with SLI were rated by classmates at least 1 *SD* below the class mean. Although some of the participants demonstrated acceptable peer acceptance, this did not necessarily translate to the formation of reciprocal friendships. For the number of mutual friendships, it was found that five of the eight children were never named among classmates as a best friend. Three of the first grade girls with SLI had reciprocal friendships with at least one other girl (who was also identified with SLI). Unexpectedly, one of the first graders with SLI was identified by six children as a friend and she also had two reciprocal friends.

Conclusions: Compared to their typically developing peers, the participants with SLI experienced fewer mutual friendships and were generally rated as being less accepted, however, the results for each individual were highly variable across classmates. The authors concluded that treatment for children with SLI needs to include targets addressing social communication.

Relevance to Current Work: This study illustrates the concern that children with language impairment experience difficulties with peer acceptance and have fewer quality friendships compared to their typically developing peers.

Fujiki, M., Brinton, B., McCleave, C. P., Anderson, V. W., & Chamberlain, J. P. (2013). A social communication intervention to increase validating comments by children with language impairment. *Language, Speech, and Hearing Services in Schools, 44*, 3-19. doi:10.1044/0161-1461(2012/11-103)

Purpose of the Study: This study investigated the effectiveness of a social communication intervention designed to increase validating comments in children with language impairment (LI). Validating comments were defined as statements directed at peers with the intent of encouraging further interaction (e.g., making positive statements, sharing information, compliments on actions, comments of consolation, statements of encouragement, and social acknowledgements).

Method: Four participants were included in the study with three of the participants receiving 40 (15-minute) sessions and the remaining participant receiving 20 (30-minute) sessions. The treatment goals addressed during the sessions included increasing successful access to peers during ongoing play, increasing cooperative play and work with peers, and increasing validating comments directed to peers during play or work. The researchers gathered data on the social competence and cooperative learning of the children by looking at the number of both validating and negative comments. Performance was also examined by comparing the performance of the children with LI to that of their typically developing peers. Social competence was assessed using socio-metric measures of peer acceptance and friendship, and the Teacher Behavior Rating Scale (TBRS).

Results: Results demonstrated varying increases in the production of validating comments across the four participants. One child made notable gains, two of the children made more modest gains, and one child demonstrated minor improvement. Three children demonstrated little to no change in peer acceptance, with one child showing a decrease. Teachers reported an increase in perceived likeability and prosocial behavior for two of the children.

Conclusion: The authors concluded that some children increased their production of validating comments following a relatively short period of intervention.

Relevance to Current Work: The intervention addressed emotional competence through the facilitation of positive interactions between children with LI with and their peers. It also piloted methods to evaluate a social communication intervention.

Fujiki, M., Brinton, B., Morgan, M., & Hart, C. H. (1999). Withdrawn and sociable behavior of children with language impairment. *Language, Speech, and Hearing Services in Schools, 30*, 183-195. doi:0161/1461/99/3002/0183

Purpose of the Study: The purpose of this study was to examine the difference in withdrawn and sociable behaviors of children with language impairment (LI) and their typically developing peers.

Method: A total of 82 children participated in the study, including 41 children with LI and 41 of their typically developing gender and age-matched peers. The Teacher Behavior Rating Scale (TBRS, Hart & Robinson, 1996) was used as a source of measure. The TBRS was presented to the classroom teacher of each participant. The teachers were instructed to complete the TBRS based on their observations of the students' withdrawn and sociable behaviors.

Results: The TBRS Teacher ratings indicated that children with LI displayed higher levels of reticence compared to typically developing peers. Moreover, boys with LI were rated as showing higher levels of solitary-active withdrawal than girls with LI and typically developing children of both genders. The children with LI did not significantly differ from their typical peers on solitary-passive withdrawal. In the area of sociable behaviors, teacher ratings indicated that children with LI scored significantly lower than their typical peers on the subtypes of impulse control/likeability and prosocial behavior.

Conclusion: The study suggests a complex relationship between LI and withdrawn and sociable behaviors; however, LI is not the single causal factor of social difficulties in children with LI so other aspects of social competence should be taken into account. It has been considered that deficits in sociable behaviors and increased withdrawn behaviors in children with LI can lead to negative social outcomes, thus it is important to consider the complex nature of these relationships when assessing and treating children with LI.

Relevance to Current Work: As part of the current thesis, the TBRS is also used to assess sociable behaviors in children with LI. Also, if there is evidence that children with LI demonstrate poorer social behaviors than their typically developing peers as suggested, then

interventions such as the one proposed in this thesis are needed to help improve emotion understanding and sociable behaviors in children with LI.

Fujiki, M., Spackman, M. P., Brinton, B., & Illig, T. (2008). Ability of children with language impairment to understand emotion conveyed by prosody in a narrative passage. *International Journal of Language & Communication Disorders, 43*, 330-345. doi:10.1080/13682820701507377

Purpose of the Study: It is well documented that children with language impairment (LI) demonstrate difficulty with the form, structure, and content of language, however, more recent studies have revealed that deficits extend into social and pragmatic aspects of language as well. This study examines this idea by investigating the ability of children with LI to use prosodic cues to identify emotions conveyed by prosody.

Methods: The study involved presenting 19 children with LI and their chronologically age-matched peers (ranging in age from 7:9 to 10:10) with 16 short narratives read by actors to express *anger, sadness, happiness, and fear*. The children were then asked to identify the conveyed emotion.

Results: The results of the study demonstrated that children with LI performed significantly lower than their typical peers in identifying the emotion expressed in the passage, with fear being the most difficult to identify.

Conclusion: It was concluded that difficulty in understanding emotion conveyed by prosody may be indicative of children with LI experiencing deficits in emotion understanding.

Relevance to Current Work: The study suggested the need for replication of these findings in addition to the development and implementation of an intervention designed to enrich emotion understanding in children with LI. The current thesis also involved the implementation of an intervention that targeted the development of emotion understanding and social competence for this population.

Gerber, S., Brice, A., Capone, N., Fujiki, M., & Timler, G. (2012). Language use in social interactions of school-age children with language impairments: An evidence-based systematic review of treatment. *Language, Speech, and Hearing Services in Schools, 43*, 235-249. doi:10.1044/0161-1461(2011/10-0047)

Purpose of the Study: The purpose of this article was to summarize an evidence based systematic review (EBSR) of studies that address treatments of social communication impairments (11 areas of treatment were reviewed).

Method: The review was led by an ad hoc committee convened by the American Speech-Language-Hearing Association (ASHA) in collaboration with ASHA's National Center for Evidence-Based Practice in Communication Disorders. The committee, comprised of five professional speech and language pathology researchers, searched 22 electronic databases to

locate studies that examined problems with language use in children with LI. This was done using key words related to social communication disorders or interventions.

Results: After narrowing down the results from 836 articles that were initially identified, only eight studies addressed the efficacy of interventions designed to treat social communication disorders in school-aged children with LI. Each of the eight accepted studies was evaluated based on methodological quality in addition to participant and research characteristics. The methodological quality of the eight studies ranged considerably. Based on the limited number of studies, the committee found it difficult to make empirically supported recommendations for change in standard clinical practices based on this review. However, the results did suggest that social communication and pragmatic language intervention have demonstrated some gains in improving the social functioning of children with LI.

Conclusion: It was suggested that until a better system is developed, clinicians should continue to make evidence-based decisions that support positive treatment outcomes in combination with their own expertise, knowledge, and experiences related to the child they are treating.

Relevance to Current Work: This article was significant to the current thesis as it supported reasons for why the field needs more studies examining the efficacy of social communication interventions and the need for refined standards and methods to evaluate those studies. The authors pointed out that, despite limitations in the studies evaluated, researchers across a range of settings achieved positive results in increasing language use in social interactions. Thus, it is important that social communication interventions remain a central part of therapy.

Hart, K. I., Fujiki, M., Brinton, B., & Hart, C. H. (2004). The relationship between social behavior and severity of language impairment. *Journal of Speech, Language, and Hearing Research, 47*, 647-662. doi:10.1044/1092-4388(2004/050).

Purpose of the Study: Studies have indicated that children with language impairment (LI) are at risk for social difficulties, however, the relationship between social competence and LI remains uncertain. Researchers are now examining the link between the severity of LI and social skills using categories of social behavior. The purpose of this study was to examine the relationship between levels of LI and specific social behaviors, such as withdrawal and sociability.

Method: The Teacher Behavior Rating Scale (TBRS) was used to verify the presence of withdrawn behavior and poor sociability in children with LI in addition to determining if a correlation exists between the level of performance on a formal language test and the child's social profile. A total of 82 children participated in the study, 41 with children with LI and 41 of their typically developing peers. The two groups of children were matched according to gender and age. The TBRS was provided to each participant's teacher in order to assess social behavior. Comparisons were made between the children with LI and the control group using the TBRS subtype scores for withdrawal and sociability. The subtypes of withdrawal assessed included

solitary-active withdrawal, solitary-passive withdrawal, and reticence. The subtypes of sociability assessed included likeability and prosocial behavior.

Results: Analyses were conducted to determine the relationship between the severity of LI and the level of observed social functioning reported by the teachers. Results indicated that teachers rated children with LI significantly higher in the areas of reticence and solitary-passive withdrawal compared to their typically developing peers. There was not a significant difference between the groups in teacher ratings for solitary-active withdrawal. Results also indicated that teachers scored children with LI significantly lower than their typical developing peers in both likeability and prosocial behavior. In addition, the severity of LI was associated with prosocial behavior but not with withdrawn behavior.

Relevance to Current Work: This study provided supporting evidence that children with LI have difficulty with social competence and are perceived to show higher levels of reticence and poorer sociable behaviors than their typically developing peers. Similar to this study, the current thesis is outlined to investigate the relationship between LI and sociable behaviors using the TBRS as a source of measure.

Liiva, C. A., & Cleave, P. L. (2005). Roles of initiation and responsiveness in access and participation for children with specific language impairment. *Journal of Speech, Language, and Hearing Research*, 48, 868-883. doi:10.1044/1092-4388(2005/060)

Purpose of the Study: This study investigated the ability of children with specific language impairment (SLI) and their typically developing (TD) peers to access and participate in social interactions between two unfamiliar partners.

Methods: A total of 69 children participated in the study. The children formed 23 triads which consisted of 1 target child and 2 unfamiliar gender and grade-matched peers. The target participants consisted of 10 children identified with SLI (3 females and 7 males) as well as 13 TD children (6 females and 7 males). The remaining children participated as play partners. The procedure used for the study included recorded observation of the triadic interactions. The two play partners were introduced first and were invited to play with a thematic toy set. After 10 minutes passed, the target child was introduced to the two play partners. The target child was given 10 minutes to access interaction with their play partners. The triadic interactions were later transcribed, coded, and analyzed.

Results: Analyses were conducted to assess when the target child was successful in accessing ongoing interaction among play partners. The attempts were then divided into access response or access initiation. After the first successful access point was determined, all other analyses were performed during the pre-access period or post-access period. Analyses for the study included the number of partner inclusion bids the target children received prior to the first access point, the length of time the target children required to access ongoing interactions, the length of time it took the target children to access interaction through initiation, and the percentage of intervals the target children were involved in partner play, solitary play, or on-looking behavior. Results indicated that all of the target children achieved access, but varied in the manner in which access occurred. Only one of the TD children initially accessed

responsively to bids made by play partners, but this child eventually achieved access through initiation. The remaining TD children accessed ongoing play by making initiations toward the play partners. Over half of the children with SLI accessed ongoing interactions responsively, and only two achieved successful access initiation. Results also indicated that there was not a significant difference in the number of utterances produced by members of the TD group. However, participants with SLI produced significantly fewer utterances than their play partners.

Conclusions: The results of this study supported the idea that children's language ability influences their ability to perform social tasks. Moreover, the children with SLI demonstrated difficulties initiating ongoing interactions even after being invited by their peers to join them in play. This difficulty was more closely related to the children's expressive language skills and the linguistic demands of the task versus severity of language impairment. Thus, it is important for clinicians to consider the social implications related to deficits in language when working with the SLI population. It is also important for social difficulties to be addressed in intervention in order to increase children's access to peer interactions and decrease risks of peer rejection or neglect.

Relevance to Current Work: This work provided further evidence that children with SLI often experience deficits beyond language structure. These children also experience deficits with social communications, including accessing ongoing interactions with peers.

Merkenschlager, A., Amorosa, H., Kiefl, H., & Martinius, J. (2012). Recognition of face identity and emotion in expressive specific language impairment. *Folia Phoniatica et Logopaedica*, 64, 73-79. doi:10.1159/000335875

Purpose of the Study: Previous studies have shown that children with language impairment are also at risk for deficits in social communications. One area of social competence studied in children with LI is their ability to recognize emotion portrayed through facial expression. The purpose of this study was to assess the accuracy between children with LI and their typically developing peers in recognizing face identity and emotion.

Method: As part of the person recognition task, researchers presented a group of 24 children with LI and a group of 24 typically developing children (ages 7 to 11 years old) with picture slides of five actors or actresses followed by movie scenes in which the children were asked to recognize the same actor/actress. The emotion recognition task consisted of asking both groups of children to identify the emotions conveyed in the facial expressions of actors shown in 13 different silent movie scenes. The movie scenes consisted of everyday life situations in which feelings of *joy*, *pain*, *fear*, *anger*, etc. were portrayed. The children identified the emotion displayed in the scenes by either choosing a line drawing matching the emotion expressed, or by providing a verbal or pantomimed description of the emotion.

Results: When comparing the performance of children with LI to those of their age-matched controls, the children with LI scored significantly poorer than their normally developing peers in both face identity and emotion recognition.

Conclusion: The researchers concluded that difficulty with nonverbal expressions of emotion was closely associated with LI. Moreover, the results of this study suggested that the impaired performance of children with LI in accurately identifying non-verbal emotion might be one important causal factor for social communication deficits in this population.

Relevance to Current Work: This study investigated an aspect of emotion understanding, which was also a focus of the current intervention.

Mok, P. H., Pickles, A., Durkin, K., & Conti-Ramsden, G. (2014). Longitudinal trajectories of peer relations in children with specific language impairment. *Journal of Child Psychology and Psychiatry*, 55, 516-527. doi:10.1111/jcpp.12190

Purpose of the Study: Children with language impairment (LI) are at risk for poor peer relations. The purpose of this study was to investigate longitudinal trajectories of peer relations in a sample of children with LI over a nine year period (from 7 to 16 years of age).

Method: The authors randomly selected 171 children with a history of LI from a larger group of 242 children who were originally part of a larger study. Two measures were used to examine peer relations: the peer problem subscale from the Strengths and Difficulties Questionnaire (SDQ) filled out by teachers, and teachers' responses to three items in the Rutter Children's Behaviour Questionnaire. The SCQ was completed by participants' teachers at ages 11 and 16 and the Rutter Children's Behaviour Questionnaire was administered when the participants were 7, 8, and 11 years old. Prosocial behavior and behavior difficulties were also measured using subscales of the SDQ when the participants were 11-years-old. Other measures such as performance IQ, receptive and expressive language abilities, pragmatic language, and reading accuracy and comprehension were also used and assessed across various ages.

Results: Discrete factor growth modeling was used to chart developmental trajectories. Multinomial logistic regression analysis was conducted to identify factors associated with group membership. Four distinct developmental trajectories of peer relations were found: 22.2% of the participants experienced low-level to no problems in peer relationships, 12.3% experienced childhood-limited problems, 39.2% experience childhood-onset persistent problems, and 26.3% experienced adolescent-onset problems. Overall, it was found that children with LI were at greater risk of poor trajectories of peer relations. The study also indicated that prosocial behavior was the factor most strongly associated with trajectory group membership. In other words, the children with higher levels of prosocial behavior and better pragmatic language experienced lower levels of emotional problems and had less difficulty developing peer relationships.

Conclusion: The authors concluded that while some children seem to overcome early difficulties in social communications, the majority showed persistent problems regarding relationships with peers. However, it was demonstrated that high levels of prosocial behavior are able to counteract some of the poor social outcomes presented.

Relevance to Current Work: This study was relevant to the current thesis in that it demonstrated the possible social outcomes that can result when children with LI experience deficits in social communication and the projected results for those who overcome these deficits.

Phillips, B., & Lonigan, C. (2010). Child and informant influences on behavioral ratings of preschool children. *Psychology in the Schools, 47*, 374-390. doi:10.1002/pits.20476

Purpose of the Study: The purpose of the study was to investigate the relationship among teacher, parent, and direct observer behavior ratings of preschool children from economically as well as ethnically diverse backgrounds.

Method: A total of 166 children from middle-income (MI) as well as 199 children from low-income (LI) backgrounds participated in the study. The Emotionality, Activity, Sociability, and Impulsivity Temperament Survey (EASI) and a modified version of the CTRS-28 were used by teachers, parents, and observers to rate participants' behavior. The modified CTRS-28 used a scale that ranged from 0 (not at all) to 3 (very much) when rating children's behavior. The total scores for the three subscales of Conduct Problems, Hyperactivity, and Inattentive were analyzed. The EASI was comprised of 20-item questionnaire and children were rated using a 0 to 4 Likert scale which indicated whether each statement applied to the child "not at all" to "very much." The total scores for each of the subscales in the EASI were also analyzed.

Results: Results were obtained by calculating the relative agreement in ratings between teachers, parents, and direct observers. These were examined by using intra-class correlations (ICC), which is a measure of the agreement between rater pairs. Cross-rater ICCs were calculated for each pair of sources and for all three raters simultaneously on the six subscales, and agreement between different pairs was compared both within and between income groups for each scale. Results demonstrated that, in general, the ICC values were significantly greater than chance in both income groups. Also, agreement between teacher and direct observer ratings was consistent across both income groups. However, rater agreement was only moderate at best and better overall for the MI group. It was also found that teacher ratings were higher in the LI classrooms, whereas observers proved the lowest average ratings of behavior problems. Likewise, parents and teachers tended to rate children's behavior based on the absence or presence of itemized behaviors, especially those behaviors that were more disruptive, noncompliant, or required more attention (thus skewing representation of the behavior). On the other hand, observers were trained to attend to all behaviors and were exposed to more children across settings, which may have contributed to their significantly lower ratings.

Conclusions: The study identified significant findings regarding the relationships between multiple raters of preschool children's behavior. The results obtained provided evidence for both the commonalities and differences found between sources when rating the same children's behaviors. The study also illustrated the need for multiple methods of evaluation when assessing children's behavior, especially those with LI.

Relevance to current study: This study provided support for using multiple sources of data (e.g., multiple rating scales and raters) when assessing the behaviors of young children, especially considering that that teacher, parent, and observer ratings were not interchangeable.

Radke-Yarrow, M., Zahn-Waxler, C., & Chapman, M. (1983). Children's prosocial dispositions and behavior. In E. Hetherington (Ed.), *Handbook of child psychology, socialization, personality, and social development* (Vol. 4, pp. 469-546). New York, NY: Wiley.

Purpose of Work: In this work the authors discussed prosocial behaviors, such as care or concern for others. More specifically, they reviewed the nature of positive personalities/dispositions and their influence on behaviors in children.

Summary: The authors presented the historical, cultural, psychological, and biological background of prosocial behavior. A systematic review of research related to prosocial behavior in children within the domain of developmental psychology was then discussed. This review revealed a change in perspective regarding altruism and empathy in children. It was indicated that prosocial behaviors such as sharing, cooperating, helping, feeling empathy, and caring for others need to be considered when analyzing a child's overall social development. The authors also presented the idea that social behavior is best understood within the context of emotional development. They described prosocial behavior as behaviors that are carried out for the benefit of others. In young children, prosocial behavior is demonstrated by the natural way they express care and concern for others.

Conclusions: The authors concluded that social development, maturity, and experiences influence a child's prosocial behavior. This relationship between these factors seems to occur independently of the child's innate readiness. However, the explained that research in understanding the nature of this relationship has changed considerably over time, and much more research is needed to better understand the impact of individual factors in the manifestation of prosocial behaviors in children

Relevance to Current Work: This chapter defined, discussed, and facilitated understanding of prosocial behaviors in children and the role they play in social and emotional development of children.

Rubin, K. H., Coplan, R. J., & Bowker, J. C. (2009). Social withdrawal in childhood. *Annual Review of Psychology*, *60*, 141–171. doi.10.1146/annurev.psych.60.110707.163642

Purpose of the Study: Three main goals were presented in this article. The first was to provide definitional clarity for the construct of social withdrawal. The second was to investigate factors that help predict social withdrawal in children. The third was to consider the implications of childhood social withdrawal.

Methods: The authors considered the historical and theoretical development of social withdrawal as well as recent research supporting the idea that peer interactions and relationships (or lack thereof) impact social and emotional functioning. The authors also presented a review of the many definitions and aspects of social withdrawal. They outlined the developmental course of childhood social withdrawal including the influence of biological factors, stability of withdrawn behavior, and parental influence. Implications of childhood social withdrawal were identified. Some of these implications included fewer interactions and quality relationships with

peers, peer rejection, development of anxiety, difficult transitioning to school, lower expressive language skills, and lack of academic confidence.

Results: The authors proposed that social incompetence associated with withdrawn behavior may result from the interactions of an inhibited temperament (e.g., fear and anxiety), parent-child relationships, peer rejection/victimization, and preference for solitude. Possible outcomes related to the interaction of these factors included low self-esteem, social anxiety, loneliness and possibly depression.

Conclusions: The authors concluded that not all acts of solitude lead to negative outcomes. Those who experience solitude due to social disinterest do not experience the same negative outcomes as those who experience other forms of social withdrawal (e.g., reticence). However, if an individual continues to demonstrate unsociable behaviors into their adolescent and adult years, they may experience deficits in important social and social-cognitive skills (although, these longer-term outcomes of unsociability require further research). The authors also concluded that there are significant protective factors presented in recent research that can help to counteract negative social outcomes associated with withdrawal including early intervention and specific treatment approaches.

Relevance to Current Work: This article provided an in-depth understanding of the background, predictors, consequences, and social implications of withdrawn behavior which is often experienced by children with LI.

Salovey, P., Detweiler-Bedell, B. T., Detweiler-Bedell, J. B., & Mayer, J. D. (2008). Emotional intelligence. In M. Lewis, J. M. Haviland-Jones, & L. Feldman Barrett (Eds.), *Handbook of Emotions* (3rd ed., pp. 533-547). New York, NY: Guilford Press.

Purpose of Work: The purpose of this chapter was to define, describe, and discuss emotional intelligence and its relationship to social and emotional functioning.

Summary: The chapter discussed the history and research surrounding emotion. Emotional intelligence was introduced in terms of its relationship to reasoning. A framework for emotional intelligence was presented by the authors, including details of the each component (emotion perception, emotion use, emotion understanding, and emotion regulation). Measures of emotional intelligence are still developing, however, the authors discussed current measures such as self-report assessments and task-based measures in addition to the findings and implications that have stemmed from the use of these measures.

Conclusions: The authors concluded that the concept of emotional intelligence has begun to emerge, develop, and gain more interest in research, however, there is still much to be discovered. The authors reiterated the importance of viewing emotional intelligence in relation to an individual's abilities and competencies in appraising, understanding, regulating, and using emotions. Moreover, they concluded that this area of research will not prove beneficial unless emotional intelligence can be measured reliably and be applied to real-world outcomes.

Relevance to Current Work: This work provided a foundational understanding of emotional intelligence and the implications for an individual's social and emotional functioning.

Spackman, M. P., Fujiki, M., & Brinton, B. (2006). Understanding emotions in context: The effects of language impairment on children's ability to infer emotional reactions. *International Journal of Language & Communication Disorders, 41*, 173-188. doi:10.1080/13682820500224091

Purpose of the Study: The purpose of this study was to investigate the ability of children with LI to infer emotions experienced in response to specific social situations.

Method: In this study, a group of 43 children with LI and a control group of 43 typically developing children were asked to identify emotions experienced by a fictional character, Chris, in situations that would elicit feelings of anger, fear, happiness, or sadness. The children were asked to identify the emotion Chris experienced in relation to the scenario. They were also asked to discuss the emotion they associated with the scenarios. For example, they were asked why Chris felt a certain emotion and how the particular emotion would feel (e.g., How does it feel inside to be angry?).

Results: Both the children in the LI and control group most accurately identified happiness, followed by sadness. Identifying fear and anger was more difficult for both groups. The older children in the groups were found to be more accurate in identifying emotions than the younger children. Likewise, the control group was more accurate than the LI group in identifying emotions. There were few valence errors in either group.

Conclusion: They concluded that children with LI were significantly less accurate and sophisticated in inferring what emotions would be experienced when compared to their typically developing peers. The difficulty that children with LI have with recognizing emotion through facial expressions may affect their ability to engage in successful social interactions. Moreover, it is suggested that further research be conducted in order to investigate how other aspects of emotional competence are associated with LI.

Relevance to Current Work: This article provided evidence that emotion understanding is closely related to LI, which is a key factor in successful social interactions. Moreover, a key focus of the current thesis was facilitating emotion understanding in children with LI.

Spackman, M., Fujiki, M., Brinton, B., Nelson, D., & Allen, J. (2005). The ability of children with language impairment to recognize emotion conveyed by facial expression and music. *Communication Disorders Quarterly, 26*, 131-143. doi:10.1177/15257401050260030201

Purpose of the Study: The article presents two tasks designed to examine emotional understanding in children with LI. The first study investigated children's ability to identify facial expressions in photographs. The second study consisted of identifying emotions conveyed in excerpts of classical music.

Methods: A group of 43 children (21 boys and 22 girls) with language impairment and 43 of their age and gender-matched peers participated in the study. Participants were divided into two age groups. The younger group consisted of 11 boys and 10 girls between 6 and 7 years of age. The older group included 12 boys and 10 girls with an average age of 10 years. Procedures for the first study included presenting participants with 24 photographs of faces expressing emotions and asking the children to identify the emotion shown. Procedures for the second study included presenting excerpts of classical music. After hearing the excerpt, the children were asked to identify which emotion was conveyed through the music.

Results: Results from the facial expression task demonstrated results similar to previous findings. The children were able to successfully identify happiness, sadness, and anger. However, accurate identification of fear was more difficult for both groups of children. Moreover, identifying surprise and disgust was more difficult for those in the LI group than the group with typically developing children. The influence of gender and age on this task was not explicit. The second task, interpreting emotion through music, demonstrated variable results. Both groups of children had the most success identifying musical excerpts conveying happiness. Excerpts identified as *anger*, *sadness*, and *fear* were lower in their agreement levels, with more confusion between *anger* and *fear*. For this task, children with LI presented with lower agreement scores overall than the typically developing group. Also, there were some differences identified between gender and age groups, especially in the identification of *fear*.

Conclusions: It was concluded that children with LI recognized expression of emotion differently than their typically developing peers. The results also suggested that identification of nonverbal expressions of emotion is interrelated with language development and impairment. However, additional research is needed to explore this relationship in regards to children with LI. This population may experience deficits in emotional understanding due to limited language skills, less social interactions with others, and fewer opportunities to participate in interactions that facilitate language development.

Relevance to Current Work: This study indicated that children with LI experience greater difficulty in accurately identifying emotion compared to their typically developing peers. These results also have implications for clinical interventions for children with LI.

Timler, G. R. (2008). Social knowledge in children with language impairments: Examination of strategies, predicted consequences, and goals in peer conflict situations. *Clinical Linguistics and Phonetics*, 22, 741-763. doi:10.1080/02699200802212470

Purpose of the Study: The purpose of the study was to investigate the social knowledge of children with language impairment (LI) by examining their ability to suggest effective strategies for resolution of conflicts during hypothetical scenarios.

Methods: Twenty-four children between the ages of 8 and 12 participated in the study. Twelve of the participants were identified with LI while the other 12 subjects had typically developing (TD) language skills. Research tasks consisted of the presentation of 12 hypothetical peer conflict scenarios administered under two conditions: an open-ended condition and a forced choice condition. Responses from the open-ended condition were transcribed and coded whereas

participants' choices in the forced-choice condition were recorded online and tallied. Parents of the participants were administered the SSRS to assess the frequency of specific social skills and problem behaviors. Likewise, the teacher form of the SSRS was completed by the children's teachers to identify the presence and severity of social difficulties in school settings.

Results: For the open-ended condition, it was found that children in the LI group generated fewer prosocial strategies when solving hypothetical peer conflicts and predicted fewer positive peer consequences than the TD group. Both groups of children stated more self-interest goals than relationship goals. For the forced-choice condition it was found that children with LI selected fewer prosocial strategies, with 12 LI participants selecting one or more hostile strategies. Teacher reports indicated that the children with LI experienced lower social skills and more problem behaviors while parental reports resulted in no differences between the LI and TD groups.

Conclusions: It was concluded that children with LI demonstrated fewer effective strategies for resolution of conflicts compared to their TD peers. Based on these findings, it is important for service providers to provide social communication intervention that supports social skills and knowledge for this population. Moreover, the authors concluded that the hypothetical tasks presented in this study can be used as a tool to differentiate between social skill acquisition and skill performance deficits. Children experiencing these deficits require targeted intervention addressing the how and why of what to do in social situations.

Relevance to Current Work: The findings from the study validated the concern that children with LI experience difficulties with social knowledge, including suggesting and identifying appropriate peer conflict resolution strategies.

Timler, G., Olswang, L., & Coggins, T. (2005). Social communication interventions for preschoolers: Targeting peer interactions during peer group entry and cooperative play. *Seminars in Speech and Language, 26*, 170-180. doi:10.1055/s-2005-917122

Purpose of the Study: Some children with language impairment (LI) differ from their peers in the way they approach and manage interactions. The purpose of the article was to consider various intervention strategies that facilitate peer group entry and cooperative play for children with LI.

Methods: The article discussed two purposes of social communication assessment, including identification of children with social communication problems and identification of appropriate goals and situations for intervention. Also identified were the essential features of social communication interventions which included the incorporation of typical peers as part of the intervention, arranging small group training sessions where social communication targets are taught and practiced, and implementing strategies to support generalization of social behaviors within the classroom setting.

Results: Inclusion of typical peers in intervention provided opportunities for children with LI to interact with, learn from, and model the social behaviors of their peers. Likewise, small group training sessions allowed opportunities for children with LI to learn new social

behaviors, practice these behaviors during play with their typical peers, and review play sessions with the clinician to gain feedback on performance. The social behaviors learned in the small group training sessions helped to generalize the behaviors to the classroom setting. However, to further promote generalization, classroom therapy sessions needed be conducted where the teacher played an active role in addressing targets and providing feedback. Incorporating these strategies for children with LI demonstrated positive changes in the children's language skills and social behaviors, especially in the areas of peer entry and cooperative play.

Conclusions: The authors concluded that preschoolers with LI can benefit from interventions that facilitate communication situations such as peer entry and cooperative play. These skills are an important part of children's everyday communication interactions and are necessary to achieve successful social interactions with peers. Moreover, effective social communication interventions include those that instruct and support target social behaviors of children in the context of the classroom. The ability of children with LI to generalize these skills to the classroom is pertinent to their ability to internalize these learned behaviors.

Relevance to Current Work: This article illustrated the importance of interventions targeted to help children with LI gain access to and manage peer interactions, which are fundamental components of social and emotional development.

Wadman, R., Durkin, K., & Conti-Ramsden, G. (2008). Self-esteem, shyness, and sociability in adolescents with specific language impairment (SLI). *Journal of Speech, Language, and Hearing Research, 51*, 938-952. doi:10.1044/1092-4388(2008/069)

Purpose of the Study: The purpose of the study was to determine if lower self-esteem, shyness, and low sociability were associated with specific language impairment (SLI) in adolescents.

Methods: Participants for this study included 54 adolescents with SLI and 54 of their peers with typical language (TL) abilities. All participants were between the ages of 16 and 17 years. Self-report measures including the Rosenberg Self-Esteem scale and the Cheek and Buss Shyness and Sociability scales were used to compare the adolescent groups. The assessments were administered in one session with all items read aloud with additional clarification provided as needed.

Results: Results indicated that mean self-esteem score for adolescents in the SLI group were lower than that for the TL group, however, most self-esteem scores were within normal range. As predicted, the SLI group had higher shyness scores than adolescents in the TL group. However, the scores for sociability did not significantly differ between the two adolescent groups. Regression analysis indicated that language ability was not predictive of self-esteem, however, shyness proved to be a more predictive factor (e.g., individuals who are shyer may experience lower self-esteem).

Conclusions: Based on the results presented, the authors concluded that adolescents with SLI may be at higher risk for social limitations such as lower levels of self-esteem and higher levels of shyness. It was suggested the clinicians consider these difficulties when working with

and determining intervention strategies for individuals with SLI. Moreover, interventions designed to support assertiveness and ameliorate social anxieties may prove more beneficial for adolescents with SLI than generalized social skills training.

Relevance to Current Work: This study supported the idea that social limitations experienced by children with SLI, such as low sociability and shyness, may persist into adolescence.

Appendix B: Clinical Evaluation of Language Fundamentals-5 (CELF-5)

Clinical Evaluation of Language Fundamentals-5 (CELF-5)

Participant	CELF-5 ¹ Percentile Rank Scores					
	Age	Sentence Comp ²	Word Structure	Formulated Sentences	Recalling Sentences	Core Percentile
VA	5:07	25	9	1	5	5
JS	7:11	50	2	9	9	9
	Age	Word Classes	Semantic Relationships	Formulated Sentences	Recalling Sentences	Core Percentile
PW	9:10	50	2	16	5	9
KJ	10:01	<1	16	9	2	2
MG	10:11	5	2	25	2	4

Note. ¹Clinical Evaluation of Language Fundamentals-5 (CELF-5). ²Sentence Comprehension.