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Social Outcomes of Students with Language Impairment: An Eight-Year Follow-up Study

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SOCIAL OUTCOMES OF STUDENTS WITH LANGUAGE IMPAIRMENT: AN EIGHT-YEAR FOLLOW-UP STUDY

by

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ABSTRACT

SOCIAL OUTCOMES OF STUDENTS WITH LANGUAGE IMPAIRMENT:

AN EIGHT-YEAR FOLLOW-UP STUDY

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Master of Science

This study re-examined the language and social skills of four females with language impairment who were initially studied eight years ago (Brinton, Fujiki, Montague, & Hanton, 2000; Fujiki, Brinton, Isaacson, & Summers, 2001). Language measures included the *Clinical Evaluation of Language Fundamentals-Fourth Edition* (Semel, Wiig, & Secord, 2003) and a thirty minute language sample. Social measures included the *UCLA Loneliness Scale-Version 3* (Russell, 1996), parent, teacher and student forms of the Social Skills Rating System (Gresham & Elliott, 1990), and an interview with each participant's teacher or speech-language pathologist. Results of the current assessment were compared to results from the original assessment.

In terms of social ability, the two girls who were classified as having the best social skills initially, Jean and Kristine, still appeared to be the most successful in the current study. Despite their social strengths, Jean's teacher indicated that she was socially

immature and had difficulty reading the social cues of teachers and peers. Kristine reported that she prefers isolation. Her teacher reported that Kristine may be at risk for self-harm. Amy was still enrolled in resource and speech-language services. Though she had found acceptance in a cultural peer group, her communication style often appeared rude and disrespectful to adults. Marie was dismissed from speech-language intervention, but was still enrolled in resource and received extra academic support from Sylvan Learning Center to be moderately successful. Socially, she demonstrated a high level of problem behaviors and mood swings. According to the UCLA Loneliness Scale, she experienced the most loneliness and isolation of the four subjects. Similar to what has been observed in group studies of children with language impairment, the results from this study found social deficits in these individuals persisted into young-adulthood.

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Introduction

Language skills are basic to establishing and maintaining successful peer relationships (Craig, 1993; Fujiki, Brinton, & Todd, 1996). It might be expected, then, that children with language impairment (LI) would have difficulty with a variety of social tasks involving peers (Brinton, Fujiki, & Higbee, 1998; Brinton, Fujiki, Spencer, & Robinson, 1997; Craig & Washington, 1993; Liiva & Cleave, 2005). These problems may lead to isolation and contribute to what Rice (1993) referred to as the "negative social spiral," (p. 155) limiting social interaction and resulting in increasingly poor social skills. Although a serious concern, the social development of children with LI is often not addressed, leaving the student at particular risk for alienation from peers (Gallagher, 1993).

Several researchers have addressed the social outcomes experienced by children with LI. For example, a series of studies by Beitchman and colleagues (Beitchman et al., 1996; Beitchman et al., 2001) examined the psychological outcomes of individuals with speech-language impairment in Ottawa, Canada. Mawhood, Howlin, and Rutter (Howlin, Mawhood, & Rutter, 2000; Mawhood, Howlin, & Rutter, 2000) studied the cognitive, language, social, behavioral, and psychological outcomes of young adults with autism and developmental receptive language disorder in the United Kingdom (UK). Conti-Ramsden and her colleagues in the UK have also followed a large sample of children with LI (Conti-Ramsden & Botting, 2004; Conti-Ramsden, Botting, Simkin & Knox, 2001). In general, researchers have found that individuals with LI experience negative social outcomes, as well as significantly higher rates of anxiety disorders including social phobia and antisocial personality disorder. It is of note, however, that not all researchers have observed negative outcomes. For example, Record, Tomlin, and Freese (1992)

compared the self-reports of the quality of life for young adults with mild to severe LI to young adults with typical language development and found no statistical difference between the groups.

Although these studies reveal important information, they do not allow access to the specific occurrences that characterize individual cases. A detailed examination of an individual child may reveal information that is not available when performance is averaged across children. Despite the general similarities among children with LI, each child with LI may present a unique combination of language and social difficulties. Therefore, a detailed examination of individual case studies may provide important insights for the treatment of children with LI. By way of illustration, Brinton, Fujiki, and Robinson (2005) described Cody, an individual with LI followed from ages 4–19 years. The authors discussed Cody's academic, social, and emotional challenges and their effect on his quality of life. Of particular interest was how different social contexts at different ages interacted with Cody's linguistic deficits to produce social outcomes. At age 4, Cody appeared to represent a classic case of specific language impairment (SLI). At age 19, after 15 years of speech-language intervention, Cody still had handicapping difficulties with social communication. Cody's mother stated that LI "affects every aspect of [Cody's] life" (p. 349). This detailed examination of Cody's case study provides additional insight for professionals and contributes to an understanding of the long-term relationship between LI and social outcomes. Cross-sectional group studies would not have revealed the evolution of Cody's specific social communication problems.

The purpose of this study is to offer a follow-up snapshot of five young adolescents who were previously part of a group study of children with LI. Data analysis

focused specifically on the social outcomes of these students. Results from this study described specific strengths and weaknesses for these students at the middle school and high school level.

Review of Literature

The purpose of this review is to define *language impairment* (LI) as well as illustrate and explore the various social problems children with LI experience. Social outcomes of children with LI are particularly problematic across many social tasks and contexts; specifically, these outcomes include withdrawal and challenged peer relationships. Following a review of the existing longitudinal studies regarding social outcomes in these areas, a rationale will be provided for the current study.

Language Impairment

Traditionally, LI has been defined as a receptive-expressive language disorder in the absence of hearing loss or cognitive delay (Paul, 2001). Etiology is almost always unknown. LI appears in young children and often persists into adulthood. LI has several alternate labels, including SLI, developmental language disorder, language delay, and developmental dysphasia. The primary factor separating developmental delay from LI is nonverbal IQ: Children with LI are characterized by average to above average nonverbal IQ, suggesting the impairment is specific to language (Rice, Tomblin, Hoffman, Richman, & Marquis, 2004).

Children with LI perform poorly on a range of language skills when compared to typical peers. Studies have shown children with LI to have less developed morphosyntactic abilities (Rice et al., 2004), slower language processing speed (Miller, Kail, Leonard, & Tomblin, 2001), poorer story composition skills (Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004), and smaller vocabularies (Weismer et al., 2000) than their typical peers. Taken as a whole, these problems represent a significant limitation in the child's ability to use language to communicate. These problems also

impact the child's access to the academic curriculum. The literacy problems of children with LI are well-documented (Boudreau & Hedberg, 1999; Catts & Kamhi, 2005).

In addition to the wide range of impairments in language product and comprehension, recent studies of children with LI have revealed co-existing social and behavioral difficulties. A number of researchers have examined the relationship of social difficulties and LI. The social deficits experienced by these children are often considered to be the direct result of poor language skills (Redmond & Rice, 1998). Although most researchers recognize the important role that language plays in social interaction, some have speculated that language problems alone do not explain all of the social problems observed in these children (Conti-Ramsden & Botting, 2004; Hart, Fujiki, Brinton, & Hart, 2004). Although not widely advocated, it has also been hypothesized that the linguistic deficit found in children with LI may stem from the child's social deficit (Paul, 2000).

While the relationship between language and social difficulties is a matter of debate, there is little question as to whether children with LI have social difficulties. When compared to typically developing peers, children with LI are more withdrawn (Fujiki, Brinton, Morgan, & Hart, 1999), less accepted by classmates, and are at higher risk for failure in developing social interactions and peer relationships (Gertner, Rice, & Hadley, 1994). The social and behavioral difficulties children with LI face are evident when specific social tasks and contexts are taken into consideration.

Social Problems with Specific Tasks and in Specific Contexts

There is extensive literature demonstrating that children with LI have difficulty with a variety of important social tasks and contexts including peer negotiation, conflict resolution, and accessing ongoing social interactions (see Brinton & Fujiki, 2005; Fujiki

& Brinton, 2004, for review). The following studies are cited to illustrate the nature of some of the documented problems.

Difficulty with social tasks. One task that children with LI have difficulty with is peer negotiation. Brinton, Fujiki, and McKee (1998) compared children with LI to both age-matched and language-similar peers in a group setting to examine negotiation skills and mutual understanding. During a "snack shop" activity, the children were given tokens to redeem at the snack shop and instructed to work together to decide which treat they wanted. None of the children had enough tokens to purchase the candy individually. Each child's utterances were scored from 0 to 3 using the interpersonal negotiation strategy model (Beardslee, Schultz, & Selman, 1987; Selman, 1981) This model uses a scoring system ranging from a score of 0 to represent impulsive, non-collaborative behavior, to 3, representing the highest level of collaboration. In these interactions children with LI consistently produced fewer utterances than their partners. Statistical analysis also revealed that the children with LI used significantly lower level negotiation strategies than their age- or language-matched peers. Conversely, both subgroups of age-matched and language-similar peers produced significantly higher negotiation levels than the children with LI.

The inability to resolve conflict is another social task that can ultimately interfere with a child's ability to establish and maintain positive interpersonal relationships. Stevens and Bliss (1995) addressed conflict resolution abilities of children with LI when interacting with children with typical language skills. Thirty students with LI were compared to 30 children with typical language on a variety of tasks. The first task required the participants to listen to a story about a protagonist and antagonist. The

children were then asked to describe to the investigator as many things as possible that the protagonist could do in each context. The second task examined role enactments of conflict in dyads of participants with similar language abilities from the same age group. Children were asked to have an argument about a given topic. In the hypothetical context of the first task, the children with LI used fewer conflict management strategies and proposed less cooperative solutions to conflicts than the children with typical language. During the role enactment task, however, the children with LI were able to demonstrate their conflict resolution abilities as they acted out conflicts with their peers. There were similarities and differences found in the types of strategy used by the children with LI and children with typical language for both of the tasks.

In addition to peer negotiation and conflict resolution, another task in which children with LI demonstrate difficulty is in accessing, or entering, ongoing social activities. Craig and Washington (1993) observed verbal and nonverbal behaviors used by five 7-year-old children to gain access into ongoing social interactions. The behavior of children with LI was compared with that of age-matched and language-matched peers. All of the students with typical language were able to access the interactions. Two of the five second graders with LI were also able to gain entry using only nonverbal strategies. The remaining three children with LI failed to gain access to the social interaction. All three of these individuals had clinically significant receptive language problems. When unable to access the interaction, these children engaged in solitary play and self-talk about their activity. They frequently observed the play of their peers, but did not engage in the interaction.

To extend the research of Craig and Washington (1993), Brinton et al. (1997) studied six 8–12 year-old children with LI to see if access problems would resolve as the children grew older and gained more social experience. The ability of these children to access and participate in an ongoing interaction with two typical peers was observed. Language age- and chronological age-matched peers were also observed under similar conditions. Results from this study were consistent with the findings of Craig and Washington (1993). Two of the six participants with LI did not gain access to the groups, and another child left the triad after gaining access to the interaction and then wandered around the room. The remaining three subjects took longer than their typical peers to access the interaction. The four children with LI who were able to access the peer group had difficulty actively participating in the interaction. These children talked significantly less, were addressed significantly less, and collaborated less than any other partner in the group.

Using a similar methodology, Liiva and Cleave (2005) compared children with LI in grades 1 and 2 and children with typically developing language in their abilities to access and participate in an ongoing interaction between two unfamiliar peers. Sixty-nine first and second graders were divided into triads. Each experimental group consisted of one child with LI and two unfamiliar play partners matched for grade and gender. Control groups included one child with typically developing language and two unfamiliar play partners matched for grade and gender. The two play partners were brought to a room with toys on the carpet and given instructions for play. The child (with LI/typically developing language) who would be required to access the interaction was introduced to the play partners by the investigator about 10 minutes later. This methodology was

designed to measure the target child's ability to access the ongoing activity independent of invitation from play partners, as well as the length and quality of interaction post access. Utterances and access behaviors were coded into successful and unsuccessful categories by the investigator as defined in previous work (Brinton et al., 1997). All of the typical children in the study accessed the interaction by either initiating interaction with their peers without prompting or by responding to an invitation to the interaction. Four of the 10 children with LI were unable to initiate access to the interactions. The remaining children with LI needed significantly more time to initiate access to the interaction. Once they had accessed the interaction, these children were addressed significantly less often than their play partners.

Difficulty in various contexts. Research has shown that children with LI not only have difficulty with social tasks, but their difficulties vary by context (Fujiki et al., 1996; Brinton, Fujiki, Montague, & Hanton, 2000). One context that is generally expected to be difficult for these children is school. School is a language intensive context. It is also the context in which many children first interact with peers for significant periods of time. Therefore, it is of importance to examine the context of school to determine the nature of social interactions and what in particular is problematic for children with LI.

Rice, Sell, and Hadley (1991) observed children with LI in the Language Acquisition Preschool (LAP) at the University of Kansas. To enroll in the LAP, children must be between the ages of 3 and 5, demonstrate normal social/emotional development, and be free of physical handicap, visual handicap, or hearing loss. Twenty-six children were divided into four groups according to language ability. The four groups of children included children with typically developing English, LI, speech impairment, and English

as a second language (ESL). The pattern of interactions and social responses among the children was captured in 5-minute continuously recorded intervals. Results from the study revealed that preschoolers with LI preferred interactions with adults over interactions with peers. They also tended to use shorter phrases and more nonverbal communication than their peers.

Hadley and Rice (1991) also measured the conversational responsiveness of speech- and language-impaired preschoolers at LAP during free play. Again the children were categorized according to language ability. The four categories included children with (a) typically developing language, (b) marginal language (children who were once identified with speech or language impairment, but were determined at the time of study to be functioning within normal limits), (c) LI, and (d) speech impairment. Children with LI and speech impairment participated in fewer peer interactions than their typically developing classmates, as they were often ignored by their peers and were less responsive to the social bids of peers. These studies of social interactions of children with LI support the notion that preschool-age children with LI interact differently in the school context than children with typical language, and that communication abilities affect their participation in social interactions.

As previously discussed, children with LI prefer social interaction with adults to social interaction with peers. Scheule, Rice, and Wilcox (1995) investigated a teacher-implemented procedure, *redirects*, as a way of redirecting interactions with adults to initiations with peers over the course of two semesters at LAP. The participants were tested at the beginning of the study, trained using redirects, and tested again at the conclusion of the study. The purpose of redirecting the children's initiation was to

capitalize on their desire to interact, while redirecting their interaction to an age-appropriate partner. This process allowed the children to interact with peers under the teacher's support and direction. While redirects encouraged positive interactions between children with LI and their peers, the strategies only generalized to two of the four participants with LI, which highlighted the strong tendency for children with LI to interact with adults rather than their age- or language-matched peers.

Children with LI in elementary school have also been observed to interact differently than their typically developing peers in the classroom. Fujiki et al. (1996) studied the effects of LI on social interaction between the ages of 8 and 12 years. Students were assessed using (a) the *Social Skills Rating Scale*-Teacher form (SSRS; Gresham & Elliot, 1990) to provide a general estimation of social ability, (b) a picture task in which children were shown pictures of social activities and asked whether they had participated in the activity to provide a measure of engagement with peers, and (c) the *Williams and Asher Loneliness Scale* (WALS; Williams & Asher, 1992) to measure the student's feelings of loneliness and social satisfaction. Teachers rated students with LI as having lower levels of social ability and more problem behaviors than typical peers. It was also found that children with LI interacted with fewer peers in a small number of social activities, and were less satisfied with their social relationships. Students with LI also rated themselves as more lonely in the school context than did typical peers.

In school there are particular sub-contexts in which children must participate. One such sub-context is the cooperative learning group. Brinton, Fujiki, and Higbee (1998) examined the involvement of children with LI in a task modeled after cooperative learning tasks typically used in school settings. Fifty-four subjects participated in 18

triadic interactions. Performance of the children with LI was compared to the performance of two groups of typically developing children: those matched for chronological age and those matched for language ability. Verbal and nonverbal collaborative activities were analyzed as each group worked together to build a cardboard periscope. Of the six children with LI, four played minimal roles in the activity. They did not interact with their peers and performed minimal work on the group project. The children with LI were overall less likely to play an active role in building the periscope and were less verbal in all of the groups. Even in the least talkative triad, the child with LI talked less than his partners.

In another study of cooperative learning, individual social profiles of six children with LI were examined to describe their ability to work in cooperative groups (Brinton et al., 2000). Social profiles of the children with LI were described using the *Teacher Behavior Rating Scale* (TBRS; Hart & Robinson, 1996). The TBRS is a bank of 161 teacher-rated behaviors that was used to gather data on each child's aggressive, withdrawn, and sociable behaviors. The children with LI interacted in four cooperative work groups. Each group consisted of one child with LI and two typically developing peers. Four separate activities allowed the children with LI to take various roles in the interaction and to work with different communication partners. Groups were instructed to include all members in the activity. Accommodations were made to compensate for the differences between children with LI and their typically developing peers, such as seating the child with LI between the other two partners. The groups were given simple verbal instruction with visual support to ensure understanding of directions. The social profiles of the children with LI were examined as they participated in the cooperative groups. The

It was observed that the child's behavioral profile was a better predictor of their success in the cooperative group than their language ability. Some of the students were aggressive while others showed high rates of withdrawal. Overall, behaviors were consistent from scores on the TBRS across the four observed activities. This study illustrated the importance of examining children with LI individually, as each participant reacted differently to working in cooperative groups. A group study could not have shown the individual interaction styles of each child with LI, or their significant deficits, because the range of deficits was so broad. It is of note that five of the children from this study are the same children examined in the current study.

These studies demonstrated the difficulty children with LI have with social interactions at school. Overall, the children with LI participated less in cooperative groups. However, there was considerable variation among the children with LI. There was evidence that a child's social profile, as well as language abilities, may affect how the child performs within these groups.

Problematic Social Characteristics

There is extensive literature examining the negative social characteristics of children with LI. For example, it has been repeatedly demonstrated that elementary school-age children with LI are more withdrawn and less sociable than their typically developing peers. The following review provides a sampling of this literature to illustrate some of these problems.

Withdrawal. Fujiki, Brinton, Morgan, et al. (1999) studied three subtypes of withdrawal identified in the child development literature: *solitary-active withdrawal*, *reticence*, and *solitary-passive withdrawal*. Solitary-active withdrawal results from active exclusion from the peer group and "is characterized by repeated sensorimotor action with

or without objects and/or solitary dramatizing" in the midst of a social play group (Coplan, Rubin, Fox, Calkins, & Stewart, 1994, p. 130). These children may play around other children but do not actually interact with them. Reticent children would like to interact with others but are fearful of doing so. They often watch others interacting but do not attempt to join the group (Fujiki, Brinton, Morgan et al., 1999). Solitary-passive withdrawal characterizes the behavior of children who appear to enjoy solitary play. These children typically play quietly with toys or engage in some constructive activity while playing alone (Fujiki, Brinton, Morgan et al., 1999). The TBRS was used to obtain teacher perceptions of withdrawn and sociable behavior in children with LI and their typically developing peers (sociable behavior will be discussed in a later section). Results revealed that children with LI were significantly more reticent than their typical peers. Solitary-active withdrawal was not common among the students with LI; however, male students with LI demonstrated higher levels of reticent behavior than the other subgroups of children. There were no significant differences found between the groups for solitary-passive withdrawal, although boys were rated higher in this subcategory than girls.

In a replication of the Fujiki, Brinton, Morgan et al. (1999) study, Hart et al. (2004) compared the withdrawal and sociability behaviors of 41 children with LI with that of their typically developing peers. Social behaviors were again assessed using the TBRS. Teachers reported significantly higher levels of withdrawal in the children with LI. Similar to the results of Fujiki, Brinton, Morgan et al. (1999), the children with LI demonstrated high levels of reticence. The teachers indicated that these children exhibited high levels of behaviors, such as staring at other children, not participating in activities, and appearing fearful of approaching other children. Contrary to the results found in the

previous study (Fujiki, Brinton, Morgan et al., 1999), children with LI also demonstrated significantly more solitary-passive withdrawal. Solitary-active withdrawal was infrequently reported in any group. Withdrawal behaviors were not offset by sociable behavior, as teachers also ranked students with LI as less sociable than their typically developing peers.

Fujiki, Brinton, Isaacson, and Summers (2001) conducted a pilot study examining the social behaviors of children with LI and their peers on the playground. Videotaped segments of eight children with LI and their age-matched peers at recess were collected over a two-month period, transcribed, and analyzed. Data were divided into six general categories: peer interaction, adult interaction, withdrawal, aggression, victimization, and other. Significant differences were noted in the areas of peer interaction and withdrawal. Children with LI spent significantly less time interacting with their peers and demonstrated significantly more withdrawn behaviors than their typically developing classmates. While typically developing children spent 80% of their recess time interacting with peers, children with LI spent only 54% of their time on the playground interacting with peers. Conversely, children with LI spent 42% of their recess engaged in withdrawal behaviors, while typically developing peers demonstrated withdrawal behaviors only 17% of the time. Overall, the children with LI were more isolated and withdrawn than their typically developing classmates.

To gain a clearer understanding of the relationship between withdrawn behavior and LI, Fujiki, Spackman, Brinton, and Hall (2004) examined emotion regulation, language ability, and reticent behavior in children with LI. Forty-three children with LI and 43 children with typically developing language participated in the study. Teachers

completed the Emotion Regulation Checklist (Shields & Cicchetti, 1998) and the TBRS for each participant to provide measures of emotion regulation and reticence. The Comprehensive Assessment of Spoken Language (CASL; Carrow-Woodfolk, 1999) was administered to all participants to determine their language ability. Participants with LI scored lower on both the language test and the Emotion Regulation Scale than their typical peers. A regression analysis showed both the CASL and emotion regulation scores to be significant predictors of the subject's reticence scores.

Sociable behavior. Sociability describes the "child's willingness to engage others in social interaction and to seek their attention or approval" (Shaffer, 2005; p.424). Children with LI have been shown to demonstrate less sociable behavior in conjunction with increased displays of withdrawal. Children aged 5–8 years and 10–13 years were sampled to examine subtypes of withdrawal and sociability in children with LI (Fujiki, Brinton, Morgan & Hart, 1999). In addition to displaying higher levels of withdrawn behavior, children with LI were rated by their teachers as demonstrating significantly lower levels of sociable behavior, such as control/likeability and prosocial behavior.

To explore the relationship between severity of LI and problematic social behavior, Hart et al. (2004) divided children with LI into subgroups according to severity. Statistical analyses were performed to see if these groups differed with regard to the level of reticence they experienced. Results showed that severity of LI was related to sociable behavior but not to withdrawn behavior. The amount of likeability and prosocial behavior seen in children with LI was related to the severity of the LI. On the other hand, severity of impairment was not closely related to withdrawal behaviors.

Problematic Social Outcomes

It is not surprising that children with LI who are more withdrawn and less sociable experience problematic social outcomes. The following review includes studies examining friendship and peer acceptance in children with LI.

Friendship. Children with LI often have fewer friends and are less satisfied with their friendships than their typically developing peers (Fujiki et al., 1996). Fujiki, Brinton, Hart, and Fitzgerald (1999) used reciprocal friendship nomination procedures (Parker & Asher, 1993) to assess mutual friendship in eight children with LI (four of these children were re-assessed for the current study). To determine reciprocal friendship nominations, each child was instructed to name his/her three best friends from a class list. Each child's list of friends was then compared to the lists of other children in the class.

The friendship measure closely followed the authors' predictions that the children with LI did not have many friends, as five of the eight subjects were not named by any classmates as a best friend. Three of the girls with LI had reciprocal friendships with at least one other girl with LI. Playground observations confirmed results from the peer ratings and friendship nominations. The authors observed that most of the children with LI were often on the outside of social activity in their classes and at recess. The children generally played alone or followed groups of classmates from activity to activity, but were never accepted as equal play partners. The lack of social interaction revealed in this study implies serious consequences for children with LI. Communication and academic support in the school setting is most frequently provided by friendships. As children have difficulty forming friendships, they lack the support of their peers to develop language and appropriate social skills.

Durkin and Conti-Ramsden (in press) compared quality of friendship in 16 year-old adolescents with and without SLI. Participants included 120 adolescents with SLI and 118 typically developing peers. The quality of friendships was measured using the Friendships and Social Relationships section of the *Social-Emotional Functioning Interview* (SEF-I; Howlin et al. 2000). Two versions of the interview, self-report and informant report were administered to the adolescents and their parents, respectively. Durkin and Conti-Ramsden found that while typically developing adolescents showed good quality of friendship with normal social interaction, adolescents with SLI had poorer quality of friendships overall. The adolescents with SLI showed a great deal of heterogeneity in friendship outcome with approximately 60% of adolescents with SLI experiencing good quality of friendship. Overall, the authors' results generally parallel other results concerning the social competence of children with SLI (Brinton & Fujiki, 2002).

Peer acceptance. Fujiki, Brinton, Hart, and Fitzgerald (1999) also used peer sociometric ratings (Asher & Dodge, 1986; Parker & Asher, 1993) to measure peer acceptance. For the peer sociometric ratings, children were asked to circle or point to a happy, neutral, or sad face for each of their classmates. Three of the eight children with LI were rated one or more *SD* below their class means, but the ratings were not consistently low for all of the children with LI. One of the girls with LI was one of the most popular students in the class according to peer ratings, scoring more than 1 *SD* above the mean. Another girl with LI in the same class was rated the least popular, with her peer rating score falling 2 *SD* below the mean. The remaining six children with LI fell between the two extremes, but were generally on the lower end.

Gertner et al. (1994) studied the influence of communicative ability on peer preferences in a preschool classroom setting. These authors found that limited language ability was associated with lower levels of social acceptance among peers. Participants included children with LI, ESL, and typically developing children. All of the participants completed a positive and negative nominations task (Black & Hazen, 1990; Hazen & Black, 1989). Each of the participants was asked to point to and name pictures of all of their classmates, and then to point to the pictures of their three favorite and three least favorite playmates in the class. Results from the nominations task revealed that typically developing children received higher nominations than both the ESL and LI groups. In this sample, language ability was the greatest predictor of peer status over age and intelligence. Receptive language proficiency seemed to discriminate between the individuals who were and were not accepted by peers. The children with LI or limited English vocabulary were less equipped to use language to establish and maintain friendships in early childhood.

Results from the studies of peer acceptance reveal that although children with LI are often less accepted by their typically developing peers, there is considerable variation among the students. This finding suggests that there may be specific variables that influence social outcomes, in addition to language ability.

Longitudinal Studies of Social Outcome

As is evident from the outlined studies regarding peer acceptance, children with LI are generally less accepted and develop fewer positive reciprocal relationships than their peers. A natural extension of this finding is whether these problems persist over time. The following studies examine the social outcomes of children with LI over time.

Group studies. Beitchman et al. (1996) described the psychological outcomes of 105 speech/language impaired children and 97 control children in a 7-year follow-up study. These children were originally identified and tested for speech and language disorders at age 5. The follow-up study tested the children at age 12;6 for speech and language ability using a variety of formal speech and language tests. Psychological status was measured using a semi-structured interview protocol similar to that used in the original study. Teachers and parents of the participants completed behavioral checklists to provide a behavioral profile of each child. The authors found that even with improved speech-language skills, individuals with speech impairment and/or LI at age 5 were still at an increased risk for psychological disorders at age 12;6. Individuals with LI were more likely to have co-occurring psychological disorders at age 12;6 than individuals with speech impairments. Attention Deficit Hyperactive Disorder was significantly more frequent among the children with LI than the typical speech-language group. The findings of this study highlight the impact of speech and language problems, even when these impairments show improvement over time.

In a 14-year follow-up study of the same group of children, Beitchman et al. (2001) continued to look into the correlation between early childhood speech/language impairments and psychological disorders in later life. The authors located and tested 244 participants from the original study for the second follow-up study. Psychological outcomes were assessed using several widely used psychiatric tools. The authors found a continued increase in risk for disorders, such as anxiety disorder, social phobia, and overall antisocial personality disorder in adulthood for individuals with LI when compared to typically developing peers. Young adults with a history of LI have a high

rate of psychological disorders when compared to typically developing children of the same age. The authors concluded that this study supports the association between early childhood speech/language impairment with social and psychological disorders in adulthood and highlights the necessity for early intervention.

In a two-part 11-year follow-up study, Mawhood et al. (2000) and Howlin et al. (2000) compared a group of young men with autism to a group with developmental receptive language disorders. Mawhood et al. (2000) described cognitive and language outcomes, while Howlin et al. (2000) described social, behavioral, and psychological outcomes. Both studies are based on a sample of 47 male participants with typical IQ, beginning when the participants were 7–8 years old. Nineteen participants had autism, twenty participants had language disorders, and the remaining subjects had a mixed diagnosis. The participants were given nonverbal IQ tests and a variety of language measures in both the original and follow-up study. The authors found that 60% of individuals in the language group had mismatch between the original and the study diagnosis on at least one variable while only six (33%) of the participants in the autism group showed mismatch of diagnosis. Overall the information obtained from these two studies was useful for finding predictive characteristics for autism prognosis but not in projecting outcomes for children with LI. While these studies are a promising starting point for determining predictive characteristics, it is another example of the limitations of a group study and therefore the need for individual studies.

Howlin et al. (2000) addressed the social, behavioral, and psychological outcomes of the participants. It is generally accepted that individuals with autism have many problems as adults and that their prognosis is poor for an independent lifestyle. On the

other hand, outcomes of individuals with LI are less well known. The authors found that even when language skills improved, individuals with LI continued to be at risk for a range of other difficulties such as behavior and attention problems, academic delays, and social and psychological disorders. Although the researchers found that individuals with LI had a better prognosis than individuals with autism, those with LI showed serious difficulty functioning socially and creating close relationships. Overall ratings of social functioning of the subjects with LI were considerably below age-appropriate levels. The majority of the subjects with LI had no friends. It is of interest that while some individuals expressed a desire for more social interaction, none of the participants described themselves as feeling very lonely or isolated.

In a series of research projects, Conti-Ramsden and associates sought to understand the educational and social outcomes and associated factors of children with SLI as they mature into adolescence and adulthood. When compared to typically developing peers, Durkin and Conti-Ramsden (in press) found that children with SLI perform significantly more poorly on quality of friendship measures than peers with typical language and social skills. These results are concerning because friendship is important for various aspects of child development including security, social support, problem-solving skill development, and preparation for adult romantic relationships (Shaffer, 2005).

The research reviewed above indicates that children with LI have negative social outcomes over time. However, there is evidence that not all individuals with LI experience poor quality of life over time. For example, Record et al. (1992) administered a quality of life tool to young adults with a history of LI. In this way the researchers

gathered information concerning personal happiness and life satisfaction. Various life domains such as marital status, living situation, employment, income, and educational attainment were examined. Twenty-nine young adults with LI and 29 age-matched control subjects participated in the survey. The subjects with LI had been diagnosed with the disorder as children and had since received treatment. None of the subjects had a history of hearing impairment, mental retardation, emotional/social impairments, environmental deprivation, or gross neurological deficits. Both groups were given a battery of language tests as well as the quality of life measure. Subjects with LI continued to demonstrate receptive and expressive deficits. While significant differences were found between the groups for all language measures, the results indicated no statistically significant differences between the two groups according to the quality of life measurement tool. The only significant difference between the groups with regard to various life domains was the number of subjects enrolled in a post-secondary educational program at the time of study. Significantly more subjects from the control group pursued education after high school than subjects with LI. It is of note that the individuals were surveyed immediately after high school and may not have achieved their potential in the various life domains previously listed. However, no differences were found when comparing happiness and life satisfaction between the two groups.

Individual case studies. The information revealed by large group longitudinal studies is invaluable. It is also important, however, to consider individual case studies. Because the category of LI is highly heterogeneous, it is likely that the performance of very different individuals is averaged together in any group study of these children. The examination of individual children makes it possible to consider how individual

differences impact social outcomes. The following case studies show the difficulties encountered by individual subjects and how their social skills were affected by the disorder over time.

Damico (1988) documented the case of Debbie, a girl who was originally evaluated at 5;11 for language difficulties, including semantic and syntactic errors. By the end of the school year, Debbie was thought to have overcome her difficulties and was dismissed from therapy. Six years later, however, Debbie was referred and re-evaluated for LI. By this time her academic standing had drastically declined and she demonstrated a more severe communication disorder than when previously seen. Debbie's difficulties included poor reading skills, inability to complete assignments, and poor social skills. While signs of her difficulties were demonstrated in early reports, Debbie's communication and academic difficulties became much more complex with age. Somewhat unexpectedly, she developed serious social difficulties as well. In the seventh grade, Debbie reported she had only three friends, two of them in special education units. Overall, Debbie became more withdrawn and demonstrated more severe language, academic, and social difficulties as an adolescent than when she was originally evaluated in childhood. She was a poor reader and unable to complete the majority of her seventh grade class work. She was enrolled in resource services and received counseling. She was described as a shy girl with poor social skills. This case demonstrates the global and lasting effects of LI and highlights the need to consider social competence in assessment and intervention. Had Debbie's long term social and academic outcomes been considered, she may not have been prematurely dismissed from speech-language intervention.

Another case study followed the progress of Cody, a boy with LI, from age four to 19 (Brinton et al., 2005). Cody's developmental history was somewhat delayed but was determined to be within typical limits. He spoke his first word at 10 months but did not combine words until he was 2;6. He displayed many language problems in early childhood and was inattentive and uninterested in group activities. Both Cody's receptive and expressive language was severely impaired, but his nonverbal IQ score was still within typical limits. Despite his LI, Cody used appropriate social conventions such as eye contact and initiating and maintaining conversation.

Cody was enrolled at a university clinic at 4;8 and received speech-language pathology services over the course of the next 15 years. His school district also provided speech-language intervention. Despite the years of speech-language intervention, Cody's LI was persistent and more pervasive than expected. Cody continued to demonstrate a variety of deficits in communication, but had particular difficulty with social interaction. To target these problems, clinicians worked with Cody on conversational responsiveness and topic maintenance. Cody also experienced social difficulties in establishing and maintaining relationships and managing his level of stress and anxiety.

When Cody entered middle school, he was bullied despite his large stature. He began treatment with a psychologist to learn strategies to handle confrontations with his peers. Unfortunately, it was difficult for him to implement the strategies because he could not read the situation to determine which strategy to use. Through analogies and role play scenarios, Cody's speech-language pathologist (SLP) helped him to learn the difference between teasing, annoying behavior, and bullying. In therapy, Cody worked intensively

on the rules of conversation, specifically topic maintenance, turn-taking, and reading nonverbal cues of his conversational partner.

Cody continued to show similar difficulties throughout high school. One aspect of social training involved an intervention referred to as the *conversation game* (Brinton et al., 2005). The conversation game was used to teach more appropriate conversational interaction skills by focusing on conversational responsiveness. Cody was trained to be more responsive to conversational partners, as well as to learn what reactions were socially acceptable in context. Although he made progress with the interventions, Cody continued to lack reciprocal friendships and experienced extreme anxiety throughout his high school years.

A third case was that of Andy, a boy with severe receptive and expressive LI (Skarakis-Doyle, 2005). His birth and medical history were unremarkable. However, he began verbalizing single words at age three, and spoke in phrases and simple sentences at age four only when pressed by an adult. Interestingly, Andy had two siblings, and all three children had language learning disabilities. Of the three, Andy had the most severe LI. Although fine and gross motor delays were diagnosed in kindergarten, Andy's development in other areas was generally intact.

Andy was placed in a special education classroom in kindergarten and received intensive traditional speech-language intervention for five years before he became Skarakis-Doyle's client during his preteen years. Speech-language intervention during elementary school targeted expressive language, following multi-part commands, and comprehension of *wh* questions. Unfortunately, speech-language intervention could not

help Andy keep up academically and socially with his typically developing peers, and as time went on the gap widened between them.

When Skarakis-Doyle initially saw Andy he rarely spoke spontaneously, even to people he knew fairly well. His auditory and written comprehension were significantly below age level. Andy's therapy goals were immediately changed from targeting linguistic rules to using the language he already had to participate in social interactions and to support his academic performance. He received three hours of individual speech-language intervention a week and one hour of communication group work with other students from his class.

To improve his reading comprehension, Andy began the *Reading Milestones* (Quigly & King, 1981) series of reading materials designed for children with hearing impairments. Intervention also focused intensively on linguistic form and content. This approach was drastically different from the intensive traditional speech and language Andy had previously received. Rather than the traditional focus on his impairments, Andy's new goals focused on reducing activity limitations and increasing his participation in his classroom program. For social goals, Andy was introduced to peer communication structured around games and role-play of functional life skills. For these activities, Andy was given a script to respond appropriately in each situation. It was hoped that he would carry over the role-play activities to real-life activities by beginning to spontaneously produce varied utterances.

Skarakis-Doyle only followed Andy for three years. At the end, Andy's test scores showed that he was neither widening nor closing the gap with his classmates. However, the data from his therapy sessions showed improvements in his comprehension

and expression. Andy was able to maintain an 80% accuracy level in his *Reading Milestones* workbook comprehension exercises and was improving his understanding of anaphoric referents. Andy's most outstanding improvements with regard to language use were as follows: he increasingly initiated conversations, contributed new information that extended the conversation beyond a single turn, and learned to use language for daily living activities, such as taking a phone message.

Longitudinal studies of children with LI, such as those above, have indicated that children with LI are at risk for long-term social, academic, and vocational difficulties that may exclude them from society on various levels throughout their life. It is imperative that SLPs take into consideration these long term outcomes as they develop treatment plans. Longitudinal studies of children with LI will help researchers and SLPs to identify the areas of difficulty and effective treatment SLPs must offer children with LI.

Summary

Over the years, studies of children with LI have revealed difficulty with social skills in addition to problems with receptive and expressive language. Some of these social difficulties include problems with specific social tasks in various contexts as well-accepted by peers, a tendency to have fewer friends, and being less desired as playmates. Longitudinal studies have revealed that the early signs of LI persist over the years and change as the individual matures to present new difficulties with language, academics, psychological disorders, and social tasks. To supplement existing work, this study will address the social outcomes of children with LI who participated in a series of studies seven years ago. These findings may provide insights that will impact intervention for children with LI who have social problems. Implications of the study may help guide intervention for children with LI regarding treatment of their social problems.

Current Study

The purpose of this study is to assess the linguistic, social, and emotional outcomes of five children with LI in a seven year follow-up study. These children with LI were studied in detail during the 1998-1999 school year. Results of current assessments will be compared to original data, and past and present social profiles of each child will be compared. Results from this study will provide additional information on the social difficulties children with LI encounter over time.

Method

Participants

Participants for this study were originally examined by Brinton, Fujiki, and colleagues (Fujiki, Brinton, Hart, et al., 1999; Fujiki et al., 2001; Brinton et al. 2000) in a series of studies examining the social skills of children with LI. Students who participated in the original study were identified by a school SLP using the following criteria:

1. The students' formal language test scores were at least one *SD* below the mean in both language production and language comprehension.
2. Typical hearing status was determined by passing an audiometric screening at 20 dB HL, administered by school personnel.
3. The students were placed in mainstream classrooms, grades one through six, and received pullout speech-language pathology services.
4. A psychometric evaluation was performed by a school district psychologist to rule out developmental disability or pervasive developmental disorder as a primary diagnosis.
5. Teacher reports and school records indicated no outstanding history of behavioral, social, and emotional problems requiring special services (Fujiki, Brinton, Hart et al. 1999).

The original sample consisted of seven girls and one boy with LI. The TBRS, the WALS, peer ratings, and reciprocal friendship measures were used to assess the social ability of the participants in both November 1997 and April 1998. These measurements were taken before and after two months of social/language intervention administered by BYU graduate clinicians (Fujiki, Brinton & Hart, et al. 1999). One of the participants from the original study moved during the experiment, leaving results for 7 subjects.

Participants for the current study were selected based on participation in the original studies, the researchers' ability to locate the participants, and student and parent consent. Five females were located from the previous study. The researchers obtained consent from the school district and each participant and legal guardian for four of these individuals. The fifth girl dropped out of school following a violent physical altercation outside the school office shortly before data collection was initiated and could not be contacted. It is interesting to note that while LI is more prevalent in boys, all of the participants in the current study were female, providing a unique opportunity to view the disorder specifically in girls. For the purposes of this study, names of the participants were changed to protect their identity.

Procedures

The students were pulled out of class for a total of three hours to complete a battery of testing. Testing was performed in a quiet room, such as the library or SLP's therapy room at the students' school. Each session was video recorded with a digital camcorder and an external microphone. A combination of formal and informal procedures was administered to each participant to assess language, social, and emotional skills. The order of testing procedures varied among participants. The students were each given $50 for completing the formal and informal measures. Parents and teachers were each given $10 as a thank you for completion of the SSRS on the students' behalf.

Instruments

Language measures included the *Clinical Evaluation of Language Fundamentals-Fourth Edition* (CELF-4; Semel, Wiig, & Secord, 2003) and a thirty-minute language sample. Social measures included the *UCLA Loneliness Scale-Version 3* (Russell, 1996), parent, teacher and student forms of the SSRS (Gresham & Elliott, 1990), and an

interview with each participant's teacher or SLP. Emotional measures included three tasks examining the child's ability to understand the emotions of others. Emotional measures were not included in the study. All tasks were administered by the investigator. Each of these measures is discussed in detail below.

Clinical Evaluation of Language Fundamentals-Fourth Edition. The CELF-4 is an assessment designed to identify, diagnose, and provide follow-up evaluation of language and communication disorders in students from 5-21 years old. The CELF-4 contains 18 subtests that provide information on the following four levels of assessment: identify presence or absence of LI, describe the nature of the existing impairment, evaluate underlying clinical behaviors, and evaluate language and communication in context.

The CELF-4 was administered to obtain a current evaluation of the participants' language ability. Two examiners administered the CELF-4 to the participants. Four subtests were used to produce the core language score: Recalling Sentences, Formulated Sentences, Word Classes (Receptive and Expressive), and Word Definitions. Two additional subtests were administered: Semantic Relationships and Understanding Spoken Paragraphs. The objectives of the subtests are described below.

The Recalling Sentences subtest evaluates the student's ability to (a) listen to spoken sentences of increasing length and complexity, and (b) repeat the sentences without changing word meaning, inflection, morphology, or syntax. The Formulated Sentences subtest evaluates the student's "ability to formulate complete, semantically and grammatically correct sentences of increasing length and complexity within given semantic, syntactic, and pragmatic constraints" (Semel, Wiig, & Secord, 2003, p. 185).

The Word Classes score is comprised of two subtest scores: Word Classes-Receptive and Word Classes-Expressive. The Word Classes subtest evaluates the student's ability to understand relationships between words that are related by semantic class features and to express those relationships. The Word Definitions subtest evaluates the "student's ability to analyze words for meaning features and define them by referring to class relationships and shared meanings" (Semel, Wiig, & Secord, 2003, p. 188).

The Semantic Relationships subtest evaluates the student's "ability to interpret sentences that (a) make comparisons, (b) identify location, (c) include time relationships, (d) include serial order, or (e) use passive voice" (Semel, Wiig, & Secord, 2003, p. 192) The Understanding Spoken Paragraphs subtest evaluates the students' ability to (a) sustain attention and focus while listening to spoken paragraphs of increasing length and complexity, (b) understand oral narrative and text, (c) answer questions about the content of the information given, and (d) think critically to arrive at logical answers (Semel et al. 2003). Results from the CELF-4 were used to compare the subjects' current language abilities with the language scores obtained in the original study.

Language sample. The examiner collected a thirty-minute language sample from each of the students to elicit their impressions of their own social interactions. The structural aspects of the sample were not analyzed for this study. A list of questions was generated based on previous research on conversational responsiveness (Brinton & Fujiki, 1994). The questions were asked during sampling to gain insight to the student's home, school, and social activities. For purposes of this study, the questions were examined for content, rather than scored for conversational responsiveness.

The core list of questions included the following:

1. What is your favorite class at school? Tell me about it.
2. What is your least favorite class? Tell me about it.
3. What is your favorite movie? Tell me about that movie.
4. What are some chores you have to do at home? Tell me about them.
5. Who are your friends? Tell about them.
6. Who is your best friend? Why do you like them?
7. What do you do with your friends?
8. Think about school. What is the easiest thing about school?
9. Think about school. What is the hardest thing about school?
10. What do you like to do for fun?
11. What did you do yesterday after school?
12. Do you eat lunch at school? Who do you eat lunch with?
13. Do you hang out with friends after school? Who do you hang out with? What do you like to do?

UCLA Loneliness Scale-Version 3. The UCLA Loneliness Scale was developed to assess subjective feelings of loneliness or social isolation. Version 3 of the scale includes 10 items worded in a negative or lonely direction, and 10 items worded in a positive or non-lonely direction (Russell, 1996). Sample items from the questionnaire include, “How often do you feel alone?” and “How often do you feel part of a group of friends?” Scores on the loneliness scale have been found to predict a wide variety of mental and physical health outcomes in the research field of the social sciences. It is the most widely used measure of its kind (Cutrona, 2005).

The UCLA Loneliness Scale was used in this study to measure the students' feelings of inclusion and acceptance by peers and others. The primary investigator read items on the UCLA Loneliness Scale to the students to ensure student comprehension of the statements. Difficult words and misunderstandings were clarified. The students had the option to record their answers or to have the examiner record the responses for them. The students' scores were compared to the mean score of 489 college students (203 males, 286 females) obtained by Russell (1996). Higher scores indicate greater degrees of loneliness.

Social Skills Rating System (SSRS). The SSRS was designed to provide a more complete picture of a student's social behavior from the perspective of the student, the student's parent, and the student's teacher. The SSRS evaluates a broad range of social behaviors that affect student-teacher relationships, peer acceptance, and academic performance. Assessment of the three forms created a comprehensive picture of the student's social profile. The items on each scale are rated according to perceived frequency and importance. The SSRS includes subscales focusing on positive social behaviors, such as cooperation, assertion, responsibility, empathy, and self-control. Problem behaviors are measured in three subscales: externalizing problems, such as aggressive acts and poor temper control; internalizing problems, such as sadness and anxiety; and hyperactivity, such as fidgeting and impulsive acts (Gresham & Elliott, 1990).

The SSRS-Student form was read to the student by the examiner to ensure that the student understood the questions. Any difficult words or misunderstandings were clarified for the student. The students had the option to record their answers or to have

the examiner record the responses for them. The SSRS-Teacher form was given to the student's SLP, resource teacher, or a teacher with whom the student had a close relationship. The SSRS-Parent form was sent home to the student's parent for completion. SSRS scores were compared to social rating measures obtained in the original study.

Teacher interview. A teacher interview conducted by the examiner was obtained to develop a more complete social profile of each student. The students were asked to choose a teacher who they felt knew them and their academic abilities. The teacher interviews were reviewed for content and compared to the TBRS scores obtained in the original study. The standard list of questions asked during this interview included the following:

1. What is the student's current academic placement?
2. What type of services were received (speech, resource, etc.) and what goals were addressed?
3. What are your impressions regarding the student's social difficulties?
4. What are your impressions regarding the student's academic difficulties?
5. What were the student's greatest needs?
6. How have the student's needs changed over the year(s)?
7. What are the student's greatest needs currently?

Emotional measures. Because of the strong link between emotional and social competence (Denham, 1998), several measures of emotion understanding were administered. The examiner administered each of the emotion tasks. The first task was based on procedures employed by Spackman, Fujiki, Brinton, Nelson, and Allen (2005).

This task required the students to recognize the emotions expressed on faces from 24 standardized black-and-white photographs. The photographs were selected from Matsumoto and Elkman's (1988) collection of 56 standardized photographs. Each picture card was 8 ½ x 11 inches in size and depicted the head and shoulders of one man or woman. The picture cards were displayed to the participants one at a time.

The participants were instructed to name or point to one of the six possible emotions displayed on 3 x 5 picture cards representing *happiness, sadness, fear, surprise, disgust, anger,* and *I don't know*. Each card displayed a picture portraying the emotion with a modified label printed below. The cards were illustrated by an undergraduate student in speech-language pathology, and approved by a six-member committee consisting of graduate students and professors of speech-language pathology and a professor of psychology (development and validation are discussed in detail by Spackman et al., 2005).

The second task was an emotion inferencing task employed by Spackman, Fujiki and Brinton (2006). Twenty-two stories based on stories created by Ford and Milosky (2003) assessed the participants' ability to recognize emotions in a story context. These stories were generated for the original study and depicted the following emotions: *happiness, anger, fear,* and *sadness*. Four stories were generated for each emotion, and an additional six "ambiguous" stories were used that could represent a variety of emotions. Each story was supported by two 8 ½ x 11 inch colored cartoon illustrations based on the pictures provided by Ford and Milosky (2003), and centered on a gender-neutral character named "Chris." Verbal stimuli accompanied the illustrations and consisted of short descriptions of each story in a limited number of sentences. These same illustrations

and stories were used in the current study; however, verbal stimuli were modified to be appropriate for the teenage girls.

The third task required the students to determine a speaker's emotion from affective prosody, and used a task developed by Fujiki, Spackman, Brinton and Illig (in press). The participants were presented with a recording of the following narrative:

> It was the first day of school. I got ready early; I wanted to see who was in my class. I walked in my class and sat down. Pat came in and sat next to me. Then the teacher walked in the room. I knew this year would be different.

This narrative was read to convey anger, happiness, sadness, and fear. The participants were instructed to listen to the voice recording through a head-set attached to a compact disc player, and tell the examiner whether the emotion in the voice recording depicted *happiness, sadness, fear, anger, or I don't know*. There was no time limit for the students to recognize the emotion and the recording was played again for the student upon request. The student responses were recorded by the examiner on a standardized response form.

Data Analysis

The formal and informal procedures were administered, transcribed, and scored by graduate students in Communication Disorders at Brigham Young University. The students were trained in the administration and scoring of these tests by Fujiki and Brinton, faculty members in Communication Disorders. For each of the participants, results from the formal and informal measures were analyzed and reported with the exception of the UCLA Loneliness Scale and the Emotion Tasks. These results were compared and contrasted with the previous findings from the original study. An in-depth analysis of each participant's social profile is the main focus of this section.

Results

Names of participants, states, teachers and schools have been changed to protect the privacy of those who participated in this research project. In each case study, a review of original and current information is presented, including a summary of background information, language assessment, special services/treatment history, and social skills evaluation.

Case Study 1-Amy

Initial background information. At the initial testing, Amy was a 6;6 year-old Tongan female, enrolled in a regular education first grade classroom. She has a large family with four sisters and eight brothers. She lived with both parents and had three older siblings (ages 21, 18, and 16). Both parents were employed. English was the primary language spoken in the home.

Initial language assessment. Testing by the school SLP indicated that Amy exhibited a significant language deficit. She received an expressive language score of 72 and a receptive language score of 62 on the *Test of Language Development-2 Primary* (TOLD-2; Newcomer & Hammill, 1988) placing her more than 1 *SD* below the mean for receptive language and almost 2 *SD* below the mean for expressive language. She obtained a *Developmental Sentence Scoring* (DSS; Lee, 1974) score of 5.78 on a 99-utterance language sample, placing her below the 10th percentile for her age group. She had a nonverbal IQ score of 93, as measured by the Leiter International Performance Scale (LIPS; Leiter, 1984).

Initial special services/treatment history. Amy's average intellectual ability and severe overall expressive language deficits in the first grade resulted in a diagnosis of

communication-disordered. At that time, Amy was enrolled in speech-language intervention to help compensate for her language problems.

Initial academic and social skills evaluation. According to the academic portion of the SSRS, Amy's academic performance and overall motivation to succeed in the classroom were significantly delayed when compared to her peers. In addition, Amy received little parental encouragement to succeed academically and her overall classroom behavior was in the lowest 10%. Individualized Education Plan (IEP) goals from the first grade included improving skills and strategies to increase functional language, improving basic reading skills, and improving basic math skills.

In the first grade, Amy's scores on the TBRS revealed differences from the normative database in all six dimensions. Of these differences, the largest were in sociability, withdrawal, and aggression. Within the domain of sociable behavior, Amy received a rating on the prosocial subscale that was 3 *SD* below the normative mean (lower scores indicating poorer behavior). Her score in the impulse control/likeability was 9 *SD* below the normative mean. At the same time, she was more withdrawn than her peers with solitary active withdrawal and solitary passive withdrawal scores more than 1 *SD* above the normative mean (higher scores indicative of greater withdrawal). Amy was also a highly aggressive child; for rough and tumble play (non-cooperative) her score was 14 *SD* above the normative mean. These teacher impressions were in accord with Amy's own impressions. On the WALS, Amy scored more than 2 *SD* above the mean of children with typical language skills for loneliness reported by Fujiki et al. (1996) indicating she often felt lonely and isolated from her peers.

Peer ratings of acceptance taken in her classroom indicated that Amy's overall peer rating and same-gender peer rating were more than 2 *SD* below the mean. She had no reciprocal friendships (none of the students Amy named as friends in her class named her as a friend), and was one of three children in the class who was not named as a best friend by anyone. Of the three children Amy named as friends, one responded that she did not like to play with Amy very much, another said she "kinda liked to play with her," and the third said "she liked to play with her a lot" (Fujiki, Brinton, Hart et al., 1999).

Current background information. At the time of the current assessment Amy was 15;2 years old and enrolled in the ninth grade. She lived at home with her parents, one sister, and two brothers. Both parents were employed. Amy had attended the same school for 3 years.

Current language assessment. In the current evaluation, Amy's language was still notably impaired. She received a core language score of 56 (.2 percentile), a receptive language score of 52 (.1 percentile), and an expressive language score of 57 (.2 percentile) on the CELF-4, placing her below the first percentile in all categories (see Table 1). Mrs. H, Amy's school SLP, was interviewed to gain information regarding Amy's LI and the progress she has made over the years. Mrs. H reported that Amy is not motivated to achieve academically and has a long history of academic failure. Although not specifically related to speech and language, one of her goals was to attempt every academic assignment without feeling the obligation to get every answer right. At the time of the study, Amy had shown much improvement in this area and was working hard to try all her school assignments. Additionally, she would ask for help from her teachers when

Table 1

Amy's Assessment Scores

Clinical Scale of Language Fundamentals-4

	Core Language	Receptive Language	Expressive Language
Recalling Sentences	1		1
Formulated Sentences	4		4
Word Classes-Receptive		2	
Word Classes-Expressive			4
Word Classes-Total	5		
Word Definitions	2		
Understanding Spoken Paragraphs		3	
Semantic Relationships		1	
Standard Score	56	52	57
Percentile Rank	<1	<1	<1

Social Skills Rating System

	Social Skills	Problem Behaviors	Academic Competence
Teacher Form	47	90	4
Parent Form	79	>98	
Student Form	97		

Note: Scores of the Clinical Evaluation of Language Fundamentals-4 scores are standard scores; M = 100, SD = 15. Social Skills Rating System scores are reported in percentiles. High scores for social skills indicate positive social ability; high scores for problem behaviors indicate negative behavior.

necessary. As a result of her attempts to complete the work, Amy was more successful in school. Mrs. H. reported Amy was currently earning mostly B grades, with an occasional C grade when she did not complete her class work.

Current special services/treatment information. Amy has received speech-language intervention provided by the school district since she was identified as having LI in kindergarten. She has been enrolled in resource classes during this entire time as well, although not at the self-contained level. As a seventh-grader, Amy had resource support for reading, language arts, and math. At the time of the current study, Amy was enrolled in resource classes for language arts and math, and continued to receive speech-language intervention through the school district.

At the time of this assessment, Amy's speech and language intervention focused on the following goals: memory strategies, semantics, non-literal language, deducing meaning from context, textbook skills (scanning for important information, bold words, using the index/glossary, and grid system for maps in geography), summarizing, and thought organization to express her knowledge. Amy's intervention also included social goals such as utilizing strategies for participating in a class discussion and interacting with peers in a small group setting. Her clinician indicated that her greatest needs were expressive language and word retrieval skills. These deficits become more severe when Amy is under stress.

Current academic and social skills evaluation. SSRS forms were completed by Amy, her mother, and her SLP, Mrs. H, for the current study. Amy's social skills scores all fell in the typical range. Problem Behavior and Academic Competence scores were much lower, indicating a serious deficit. According to Amy, her social skills are in the

97th percentile, reflecting her positive view of her social abilities (the higher percentile reflecting better social skills). Although others have a less favorable view of her social abilities, Amy still scored within the typical range for social skills. For social skills, Amy's mother rated her in the 79th percentile, and Mrs. H rated her in the 47th percentile. For problem behaviors, Amy's mother rated her above the 98th percentile and Mrs. H rated her in the 90th percentile (higher score indicates more problem behaviors). With regard to academic competence, Mrs. H rated her in the 4th percentile (lower score indicates poor academic competence). On the UCLA Loneliness Scale, Amy's score of 44 was within 1 *SD* above the mean of 487 college students (*M*=40.08, *SD*=9.50; Russell, 1996). Higher scores on this measure indicate increased loneliness.

Informal interviews with Mrs. H and Amy's mother also reflect the formal scores from the SSRS. In working with Amy, the SLP observed "two social Amy's." When interacting with teachers and peers in a structured environment, Amy is a meek, polite, and quiet student. She demonstrates understanding of social rules and follows those rules during structured activities. When Amy was first brought to meet the research team for this study, she sat quietly with her head down. She appeared shy, almost frightened, and had difficulty answering questions. She was very polite and listened intently as Mrs. H explained the procedure of the study in simple terms. With this first encounter in mind, Mrs. H's report of Amy's alternate character came as a surprise.

Mrs. H has observed that Amy displays more difficulty in less-structured situations. Amy can be loud and aggressive, and plays the role of "bouncer," as reinforced by her peer group. She often displays aggressive behaviors when not monitored by adults, but has been observed to self-correct social misbehavior when

caught by a teacher. For example, she was observed yelling and bullying another student in the hall, but quickly changed her behavior when Mrs. H called her name and Amy realized she was being watched. In general, Amy is not directly rude to teachers; however, her body language may be interpreted as rude or disrespectful.

Socially, cultural ties to fellow Tongans and Pacific Islanders have given Amy a unique support system that offers acceptance she might not otherwise enjoy. Although the role of "bouncer" suits her well because of her size, it also reinforces her typically inappropriate aggressive behavior. Despite the positives associated with acceptance among her peers, Mrs. H is concerned that Amy does not understand when that role is unacceptable outside of the classroom. Mrs. H expressed concern that Amy's aggressive behavior and disrespectful body language, coupled with the LI, will put her into dangerous situations that she is not well-equipped to manage.

Case Study 2-Jean

Initial background information. Jean was a 6;6 year-old female in a regular first grade class. She lived with her mother and had two younger siblings at home. Her mother was employed. English was the primary language spoken in the home. Midway through the school year, Jean moved out of the school district and was unable to participate in the data collection following the social skills intervention.

Initial language assessment. Testing by the school SLP revealed the following test results. In the original study, Jean received a standard score of 87 for receptive language and a total language standard score of 83 on the TOLD-2, placing her 1 *SD* below the mean for both expressive and receptive language for her chronological age (the expressive score was not available). She received a DSS score of 3.93, placing her below the 10th percentile for her age group. She had a nonverbal IQ of 100 on the LIPS.

Initial special services/treatment history. At the time of the original study, Jean was diagnosed with LI and received speech-language intervention services provided by the school district.

Initial academic and social skills evaluation. In the first grade, Jean's scores on the TBRS differed from the normative database of children between the ages of 5-8 years by more than 1 *SD* in only one subtype of the six dimensions: the assertive/reactive subtype of hostile/aggressive reactive behavior. This score indicated that she showed few assertive behaviors when dealing with other children who were aggressive or hostile. Her ability to work with others, as stated in Brinton et al. (2000), varied between four group projects. Jean demonstrated the most favorable social interactions of the six children with LI, however. With the exception of her score on the assertive/reactive subtype of the TBRS, her social behavior was typical of children her age. In general, the authors reported that Jean seemed comfortable interacting with her peers, despite her LI. Her peer rating was 1 *SD* above the mean and her same-gender peer rating was more than 2 *SD* above the mean. Jean was mentioned as a friend by six of her classmates, two of which were reciprocal friendships. Interestingly, one of those reciprocal friendships was with Marie, another participant in the current study. As Jean was unable to complete the experiment, follow-up scores were not available.

Current background information. At the time of the current assessment, Jean was a 14;11 year-old female in the eighth grade. She lived with her mother and step-father, grandmother, and her younger brother and sister at home. Both her mother and step-father were employed. Jean had attended the school for one year.

Current language assessment. In the current study, Jean received a core language standard score of 79 (8th percentile), receptive language standard score of 80 (9th percentile), and an expressive language standard score of 77 (6th percentile) on the CELF-4 (see Table 2).

Current special services/treatment history. At the time of the current study, Jean was enrolled in resource for language arts and U.S. History, but no longer received speech-language intervention services. She was also enrolled in resource for reading, but has since been transferred to a regular education reading class. The transfer was not recommended by Mrs. M, her resource teacher. Mrs. M indicated that she thought the transfer was at the request of Jean's mother. According to Mrs. M, Jean mostly has trouble with reading, reading comprehension, writing, and spelling. Jean reported that she has dyslexia; however, Mrs. M did not mention it. At the time of the current study, she was functioning at a middle elementary school level. It was also noted that at the time of the study, Jean was taking a prescribed medication to reduce aggressive behaviors. It was reported that she had been physically aggressive with her mother and others prior to the prescription.

Current social skill evaluation. According to Jean, her social skills are in the 47th percentile, which was higher than the SSRS-Parent score and much lower than the SSRS-Teacher score. For social skills, Jean's mother rated her in the 37th percentile and Mrs. M rated her in the 93rd percentile. Problem behavior scores reported by parent and teacher were similar and both in the average range, 32nd percentile and 27th percentile respectively. For academic competence, Mrs. M placed Jean in the 34th percentile

Table 2

Jean's Assessment Scores

Clinical Scale of Language Fundamentals-4

	Core Language	Receptive Language	Expressive Language
Recalling Sentences	8		8
Formulated Sentences	8		8
Word Classes-Receptive		5	
Word Classes-Expressive			3
Word Classes-Total	4		
Word Definitions	6		
Understanding Spoken Paragraphs		9	
Semantic Relationships		6	
Standard Score	79	80	77
Percentile Rank	8	9	6

Social Skills Rating System

	Social Skills	Problem Behaviors	Academic Competence
Teacher Form	93	27	34
Parent Form	37	32	
Student Form	47		

Note: Scores of the Clinical Evaluation of Language Fundamentals-4 scores are standard scores; M = 100, SD = 15. Social Skills Rating System scores are reported in percentiles. High scores for social skills indicate positive social ability; high scores for problem behaviors indicate negative behavior.

(average range). On the UCLA Loneliness Scale, Jean's score of 47 is within 1 *SD* above the mean and indicated that she is somewhat lonelier than the mean of college students (Russell, 1996).

Mrs. M was interviewed to gain information regarding Jean' current academic and social abilities and the progress she has made over the last year in her class. Mrs. M described Jean as a hard-working student who genuinely likes learning. She is obedient and anxious to learn. She has good organizational skills and knows when to ask for clarification. Socially, Mrs. M described Jean as young, naïve, and needy. She does not seem to understand boundaries and the rules of proximity. Jean often hugs her teachers and classmates, regardless of the comfort level of others. Mrs. M doesn't believe Jean is able to read the emotions of others unless they are obvious and extreme. On the other hand, she is very friendly and wants to be friends with everyone. Her peers seem to be accepting of her despite the hugs. Mrs. M is concerned that the way Jean relates to others may endanger her, as she feels comfortable approaching practically anyone for a hug. Interestingly, Jean ran to hug the graduate clinician whom she had only met once during a previous assessment session.

In working with Jean, the graduate clinician observed behavior consistent with Mrs. M's description. Upon the second assessment session, Jean quickly became comfortable with the clinician, greeting her with a smile, wave and hug. This seemed somewhat odd, since weeks separated the first and second sessions. Jean mentioned having several friends at school, although she does not socialize with them after school. Jean said she does not have any trouble making friends; her family typically moves once a year, so she is used to making new friends. Still, her best friend is her mother. Jean likes

Disney television shows and Tinkerbell, which seems young for a 14 year-old girl. She loves to shop, watch movies, dance, and "annoy" people. She didn't seem to understand that annoying behavior might cause her peers to dislike her. In the interview, Jean's speech as well as her mannerisms and preferences seemed somewhat immature, for example her interest in Disney characters and television shows younger children typically enjoy. Overall, Jean was friendly and personable.

Case Study 3-Marie

Initial background information. Marie was a 6;3 year-old female in a regular education first grade class. She lived with both parents and three siblings (sister age 11 and twin brothers age 3). Both parents were employed (mother was self-employed). English was the primary language spoken in the home. Marie had attended the same school for two years.

Initial language assessment. In the original study, Marie scored within the 3rd percentile on the expressive language portion and within the 4th percentile on the receptive language portion of the *Clinical Evaluation of Language Fundamentals-Revised* (CELF-R; Semel, Wiig, & Secord, 1987). She received a DSS score of 5.92 on a 48-utterance language sample, placing her below the 10th percentile. She had a composite IQ score of 76 as measured by the Stanford-Binet Intelligence Scale-4th Edition (SBIS-4; Thorndike, 1986). The testing psychologist indicated that she was not mentally retarded, however, as cited in her IEP.

Initial Special services/treatment history. At the time of the study, Marie was diagnosed with LI and received speech-language intervention services through the school district since the initial testing. Initial IEP goals included improvement of skills and

strategies for more effective communication, improvement of reading skills, and improvement of math skills.

Initial academic and social skills evaluation. According to the academic portion of the SSRS, Marie's overall academic performance was very low compared to her classmates; however, her overall motivation to succeed academically was considered by her teachers to be average. Marie received limited parental encouragement. Her overall classroom behavior was rated as average, although her teacher mentioned that Marie's mood swings were an issue. At the time of the initial assessment, medication seemed to be helping.

In the first grade, Marie's scores on the TBRS revealed differences from the normative database in all six dimensions. Both sociability subscale ratings were significantly decreased. Her impulse control/likeability rating was 4 *SD* below the corresponding normative mean and her prosocial rating was more than 1 *SD* below the normative mean (lower scores indicate more social problems). Marie demonstrated higher levels of withdrawn/solitary behavior than her classmates with solitary active withdrawal and solitary passive withdrawal more than 5 *SD* above normative means and reticence more than 1 *SD* above the normative mean (higher scores in these categories indicate more problem behaviors). Among the anxious/distractible behaviors, Marie was 8 *SD* above the corresponding normative mean for depression, 2 *SD* above the mean for anxious/fearful behavior, and more than 1 *SD* above the mean for overt emotional display. Within the realm of emotional/impulsive factors, she scored more than 1 *SD* above the corresponding means for rough/tumble (non-cooperative) play. Under ratings

of Marie's hostile/aggressive reactive factors, only assertive reactive was more than 1 *SD* from the norm.

Marie's score on the WALS of 23 was more than 1 *SD* above the mean of children with typical language skills, indicating she often felt more lonely and isolated from her peers. The classroom peer rating scale found Marie's overall peer rating and same-gender peer rating to be within 1 *SD* of the corresponding class means. She had two reciprocal friendships, one of which was with the child she named as her very best friend. She was not named as a friend by any of the other children, however, which placed her within 1 *SD* of the class friendship means.

Current background information. At the time of the current assessment, Marie was a14;8 year-old female in the ninth grade. She lived with both parents and two siblings (twin brothers). Both parents were employed. Marie had attended the same school for 3 years.

Current language assessment. In the current study, Marie received a core language standard score of 78 (8^{th} percentile), a receptive language standard score of 76 (5^{th} percentile), and an expressive language standard score of 77 (6^{th} percentile) on the CELF-4, placing her below the 10^{th} percentile in all categories (see Table 3).

Mrs. H, Marie's SLP, was interviewed to gain information regarding Marie's LI and the progress she has made both academically and socially over the years. Mrs. H reported that Marie is doing well with her current IEP goals. She is earning mostly A's and B's in her classes, with the exception of keyboarding, which is Marie's least favorite class. She earns good grades in her resource classes because she is trying hard to complete her class work. She has had trouble with these classes in the past, primarily due

Table 3

Marie's Assessment Scores

Clinical Scale of Language Fundamentals-4

	Core Language	Receptive Language	Expressive Language
Recalling Sentences	7		7
Formulated Sentences	7		7
Word Classes-Receptive		7	
Word Classes-Expressive			5
Word Classes-Total	6		
Word Definitions	5		
Understanding Spoken Paragraphs		8	
Semantic Relationships		3	
Standard Score	78	76	77
Percentile Rank	7	5	6

Social Skills Rating System

	Social Skills	Problem Behaviors	Academic Competence
Teacher Form	79	77	4
Parent Form	7	>98	
Student Form	6		

Note: Scores of the Clinical Evaluation of Language Fundamentals-4 scores are standard scores; $M = 100$, $SD = 15$. Social Skills Rating System scores are reported in percentiles. High scores for social skills indicate positive social ability; high scores for problem behaviors indicate negative behavior.

to a lack of motivation. When administered the CASL by the graduate clinician, Marie's synonym score was low, but overall she scored well. Her score for non-literal language was high.

Current special services/treatment history. Marie had received speech and language intervention provided by the school district since she was identified as having LI in kindergarten. Marie was seen by Mrs. H during first and second grade, and then again during seventh, eighth, and part of ninth grade.

Marie was in a self-contained resource setting for elementary school. As a seventh grader, she is currently enrolled in resource classes for language arts, reading, math, and study skills. Her speech goals focused on the following goal areas: non-literal language, taking meaning from context, memory strategies, general organizational and good student strategies, vocabulary expansion, word expansion (semantic) with curriculum, and test-taking strategies. Additionally, from the beginning of seventh grade through the first month of ninth grade, Marie attended a small group pull-out session at school during one period a week where social skills were addressed in a group setting. Mrs. H noticed significant mood swings in Marie in comparison to her peers. Subsequently, part of Marie's intervention focused on managing non-verbal communication during these mood swings, such as monitoring her facial expressions and intonation. Marie's motivation to participate often correlated with her mood.

Marie was dismissed from speech services six months before the current study was conducted, but she still received self-contained resource services for language arts, math, and reading. She also attended a study skills class for educational support outside of school. She attends the Sylvan Learning Center for additional help with math and

reading. Though she was dismissed from speech-language services, Mrs. H believes reading and mood management, especially nonverbal communication, are among her greatest needs.

Current social skill evaluation. The SSRS form was completed by Marie, her mother, and Mrs. H for the current study. According to Marie, her social skills are in the 6th percentile, reflecting a poor perception of her social abilities. For social skills, her mother rated her in the 7th percentile, and Mrs. H rated her in the79th percentile. Both Marie's mother and Mrs. H rated Marie's problem behavior high: greater than the 98th percentile, and 77th percentile, respectively. Mrs. H rated Marie's academic competence at the 4th percentile. Marie's score of 52 on the UCLA Loneliness Scale was almost 1.5 *SD* above the mean of college students assessed by Russell (1996). Her score was the highest of all four subjects, indicating she felt the most lonely.

According to Mrs. H, Marie's social competence varied depending on her level of academic security and moods. The mood swings Mrs. H observed in Marie were a significant concern and Marie's greatest challenge socially. Improvement in this area was observed over the last two years. Another concern is Marie's shyness associated with academic failure. When academic expectations are decreased, Marie feels more confident academically and is able to concentrate on the social signals she is sending, and therefore perform better socially. She also has trouble reading social cues in her environment, for example when others are bored or annoyed by her.

While Marie mentioned having several friends from school during a conversation sample with the graduate clinician, Mrs. H commented that she has not observed that

Marie belongs to a certain group or clique. Interestingly, Marie indicated that one of her best friends was Kristine, another participant in the current study.

Case Study 4-Kristine

Initial background information. Kristine was a 7;6 year-old female in a regular second grade class. She lived with her mother and step-father (recently remarried) and her older sister (age 9). Both her mother and step-father were employed. English was the primary language spoken in the home. Kristine had attended the same school for 3 years.

Initial language assessment. In the original study, Kristine scored in the 2nd percentile on the expressive and receptive portions of the CELF-R. She received a DSS score of 7.34 on a 122-utterance language sample. Although DSS norms were not available for her chronological age, her score would have been below the 10th percentile for children one year younger. Kristine had an IQ score of 85 as measured by the SBIS-4. Subsequent scores obtained during 2nd grade demonstrated near typical performance.

Initial special services/treatment history. At the time of the original study, Kristine was determined to have LI and received speech-language services through the school district. At the time of the initial assessment, Kristine's IEP goals included increasing daily living skills, improvement of pre-reading skills, increasing math skills, and increasing semantic skills.

Kristine also received speech-language services from a university speech-language-hearing clinic at the time of the initial evaluation. Kristine's goals at the clinic included language intervention for comprehension and expression of temporal, spatial and numerical concepts, pronouns and prepositions, expression of regular and irregular past tense markers, emergence of topic manipulation (including initiation, maintenance, and closure), and developing intent to communicate interactively with other people.

Phonological intervention goals included consonant cluster reduction, initial and final consonant omission, strident /s/ and liquid /l/ distortion and/or omission, and vowel distortion.

Initial academic and social skill evaluation. According to the academic portion of the SSRS (Gresham & Elliot, 1990), Kristine's academic performance and overall motivation to succeed was average compared to her peers (5; highest 10%). The SSRS also reported Kristine's strong parental encouragement to succeed academically, average intellectual functioning (4; next highest 20%), and the highest positive rating of overall classroom behavior (5; highest 10%).

In the second grade, Kristine's scores did not differ from the norms in the dimensions of emotional/impulsive, hostile/aggressive proactive, and hostile/aggressive reactive behavior. There were differences from the normative database in three of the six dimensions. Within the dimension of sociability, Kristine's ratings of prosocial and impulse control/likeability varied from within the average range to 1 *SD* below normative means across the two behavior samples in November and February. Under the dimension of withdrawn/solitary behavior, Kristine's solitary passive withdrawal rating was more than 2 *SD* above the normative mean, indicating greater withdrawal. Under anxious/distractible behavior, speech disorder was notably above the mean during the first measure, but had greatly improved by the second measure.

On the WALS, Kristine's score was within 1 *SD* of the mean of children with typical language skills; however, her scores were the lowest when compared to scores obtained from the other subjects, indicating that she was more lonely than her classmates.

Current background information. At the time of the current study, Kristine was a 15;11 year old female in the tenth grade. She lived with her mother and her older sister. Her mother was employed. Kristine had attended the school for one year.

Current language assessment. In the current study, Kristine received a core language standard score of 102 (55th percentile), a receptive language standard score of 86 (18th percentile), and an expressive language standard score of 99 (47th percentile) on the CELF-4 (see Table 4).

Current special services/treatment history. At the time of the current study, Kristine did not receive special education services, resource, or speech pathology services.

Current social skill evaluation. SSRS forms were completed by Kristine, her mother, and Mr. D, her ninth grade language-arts teacher. Kristine had selected Mr. D as the teacher who knew her the best. As can be seen in Table 4, Kristine rated her social skills at the 55th percentile, her mother rated her at the 91st percentile, and Mr. D rated her at the 8th percentile. For problem behaviors, Kristine's mother rated her at the 45th percentile and Mr. D rated her at the 87th percentile. According to Mr. D, her academic competence was at the 30th percentile. On the UCLA Loneliness Scale, Kristine's score of 45 was within 1 *SD* above the mean, and indicated that she was somewhat lonelier than the mean of college students (Russell, 1996).

According to Kristine, she sees no need for friends at school, but her favorite classes were the ones where she could talk to her peers. She mentioned two very close friends: Marie and Jeff. She noted that she previously dated Jeff. She also mentioned three more names of peers who are fairly good friends. Kristine belongs to a social

Table 4

Kristine's Assessment Scores

Clinical Scale of Language Fundamentals-4

	Core Language	Receptive Language	Expressive Language
Recalling Sentences	6		6
Formulated Sentences	14		14
Word Classes-Receptive		8	
Word Classes-Expressive			10
Word Classes-Total	9		
Word Definitions	13		
Understanding Spoken Paragraphs		7	
Semantic Relationships		8	
Standard Score	102	86	99
Percentile Rank	55	18	47

Social Skills Rating System

	Social Skills	Problem Behaviors	Academic Competence
Teacher Form	8	87	30
Parent Form	91	45	
Student Form	55		

Note: Scores of the Clinical Evaluation of Language Fundamentals-4 scores are standard scores; $M = 100$, $SD = 15$. Social Skills Rating System scores are reported in percentiles. High scores for social skills indicate positive social ability; high scores for problem behaviors indicate negative behavior.

organization for girls called Job's Daughters (Jobies), which is a sponsored by the Free Masons. She is very involved with the Jobies and typically attends meetings twice a week. Kristine socially benefits from her participation with the Jobies, as it has allowed her to be part of a network of youth.

An informal interview with Mr. D was conducted to provide a more thorough description of Kristine's current social profile. Mr. D was Kristine's 8th grade general education language-arts teacher. As previously noted, Kristine indicated that Mr. D was the teacher who she thought knew her the best overall. Mr. D described Kristine as a student of average to below average academic standing. Her poor performance was primarily related to late assignments. Her success in each class depended on whether she liked the class. Mr. D was unaware of Kristine's speech/language needs; however, socially he observed her to be completely isolated. Kristine did not talk in class or participate in discussion unless forced to do so. Mr. D's first interaction with Kristine was when he asked her a question regarding her lack of preparation for class. She cried in response. After this incident she made a connection with Mr. D. She began bringing in several poems a week for his review. Compared to other students, Kristine's writing was on grade level to above average. Her poems required editing on a mechanical level, but were insightful and clever. Kristine's poems were very personal in nature and often reflected feelings of isolation, sadness, and sometimes self-loathing. Despite the dark tone of her poems, her conversations with Mr. D were light and sociable. Kristine never talked about feeling isolated. On occasion, Kristine brought friends with her to see Mr. D after class. Those friendships seemed well-established with peers from grammar school.

According to Mr. D, Kristine's greatest needs were to have someone in the academic realm who will listen to her and to make a connection with her. She needs to learn how to approach teachers for help. She also needs organizational skills for completing her class work on time. Mr. D's greatest concern for Kristine was that some girls in 8th and 9th grades isolate themselves and harm themselves through cutting, etc. He had the impression that she may have been involved in that group, although he did not see evidence of personal harm.

Kristine still visits with Mr. D. The last time Mr. D saw Kristine, she seemed more mature and better adjusted. He wonders whether the isolation he observed is a reflection of Kristine's shyness or merely a decision not to be social.

Discussion

Children with a history of LI continue to show significant social deficits. These children are more withdrawn, have fewer friends (Durkin & Conti-Ramsden, in press; Fujiki et al., 1996; Fujiki, Brinton, Hart, et al., 1999; Brinton, Morgan, et al., 1999; Hart et al., 2004). Social problems may persist through the school years into young-adulthood. The purpose of this study was to collect follow-up data for four females who were previously included in a group study of children with LI. We were particularly interested in the students' social outcomes. Each of the four case studies was examined in detail, with an initial and a current look. Although this study gives insight to the social development of four females with LI, we are only able to hypothesize regarding its generalizability to the social outcomes of other individuals with LI. Additionally, because research has shown LI to be more prevalent in males, the fact that all of the subjects in this study are female should be considered.

As documented in numerous case studies, significant language and social impairments are found in children with LI (Brinton et al., 2005; Damico, 1998; Skarakis-Doyle, 2005). Though these impairments vary in type and significance, all four participants in this study demonstrated social problems. Amy's initial language scores were below the mean for both receptive and expressive language, which qualified her for speech-language services throughout her school years. Amy was among the subjects from the original study who appeared most socially at-risk for her chronological age. She had the poorest ratings on the TBRS of all of the children measured and her social profile was categorized as highly aggressive and socially withdrawn. Initial peer classroom ratings found Amy to be aggressive, lonely, and isolated with no reciprocal friendships. She was also generally disliked by her peers. Since the original study, Amy has been enrolled in

speech-language intervention and resource classes; however, her LI continues to impact her life, particularly in academic and social competence.

The current assessment found Amy still has a significant language problem, as indicated by her low CELF-4 scores and continued enrollment in language intervention. Low language scores coupled with a history of academic failure have been typical for Amy. Socially Amy has found acceptance in a culturally defined peer group as a "bouncer." However, aside from that group, teachers and peers find her style of communication rude and disrespectful. When not being monitored by adults, the quiet Amy often seen in the classroom setting becomes loud and aggressive. Mrs. H's greatest worry is that Amy will find herself in a dangerous situation at some point because she does not understand that her behavior is unacceptable outside of the cultural clique.

Initial testing placed Jean's receptive and expressive language significantly below the normative mean. In general, her social behavior was relatively typical of children her age. In the current assessment, Jean's scores on the CELF-4 documented her persisting LI. Jean is currently enrolled in self-contained resource classes for her core curriculum, but was dismissed from resource for reading and from speech-language services. According to teacher and parent report, Jean demonstrates limited problem behaviors, which may at least in part be the result of the medication she is taking to reduce aggressive behaviors. Frequent relocating and transferring between schools, almost annually, may account for her lack of friendships outside of the school setting. Mrs. M's main areas of concern are that Jean doesn't seem to understand the social rules of proximity and that her naïve personality may make her vulnerable to teasing and more serious danger in the future.

Marie's initial language scores were significantly below the normative mean for both receptive and expressive language. Since then, she has been enrolled in speech-language services to treat her LI. According to TBRS scores, Marie's social behavior was classified as socially withdrawn. In the 1st grade, Marie reported feeling lonely and isolated. In the current assessment, Marie's language scores on the CELF-4 were still notably low. Her score on the UCLA Loneliness Scale revealed that she felt the loneliest of the four subjects. Loneliness has also been documented in adolescents with LI (Conti-Ramsden & Botting, 2004). Despite her persisting LI, Marie is doing relatively well academically, which may be in part attributed to her current level of motivation in school. Marie is presently enrolled in resource classes but was dismissed from speech-language services. Outside of school, Marie attends Sylvan Learning Center for additional academic support. According to the SSRS data, lack of social ability and high problem behaviors are problematic. These problems are complicated by significant mood swings as reported by Mrs. H. Mrs. H's greatest concerns for Marie are her fluctuating motivation to succeed academically and the mood swings that affect her performance both academically and socially.

Initial language testing for Kristine was significantly low for both expressive and receptive language. Scores on the TBRS characterized her social skills as relatively typical compared to her classmates. Though her current language scores are within the typical range, she still has notable social problems. This illustrates the notion that language and social ability are not necessarily correlated in children with LI (Fujiki, Brinton, Morgan et al., 1999). Improvement of language does not necessarily resolve social communication problems. Kristine does not currently receive services for speech

or resource. Current academic failure is mainly due to unfinished assignments and late work. According to the SSRS, Kristine has poor social skills and demonstrates problem behaviors. According to the UCLA Loneliness Scale, her score was within normal limits; however, in the conversation sample, Kristine only mentioned two close friends. She also belongs to a large social organization for students her age, but it was unclear whether she has any friends in the group. Mr. D reported his concern for Kristine as a socially isolated student who may be prone to depression and self-harm.

At the time of the initial assessment, three of the four participants had significant LI. Despite speech-language intervention and other special education services, the impairment was still evident in the current language assessment of three subjects. In fact, scores decreased from the time of initial evaluation for two of the four girls (Amy and Jean) on the current language measures when compared to the normative mean. This may be due to several factors including increased language expectations for the girls' current ages, changes in the normative sample of the different tests, lack of motivation, or history of failure. Of the remaining two girls, Marie's scores slightly increased for both receptive and expressive language compared to the norms, and Kristine's scores dramatically increased, especially for expressive Both receptive and expressive scores were in the typical range.

In this study, we found that social deficits persisted into young-adulthood for all of the four girls studied. Although the students' deficits represent varying levels of severity, the findings are similar to observations from group studies of children with LI: children with LI are at risk for social difficulties that disrupt their ability to establish and maintain positive social relationships. Follow-up data including formal measures may

show language problems have resolved; however, the underlying social and emotional deficits may remain despite the improvement of language over time. This was also true for the results of the current study. The girls who were classified as relatively typical in the original study (Jean and Kristine) still seemed to be the most successful. Marie, who was classified as socially withdrawn, was still having trouble socially in the current evaluation but has developed several compensatory strategies to help her succeed academically and socially. Originally classified as highly aggressive and socially withdrawn, Amy had the most trouble academically and demonstrated the most problem behaviors of the four girls. Jean appeared to be the most outgoing, but had trouble reading the nonverbal cues of others. Although Kristine stated she had no need for friends, Mr. D worried her isolation might lead to self-harm.

For children with typically developing language, the first years of life are spent learning to use language to communicate effectively. The early development of communication is supported through and motivated by social interaction with caregivers and other individuals. Eventually the child is able to use language as an effective means to communicate with caregivers and peers. In school, language is critical to the social interactions in which children participate. These interactions are important to developing positive peer relationships, which in turn support their academic learning (Brinton & Fujiki (2004).

Conversely, children with LI struggle from birth to learn what seems to be easily learned for so many children. Their delayed social and linguistic communication places them far behind their peers. When children with LI reach kindergarten and first grade, these children are already at a disadvantage for both participating in social interactions

and accessing the curriculum. This finding was supported by the original data collected by Brinton, Fujiki and associates (Fujiki, Brinton, Hart, et al., 1999; Fujiki et al., 2001; Brinton et al., 2000). As children with typical language continue to increase their ability to communicate socially and academically, children with LI fall further behind. Since children with LI are often unable to access peer interaction, they lack the support and language model that might be accomplished through friendships. This pattern results in the "negative social spiral" (Rice, 1993, p. 155) in which limited social interaction and results in increasingly poorer skills. This phenomenon was evident in the data and analysis collected for the current study.

In interviewing the participants' teachers and SLPs, it became evident that social skills intervention was of particular concern for these four students. A common underlying theme was the girls' academic failure, due to a variety of reasons, including a lack of motivation and incomplete assignments. The students had access to academic support from resource teachers and SLPs to deal with academic difficulty due to LI and afford them equal access to the curriculum. Current data, however, revealed persistent deficits both in academics and social skills. In interviewing the students, three of the four girls mentioned that having friends in class and their level of interest in a particular subject influenced their academic success just as much or more than the amount of additional support from educators and assignment modifications to adapt to their language limitations. This trend magnifies the importance of social relationships and acceptance in the school setting to support academic success for children with LI. With this in mind, it then follows that a dual focus on speech-language intervention and social skill training would prove most beneficial to students with LI, as opposed to the

traditional focus on remediation of language limitations. The main goal of intervention is to support academic success. Thus focus on social skill training to offer children with LI access to the development and maintenance of positive peer relationships may be a critical component. This social skill training may assist in breaking the cycle of academic failure and the negative social spiral previously discussed. This theory was strongly supported by the teachers and SLPs interviewed for this project.

In all four cases, the interviewed teacher/SLP discussed specific concerns that the girls had difficulty interacting with their peers. For these particular subjects, the teachers were concerned that a lack of social interaction would ultimately lead to negative physical and psychological issues in the future. This provides additional support for the need to address adequate social skills intervention. Although the sample size was small, the results offer detailed insight into the lives of four females with LI that could not be obtained through a group experimental design.

Given the unique strengths and limitations of this study, further research is necessary to look at the specific needs and types of social intervention necessary to aid and teach social compensatory strategies to children with LI. Areas that should be considered in future research of social outcomes of children with LI are (a) what happens to these children socially as they progress toward adulthood, (b) what type of compensatory strategies children with LI develop over the years to make up for their lacking social skills, and (c) which factors impact social skills in addition to language deficits (i.e., family relationships, culture, socioeconomic status, geographic influences, etc.).

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