

Recognizing the Need to Dissemble Emotions in Hypothetical Social Scenarios:
Differences in Children with Language Impairment

by

Emily Rowberry Jones

A thesis submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

Master of Science

Department of Communication Disorders

Brigham Young University

August 2008

BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

Emily R. Jones

This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

Date

Martin Fujiki, Chair

Date

Bonnie Brinton, Committee Member

Date

Ron W. Channell, Committee Member

BRIGHAM YOUNG UNIVERSITY

As chair of the candidate's graduate committee, I have read the thesis of Emily Rowberry Jones in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

Date

Martin Fujiki
Chair, Graduate Committee

Accepted for the Department

Date

Ron W. Channell
Graduate Coordinator

Accepted for the College

Date

K. Richard Young
Dean, David O. McKay School of Education

ABSTRACT

Recognizing the Need to Dissemble Emotions in Hypothetical Social Scenarios: Differences in Children with Language Impairment

Emily Rowberry Jones

Department of Communication Disorders

Master of Science

This study investigated the ability of children with LI to recognize the need to dissemble emotions. Participants included 22 children with LI and 22 typically developing peers, ages 7;1 to 11;0 years. Children were presented with 10 hypothetical social scenarios in which the main character experienced an emotion which should be dissembled for social purposes. The participant's responses were categorized as dissemblance or display. Children with LI reported that they would hide the experienced emotion significantly less often than their typical peers. Children in both groups reported higher levels of dissemblance when asked what their parents would want them to do. There was no significant difference between language groups for this question.

ACKNOWLEDGMENTS

I would like to thank my graduate committee for their insight and guidance throughout this process. Dr. Bonnie Brinton, Dr. Matthew Spackman, Dr. Ron Channell, and especially Dr. Martin Fujiki have all taught me so much and helped me understand research at a higher level. I would like to express special appreciation to my parents for their constant love and encouragement throughout my schooling. I would not be at this point without their support and confidence. I would also like to thank my husband for his patience and support during this project, as well as for being such a great ‘ugly boyfriend!’ I want to say thanks to Melanie Cobabe, Veronica Gardner, Lara Goldie, Bethany Hillary, Jami Potter, Dorthy Stott, Chelsea Voorhees, and especially Noel Hurst for their help with the data collection. This work was supported by a David O. McKay Fellowship from Brigham Young University.

TABLE OF CONTENTS

	Page
Introduction	1
Review of Literature.....	5
Definition of Dissemblance	5
Typical Development of Dissemblance	6
LI and Emotion Understanding	10
Method.....	13
Participants	13
Participants with LI.....	14
Participants with Typically Developing Language Skills.....	14
Procedures	14
Scoring Responses.....	17
Data Analysis	18
Results	19
Comprehension Question	19
Emotion Question.....	19
Dissemblance Question	19
Display Rule Question.....	20
Discussion	22
Research Questions.....	23

What Should Chris Say?.....	23
What Would Chris' Parents Want Chris to Do?.....	25
Directions for Future Research.....	27
References	30

LIST OF TABLES

Table	Page
1. Percentage of Responses to the Question “What Should Chris Say?” by Language Group and Gender.....	20
2. Percentage of Responses to the Question “What Whould Chris’ Parents Want Chris to Do?” by Language Group and Gender.....	21

LIST OF APPENDIXES

Appendix	Page
A. Consent to Take Part in Research (for parents of children with LI)	34
B. Examples of Pictures Accompanying Each Scenario	40
C. Hypothetical Social Scenarios.....	41
D. Emotion Card Training Instructions	43
E. Emotion Differences Data	44

Introduction

Numerous studies have shown that children with language impairment (LI)¹ have greater difficulties with social interaction than linguistically typical peers (Conti-Ramsden & Botting, 2004; Fujiki, Brinton, & Clarke, 2002; Fujiki, Brinton, Hart, & Fitzgerald, 1999; Hart, Fujiki, Brinton, & Hart, 2004, Liiva & Cleave, 2005). For example, Conti-Ramsden and Botting (2004) found that children with specific language impairment (SLI) demonstrated more socially problematic behaviors than their linguistically-typical peers. Children with SLI were less likely to initiate a conversation, more likely to play alone, and less likely to be liked by others in their class. Fujiki, Brinton, Morgan, and Hart (1999) also found that teachers rated children with LI as demonstrating higher levels of reticent withdrawal than their typical peers. Withdrawn social behaviors are particularly concerning because they can limit the positive social interactions in which a child might participate, thereby also limiting social learning opportunities. Conti-Ramsden and Botting also found that these difficulties with social interactions tend to increase with age for children with SLI.

Language plays a central role in social interactions. It can be inferred that children with LI will have difficulties in social situations, and thus with peer relationships, because of their linguistic difficulties (Redmond & Rice, 1998). Fujiki, Brinton, Hart, et al. (1999) found that language ability did not directly dictate social status, however.

¹ The term LI is used to refer to children who have problematic language skills in the face of unremarkable status in other areas of development, including cognitive, sensory, and motor abilities. In this study an IQ score of 70 or better, thus eliminating intellectual disability, was considered as acceptable for inclusion. This IQ level does not meet the traditional standard for the definition of specific language impairment (SLI), however. Because the terms LI and SLI are often used interchangeably, I have used the same term employed by the authors of the study under discussion when reviewing the literature.

These authors used a peer-rating system to assess the acceptance and friendships of eight children with SLI in several different classrooms. These eight students varied markedly in their popularity ratings. One child was ranked among the most popular students; however, most were ranked more than one standard deviation below the class mean for popularity. Fujiki, Brinton, Hart, et al. also found that severity of LI did not directly dictate acceptance rates. Thus, the lower social rankings could not be explained entirely by language status. Fujiki, Brinton, Morgan, et al. (1999) stated that difficulties with social behaviors demonstrated by children with language impairments, “undoubtedly represent a complex developmental interaction of cognitive, linguistic, social, and behavioral processes” (p. 192). One aspect of development that has recently received support as a potentially influential variable is emotion understanding (Brinton, Spackman, Fujiki, & Ricks, 2007; Ford & Milosky, 2003; Fujiki et al., 2008).

In order to successfully participate in social contexts, children must be able to understand the emotions shown by others, whether conveyed through words, tone of voice, facial expressions, or some other means. As children develop more complex emotion understanding skills, they are not only able to interpret the emotions of others, but have greater awareness of their own emotions. One aspect of this awareness is the ability to feel one emotion and display another for social purposes. In some situations, successful social behavior is dependent on this ability to dissemble, or hide, emotions (Saarni, 1979).

Adults recognize that there are times when the emotion that one is feeling should be dissembled in order to protect the feelings of another person, conform to social expectations, or further one's own interests. Children as young as two show some

indication of this, and by four or five years of age, typically developing children realize that emotion expression can be controlled and does not always portray the same emotion a person is feeling (Gosselin, Warren, & Diotte, 2002; Harris, Donnelly, Guz, & Pitt-Watson, 1986). Adult-like dissemblance is not developed until the middle elementary school years (Saarni, 1979). Rules for when and how to display or hide emotions are generally referred to as display rules and are largely determined by cultural standards (Gnepp & Hess, 1986).

The ability of children with SLI to recognize the need to dissemble their emotions was studied by Brinton et al. (2007). These researchers found that children with SLI felt emotions should be dissembled significantly less frequently than their typically developing peers. Children with SLI appeared to lack understanding of the impact of displaying emotions rather than dissembling them. The inability of children with SLI to recognize the need to dissemble emotions may contribute to the social problems that these children experience.

The purpose of the present study was to further assess the ability of children with LI and linguistically typical children to recognize the need to dissemble emotions by replicating the Brinton et al. (2007) study. In the current study, children were included in the sample as long as they produced a nonverbal IQ above 70, thus eliminating intellectual disability. In the Brinton et al. study, only children with a nonverbal IQ score of 85 or higher were studied. It was hoped that by including children with a wider range of IQ scores that the ability to generalize its findings would be increased (Plante, 1998).

As in the Brinton et al. (2007) study, participants were presented with several linguistically simple, hypothetical social scenarios, in which the central character should

dissemble his/her emotions to follow social display rules. For each scenario, participants were given two opportunities to demonstrate their knowledge of emotional dissemblance rules. First, the child was asked what the character should do in the scenario. Next, the child was asked what the character's parents would want him or her to do in the same social situation. These two questions were used to gain insight into children's developing understanding of emotion and display rules. The following research questions were addressed:

1. What strategies would children with LI and their typically developing peers suggest that a character should use when presented with a social scenarios requiring dissemblance?
2. What strategies would children with LI and their typically developing peers think that the character's parents would indicate are appropriate when presented with social scenarios requiring dissemblance?

Review of Literature

First, dissemblance is defined and reasons why individuals dissemble emotions are discussed. Next, the relationship between dissemblance and cultural display rules is examined and four common display strategies are reviewed. The development of dissemblance skills in typical children is then considered. Finally, dissemblance in children with LI is examined.

Definition of Dissemblance

Some social situations require hiding, or dissembling, one's emotions. For example, in middle class American society, when given a disappointing gift, it is more appropriate to display gratitude rather than disappointment. Even young children understand that there may be a difference between the emotion an individual expresses and experiences (Gosselin et al., 2002; Harris et al., 1986).

The appropriate display of emotion is dictated by culturally defined display rules. Gnepp and Hess (1986) defined cultural display rules as "social conventions shared by members of a particular social class, subculture, or culture" (p. 103). One way that children learn to control and at times dissemble emotion is through conformance to cultural display rules (Zeman & Garber, 1996). Two basic types of display rules are those with prosocial and self-protective motivations (Gnepp & Hess, 1986; Gosselin et al., 2002). Prosocial dissemblance is used to maintain relationships and protect the feelings of others. Self-protective dissemblance is used to avoid negative consequences or gain advantages, as well as to preserve self esteem.

Prosocial display rules are generally understood by children at a younger age than self-protective display rules. One reason for this may be that prosocial display rules are generally taught to children more explicitly than self-protective measures. Parents

frequently direct their children to “say thank you” or “don’t talk back” (Gnepp & Hess, 1986). Even prosocial facial expressions are addressed more often than self-protective ones by parents (“Smile at your grandmother”). Banerjee and Yuill (1999) observed that children ages 8 to 11 years were able to provide explanations for self-protective and prosocial dissemblance events equally well. The 6- to 7-year-old children in their study performed almost as well as the older groups on prosocial stories, but produced significantly poorer explanations of the self-protective stories.

There are four common display strategies, or ways to modify one’s emotional expression. These strategies include minimization, neutralization, intensification, and masking. Minimization refers to lessening the intensity of the expressed emotion. Neutralization involves minimizing the emotion completely and showing a neutral face. Masking involves expressing an emotion other than the one experienced, while intensification entails increasing the intensity of the emotion. The first three strategies are effective for dissemblance of emotions (Gosselin et al., 2002)

Typical Development of Dissemblance

Typically developing children show some ability to dissemble emotions early in life. However, these skills do not reach an adult level of sophistication until adolescence. Harris et al. (1986) presented eight different stories to children ages 6 and 10. Each story contained a situation likely to elicit a specific emotion and a reason that the main character should hide that emotion. The children were asked to identify the emotion experienced by the character in the stories, as well as to identify what emotion was displayed. The researchers found that the children performed this task with a high level of accuracy, suggesting an understanding that displayed emotions can differ from real emotions. These researchers repeated the study with children ages 4 and 6 and found that

children as young as 4 years of age were able to correctly distinguish real and apparent emotions. However, the 4-year-old children rarely could produce a correct justification for dissembling emotions. It appears that young children have a limited understanding that real and displayed emotions can differ, but that concept becomes more concrete and more easily articulated by about 10 years of age.

Josephs (1994) conducted a modified version of the study by Harris et al. (1986) and found that a major improvement in understanding the distinction between real and apparent emotions can be expected between 5 and 6 years of age. Josephs presented six stories to 4- and 5-year-old children and asked them to identify the main character's real emotion and apparent emotion. Most children were able to correctly identify the real emotion, but had difficulty choosing the character's apparent emotion. Most children selected the apparent emotion that matched the character's real emotion.

Josephs (1994) also found that children understood stories with negative valence emotions better than stories with a positive valence emotion. Josephs suggested that this was because the teaching of cultural display rules generally involves negative emotions. Josephs' study showed that girls demonstrated higher understanding of prosocial stories than boys did. This could be caused by a greater emphasis placed on teaching girls to be polite and to not hurt others feelings.

Understanding and use of display rules contribute to a child's social competence. McDowell and Parke (2000) studied the relationship between third grade children's use of display rules and their social competence, as judged by peers and classroom teachers. These researchers found that children who endorsed the use of display rules (dissembled) for both positive and negative emotions were judged by peers and teachers as being more

socially competent. These results show that children must understand the importance of dissemblance in order to be socially successful. Another interesting finding from this study was that parents who were more controlling of their child's emotional expressions limited their child's social competence. The results showed that children with controlling parents were less likely to endorse the use of display rules. Parents who are less controlling allowed their child to experiment with emotional responses, which were then shaped by natural consequences in situations with peers. These encounters with peers allowed the child to take another's perspective and regulate their emotion expression internally, rather than always depending on an external cue (from their parents).

McDowell, O'Neil, and Parke (2000) further studied the relationship between children's use of display rules and their report of their own use of these rules. These authors also examined the connection between the use of display rules and teacher and peer ratings of social competence. They found that fourth grade children who demonstrated appropriate display rules and reported the use of display rules were judged by teachers and peers as being more socially competent than children who did not.

Children studied by Gosselin et al. (2002) chose neutralization as a dissemblance strategy more frequently than any other technique. Children were read stories designed to elicit display rules and asked to identify what facial expression the protagonist might make to hide his/her emotions. Neutralization was chosen most frequently while minimization was chosen infrequently by children in this study. This demonstrates that children recognize that minimization is not an effective way to hide one's emotions.

Zeman and Garber (1996) studied various factors that may affect children's decisions to dissemble emotions including type of emotion (anger, sadness, physical

pain), audience (mother, father, peer, alone), age (first, third, or fifth grade), and gender. Children were presented with a scenario and then asked whether they would show their emotion or dissemble it, their reasons for doing so, and their perceptions as to how acceptable and understandable their reaction would be to the audience. Zeman and Garber found that children were more likely to dissemble negative emotions in the presence of peers than alone or in the presence of their parents. Children also stated that they would dissemble their negative feelings for self-protective reasons; specifically, to avoid negative interpersonal consequences such as teasing.

Underwood, Coie, and Herbsman (1992) studied children's use of display rules for anger. These researchers presented children in grades 3, 5, and 7 with videotaped, anger-provoking scenarios. Children indicated that they would use display rules for anger significantly more frequently with teachers than with peers. This finding suggested that children as young as 8 years understood that expressing anger towards an adult authority figure was socially unacceptable. The researchers also found that children reported facial masking of anger increasingly with age, but only towards teachers, not peers. This finding suggested the gradual development of display rules and emotion understanding.

Children can also learn to control verbal emotion expression. Gnepp and Hess (1986) stated that verbal expressions might be easier to monitor than facial expressions. These researchers presented children in first, third, fifth, and tenth grades with eight stories, with one of three audience conditions: protagonist alone, protagonist with an audience, or protagonist with a prompted audience. The prompted audience condition was the same as the audience condition, except for the addition of one sentence which states that the protagonist did not want the audience to know his or her feelings. After

each story, the child was asked (a) what the character said and why, and (b) what kind of face the character made and why. Gnepp and Hess found that children used display rules more frequently with increasing age. They also found that children learned to control their verbal expressions of emotion at a younger age than they learned to control facial expressions. Although children were taught control of both types of emotion expression, instruction in verbal control was generally more overt (e.g., “say thank you,” “don’t talk back”). Control of facial expression was generally taught through observation and indirect feedback. Gnepp and Hess found that children in first through tenth grades had a better understanding of verbal display rules than facial display rules.

The development of emotion understanding and cultural display rules is a process that continues throughout the elementary school years. Saarni (1979) studied children ages 6, 8, and 10 years. She presented the children with four different scenarios and then asked questions regarding the emotion experienced and the emotion displayed. Saarni found that the 10-year-old children reported using display rules more frequently than the younger age groups. The 10-year-old group also used significantly more complex reasoning for using the display rules. These results show the gradual development of emotion understanding and use of dissemblance or other display rules throughout childhood.

LI and Emotion Understanding

Several researchers have examined the ability of children with LI to understand the emotions of others. This work suggests that at least some children with a primary diagnosis of LI have difficulty with emotion understanding. Stevens and Bliss (1995) presented children with hypothetical conflicts and asked them to list strategies for dealing with the conflict. Children with SLI had significantly fewer strategies than did normally

developing peers. One of the major contributing factors to this difference appeared to be difficulty understanding another person's point of view.

Fujiki et al. (2008) studied the ability of children with LI to understand emotion conveyed by prosody. Children were presented with 16 recordings of a narrative passage, read with 4 different emotions: happiness, anger, fear, or sadness. Children with LI were significantly poorer than their typically developing peers at identifying the emotion conveyed by the passage, having particular difficulty with fear.

Ford and Milosky (2003) suggested that one source of these social difficulties may be the inability of children with LI to infer and appropriately respond to emotions in others. These authors found that kindergarten children with LI were able to recognize facial emotions as well as their typical peers. However, the children with LI were less proficient at inferring the emotion a character would experience, given a specific context. These results suggest difficulty in understanding the emotions expressed by others, which is an important part of social interactions.

The ability of children with SLI to recognize the need to dissemble their emotions was studied by Brinton et al. (2007). These researchers presented stories portraying a situation that required dissemblance in order to follow display rules to typically developing children and children with SLI. The children were asked whether they thought the emotion should be displayed or dissembled. The researchers found that both groups of children expressed a high rate of display, but children with SLI indicated that emotions should be displayed significantly more often than their typically developing peers. However, it did not appear that the children with SLI were unaware of cultural display rules. When asked what their parents would want them to do, dissemble or

display, the children with SLI did not significantly differ from the typically developing group. Both groups of children indicated that the main character's parents would want their child to dissemble his/her emotions much more frequently than displaying them. Children with SLI appeared to lack understanding of the impact of not following cultural display rules and displaying their emotions rather than dissembling them. The inability of children with SLI to recognize the need to dissemble emotions may contribute to the social problems that these children experience.

As the literature shows, children with LI have a difficult time viewing the world as others view it. An important factor in the social difficulties children with LI experience may be their deficits in emotion understanding, especially in the use of display rules dictating dissemblance. Typically developing children demonstrate an understanding of emotions and display rules during the early to middle elementary school years. Children with LI demonstrate some understanding of display rules, but do not appear to have as sophisticated an understanding as their typical peers.

Method

This study was part of a larger project which evaluated various levels of emotion understanding in children with LI and their typical peers. Four tasks examining emotion understanding were administered; the dissemblance task is reported here. Order of administration was systematically varied to avoid order effects.

Participants

The current study involved 44 children: 22 with LI and 22 with typically developing language skills. Participants were selected from regular classrooms in three local school districts. The participants ranged in age from 7;1 (years; months) to 11;0. Information regarding socioeconomic status was determined from block group data from the U.S. Census Bureau to provide a measure of neighborhood income level (U.S. Census Bureau, 2008). The percentage of people below the poverty level in the areas surrounding the eight schools ranged from 0% to 11%, with a mean of 3.58% ($SD = 3.45$). Only four participants came from the school with the 11% figure. All participants spoke English as their primary language. All of the participants passed a pure-tone hearing screening administered by a school district audiologist or speech-language pathologist.

The Comprehensive Assessment of Spoken Language (CASL; Carrow-Woolfolk, 1999) and the Universal Nonverbal Intelligence Test (UNIT; Bracken & McCallum, 2003) were administered to all participants. The CASL was used to provide a consistent measure of language abilities across all participants. The UNIT was administered to provide a uniform measure of cognitive functioning across all the participants. Both tests were used to corroborate proper group membership. Each group is described in detail as follows.

Participants with LI. Speech-language pathologists in three BYU partnership school districts identified children who met the requirements for the study. The group with LI consisted of 8 females and 14 males. The children's ages ranged from 7;1 to 11;0. The participants in this group were required to produce a standard score for overall IQ at or above 70 on a standardized IQ test. The participants in the group with LI also were required to produce an overall standard language score more than one standard deviation below the mean on a standardized language test. Where tests were not available for the participants the UNIT and CASL scores were used for these purposes.

Participants with typically developing language skills. The participants with typically developing language skills were selected by identifying all classmates of similar gender and age (within 6 months) as the participants with LI. The participants then were randomly selected from the resulting group of children. The children in this group consisted of 8 females and 14 males. The participant's ages ranged from 7;1 to 11;0. None of the participants with typically developing language skills were receiving special services of any kind at school. These children were within the normal academic performance range based on school records and teacher reports. The children in this group were also administered the CASL and the UNIT to corroborate proper group placement and to provide consistent measures of language and intelligence level across all participants. All participants in the typically developing language skills group obtained a score above or within one standard deviation of the mean for each test.

Procedures

Each child was presented with ten hypothetical social situations, each in the form of a story. The stories use age-appropriate language and were accompanied by pictures to enhance understanding. The main character in the story was gender neutral and thus

could be matched to the child being assessed (e.g., when the participant was a female, the character in the story was female). The neutrality of gender was achieved by using a gender neutral name (Chris) and adjusting pronouns in the story to match the participant's gender. The character in the accompanying picture was also drawn to be as gender neutral and emotionally neutral as possible (See Appendix B for example).

Each story was designed to elicit one of five emotions: happiness, sadness, fear, disgust, or anger. These emotions were depicted on five separate cards by a graphic and the written emotion, which were presented to the child at the beginning of the project and used on several tasks throughout the assessment. For example, happiness was represented by a picture of a sun with the word happy printed below. A card with a question mark was also given to the child for a response of "I don't know" or "I'm not sure." The child had the option of using these cards to respond or to verbally identify the emotion. A pilot study was conducted to ensure that the emotion cards did not increase the difficulty of the task. Two groups of preschool children, one with emotion cards and one without, were given the same task of identifying the main emotion from a story. Observation and z -tests of proportion comparisons showed no significant differences between the two groups (see Spackman, Fujiki, & Brinton, 2006). Specific training procedures are presented in Appendix D.

Each scenario focused on a character named Chris, who encountered a social situation that would elicit one of the five previously identified emotions. Following is an example of a story designed to elicit disgust:

This is Chris. This is Chris' mom. Chris' mom always cooks something good for dinner. One day, Chris' mom is sick. She has to stay in bed. The next door

neighbor, Mrs. Smith, brings dinner for Chris' family. Mrs. Smith brings tuna casserole. Chris thinks the tuna casserole is very yucky.

After reading the story, the examiner asked each participant four questions. First, the participant was asked a comprehension question about a major element of the story, such as "How does the casserole taste?" This question was used to assess the child's understanding of the scenario presented.

Second, an emotion question, "How does Chris feel?" was asked to obtain the participant's judgment of Chris' emotions. Each story was designed to elicit a specific emotion. However, since the primary purpose was to present a scenario in which the child would need to dissemble, as long as the emotion given was of the correct valence, the question was counted as being answered correctly. For example, if a child responded that Chris would feel mad when the correct answer was sad, this was counted as a correct answer. Because the two emotions were of the same valence, either emotion would need to be dissembled. Based on previous work, the two scenarios designed to elicit happiness would result in the need to dissemble even if the child selected an incorrect valence (Brinton et al. 2007). Despite this, valence errors for these scenarios were still scored.

Third, a dissemblance question was asked to determine if the participant would recommend that the child in the scenario dissemble his/her emotion ("What should Chris say to Mrs. Smith?"). If the participant's response did not address emotions, the examiner prompted the child with a second question, "What should Chris say about his/her feelings?"

The final question for each story was a display rule question, which was used to determine if the participant recognized that this was a situation that required

dissemblance. This question was phrased as, “What would Chris’ parents want Chris to do?” It was assumed that most parents would teach their children that certain social situations required hiding emotions for self-protective or prosocial reasons. However, it was possible that some parents would teach their children that honesty was preferable.

A variety of stories were piloted on children between the ages of 6 and 12 years. The scenarios were modified in line with the results of the pilot study and 10 were selected for use (see Appendix C for a list of the scenarios used).

Scoring Responses

Scoring was based on conventions developed by Brinton et al. (2007). The comprehension question received a score of 1 if the participant’s answer was correct and a score of 0 if the answer was incorrect. The emotion question was scored in a similar manner, with participants’ receiving a 1 for an emotion of the correct valence (e.g., mad for sad) that was a plausible reaction to the situation. Participants received a score of 0 for an emotion in a different valence or for a response of “I don’t know.” The responses to the questions “What should Chris say?” and “What would Chris’ parents want Chris to do?” received a score of 1 if the child suggested dissemblance and a score of 0 if the child suggested display. If a child incorrectly answered the comprehension question, but demonstrated an understanding of the story on the remaining questions, the child’s data were included in the analysis. If it was obvious that a child misunderstood the entire story (thus eliminating the opportunity for the character to dissemble his or her emotion), the response for that question was dropped before the analysis. This happened on only one question for one student in the group with LI.

Data Analysis

Descriptive statistics were calculated on the responses for the comprehension and emotion questions. Random effects logit models were used to identify significant differences related to language (typically developing or LI), gender, and emotion in the responses to the questions “What should Chris say?” and “What would Chris’s parents want Chris to do?” Random effects logit models allow differences in expected and observed frequencies to be tested across levels of variables and in interactions between variables while also permitting the inclusion of a covariate (in this case, IQ). Although emotion was tested it was not considered a variable of interest and differences were not further considered.²

² As noted, the scoring system only examined whether the emotions were of the correct valence. Since the both groups performed at a high level of accuracy regarding valence, the difference between emotions was not explored further. See Appendix E for data on specific emotions.

Results

Comprehension Question

Ninety-seven percent of the subjects with LI correctly answered the comprehension question. Six children with LI each incorrectly answered one comprehension question. One of those six children responded with “I don’t know.” One hundred percent of typically developing children answered the story comprehension question correctly.

Emotion Question

Ninety-four percent of all subjects correctly identified the emotion the main character would experience in each scenario. The participants with LI correctly identified the valence of the emotion 90% of the time, compared to 97% of participants in the typical group. Approximately half of the incorrect responses to this question were children who answered with “I don’t know” or “I’m not sure.” Children with LI correctly identified the valence of the emotion the main character would experience 197 times, compared to 214 responses from typically developing children. Of the 22 incorrect responses from children with LI, 11 of them were responses of “I don’t know.” Five of the six typically developing children that incorrectly responded to this type of question produced a response of “I don’t know.” One child with LI misunderstood one of the scenarios and thus did not have an opportunity to dissemble. This child’s response for that question was dropped from the data set.

Dissemblance Question

The percentage of display and dissemble responses to the question, “What should Chris say?” are presented in Table 1, delineated by language group and gender. A random effects logit model was used to examine differences between language groups and

gender. Emotion was also tested, but because the identification of specific emotions was not meaningful (because the emotions were scored for valence), this analysis is not presented. Differences in intelligence were controlled by using the IQ score from the UNIT as a covariate. This analysis revealed that children with LI suggested dissemblance significantly less often than their peers with typically developing language skills, $Z = -2.17$, $p = .030$. The difference between genders was not significant $Z = -1.49$, $p = .135$. No significant interactions were found. As a group, children with LI indicated that Chris should dissemble on 24% of trials compared to 48% for the typical children.

Table 1

Percentage of Responses to the Question “What Should Chris Say?” by Language Group and Gender

Strategy	LI		Typical	
	Male	Female	Male	Female
Dissemble	23.7%	23.7%	40.0%	61.3%
Display	76.3%	76.3%	60.0%	38.7%

Display Rule Question

The percentage of responses to the question, “What would Chris’ parents want Chris to do?” are presented by language group and gender in Table 2. A random effects

logit model revealed no significant differences between groups, $Z = -1.30$, $p = .194$.

Children with LI indicated that Chris' parents would want Chris to dissemble 62% of the time, compared to 76% for the typical children.

When responses from the dissemblance question and the display rule question were compared, the typically developing language group showed higher percentages of agreement in strategies (dissemble or display) than the group with LI. Children with LI reported agreeing strategies for Chris and his/her parents (display/display, dissemble/dissemble) in 112 of 219 opportunities, or 51% agreement. Typical children had agreeing strategies in 143 of 220 opportunities, or 65% agreement. The subjects with LI reported behavior in situations requiring dissemblance that did not match strategies they think parents would use more frequently than the typically developing subjects.

Table 2

Percentage of Responses to the Question "What Would Chris' Parents Want Chris to Do?" by Language Group and Gender

Strategy	LI		Typical	
	Male	Female	Male	Female
Dissemble	67.6%	51.3%	75.7%	75.0%
Display	32.4%	48.7%	24.3%	25.0%

Discussion

The current study focused on the ability of children with LI to recognize the need to dissemble, or hide, emotions for social purposes. Participants were presented with ten short scenarios and then asked a series of four questions. In each scenario, the main character needed to dissemble his or her emotions in order to maintain a positive relationship with the other characters (e.g. peers, friends, neighbors, and relatives).

For each scenario presented, the child was presented with four questions. The first question was asked to check the child's comprehension of the story. The language in the stories was very simple and the majority of the subjects did not have difficulty understanding the story. In a few cases, the child incorrectly answered the comprehension question, but further responses demonstrated that the child had indeed understood the storyline. Overall, there was little indication that the children with LI did not understand the task as well as typically developing children.

The second question related to the emotion elicited by the situation--either fear, anger, happiness, sadness, or disgust. Although the data were scored by emotion, the key issue was whether the children selected the correct valence. For example, if the story was designed to elicit sadness, but the child judged that Chris would be angry, there would still be a need to dissemble. Because task integrity was maintained as long as the child selected the correct valence, the selection of specific emotions was not considered beyond the selection of valence.

As with the comprehension question, the majority of the participants correctly identified the valence of the emotion experienced by the main character in each scenario. Although children with LI did have a little more difficulty with the task than the typical children, they still responded correctly in 90% of the scenarios. If the responses of

children who answered, “I don’t know” are removed, the percent correct for children with LI would increase to 95%. Thus, children with LI did not appear to struggle with this question and differences between groups are minimal.

The participants were next asked a dissemblance question; specifically, what the main character should say in the given situation. Each child’s response was categorized as an attempt to either display or dissemble the experienced emotion. Many of the children in both groups suggested that the main character should display his or her emotion. However, the children with LI reported that they would display the experienced emotion significantly more often than typically developing peers.

The final question asked of participants was a display rule question. This was different than the dissemblance question in that the child was asked what they thought their parents would want them to do, thus providing an indication of what type of behavior had been taught as acceptable. Children in both groups reported a higher level of dissemblance than they had on the previous question. This indicated that at times, although they were aware of cultural and personal display rules, the children would still display the experienced emotion. Overall, children with LI had a greater discrepancy between what they suggested Chris should do and what they thought Chris’ parents would want Chris to do than did children with typically developing language skills. The difference between groups was not statistically significant.

Research Questions

What Should Chris Say? The first research question addressed by this study pertained to what strategies children with LI and their typically developing peers would suggest for a character who was presented with social scenarios requiring dissemblance.

The analysis showed that children with LI suggested displaying their emotions significantly more frequently than their typically developing peers.

The majority of the scenarios dealt with prosocial cultural display rules in which the child needed to dissemble emotion in order to protect the feelings of another person or maintain a relationship. Children suggested dissemblance most frequently for scenarios requiring prosocial display rules. This is consistent with the observation of Gnepp and Hess (1986) who indicated that children are taught prosocial display rules more explicitly than self-protective display rules. Banerjee and Yuill (1999) found that younger children were less successful at explaining self-protective stories than prosocial stories. Although children with LI suggested dissemblance for prosocial scenarios more frequently than other types of scenarios, overall they still suggested dissemblance responses significantly less frequently than typically developing children. This behavior suggested that these children have less complex or less developed emotion understanding skills than typical children of the same age.

Some children with LI indicated an awareness of cultural display rules, but disregarded social conventions. For example, one child with LI responded to several scenarios with a display of emotion, followed by, “sorry though.” This child appeared to recognize that his response could damage his relationship and thus tacked on a standard apology.

Two of the scenarios dealt with personal or self-protective display rules, which elicited fear and required dissemblance to “save face” in front of the child’s class. This type of scenario had the lowest percentage of dissemblance for children in both groups – 14% for typical children and 7% for children with LI. Apparently, children in both groups

did not perceive the consequences of displaying fear at a class activity as serious enough to dissemble their emotions. Some children acknowledged their feelings of fear and then tried to find a solution, such as having a friend hold their hand while on the roller coaster.

Two of the scenarios incorporated prosocial and self-protective display rules, in dealing with the aggression and anger of a friend. Children in both groups suggested displaying the emotion with almost equal frequency. Typically developing children recommended dissemblance only 25% of the time, while children with LI recommended dissemblance 23% of the time. Although some children suggested the implementation of rules to regulate the activity (e.g. throw only between the neck and waist) or moving away from the problem (e.g. choosing a different seat in music class after the peer pulls out the child's chair from under him or her), the majority of children in both groups did not see the need to dissemble their emotions in this type of situation.

What Would Chris' Parents Want Chris to Do? The second research question addressed by this study pertained to strategies that children with LI and their typically developing peers would suggest that the characters' parents would want them to employ in situations requiring dissemblance. Children in both groups suggested a higher level of dissemblance for this question than the previous question, and there was no significant difference between language groups. Overall, children with typically developing language skills demonstrated a higher level of agreement between what they thought Chris should do and what his/her parents would want than children with LI.

Children with LI appeared to be aware of the cultural display rules when suggesting how the main character's parents would want him or her to respond in a social situation. Dissemblance responses for the display rule question were 15 to 50% higher for

every emotion for children with LI, with a mean increase of 38%. Typically developing children demonstrated a smaller increase in dissemblance responses for each emotion, with increases ranging from 15 to 40% and a mean increase of 27%. The difference in increases of dissemblance responses is most likely due to the fact that typically developing children had a higher level of dissemblance responses for the initial question about what the main character should say. The significant increase in dissemblance responses for children with LI suggests that these children do not understand the impact of displaying their emotions on their relationship. Brinton et al. (2007) stated that, “cultural or personal display rules are effective only to the extent that they influence behavior” (p. 807). These data show that knowledge of display rules did not affect the behavior in social scenarios of the children with LI to the extent that it did for typically developing children. Brinton et al. suggested that the discrepancy between suggested actions for the child and the parents’ expectations could be influenced by the lack of experience in social interactions of children with LI. Fewer social interactions would result in less feedback as to the appropriate social display of emotions. This lack of opportunity, along with their linguistic deficits, could lead to poor performance in social situations.

A few of the children repeatedly suggested a generic response such as “say sorry” or “give a hug.” These suggestions were made most often by the children with LI. Recurrent suggestions of this type suggested that the child recognized the potential for conflict or hurt feelings in the scenarios, but was unaware of how to deal with the problem. One child in particular responded to the question, “what would Chris’ parents want her to do?” with “give a hug” for half of the scenarios. This child correctly

answered the comprehension and emotion question for each of the scenarios, but apparently lacked dissemblance strategies.

The results of this study indicated that children with LI suggest dissemblance strategies significantly less frequently than typically developing peers, which replicated the findings of Brinton et al. (2007). The deficit in the ability to recognize the need to dissemble emotions in certain situations for social purposes may be a factor contributing to the poor social skills of children with LI.

Directions for Future Research

The current study looked at a specific aspect of emotion understanding, the ability to recognize the need to dissemble emotions for social purposes, using hypothetical scenarios. It is unknown whether the self-reported behaviors would be similar to how children would actually behave in natural situations requiring dissemblance. Future research should include exploration of children with LI in more natural dissemblance contexts, perhaps in combination with self-reported measures.

The current study used a sample of subjects from a small area of Salt Lake and Utah Counties in northern Utah. These participants may have responded differently than children from other locations. The display rules that dictate dissemblance are heavily influenced by local standards of appropriate social behavior. These standards in turn are dictated by cultural expectations. Future research could include subjects from more diverse backgrounds and locations in order to determine the extent to which these results can be generalized to other groups. Scoring the responses of these individuals would likely result in the need to refine scoring guidelines in accord with local cultural expectations.

Another opportunity for future research on this topic involves the use of video presentation of scenarios. This manner of presenting the scenarios would allow the child to obtain information from nonverbal cues, such as facial expressions and prosody, which might affect their decision to dissemble or display their emotions. Providing the participants with additional cues and a visual of the scenario may allow for better understanding of other's feelings and the consequences of displaying one's emotions.

Future research should also involve a variety of different people in the hypothetical scenarios. For example, several of the current study's scenarios involved the child's interaction with immediate or extended relatives. Future studies could use more scenarios involving friends, peers and teachers. Children's use of dissemblance strategies may differ according to the conversational partner. A wider variety of characters in the scenarios would allow for a closer look into how the child's response depends on the person with whom they are interacting.

The findings of this study, combined with other research looking at the emotion skills of children with LI, suggests that children with LI have poorer emotion understanding skills than their typically developing, age-matched peers. Linguistic and emotional deficits contribute to the poor social interaction skills of children with LI. Further research should address the effectiveness of emotion skills training for improving the quality of interactions for children with LI. Emotion skills training could include explicitly teaching children with LI to recognize and appropriately respond to emotions expressed by others. This training could involve identifying facial and prosodic cues, as well as helping the child predict what emotion certain situations might evoke, as in the

hypothetical scenarios used in this study. By explicitly teaching these emotion skills, children with LI could experience more successful social interactions.

References

- Banerjee, R., & Yuill, N. (1999). Children's explanations for self-presentational behaviour. *European Journal of Social Psychology, 29*, 105-111.
- Bracken, B. A., & McCallum, S. (2003). *Universal nonverbal intelligence test*. Itasca, IL: Riverside Publishers.
- Brinton, B., Spackman, M. P., Fujiki, M., & Ricks, J. (2007). What should Chris say? The ability of children with specific language impairment to recognize the need to dissemble emotions in social situations. *Journal of Speech, Language, and Hearing Research, 50*, 798-811.
- Carrow-Woolfolk, E. (1999). *Comprehensive assessment of spoken language*. Circle Pines, MN: American Guidance Service, Inc.
- Conti-Ramsden, G., & Botting, N. (2004). Social difficulties and victimization in children with SLI at 11 years of age. *Journal of Speech, Language, and Hearing Research, 47*, 145-161.
- Ford, J. A., & Milosky, L. M. (2003). Inferring emotional reactions in social situations: Differences in children with language impairment. *Journal of Speech, Language, and Hearing Research, 46*, 21-30.
- Fujiki, M., Brinton, B., & Clarke, D. (2002). Emotion regulation in children with specific language impairment. *Language, Speech, and Hearing Services in Schools, 33*, 102-111.
- Fujiki, M., Brinton, B., Hart, C. H., & Fitzgerald, A. H. (1999). Peer acceptance and friendship in children with specific language impairment. *Topics in Language Disorders, 19*(2), 34-48.

- Fujiki, M., Brinton, B., Morgan, M., & Hart, C. H. (1999). Withdrawn and sociable behavior of children with language impairment. *Language, Speech, and Hearing Services in Schools, 30*, 183-195.
- Fujiki, M., Spackman, M. P., Brinton, B., & Hall, A. (2004). The relationship of language and emotion regulation skills to reticence in children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 47*, 637-646.
- Fujiki, M., Spackman, M. P., Brinton, B., & Illig, T. (2008). The ability of children with language impairment to understand emotion conveyed by prosody in a narrative passage. *International Journal of Language and Communication Disorders, 43*, 330-345.
- Gnepp, J., & Hess, D. L. R. (1986). Children's understanding of verbal and facial display rules. *Developmental Psychology, 22*, 103-108.
- Gosselin, P., Warren, M., & Diotte, M. (2002). Motivation to hide emotion and children's understanding of the distinction between real and apparent emotions. *The Journal of Genetic Psychology, 163*, 479-495.
- Harris, P. L., Donnelly, K., Guz, G. R., & Pitt-Watson, R. (1986). Children's understanding of the distinction between real and apparent emotion. *Child Development, 57*, 895-909.
- Hart, K. I., Fujiki, M., Brinton, B., & Hart, C. H. (2004). The relationship between social behavior and severity of language impairment. *Journal of Speech, Language, and Hearing Research, 47*, 647-662.
- Josephs, I. E. (1994). Display rule behavior and understanding in preschool children. *Journal of Nonverbal Behavior, 18*, 301-326.

- Liiva, C. A., & Cleave, P. L. (2005). Roles of initiation and responsiveness in access and participation for children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 48*, 868-883.
- McDowell, D. J., O'Neil, R., & Parke, R. D. (2000). Display rule application in a disappointing situation and children's emotional reactivity: relations with social competence. *Merrill-Palmer Quarterly, 46*, 306-324.
- McDowell, D. J., & Parke, R. D. (2000). Differential knowledge of display rules for positive and negative emotions: influences from parents, influences on peers. *Social Development, 9*, 415-432.
- Plante, E. (1998). Criteria for SLI: The Stark and Tallal legacy and beyond. *Journal of Speech, Language, and Hearing Research, 41*, 951-957.
- Redmond, S. M., & Rice, M. L. (1998). The socioemotional behaviors of children with SLI: Social adaptation or social deviance? *Journal of Speech, Language, and Hearing Research, 41*, 688-700.
- Saarni, C. (1979). Children's understanding of display rules for expressive behavior. *Developmental Psychology, 15*, 424-429.
- Spackman, M. P., Fujiki, M., & Brinton, B. (2006). Understanding emotions in context: The effects of language impairment on children's ability to infer emotional reactions. *International Journal of Language & Communication Disorders, 41*, 173-188.
- Stevens, L. J., & Bliss, L. S. (1995). Conflict resolution abilities of children with specific language impairment and children with normal language. *Journal of Speech and Hearing Research, 38*, 599-611.

- Underwood, M. K., Coie, J. D., & Herbsman, C. R. (1992). Display rules for anger and aggression in school-age children. *Child Development, 63*, 366-380.
- U.S. Census Bureau, (2008). *American Factfinder Data Sets*. Census 2000 summary file 2 (SF 2) 100-percent data. Block group data for Salt Lake and Utah counties, Utah. Available from U.S. Census Bureau <http://www.census.gov/>.
- Zeman, J., & Garber, J. (1996). Display rules for anger, sadness, and pain: It depends on who is watching. *Child Development, 67*, 957-973.

Appendix A

Consent to Take Part in Research (for parents of children with LI)

Introduction

This research study is being conducted by Dr. Martin Fujiki, Brigham Young University, to study the ability of children with language impairment to correctly interpret the emotions of other people. Your child was selected because he/she is currently receiving language intervention.

Procedures

I will ask your child to complete the following tasks: (1) listen to a short paragraph read with various emotional tones of voice and judge what emotion is being conveyed, (2) listen to a short story and tell how the main character feels and what he/she should do, (3) look at pictures of facial expressions and tell what emotion is conveyed, and (4) make judgments about how emotion should be expressed in social situations. These tasks will be videotaped. Your child will also be asked to complete a test of nonverbal intelligence, a standardized language test, and a short memory test. Your child's teacher will complete a questionnaire focusing on social skills. This work will take about 2 to 2.5 hours (divided into shorter segments) of your child's time and 10 minutes of your child's teacher's time. All testing will take place in your child's school.

Risks/Discomforts

Your child will miss some class time. I will work closely with your child's teacher to make sure that research activities do not conflict with normal educational activities.

Benefits

There are no direct benefits to participants. It is hoped, however, that the research will help educators work with the social problems experienced by most children with language problems.

Confidentiality

Be assured that your child's participation will be confidential. All materials will be stored in a locked cabinet at BYU. Names will be removed from research materials and neither your name nor your child's name will ever be used in connection with any presentation of this research. All videotapes will be erased.

Compensation

At the end of each segment of work, your child will be offered a small toy, treat, or school supply to keep.

Participation

Participation is voluntary. If you give permission to include your child in the study, he/she will also be asked if he/she would like to participate. Even if you give consent, your child may withdraw at any time without penalty. Also, you may withdraw him/her at any time.

Questions about the Research

If you have any questions concerning the study, please contact me. My phone number and email address are (801) 422-5994, martin_fujiki@byu.edu.

Questions about your Rights as a Research Participant

If you would like to discuss this study with a person not involved in the research, you may contact Dr. Renea Beckstrand, Brigham Young University, 120 B RB, (801) 422-3873 (renea_beckstrand@byu.edu).

I have read, understand, and received a copy of the above consent and of my own free will allow my child to participate in the study.

Signature _____ Date _____

Consent to Take Part in Research (for parents of typical children)

Introduction

This research is being conducted by Dr. Martin Fujiki, Brigham Young University, to study the ability of children with language impairment to correctly interpret the emotions of other people. Your child was selected because I need children without language problems to serve as a comparison group.

Procedures

I will ask your child to complete the following tasks: (1) listen to a short paragraph read with various emotional tones of voice and judge what emotion is being conveyed, (2) listen to a short story and tell how the main character feels and what he/she should do, (3) look at pictures of facial expressions and tell what emotion is conveyed, and (4) make judgments about how emotion should be expressed in social situations. These tasks will be videotaped. Your child will also be asked to complete a test of nonverbal intelligence, a standardized language test, and a short memory test. Your child's teacher will complete a questionnaire focusing on social skills. This work will take about 2 to 2.5 hours (divided into shorter segments) of your child's time and 10 minutes of your child's teacher's time. All testing will take place in your child's school.

Risks/Discomforts

Your child will miss some class time. I will work closely with your child's teacher to make sure that research activities do not conflict with normal educational activities.

Benefits

There are no direct benefits to participants. It is hoped, however, that the research will help educators work with the social problems experienced by most children with language problems.

Confidentiality

Be assured that your child's participation will be confidential. All materials will be stored in a locked cabinet at BYU. Names will be removed from research materials and neither your name or your child's name will ever be used in connection with any presentation of this research. All videotapes will be erased.

Compensation

At the end of each segment of work, your child will be offered a small toy, treat, or school supply to keep.

Participation

Participation is voluntary. If you give permission to include your child in the study, he/she will also be asked if he/she would like to participate. Even if you give consent, your child may withdraw at any time without penalty. Also, you may withdraw him/her at any time.

Questions about the Research

If you have any questions concerning the study, please contact me. My phone number and email address are (801) 422-5994, martin_fujiki@byu.edu.

Questions about your Rights as a Research Participant

If you would like to discuss this study with a person not involved in the research, you may contact Dr. Renea Beckstrand, Brigham Young University, 120 B RB, (801) 422-3873 (renea_beckstrand@byu.edu).

I have read, understand, and received a copy of the above consent and of my own free will allow my child to participate in the study.

Signature_____ Date_____

Consent to Take Part in Research (for teachers)

Introduction

This research study is being conducted by Dr. Martin Fujiki, Brigham Young University, to study the ability of children with language impairment to correctly interpret the emotions of other people. You are being asked to participate because you are the classroom teacher of a child with language impairment.

Procedures

A child with language impairment and a typically developing child in your class are being asked to take perform a series of tasks that measure the ability to read the emotional reactions of other people. They will also be asked to take a test of nonverbal intelligence, a standardized language test, and a short memory test. We are asking you to complete a questionnaire focusing on social skills. You may return the completed questionnaire in stamped, self-addressed envelope that will be provided.

Risks/Discomforts

This questionnaire is 74 questions long and will take about 10 minutes, per child, for you to complete.

Benefits

This research will help educators work with the social problems experienced by most children with language problems.

Confidentiality

Be assured that participation will be confidential. All materials will be stored in a locked cabinet at BYU. Names will be removed from research materials and neither your name nor your students' names will ever be used in connection with any presentation of this research..

Compensation

We will compensate you \$5 per completed questionnaire as a thank you for your participation.

Participation

Participation is voluntary. You may withdraw at any time.

Questions about the Research

If you have any questions concerning the study, please contact me. My phone number and email address are (801) 422-5994, martin_fujiki@byu.edu.

Questions about your Rights as a Research Participant

If you would like to discuss this study with a person not involved in the research, you may contact Dr. Renea Beckstrand, Brigham Young University, 120 B RB, (801) 422-3873 (renea_beckstrand@byu.edu).

I have read, understand, and received a copy of the above consent and of my own free agree to participate in the study.

Signature_____ Date_____

Child's Assent

Introduction

My name is Martin Fujiki. I work at Brigham Young University. I study the way that children learn to tell what other people are feeling. I am working with children in Mrs./Ms/Mr. _____'s class. I would like your help.

What Will Happen (Procedures)

I will ask you to do several things. I will ask you to listen to a story and tell me how a person in the story feels. I will ask you to listen to another story and tell me how a person in the story feels and what he/she should do. I will ask you to look at some pictures of people and tell me how the people feel. I will ask you to tell me what a person should say when certain things happen. I will ask you some questions about things you like. I will videotape you doing some of these things. I will also ask you to take some tests. You will need to point to pictures, answer questions, follow directions, repeat some words, and solve some puzzles on these tests. Your teacher will answer some questions about how you work with others at school. You will do all the work at school. You will work with us two or three times. It will take an hour or less each time.

Possible Problems (Risks)

You will miss some class time. I will work with Mrs./Ms/Mr. _____ to make sure than you do not miss things in class that are really important or really fun.

Good things that will happen (Benefits)

You will get to pick a small toy or prize every time you work with us.

Who will know about this work (Confidentiality)

You, your parents, and your teacher will know that you are working with us. No one else at your school will know. We will not put your name on any of our papers. We will not put your parents' names or your teacher's names on any of our papers. We will keep all of our papers and work locked up in a cabinet at BYU.

What you will get (Compensation)

Every time you work with us, you will get to pick out a small toy or prize.

Working with us (Participation)

You do not have to work with us if you don't want to. You may quit this work any time you want to. You will still get your prize.

Questions

If you have any questions, please ask me. You can also ask your parents or your teacher. If you want to ask someone else questions about this work, you may call Dr. Renea Beckstead. Dr. Beckstead is a professor at BYU. Her number is (801) 422-3873.

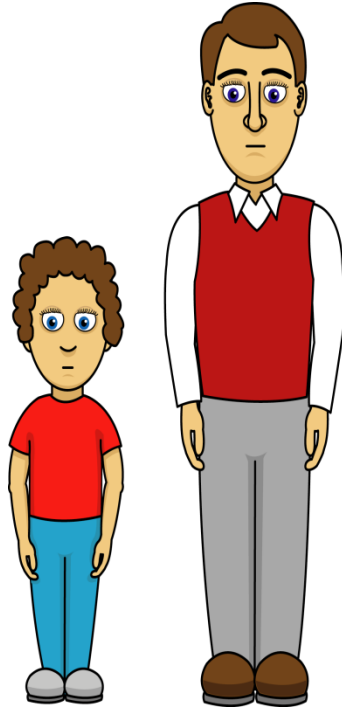
I want to take part in this study.

Signature _____

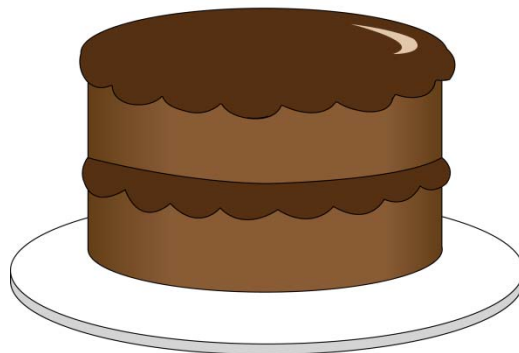
Date _____

Appendix B

Examples of Pictures Accompanying Each Scenario



Uncle Bob's chocolate cake



Appendix C

Hypothetical Social Scenarios

1. This is Chris. This is Chris' class. The whole class is going to the swimming pool. The teacher tells all the kids to jump off the high dive. The other kids are excited to jump off the high dive. But Chris thinks the diving board is very high in the air. He/She thinks he/she will get hurt. (FEAR)
2. This is Chris. This is Chris' favorite aunt. Chris' favorite aunt comes to visit him/her. Chris' aunt brings him a present for his/her birthday. Chris really wants a new scooter. Chris opens the present. It is a shirt. Chris does not want a shirt. (SAD)
3. This is Chris. This is Chris' best friend, Taylor. Chris likes to play with Taylor every day. Chris and Taylor are playing with water balloons. Taylor throws a water balloon right at Chris' face. It hurts a lot. (ANGER)
4. This is Chris and his/her mom. Chris' mom loves to go to the museum. Chris does not want to go to the museum. He/She thinks that the museum is boring. Mom wants to take Chris to the museum. Mom and Chris get in the car to go. The car won't start. They cannot go to the museum. (HAPPY)
5. This is Chris. This is Chris' favorite uncle, Bob. Chris gets to eat dinner at Uncle Bob's house. Uncle Bob makes chocolate cake. He gives Chris a big piece of cake. Chris takes a bite of the cake. The cake tastes really nasty. (DISGUST)
6. This is Chris. This is Chris' grandma. Grandma knitted a sweater for Chris for his/her birthday. Grandma worked very hard on the sweater. But Chris thinks the sweater is very ugly and he/she does not want to wear it at all. Then Grandma washes the new sweater. It shrinks in the dryer (make gesture for shrinking on the sweater). It is too small for Chris to wear. (HAPPY)
7. This is Chris. This is Chris' mom. Chris' mom always cooks something good for dinner. One day, Chris' mom is sick. She has to stay in bed. The next-door-neighbor, Mrs. Smith, brings dinner for Chris' family. Mrs. Smith brings tuna casserole. Chris thinks the tuna casserole is very yucky. (DISGUST)
8. This is Chris and his/her class. The class is going to Lagoon. There are lots of rides there. The teacher is taking Chris' whole class on the big roller coaster. The other kids love roller coasters. Chris thinks that he/she might fall out of the roller coaster. (FEAR)
9. This is Chris. This is Chris' grandma. Chris wants to be a dinosaur for Halloween. He/She wants his/her costume to be really scary. Grandma has been working for weeks on Chris' Halloween costume. Grandma finishes the costume and shows it to Chris. It is a Barney costume. (SAD)

10. This is Chris. This is Chris' good friend, Lee. Chris and Lee are finding seats in music class. Chris starts to sit down. Lee pulls Chris' chair out from under him/her. Chris falls on the floor and it hurts a lot. (ANGER)

Appendix D

Emotion Card Training Instructions

“Here are some cards. These cards show some feelings. Each card shows a different feeling. Look at these cards.

(Examiner lays out cards one at a time as she reads the corresponding description. Cards are put out in random order for each child.)

Look at this card. This means happy. Look at the sun. It means happy.

Look at this card. It means mad. See the lightning? It means mad.

Look at this card. It means scared. See the ghost? It means scared.

Look at this card. It means sad. See the tear? It means sad.

Look at this card. It means surprised. See the exclamation point. It means surprised.

Look at this card. It means disgusted. See the yucky worms. It means disgusted.

Look at this card. It means, I don’t know or I’m not sure. See the question mark? It means I don’t know.”

Examiner puts out all the cards in a line (random order) before the child.

“Show me happy. Show me mad. Show me scared. Show me sad. Show me surprised. Show me disgusted. Show me I don’t know.”

If the child cannot point to each label correctly, repeat training.

Appendix E
Emotion Differences Data

The following tables show the responses to the dissemblance and display rule questions, delineated by emotion and language group or just emotion. The final table shows the percentage of responses to the question “What should Chris say?” for scenarios eliciting happiness, delineated by language group and valence

Table A1

Percentage of Responses to the Question “What Should Chris Say?” by Emotion

	Emotion				
Strategy	Disgust	Happiness	Fear	Anger	Sadness
Dissemble	38.6	48.9	10.2	23.9	57.5
Display	61.4	51.1	89.8	76.1	42.5

Table A2

Percentage of Dissemblance Responses to the Question, “What Should Chris Say?” by Emotion and Language Group

Emotion					
Group	Disgust	Happiness	Fear	Anger	Sadness
LI	20.5	29.5	6.8	22.7	39.5
Typical	56.8	68.2	13.6	25.0	75.0

Table A3

Percentage of Dissemblance Responses to the Question, “What Would Chris’ Parents Want Chris to Do?” by Language Group and Emotion.

Emotion					
Group	Disgust	Happiness	Fear	Anger	Sadness
LI	68.1	72.7	56.8	34.1	76.7
Typical	86.4	90.9	45.5	65.9	88.6

Table A4

Percentage of Agreement to the Dissemblance and Display Rule Questions by Language

Group and Emotion

Emotion					
Group	Disgust	Happiness	Fear	Anger	Sadness
LI	43.2	47.7	45.5	61.4	58.1
Typical	61.4	72.7	63.6	54.5	72.7

Table A5

Percentage of Responses to the Question “What Should Chris Say?” for Scenarios

Eliciting Happiness by Language Group

Response				
Group	Positive Valence	Negative Valence	Both Valences	“I Don’t Know”
LI	20.5	63.6	2.3	13.6
Typical	40.9	45.5	9.1	4.5