ABSTRACT

Children's Discourse in a Problem-Solving Setting: A Cross-Gender Analysis

Emily E. Tichenor

Director: Dr. Lydia Grebenyova, Ph.D.

Much research has been done on the differences between men and women's language. However, research is lacking on children's gendered language, especially in problem-solving contexts. This study presents an experiment involving children solving a puzzle and uses the data to analyze the language of these English-acquiring children (mean age 4). I analyze the transcriptions of the recordings for the ways children ask for help, use of pronouns and discourse markers, topic changes, and hesitation utterances. The findings support boys and girls using language differently in the process of solving a problem, suggesting that each gender solves problems differently. Further, the findings have larger social implications on gender relations.

APPROVED BY DIRECTOR OF HONORS THESIS:

_____

Dr. Lydia Grebenyova, Department of English,
Program in Linguistics

APPROVED BY THE HONORS PROGRAM:

_____

Dr. Andrew Wisely, Director

Date: _____

CHILDREN'S DISCOURSE IN A PROBLEM-SOLVING SETTING: A CROSS-GENDER ANALYSIS

A Thesis Submitted to the Faculty of

Baylor University

In Partial Fulfillment of the Requirements for the

Honors Program

By

Emily E. Tichenor

Waco, Texas

May 2013

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGMENTS

There are many people without whom this project would not have been possible. I would first like to thank my thesis advisor, Dr. Lydia Grebenyova, for the many hours I sat her in office talking about my research, her comments on my drafts, and for all of her encouragement. Thanks also go to Dr. Clay Butler for his time reading my paper, thorough feedback during my defense, and providing me with the skills necessary for discourse analysis. And to my third reader, Dr. Billie Hulke, I am appreciative for her time, feedback, and the multi-cultural perspective she provided during my defense.

Also, thanks to the Piper Child Development Center for being so hospitable during the experimentation process and the children who participated in my study for allowing me to take them away from the playground during playtime. I would also like to thank Grace Goble for assisting me in the research by serving as a puzzle expert.

Finally, I cannot begin to express my gratitude to my wonderful parents, not just for their support during the thesis process, but throughout my educational career. I would not be where I am without their continuous words of encouragement and love. They taught me not to settle for anything less than my best in everything I do, while also reminding me to live with humility and grace. For these things, and many more, I am forever grateful.

DEDICATION

To my late grandmother, the epitome of a life-long learner. Thank you for showing me the beauty of language.

CHAPTER ONE

Introduction

Beginning with Robin Lakoff (1973), linguists have studied the ways in which the two genders, male and female, use language differently. The studies focusing on this topic have both addressed the language differences in broad uses and contexts, such as society's language use as a whole, in addition to narrower functions of speech use, including how men and women use language differently in a specific speech act. Research has also been conducted regarding children's language and how boys and girls use language differently from a young age. The majority of research, however, is available on adult language use, rather than that of children.

Many of the current studies that do address the differences between boys and girls separate linguistic features from other areas such as psychology and sociology. In order to gain a fuller understanding of how language is used, linguistic analysis should have a heavier focus and then the other areas may be merged and analyzed holistically.

Further, research is lacking in specific contexts of how young boys and girls use language differently. One such context that should be further studied is problem solving, the topic of this research. Problem solving has not been studied to the same extent as other areas, such as arguments and compliment. Therefore, problem solving, specifically with children, is an area that should be studied to look for new insights on language use in that particular context.

This study has two primary goals. First, it will analyze the ways in which children use language in a problem-solving environment. Various aspects of discourse from an experiment, such as help elicitation, topic changes, and pronoun use, will be analyzed and discussed. Second, and most importantly, the study will compare and contrast how boys and girls use language similarly and differently in the particular context of solving a puzzle.

These goals are important because communication plays a major role in problem solving, which, in turn, is an important, inescapable part of life and relationships. If boys and girls communicate differently when solving problems, miscommunications and frustrations may occur, especially if they do not realize how or why they are communicating and performing differently. Both determining and understanding the ways in which language is being used differently can lead to more effective communication between the genders, particularly in problem-solving settings. More effective communication can lead to more effective problem solving and group collaboration. Further, the language differences are able to apply to other contexts, such as a learning environment in a classroom.

This research is interdisciplinary and applies not only to the field of linguistics, but also to other fields of study, including psychology and sociology. However, for the purposes of this study, the majority of the results analysis will focus on specific features of language use.

This paper will first explain the research questions behind the study, as well as the hypotheses arising out of them. Previous, although limited, research on the topic, will be presented, followed by the methodology for carrying out an experiment to test the

hypotheses. Next, the results will be presented and then discussed. Finally, the conclusion will address some of the larger implications of the research, including how the findings impact adults and their relationships.

CHAPTER TWO

Research Questions

Questions

Several research questions guide this study. Most prominently, though, is the question of whether or not boys and girls use language differently to solve a problem. An experiment was designed and executed to attempt to answer this main question by analyzing the discourse of children solving a puzzle.

Other questions, though, come out of the main question. One of these other questions is how the language used in the problem-solving setting does or does not fit with the usual ways in which boys and girls use language. Previous studies have shown systematically varying ways boys and girls use language differently, so this current study looks to confirm the findings from previous studies in a new setting.

In order to analyze the data received from the experiment, the results will be broken down into five categories: help elicitation, pauses, topics, pronoun use, and hesitation utterances. For each category, I will address the question of whether or not boys and girls use each of these discourse features differently. If they do use them differently, I will analyze the differences and discuss some possible explanations for the differences. I will also address how these features relate to the children's process of problem solving. After analyzing various discourse features, I will make some conclusions about children's language use in a problem-solving setting, addressing the main question of the study.

If boys and girls use language differently in a problem-solving setting, some implications for gender relations arise. These differences may cause problems by creating frustrations, among other things, and the two genders may work more efficiently together by understanding their differences.

Hypotheses

After completing the experiment, I anticipate finding that boys and girls do use language differently to solve a problem. There is no reason to think that the problem-solving context will eliminate previously found gender differences. Based on previous research, which is discussed in the next chapter, I think the girls will ask for help more than the boys and will also be more involved by including the experimenters. I do not anticipate that either gender will be more successful in solving the puzzle than another; rather they will use their language to solve it differently.

CHAPTER THREE

Literature Review

Some of the research on the ways in which the two genders, male and female, use language differently has been done in linguistics and some of it in psychology. The psychological research often explains language in the context of speakers' behavior and addresses why a speaker behaves the way he or she does in regards of language use. Linguistics, on the other hand, explains the finer points of language use, such as the syntactical structure of a speaker's utterances and word choice.

The psychological research provides a good background for understanding the basics of gender differences and language use. Maccoby (1990) studied gender and its role on relationships and behavior in young children. In her research, Maccoby observed that differences in behavior between the genders appear as early as age three, when children become aware of their sex differences. Children usually begin preferring same-sex playgroups around this age and continue to develop the preference until approximately age eleven. Within the groups of children, sharply contrasting play styles were observed.

For example, the all-boy groups interrupted, threatened, and teased each other (Maccoby, 1990). Also, the boys used their language, including many commands, to establish dominance. The all-girl groups, on the other hand, were much more likely to express agreement with the speaker, pause to give others a change to speak, and acknowledge points of the other speaker. Rather than using commands, girls would

soften and hedge their directives. For example, instead of telling someone to do something, the girls were more likely to use language such as, '*Would you please do this for me?*' Another phenomena Maccoby observed was that the girls used conversation as a socially binding process. Girls used their words to form groups and show who was in and who was out. Further, Maccoby observed that the boys far overpowered and dominated the girls in mixed-sex groups. She attributes this fact to much of the reason why same-sex preferences are so strong. Girls choose not to play with boys because the boys overpower them in groups. Also, girls, on the whole, like to have influence over their peers, and they cannot see the effects of their influences on the boys. Boys do not build them up the way other girls do. Because the study is done from a psychological perspective, it explains that gender socialization becomes stronger and stronger as children stay in same sex playgroups. The behaviors they develop in those groups remain with them even as they age and spend more time in mixed sex groups.

Providing the background for much linguistic analysis on gender differences, Tannen (1990) discusses the contexts and cultures of each gender's language showing that they are approaching language with differing contexts. Some of the distinctions she presents between men and women are independence versus intimacy, status versus support, and orders versus proposals. For independence and intimacy, Tannen observed that men use language to establish their independence, while women use language to establish connections. For status versus support, men use their words to establish a hierarchy, while women build up and support each other. And for orders and proposals, men use language to make orders and are direct in doing so. Women, on the other hand, often hedge requests and ask for permission before making a command.

These gender differences, as noted previously, are not limited to adult men and women. Children embody the differences from a young age. Kyratzis (2001) noted the different subcultures girls and boys find themselves in and how those affect their language:

> Girls learn that talk is for (a) creating and maintaining relationships of closeness and equality, (b) criticizing others in acceptable ways, and (c) interpreting accurately the speech of other girls. Boys learn that talk is for (a) asserting a position of dominance, (b) attracting and maintaining an audience, and (c) asserting themselves when another speaker has the floor. Girls' talk is collaboration oriented, and boys' talk is competition oriented. (p. 2)

Kyratzis' explanation succinctly sums up the major differences between girls' and boys' talk. She also notes that children in preschool have already learned the expectations for how each gender should use language.

In addition to general linguistic research about children's gender differences, research on specific linguistic features has been done as well. Escalera (2009) studied children's use of discourse makers in conversation. Like Maccoby and Tannen, she holds that the separate peer groups of boys and girls constitute different cultures, each with its own conversational style. For Escalera, it was more important to ask how gender differences are used in conversation, rather than why they are used. In her study, she analyzed discourse markers, or parts of the conversations that are not grammatically obligatory, do not add meaning, and often signal topic changes. Examples of discourse markers include hedging for politeness or word abbreviations such as *cuz*. In the study, Escalera (2009) found that there were no significant gender differences in children's use of discourse markers in a single activity context, that is, when boys and girls were placed in mixed-gender groups. However, boys and girls use discourse markers for different functions when they are in same-sex groups. Context is highly important for the different

uses of language for the genders. Some contexts will elicit stronger contrasts in language use than others. Conflict, for example, highlights many of the major differences (Sheldon, 1990). Asking for help could be another context that brings out the differences.

Other research has been conducted to study how children use language in asking for help. Thompson and Moore (2000), psychologists, designed an experiment to analyze the specific ways language is used in seeking help. Rather than looking at the syntactic structure, Thompson focused on pragmatics and the speech acts of an utterance. For the study, seventy-one children did a puzzle with the experimenter at the table. The experimenter had scripted responses for when a child asked for help with the puzzle, thus help was never given in order to see if each child could complete the puzzle on his or her own. Further, conversation was not initiated with the children as not to slow them down while they were trying to solve the puzzle.

For the analysis of the data, Thompson created a coding system based on the meaning effect of each utterance. Speech act theory was used to develop the categories. After coding and analyzing the data, Thompson and Moore found that there was no significant difference between boys' and girls' problem-solving abilities. However, girls used help-eliciting utterances at much higher rates than the boys. Among the boys, the more they asked for help, the longer the puzzle took for them to solve. There was no such relationship among the girls. This correlation in the boys' data showed that boys asked for help only when they needed it, while girls either asked or hinted for help regardless of whether or not they were struggling with the puzzle. Because girls asked for help more than the boys, this could show that girls have lower confidence or

achievement expectations for themselves. Or the difference could be attributed to the different ways in which girls and boys use language in the problem-solving context. During the puzzle, girls used self-disclosure much more than the boys. Girls also tried to maintain a relationship with the adult experimenter through task talk, giving narrative about what was going on in the problem-solving process as it happened.

The data from this study shows strong evidence for differences between boy and girl language use in the problem-solving context. However, Thompson's study is one of very few on this topic. Much research is done on topics such as language during conflict and the psychological development of gender, but not on the language of asking for help. Therefore, more research should be done to explore the intricacies of the differences between boys and girls.

Although linguistic studies on seeking help are limited, further psychological research has been done specifically on children's perceptions of asking for help. Barnett, et al (1989) studied how children perceived help seeking. The researchers surveyed second, fourth, and sixth graders for them to rate the likelihood of the subject asking either a mom or dad for help in a given situation. Girls rated the child as much more likely to seek help from either parent than the boys did. The results of the study showed that children have expectations about who should ask for help, in addition to who should be asked. The children were more likely to ask a father for help with physical tasks and a mother with emotional ones, consistent with traditional gender-role stereotypes. Children seem to find it more acceptable for girls to ask for help than for boys to do so. Very few developmental differences were found between the second and sixth graders, showing that children have established their gender roles by second grade at the latest.

CHAPTER FOUR

Methodology

Participants

Fourteen children, seven girls and seven boys, participated in this study. The children participating ranged in age from 3 years 2 months to 5 years 1 month. The mean age of the participants was 4 years. The participants attended the Baylor University Piper Center for language development, a preschool intended for Baylor University students to use as a place to do experiments with and observe children. The participating children were all native English speakers raised in the United States.

Procedure

This experiment was adapted from Thompson's study (Thompson & Moore, 2000), discussed in the previous chapter. Changes were made to focus more on the language of the puzzle-solving task, rather than the psychology of how children did the puzzle. Thompson's study was much more structured in the ways in which he gave responses to the children. Further, he did not purposely elicit any speech from the children so as to not affect their completion time. Because his study was intended as a psychological study, rather than a linguistic one, he did not need to have large amounts of language from the children. However, the current study approaches problem solving from a linguistic perspective so as much speech as possible from the children is best. Therefore, this test involved some speech elicitation.

Before beginning the testing, the two experimenters spent approximately five hours each week for two weeks getting to know the children during unstructured playtime. The observation and unstructured play took place until the children seemed to feel comfortable with both experimenters. Once it seemed as if the children knew us, the experiment sessions began. It was important for the children to feel comfortable about the experimenters so their responses would be as genuine as possible.

The experiment sessions took place in a quiet classroom with one child at a time. The room was away from the playground to minimize distractions for the child. When approached on the playground, each child was asked if he or she would like to do a puzzle. If the child agreed, the first experimenter led him or her to the room.

In the room sat the second experimenter and a puzzle. The puzzle had the gender-neutral content of a picture of a puppy in a flowerpot. The 100-piece puzzle was assembled, with the exception of twenty-three pieces that were laid around the sides of the puzzle. In order to ensure that the same pieces were removed each time, each piece was labeled on the back with a number and a letter. The number corresponded to the column of the piece and the letter to the row. This process ensured equality between tests, as well as ease in putting the puzzle together when starting the experiment each day.

The puzzle was more than half complete to save time and frustration on the part of the child. The puzzle was intended to be difficult, but not too difficult so that the children should reasonably be able to complete it themselves in 15-20 minutes. The pieces that had been removed were done so in such a way that the structural integrity of the puzzle was not compromised. In the pilot experiments, when too many pieces were

removed so that the puzzle was not a whole unit, the children struggled to understand how the puzzle fit together. Therefore, the pieces needed to all hold together to remove confusion in how the puzzle as a whole fit together.

The puzzle assembled for the children is displayed below.

FIGURE 1: The puzzle the children completed during the experiment.

The puzzle was sitting on a rectangular table with a chair facing it. The chair facing the puzzle was for the child. Directly across from the child's chair sat an empty chair for the first experimenter. Both of these chairs were toward the end of the table and at the head of table sat the other experimenter. This set up was intentional to encourage

conversation for the child because he or she could see both experimenters. During the first pilot, the child was sitting directly next to the second experimenter and the seating limited the conversation.

When the child was escorted into the room, I introduced the second experimenter as being very good at puzzles and said that she works on them often. I also mentioned that she does this particular puzzle everyday and was taking a break, explaining why the puzzle was already mostly assembled. I then asked the child if he or she wanted to work on it. After the child took a seat, I sat across from him or her.

The second experimenter and I watched the child work on the puzzle. If the child did not make conversation after about a minute, I would ask a generic question about the content of the puzzle. If the child continued not to talk, I would ask basic questions approximately every minute. However, if the child seemed uninterested in talking, I would let him or her continue to work on the puzzle. If the child initiated conversation, I responded naturally. I did not discourage conversation since the experiment was to analyze children's language in a problem-solving context, and I was not looking at the child's ability to complete the puzzle in a certain time. Further, if the child seemed to have difficulty with the puzzle, I would prompt him or her to ask for help by asking if the puzzle was hard or asking the child if he or she thought the other experimenter remembered where the pieces go.

If the child asked me for help, I would say that I had never done that particular puzzle before and suggest a puzzle piece to put in a wrong place. If the child asked the other experimenter for help, she indicated where the piece went. These responses helped indicate that one experimenter was an expert, while the other was not. The other

experimenter assumed the request for help was not directed toward her, unless the child said her name, looked at her, or gave some other indication that the request was for her.

If the child did not finish the puzzle in approximately thirteen to fourteen minutes, he or she was told that the second experimenter could finish the puzzle, and I took the child back to the playground. After around thirteen minutes, it was obvious that the child was having a hard time focusing so I did not want to frustrate or bore the child with it.

Data Collection

With the exception of one session, all sessions were videotaped in their entirety. The video of one session cut short due to an equipment malfunction, but was still usable because a majority of the discourse was recorded.

The sessions were videotaped using an iPhone. When the pilots were recorded using a small video camera, the children appeared nervous when they looked at the camera, even when it was set in an inconspicuous location on a bookshelf. Not only did the video camera make the children less talkative, the camera did not have very high quality sound or video because it had to be placed so far away from the children to not completely distract them. When the phone was placed on the table for video recording, the children gave it not much, if any, attention and they talked much more freely. Further, the phone camera had higher quality sound and video because it was able to be much closer to the children.

The recordings were then transferred to a computer for transcription and analysis.

Data Analysis

I transcribed each recording according to the transcription rules of Gail Jefferson (Atkinson & Heritage, 1984/2006). After transcribing each child's session, I analyzed the data to look for features such as discourse markers and help elicitation. I compared and contrasted the ways in which the two genders used language in a problem-solving context.

CHAPTER FIVE

Results and Analysis

The recordings from the participants in this study were transcribed and then analyzed. Three of the seven boys and five of the seven girls successfully completed the puzzle. The table below shows the ages of the children and whether or not they completed the puzzle.

TABLE 1
Finishing Results

	Boys	
	Age (months)	*Finish?*
Jack	38	no
Adam	44	yes
Tyler	44	no
John	54	yes
George	54	yes
Ryan	55	no
Jim	58	no
	Girls	
	Age (months)	*Finish?*
Emma	40	yes
Allison	45	no
Caroline	47	yes
Diana	54	yes
Amanda	56	no
Kelly	56	yes
Brianna	61	yes

As shown above, one-third of the boys under age 4 completed the puzzle, while half of the boys over age 4 completed it. For the girls, two-thirds of those under age 4

completed the puzzle and three-fourths of those over age 4 completed it. Between both genders the older children successfully completed the puzzle at higher rates than their younger counterparts.

However, the data on whether or not the children completed the puzzle does not play a critical role in the analysis for this study. The factors that were affected by completion, such as length of discourse and eliciting help, are important for the analysis because completion may have affected these, as well as other, factors. Puzzle completion and its affect on discourse is further discussed in the next chapter with continued analysis and discussion.

In addition to whether or not the children completed the puzzle, the transcriptions revealed other information about children's discourse. I analyzed the transcriptions to look for the patterns in which children elicited help, took pauses, used pronouns and discourse markers, and changed topics, each of which is addressed in more depth below.

Help Elicitation

The experiment was set up so that children had the opportunity to ask an expert for help with the puzzle. Throughout the experiment, the first experimenter was established as having no experience with the puzzle, while it was emphasized that the second experimenter had much experience with the puzzle. Some children utilized this resource, while others did not. Because not all of the help requests were made in the form of a question or direct in asking for assistance, the help request is referred to as help elicitation, rather than asking for help. For analysis purposes, any utterance that indicated the child wanted assistance was considered a help-eliciting utterance.

To force the children to be more direct in eliciting help, the second experimenter only responded to children eliciting help if the child directly addressed her, as noted in the methodology chapter. Therefore, some children elicited help without receiving the help because they made a general comment about needing help, but did not direct it toward the second experimenter. Some of the girls, for example, would use help-eliciting phrases such as, "*Where does this one go?,"* and then place the piece themselves, thus not receiving the help even though they requested it. None of the girls was bothered by not receiving the help they seemed to request and some of them continued to use help-eliciting phrases even though they would repeatedly not receive help.

The table below shows which children elicited and received help.

TABLE 2
Help Elicitation and Reception

	Boys		
	Age (months)	*Elicited help?*	*Receive Help?*
Jack	38	yes	yes
Adam	44	yes	yes
Tyler	44	yes	yes
John	54	yes	yes
George	54	yes	yes
Ryan	55	no	no
Jim	58	no	no
	Girls		
	Age (months)	*Elicited help?*	*Receive help?*
Emma	40	no	no
Allison	45	yes	no
Caroline	47	yes	yes
Diana	54	yes	no
Amanda	56	no	no
Kelly	56	no	no
Brianna	61	yes	no

As shown above, four of the girls elicited help, but only one of them actually received help with the puzzle. The five boys who asked for help, on the other hand, all received help. Further, the youngest boys all elicited help, while the two oldest boys did not. The youngest girl did not request help, but the oldest did. Thus, there is not as clear an age divide in the girls' data as there is in the boys'.

The girls who elicited help did it much sooner in the conversation than the boys who elicited help. The girls made their first help-eliciting utterance at an average time of 71 seconds into the conversation. The boys, on the other hand, did not make their first help-eliciting utterance until 173 seconds, nearly three minutes, into the conversation. Also, the boys made an average of 14.4 help-eliciting utterances, while the girls made an average of 12.5. The girls started their help-eliciting utterances sooner than the boys, but then made less of these utterances. In both of the groups, the oldest child waited the longest before eliciting help, but did not necessarily do it the least amount of times. Below is a table showing the number of times each child elicited help and how many seconds elapsed before he or she did so.

TABLE 3
Help Elicitations

	Boys		
	Age (months)	*Number of Help Elicitations*	*Seconds Elapsed*
Jack	38	14	274
Adam	44	17	54
Tyler	44	14	61
John	54	21	104
George	54	7	371

	Girls		
	Age (months)	*Number of Help Elicitations*	*Seconds Elapsed*
Allison	45	5	70
Caroline	47	15	61
Diana	54	24	45
Brianna	61	6	108

Further, there were five groups of help elicitations. The five groups are: "*Can you help me?", "Where does this one go?", "Do you know where this one goes?", "Does this one go here?",* and *"I can't do this."* Each help-eliciting utterance fell into one of these categories because it was either the exact utterance or a close variant. Both the girls and boys favored the "*Where does this one go?"* question over any other. The table below shows the division between girls and boys on their help-eliciting utterances.

TABLE 4
Help-Eliciting Utterances

	Boys	**Girls**
Where does this one go?	46	39
Can you help me?	22	1
Do you know where this piece goes?	4	1
Does this one go here?	0	8
I can't do this one	0	1

When they did not receive immediate response from their help elicitations, some of the boys became frustrated and were persistent until they received help. John, for example, asked for help three times in a row.

EXTRACT 1: *John repeatedly asks for help* (2012, 04:30)

1	John	Where does this go? (5.0) Can you help me?
2		(9.0) Can you help me?

Another boy, Tyler, also repeatedly elicited help. He eventually directed his question at the second experimenter when he did not get help from the first. The dialogue below shows his switch, occurring after eliciting help from the first experimenter eight previous times during approximately seven minutes of dialogue.

EXTRACT 2: *Tyler asks for help* (2012, 07:21)

1	Tyler	Well which where this go?
2	Experimenter 1	I don't know
3	Tyler	Can you help me?
4	Experimenter 2	Mmhmm it's a corner so I think it
5		goes up here
6	Experimenter 1	Ohh I see
7	Tyler	It worked now I see this (.) Okay
8		okay I know something which way I
9		know (5.0) Can you help me?

Tyler, John, and the other boys who elicited help continued to ask for help until they received a helpful response from an experimenter. The girls, however, were not bothered by lack of a response. Their help elicitations were spaced throughout the discourse. Even if the help elicitations were close together, the girls were not bothered by not receiving help. Caroline, for example, asked where pieces went and then placed those pieces herself. Even though she had no trouble finding the place for the pieces on her own, she continued to make help elicitations.

EXTRACT 3: *Caroline asks for help* (2012, 02:03)

1	Caroline	Where does this piece go?
2	Experimenter 2	Hm (.) I think it goes right here (1.0)
3		Perfect (21.0)
4	Caroline	Where does this piece go?
5	Experimenter 2	Hm (.) Let me see (4.0) I think it goes
6		right over here (6.0) There you go
7	Experimenter 1	Good job (5.0)
8	Caroline	Where does this piece go?
9	Experimenter 1	Good job (5.0)
10	Caroline	This one?
11	Experimenter 1	Does it go right here?
12	Caroline	No?
13	Experimenter 1	No (8.0) Does it goes here?
14	Caroline	No? (4.0) How about this one?
15	Experimenter 1	That one? Does it goes here?
16	Caroline	No?
17	Experimenter 1	Up here?
18	Caroline	No
19	Experimenter 1	Hm (.) I don't know (17.0)
20	Caroline	This one goes here

Caroline uses asking for help as a way to fill silences in the dialogue. At one point, she does receive help, but she is not bothered when she does not receive the help she seems to request. She is not as insistent on receiving help as her male counterparts, which is true of all of the girls who participated in the experiment.

Pauses

Pauses occurred often during the discourse because it was not a continuous conversation. Pauses which the child broke and lasted at least four seconds were noted. The pauses broken by the experimenters were not noted because the analysis focuses on the children's speech. The table below shows the average pause lengths.

TABLE 5
Pause Length

	Boys	
	Age (months)	*Average Pause (in seconds)*
Jack	38	5.8
Adam	44	9.1
Tyler	44	7.1
John	54	8.3
George	54	12.7
Ryan	55	9
Jim	58	36.6
	Girls	
	Age (months)	*Average Pause (in seconds)*
Emma	40	9.7
Allison	45	6
Caroline	47	14.5
Diana	54	4.5
Amanda	56	6
Kelly	56	10.8
Brianna	61	14.5

As shown in the table, the boys averaged a pause length of 12.7 seconds. Removing the outlier of 36.6 seconds, the boys' average pause length was 8.7 seconds. Also, the girls' average pause length was 5.5 seconds, which was shorter than that of the boys. However, with the exception of the outlier in the boys' data, the girls had a smaller range of times. This smaller range shows less variation in the girls' pause lengths than that of the boys.

Both the boys and the girls tended to break long pauses by making a help-eliciting utterance. However, sometimes they broke the silence with a topic other than the puzzles. The children's topics are discussed in the next section.

Topics

Most of the conversations focused on either working on the puzzle or the content of the puzzle. The experimenters only initiated conversation on those topics, but sometimes the children diverged and began talking about other topics. Notably, the girls all stayed close to the topic of the puzzle. If they diverged, it was to a topic very closely related. For example, the girls talked about their own dogs since the content of the puzzle was a dog. The girls also talked about puzzles they had at home and would compare those puzzles to the one on which they were working. Even though the girls would engage in broader topics than the puzzle in front of them, most of the diverging topics were prompted by one of the experimenters.

For example, one of the girls, Brianna, discussed her puzzles at home but then quickly brought the topic back to the puzzle at hand.

EXTRACT 4: *Brianna talks about puzzles* (2012, 03:31)

1	Experimenter 1	Do you do puzzles a lot?
2	Brianna	Yea
3	Experimenter 1	You do them at home?
4	Brianna	Mmhmm
5	Experimenter 1	You're very good at them (4.0)
6	Brianna	I have two little (.) I have a little (.) um I
7		have boxes of Tangled and Cars on it
8		and the Tangled puzzle is really little
9	Experimenter 1	Oh really? Is that easy because it's little?
10	Brianna	Yea it's really hard
11	Experimenter 1	Oh it's really hard? (1.0) Are the pieces
12		really little?
13	Brianna	Yea=
14	Experimenter 1	=Oh I see (11.0)
15	Brianna	Doesn't fit (5.0) Maybe if I try another
16		side piece (3.0) This one goes

From Brianna's example, as well as samples from other girls, the girls seem to like to keep the topics close to the puzzle and do not want to discuss other things. If they do talk about something else, it is always at the prompting of one of the experimenters.

The boys, on the other hand, seem much more comfortable with initiating a range of topics. Jim, for example, changes the topic away from the puzzle very early in the conversation.

EXTRACT 5: *Jim avoids the topic of the puzzle* (2012, 00:10)

1	Experimenter 1	Do you think we can do a puzzle?
2	Jim	Yes
3	Experimenter 1	Do you like to do puzzles?
4	Jim	Yea=
5	Experimenter 1	=Yes?
6	Jim	I have a lot of stuff in my room (.) A tiny
7		backpack
8	Experimenter 1	You have a little tiny backpack?=
9	Jim	=Yea (.) I used it but there's nothing for you
10		in there (.) There's some other stuff in
11		there=
13	Experimenter 1	=Oh I see
14	Jim	=Toys and stuff=
15	Experimenter 1	=Yea
16	Jim	I have my spy glasses in there
17	Experimenter 1	Your spyglasses?
18	Jim	Yea but I don't know where they are
19	Experimenter 1	Oh (.) are you a spy?
20	Jim	Kind of=
21	Experimenter 1	=kind of? Oh my (1.0) Do you think we can
22		do this puzzle?

Jim immediately turns the topic away from the puzzle and the experimenter must bring the topic back to the puzzle so he can start it. He never actually works on the puzzle, but instead continues to change the topic throughout his discourse until he asks to leave and not finish the puzzle.

Interestingly, four of the boys initiated their own topics during the conversation, while none of the girls did so.

Pronouns

The pronouns used in the context of the puzzle were counted for each child. The categories were first-person singular, first-person plural, and second-person for both the nominative and accusative cases. In English, the first-person singular pronouns are *I* and *me* and the first-person plural pronouns are *we* and *us*. Finally, the second-person pronoun is *you*, for which English does not have a distinction between singular and plural forms.

Possessive pronouns were not marked because the possessive pronoun in the sentence always correlated with the subject or object pronoun, so recording it twice would be redundant. Further, pronouns used when discussing topics other than the puzzle were not recorded. The table below shows the number of times each child used the various pronouns.

TABLE 6
Pronoun Use

	Boys			
	Age (months)	*First-person singular*	*First-person plural*	*Second-person*
Jack	38	17	2	17
Adam	44	22	0	0
Tyler	44	56	1	14
John	54	17	0	18
George	54	10	0	1
Ryan	55	11	0	1
Jim	58	11	0	0

	Girls			
	Age (months)	*First-person singular*	*First-person plural*	*Second-person*
Emma	40	6	0	0
Allison	45	18	4	0
Caroline	47	6	1	1
Diana	54	44	9	7
Amanda	56	3	0	1
Kelly	56	1	0	0
Brianna	61	19	2	0

As shown in the table, the first person singular pronouns were the most common for both the boys and the girls. The boys averaged 20.6 uses of a first-person pronoun and the girls averaged 14.7 times. With the first-person plural, only two of the boys used one of those pronouns, while four of the girls used them. The girls used more first-person plural forms, while the boys used more second-person forms. Five of the boys used the second-person form, while only three of the girls did so.

When the boys used the second-person form, they did so either in the context of asking for help or in giving a command. Most often, though, *you* was used in asking for help in the question, "*Can you help me?*"

Tyler is one of the boys who used the second person for imperatives. The second person forms are bolded for emphasis in the dialogue below.

EXTRACT 6: *Tyler uses second-person imperatives* (2012, 01:56)

1	Tyler	**You** have to lift it up to connect it
2	Experimenter 1	Yea you do
3	Tyler	Yea but how **you** have to lift it at this
4		puzzle
5	Experimenter 1	Yea I don't know
6	Tyler	**You** have to do it in like that
7	Experimenter 1	No we don't want to lift the whole
8		puzzle
9	Tyler	But then I I then I connect it to there

During his discourse, Tyler also used the second person form for a help request, but the above example shows one of the instances he made a command.

While the boys used second person more than the girls, the girls used first-person plural more often. Many of their uses included the phrase "*Let's*." For example, Allison said, "*Let's try this*," three times while working on the puzzle.

In addition to using pronouns differently, the boys and girls also used hesitation utterances differently, as explained below.

Hesitation Utterances

All of the hesitation discourse markers were noted for each child in his or her discourse. These included: "*um," "hm," "uh,"* and *"mm."* Other discourse markers such as, "*Well*," were not used very often by the children, and therefore not marked. When "*uh huh*" or "*nuh uh*" were used, they were in place of either "*yes*" or "*no*," and therefore not marked either because they held meaning in the utterance, rather than holding a place in the conversation.

The table below shows the number of hesitation utterances for both the boys and the girls.

TABLE 7
Hesitation Utterances

	Boys				
	Age (months)	*Um*	*Hm*	*Uh*	*Mm*
Jack	38	0	1	0	1
Adam	44	0	0	0	0
Tyler	44	1	3	6	2
John	54	2	2	1	1
George	54	2	2	1	2
Ryan	55	2	0	4	2
Jim	58	1	0	0	0
	Girls				
	Age (months)	*Um*	*Hm*	*Uh*	*Mm*
Emma	40	0	10	0	2
Allison	45	1	10	1	1
Caroline	47	1	3	0	0
Diana	54	4	13	9	2
Amanda	56	4	0	0	0
Kelly	56	0	3	0	1
Brianna	61	2	6	0	0

On the whole, the girls used hesitation utterances more often than the boys. While the boys did not prefer any of the utterances, the girls used "*hm*" the most. Further, the younger girls used hesitation utterances more than the older girls, while the younger boys used less than the older boys, showing an opposite age correlation.

Both the boys and the girls made their hesitation utterances in various places throughout the conversation. These utterances sometimes were used to break a long pause, sometimes used while a child searched for a word and sometimes just to fill space within other utterances. There was no clear pattern of when these utterances were used nor was there a pattern of when each utterance was used over another. The children used them all interchangeably in varying contexts.

The use of hesitation utterances, along with the rest of the results, is further discussed and analyzed in the next chapter.

CHAPTER SIX

Continued Data Analysis and Discussion

Several conclusions about the ways boys and girls solve problems can be made after further analyzing the results from the experiment. First, even though more girls finished the puzzle than boys, it cannot be concluded that girls are naturally better problem solvers than boys. The completion percentages of each gender were extremely close, the sample size was small, and the puzzle was one of many examples of problem solving. However, for both the boys and the girls, the older children more successfully completed the puzzle than their younger peers, showing that older children may be better problem solvers than their younger counterparts. These results make sense because older children, for the most part, are naturally better problem solvers because of their maturation and cognitive development.

Whether or not children finished the puzzle is not of much importance for the analysis. How their completion, or lack thereof, could potentially affect the discourse is important. If the child did not complete the puzzle, he or she may have been less confident and more uncomfortable throughout the experiment and therefore may not have talked as much. On the other hand, a child who did complete the puzzle may have talked less because he or she was focused on completing the puzzle. It is useful to keep in mind whether or not a particular child completed the puzzle when analyzing the results, but not crucial to note.

Rather than focusing on whether or not they finished the puzzle, this data shows the ways in which boys and girls use language differently in problem solving. The data analysis is divided into the same groups as the results: help elicitation, pauses, topics, pronouns, and hesitation utterances. Each of these categories provides insights into the varying ways children solve problems.

Help Elicitation

The differing ways in which boys and girls made help-eliciting utterances sheds perhaps the greatest light on problem solving strategies by the two genders than any of the other areas discussed in the results.

As shown in the results, more girls requested help than their male counterparts. Notably, however, only one of the girls who made a help-eliciting utterance actually received help. The other girls made a help-eliciting utterance and then placed the puzzle piece by themselves, showing that they did not actually need help with placing the particular piece. All of the boys who elicited help also received it, showing that boys only ask for help when they need it. Girls, on the other hand, ask for help regardless of whether or not they need assistance.

In addition to whether or not they made a help-eliciting utterance, the boys' and girls' reactions to how the experimenters responded show whether or not they wanted help when they requested it. If they did not receive a response, the boys continued to ask for help until the experimenter responded and helped. The girls, on the other hand, were not concerned with the experimenters' help because they moved on after making an utterance for help and did not wait for a response. Because they were not expecting a response, the girls were not asking for help because they needed it. Rather, they were

asking for help with another purpose. These findings support the result of Thompson and Moore (2000), when he also observed that girls ask for help more often than boys. Thompson thought that girls' extra requests for help stemmed from a lack of confidence or low achievement expectations for themselves. Although girls may have less confidence, their asking for help more than the boys does not reflect that issue. Rather, they elicit help for different purposes than the boys. This difference in intention corroborates to the ideas cited previously (Tannen, 1990) about males and females approaching situations with different mindsets, as if from different cultures.

There are two primary explanations for the girls' differing use of help-eliciting utterances. The first explanation is that the girls were trying to build a relationship with the experimenters. As shown in previous research (Tannen, 1990), girls tend to use language to build relationships. Rather than sitting in silence while doing the puzzle, the girls strove to make conversation in order to establish a friendship with the experimenters. Not only would asking for help establish a topic of conversation, but this act would also draw the experimenters into the task of working on the puzzle. However, if the experimenters did not respond, the girls were not offended and continued to work on the puzzle, further showing that they were not concerned with actually receiving help.

Another explanation for the reason why girls made help-eliciting utterances when they did not need help is that they prefer to process their problem solving aloud. It seemed as though several of the girls were speaking their internal narrative of what they needed to do to finish the puzzle. When an adult works on a puzzle, he or she seems to be constantly asking himself or herself where each piece goes, regardless of whether or not those thoughts are conscious. Perhaps girls are more conscious of their thought

process and even like to speak it aloud. A reason why they choose to process aloud might be that they want problem solving to be a joint effort, tying to the first explanation of establishing connection. Even if they do not receive a response, the girls seemed to feel as though talking made a connection with the experimenters. The dialogue excerpt below does not provide an example of a girl eliciting help, but shows how one of the girls, Brianna, continuously processed aloud what she was doing as she worked on the puzzle. Her out-loud thoughts provided comments for the experimenters to respond to during what would otherwise be silence or the experimenters trying to prompt speech from her.

EXTRACT 7: *Brianna narrates her process* (2012, 08:55)

1	Brianna	That one doesn't fit there
2	Experimenter 1	No
3	Brianna	Let's find this one goes (3) This one
4	Experimenter 1	Oh good job
5	Brianna	Oh yea (.) Hm (.) I've seen this one before
6	Experimenter 1	Yea?
7	Brianna	It goes right there=
8	Experimenter 1	=Oh perfect
9	Brianna	I'm still looking for some more (.) Here's a little
10		bit of hair (6) It goes right there
11	Experimenter 1	Yea it does
12	Brianna	We still have a little bit left
13	Experimenter 1	Is that the hard piece?
14	Brianna	Yea
15	Experimenter 1	I wish I knew where it goes
16	Brianna	I think this one (1) I don't know
17	Experimenter 1	I don't know either
18	Brianna	I know where this one goes (.) It goes right here
19	Experimenter 1	Oh yea that does go there
20	Brianna	This one goes right here (.) Hmm (.) This one
21		goes (1) Umm (3) There

It is clear in this dialogue that Brianna is verbally walking through her thought processes as she solves the puzzle. Further, she uses several of the other features analyzed and discussed, including a plural pronoun and hesitation utterances.

The boys' help-eliciting utterances did not seem to serve any purpose other than receiving help because they only asked for help when they needed it. Notably, however, the two oldest boys did not ask for help nor did they finish the puzzle. They both seemed to be avoiding asking for help by bringing up other topics. They did not place any puzzle pieces either, so they presumably needed help with the puzzle. These boys may not have asked for help, even though they may have needed it, because they felt like they should have been able to do the puzzle on their own. Because they could not place any pieces, instead of asking for help, they avoided the topic and did not complete the task. Perhaps they felt like it would not be masculine of them to ask for help. Since they chose not to ask for help, this example may imply that boys would rather abandon a problem than receiving help. It might also be possible that these boys may have accepted help if it were offered and just did not want to do the asking. Also, they may have been more likely to ask for help if one or both of the experimenters was a male. Regardless, they did not ask for help in this setting and instead chose not to complete the puzzle.

When asking for help, both boys and girls preferred to use the question, "*Where does this one go?*" This may be because this question was the least imposing. It did not demand help from either experimenter, while at the same time it did not require the child to admit that he or she needed help. The girls strongly preferred this question to any of the other help-eliciting utterances, while the boys also used "*Can you help me?"*

relatively often. This question is much more direct than, *'Where does this one go?',* showing, again, that the boys had more intention of receiving help than the girls.

The patterns of help-eliciting utterances show that boys and girls use language differently when solving a problem.

Pauses

The many pauses in the recordings can also reveal boys' and girls' problem-solving strategies by focusing on when children broke the silences. The girls, on the whole, had longer pauses than the boys, showing that they were more accepting of silences while working on the puzzles. This finding is surprising because previous studies show that girls typically prefer to talk, while boys prefer to be doing or working on something. One would assume that the girls would be more talkative than the boys and that the boys would be fine with working on the puzzle in silence. However, in this study the girls worked in silence more than the boys. One explanation for these unexpected results is that boys and girls behave differently in a problem-solving situation, specifically when they need help.

Because boys would rather be doing something than just talking, they may have wanted to consistently be making progress on the puzzle. The children broke a vast majority of the pauses by eliciting help. As discussed previously, boys only asked for help when they needed it. Because they were not making progress on the puzzle, they broke a silence by asking for help to continue to make progress on the puzzle. Without breaking the silence, they would not have been able to work on the puzzle because they were stuck. Their pauses were shorter because they wanted to continue making progress on the puzzle.

The girls, on the other hand, had longer pauses. They, too, most often broke the pauses with a help-eliciting utterance. However, because most of them were not actually seeking help, they were breaking the silence in order to create conversation. Therefore, the notion of girls being more talkative during activities still applies to this situation since the boys were not breaking silences simply to have something to talk about. Rather, they were trying to achieve another purpose.

As stated above, the girls and the boys were breaking the silences with different purposes. The boys looked to complete their task, while the girls were looking to have a conversation with the experimenters. These examples further show that boys and girls are using their language differently to reach their end goal of solving a problem.

Topics

Most of the conversations centered on the puzzle, which is understandable since the puzzle served as the most apparent common ground between the children and the experimenters. The girls, interestingly, kept the topic closest to the puzzle. One may think that the girls would be more willing than the boys to expand topics, but the girls continuously brought the topic back to the puzzle, even when one of the experimenters changed the topic. The reason for the limited topics on the part of the girls may be due to their wanting to impress the experimenters by appearing focused and then hopefully completing the puzzle.

While the girls stayed close to the topic of the puzzle, the boys were much more willing to diverge topics. Four of them even initiated their own topics. The boys changed the topic from the puzzle when they seemed to be having trouble with the puzzle. Perhaps they wanted to take attention away from their inability to place the next

piece. Jim, for example, did not attempt to complete the puzzle. He did, however, engage in conversation with the experimenters about topics other than the puzzle. When prompted to discuss the puzzle, Jim become much quieter and timid in his responses. He was uncomfortable talking about something with which he did not expect to be successful. Despite this insecurity, when he prompted his topic of being a spy, he spoke with assertion and confidence. He perceived himself to be good at this topic and was much more comfortable speaking on this. Boys, therefore, when unsure of what to do, will change the topic to avoid addressing their insecurities.

Girls, on the other hand, do not seem concerned with addressing their inability to complete the puzzle. The dialogue below shows how Amanda immediately talked about how she would not be able to do the puzzle.

EXTRACT 8: *Amanda says she cannot do the puzzle* (2012, 01:38)

1	Amanda	You know big puzzles are kind of hard to do
2	Experimenter 1	Yea they are hard to do
3	Amanda	But I can't do hard puzzles cuz my mommy helps
4		me do hard puzzles but I can't
5	Experimenter 1	Is this a hard puzzle? (.) This one?
6	Amanda	I think it is a hard puzzle=
7	Experimenter 1	=You think it is a hard puzzle? So can you do it?
8	Amanda	No

Amanda, like the other girls, keeps the topic centered around puzzles and tells the experimenter that she will not be able to complete the puzzle in front of her. She does not change the topic to avoid addressing her inability to complete the puzzle.

The girls in the data, including Amanda, may feel as if it is more acceptable for them to be unable to do something than boys do. Therefore, the girls are more accepting of talking about that topic. The boys, on the other hand, may feel like they should be able

to complete a task put before them and if they cannot complete it, they will avoid talking about it in hopes of avoiding solving the problem and not point out that they are unable to do so on their own. As discussed with previous research, boys use their language to establish power and hierarchy (Kyratzis, 2001). They cannot establish this power if they are unable to complete a task. Thus, the topics discussed by each gender provide an example of a way each gender used language differently while solving the puzzle.

Pronouns

Pronouns are another area in which boys and girls used language differently. Both genders used first person singular more than any other form, yet this usage does not reveal anything significant because the first person singular form seems the most natural in the context. Girls and boys did, however, differ in their uses of the first person plural and second person form.

Girls used the first person plural form more than the boys, showing that they wanted to include the experimenters in the process. Other aspects of their language use, including eliciting help when they do not actually need it, show that girls work to include others. Boys, on the other hand, were much more independent in their problem solving, sometimes using the first person singular in situations such as '*I did it*,' even when they received help and did not complete the puzzle on by themselves.

While girls used more plural forms than boys, boys used more second person forms than girls. When they used the second person pronoun, it was usually in an imperative form. They were giving commands to establish their power in the problem-solving situation, even though they were receiving help from the experimenters. Because they were receiving help, the boys may have found it especially important to establish

their power in the conversation and, thus, in solving the problem. Even if someone else, such as the second experimenter, did more of the work to solve the problem, the boys wanted to make sure that they received credit for themselves. And establishing credit for the success seemed much more important to the boys than the girls, who often wanted the experimenters to be included even if they did not do anything on the puzzle.

Pronoun use in this problem solving setting shows that boys are more focused on having power in the situation and receiving credit than girls are. Further, through pronoun use, girls continue to work to include others in their problem solving process. Boys working to establish power and girls working to establish community match previous studies on the nature of male and female language, particularly Tannen's research (1990).

Hesitation Utterances

Children of both genders used hesitation utterances often. The children may have used hesitation utterances for a variety of reasons. For example, they may have hesitated simply because they needed more time to formulate their thoughts, for which many of the hesitations seemed to be used. The example below shows how Ryan used a hesitation utterance in the middle of one of his utterances. The hesitation utterance is bolded.

EXTRACT 9: *Ryan uses a hesitation utterance* (2012, 09:00)

1	Ryan	Maybe I don't know how to work **uh** work on a (.)
2		daddy's helicopter if I charge mine daddy's
3		helicopter that won't help

In this instance, along with the other instances of a hesitation utterance appearing in the middle of an utterance, the hesitation utterance is being used simply as a filler while the child searches for the words he or she wants.

However, when a hesitation utterance is used at the beginning of a sentence or in between pauses, it serves a different purpose. Because it is not in the middle of a stream of words, the hesitation utterance is more like its own thought. It is used to hold a place in the discourse, especially when a topic is not readily available. Because girls used hesitation utterances much more than the boys, the girls want to keep the discourse going, even when they are not sure of something about which they can talk. For example, at one point Caroline broke a sixteen second pause by making the utterance, '*Hm*'. This utterance was then followed by another pause of sixty-four seconds. Caroline did not break the pause by eliciting help, as the girls often did, but by making a noise that indicated that she was still working on the puzzle. Her hesitation utterance reminded those around her that she was still working and not ignoring them by not talking.

Further, even though the boys did not prefer one hesitation utterance to any of the others, girls strongly preferred '*Hm*'. Because boys used them all equally, boys did not seem to have another purpose in using them other than trying to fill space while they search for the word in their lexicon. Girls' preference, however, shows their purpose in filling gaps. '*Hm*' is the hesitation utterance most associated with thinking, rather than filling space in discourse. Therefore, by using this particular hesitation noise, girls are again showing those around them that the girls are working on the puzzle.

The girls and boys used hesitation utterances for different purposes, confirming the findings of Escalera (2009). Because the girls used hesitation utterances more than the boys, this suggests that hesitation utterances are a part of including other people in the problem solving process. Hesitation utterances, consequently, also play a role in the language of problem solving.

CHAPTER SEVEN

Conclusion

As discussed, boys and girls in this study used language differently in problem-solving settings. The discourse features analyzed to show these differences were help elicitation, pauses, topics, pronoun use, and hesitation utterances. Each of these features reveals that the boys and girls are used their language with different purposes while solving a problem.

Also, the language used by the children in the problem-solving setting aligns closely with the generalizations about male and female language. The boys used their language to establish their power and control, while the girls used conversation to establish a connection with the experimenters. These language styles match those discussed by Tannen (1990) in her research comparing and contrasting men's and women's language styles.

Further, the way each gender used language did not affect the outcome of the situation, but did affect the process. Therefore, this observation suggests that the two genders solve problems differently. Some of these differences include the girls, on the whole, processing their thoughts aloud and continuously involving the people around them, while boys think to themselves and only involve other people when they need help. Further, the boys did not address their inability to solve a problem, while the girls were much more open about their failures. The boys also used second-person pronouns to establish power and control in the situation, while girls used plural pronouns to include

the people around them. These features, among others, lead to the conclusion of the boys and girls in this study using language differently while solving the problem.

Implications

There are some implications on gender development and gender relations from the results in the study. Notably, the girls all exhibited language typical of females. The boys, on the other hand, did not all consistently model language typical of males. While the differences between the boys and girls were evident at all ages, the younger boys sometimes shifted into what is typically seen as female language. This finding may suggest that the female style is the natural style and the boys learn to adjust as they socialize with other boys. Maccoby (1990) noted that the gender differences became more apparent as children aged and began to prefer same sex playgroups. The findings from this study confirm her ideas.

Regarding gender relations, since boys and girls seem to solve problems differently, difficulties can arise when working together. Girls may become frustrated with boys because they feel like they are not being included, when boys simply do not feel like they need to vocally include others unless necessary. Boys, on the other hand, may feel like the girls are trying to be too involved or telling them too much about the process. Similarly, girls may feel like the boys are being bossy and harsh when they use the second person pronoun, while the boys feel crowded when girls use plural, inclusive forms.

These complications may extend into adulthood problem solving settings. Men and women must work together in a variety of capacities and problems will inevitably arise, especially if they do not realize that the opposite gender is solving the problem

differently. Understanding gender differences, specifically in problem-solving settings, can lead to greater success when working together. If men and women recognize that they are approaching a problem differently, there will be less room for misunderstanding.

Neither the male nor the female approach is better than the other. They are simply different. Men do not need to change their communication style while problem solving to accommodate women, nor do women need to change to accommodate men. Being aware of the differences should lead to more successful group workings. Further, the differences in language use between men and women are not categories with strict lines. Some men will inevitably use language in a more feminine style, while some women use it in a more masculine style. There is also a continuum so someone may have features of one gender along with features of another gender. Gender differences in any area should not be studied or used as a means to group people into set categories, but rather to understand differences and bring more understanding.

Further Research

Even though this study made new conclusions about children's language in a problem-solving setting, the sample size for this study was small so it should be duplicated with more children to try to confirm the findings. Further, more research, with different studies, should be done to confirm the conclusions reached in this study about gender language differences in problem solving. Studies should be done with children in other problem-solving environments and with different combinations of ages and genders. In addition to continuing research with children, adults should be studied to see if the ways they use language match with children, as hypothesized in this study to establish community match previous studies on the nature of male and female language,

particularly Tannen's research (1990). Also, it would be interesting to study children in other cultures and see how they use language differently in a problem-solving setting.

APPENDIX

APPENDIX

Transcriptions

Boys

Jim, 4 years; 10 months
*did not complete puzzle

00:00	**Name**		**Dialogue**	**Comments**
	Experimenter 1		Do you think we can do a puzzle?	
	Jim		Yes	
00:33	Experimenter 1		Do you like to do puzzles?	
	Jim		Yea=	
	Experimenter 1		=Yes?	
	Jim		I have a lot of stuff in my room (.) A tiny backpack	
	Experimenter 1		You have a little tiny backpack?=	
	Jim		=Yea (.) I used it but there's nothing for you in there (.) There's some other stuff in there=	
	Experimenter 1		=Oh I see	
	Jim		=Toys and stuff=	
	Experimenter 1		=Yea	
	Jim		I have my spy glasses in there	
	Experimenter 1		Your spy glasses?	
	Jim		Yea but I don't know where they are	
01:01	Experimenter 1		Oh (.) are you a spy?	
	Jim		Kind of=	
	Experimenter 1		=kind of? Oh my (1) Do you think we can do this puzzle?	
	Jim		Yes=	
	Experimenter 1		Yea? (5) I've never done it before (3) where do you start? (17)	
01:35	Jim		I don't know where I start (.) I've never done th I don't have this puzzle at my house=	
	Experimenter 1		=I've never done (.) Grace has done it (.) She was working on it earlier=	
	Experimenter 2		=Mhm. I have	
	Jim		I don't have this puzzle.	
	Experimenter 1		No? (2) Well what should we do if we don't know what to do? (12)	
02:12	Jim		The puppy's nose goes right in here	
	Experimenter 1		Yea (.) I bet you're right (.) do you see a puppy (.) is this the puppy nose?	
	Jim		No	
	Experimenter 1		Oh it's not (1) ohhh there it is (4) good job (155)	Jim found correct piece
05:05	Experimenter 1		Is this puzzle hard?	
	Jim		Yes	Almost a whisper
	Experimenter 1		It is? Or no?	
	Jim		Yes (.) No (121) I don't know where this one goes	Yes was much softer, no was

				louder
07:12	Experimenter 1		You don't know where it goes?	
	Jim		No	whispered
	Experimenter 1		Hmm (.) What should we do? (3) Because I don't think I know either (.) maybe this piece goes here? (1) No	
	Jim		That piece goes there	Very soft
	Experimenter 1		Do you think Grace knows? (3)	
	Jim		Hmm=	
	Experimenter 1		=you don't know? (3) She was doing it earlier (7) Oh good job (62)	
08:52	Jim		I don't know the rest of the puzzle	Jim was looking around during pause
	Experimenter 1		You what?	
	Jim		I don't know the rest	
	Experimenter 1		Well there's one	
	Jim		Maybe	
	Experimenter 1		This goes here?	
	Jim		No (5)	
09:12	Experimenter 1		I bet Grace knows since it's her puzzle and she was doing it (56)	
10:09	Jim		I don't really know this (3) umm	
	Experimenter 1		Well what should we do? (5) Do you think you can finish the puzzle?	
	Jim		No	
	Experimenter 1		No? You don't think you can?	
	Jim		I don't have this puzzle at my house	
	Experimenter 1		You don't have it at your house? (4) Do you want to finish it or no? (1) That's okay (.) You don't have to (1) Thanks for doing it though	Jim only gave nonverbal responses

George, 4 years; 6 months
*completed puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:15	Experimenter 1		Do you remember Grace from the puppet show? (3) Well guess what (2) She really likes to do puzzles (.) She does them all the time (1) And this one's her favorite she does it a lot (.) She was working on it earlier but now she's taking a break (.) Do you think we could do this puzzle?	George nodded in response
00:39	Experimenter 2		You already have a piece done	George immediately places a piece
	George		I put one right here	
	Experimenter 1		Good job (20)	
01:03	George		Does it go this way?	
	Experimenter 1		I don't know I've never done this puzzle before	
	George		Is it very hard?	
	Experimenter 1		Hm (.) I don't know (.) Do you think it's hard?	
	George		No *mutters something* (9) My fingers so	
	Experimenter 1		Your what? (11) Do you know what this is?	
01:41	George		Nuh uh	
	Experimenter 1		What the puzzle's gonna be?	
	George		A puppy	Smiles widely

	Experimenter 1		A puppy that's right (2) How do you know?	George looks behind seat, moves around
	George		Know (1) I just know	
	Experimenter 1		You just know because you're so smart	
	George		Hm (.) hm (18)	
02:18	Experimenter 1		Good job (37) Good job (.) You're really good at it (34) I think that one goes right there (1) Mm didn't work (33)	George places 2 pieces
04:17	George		My mommy comes to meet me at school today	
	Experimenter 1		She met you at school today? (1) Cool (.) For what?	George nods in response
	George		For my mommy (.) for for (.) my (1) baby come see my teachers	
	Experimenter 1		Ohh	
	George		I was drawing uhhh space	
	Experimenter 1		You were drawing space?	
	George		Umm in my classroom (4)	George drops puzzle piece
04:54	Experimenter 1		Do you like this puzzle?	
	George		Mmhmm	George climbs under table to get piece
	Experimenter 1		Yea (.) Grace really likes it because she does it a lot (2)	
	George		The alligator?	
	Experimenter 1		The alligator?	
	Experimenter 2		Albert didn't come today=	
	Experimenter 1		=Ohh that alligator (.) Albert that's right (.) No he's at home	
	George		Do you like this puzzle?	
	Experimenter 1		Do I like this puzzle?	
	George		No no does alligator like it?	
	Experimenter 1		I think he does	
	Experimenter 2		We do it together sometimes (17)	
05:35	George		Guess who's picking me up	
	Experimenter 1		Who's picking you up?	
	George		Guess	
	Experimenter 1		Your mom (2) No?	George shakes head
	George		Daddy=	
	Experimenter 1		=Your daddy	
	George		He brought magazines (.) in my classroom	
	Experimenter 1		So you can read them?	
06:00	George		Cut them	Makes scissors with fingers
	Experimenter 1		What do you cut them for? (10)	George shrugs shoulders
	George		Where does this one go?	directed at Experimenter 2, shrugs again
	Experimenter 2		Let me see (1) Can I see? (3) I think it goes right over here (3) There you go	
	Experimenter 1		Good job (.) I didn't know that	
	George		Where does this one go?	

	Experimenter 2		I can't see it silly goose (1) Hmmm (4) I think it goes right over here (4) Yep it goes right there	
	George		I don't think so	
	Experimenter 2		You don't think so? (4)	
07:05	George		It don't have a shape like this	
	Experimenter 2		Are you sure it doesn't? I think it does	
	Experimenter 1		It might look like it goes right there (.) I think Grace was right=	
	Experimenter 2		=I think it does	
	George		See (.) it doesn't	
	Experimenter 2		Umm right here (1) You just didn't turn it enough times (8) Okay maybe I was wrong	
	Experimenter 1		There you go	
	Experimenter 2		I was right	
	Experimenter 1		She was right (4)	
07:41	George		I think it goes right here (3) right here (2) uhh right here (27) I think it goes right here	shrugs shoulders after third 'right here', whispers at end
	Experimenter 1		Good job	
	George		I'm right (1) It goes right there	whispers
	Experimenter 2		Good job (6)	
08:33	George		I think this goes right here (2) I'm right	whispered
	Experimenter 1		Why are you whispering?	Whispered, George shrugs shoulders
	George		Mm (.) Um	
	Experimenter 1		You can whisper if you want I was just wondering why (3)	
	George		Does this go right here?	
	Experimenter 1		Mm (.) I don't know	
	George		That's my class going	
	Experimenter 1		Ohh	
	George		Better hurry (29) Where this one go?	Directed to Experimenter 2
09:35	Experimenter 2		Hmm (1) Let me see (1) I think it goes (2)	
	George		Right here?	
	Experimenter 2		No I think it goes right (2) Oops wrong way (1) Turn it around (3) Not like that silly	
	Experimenter 1		Good job=	
10:04	Experimenter 2		=There we go (1) Oops you dropped one (3)	
	George		Why is there tape on the floor?	
	Experimenter 2		[I don't know	
	Experimenter 1		[I don't know	
	George		Because we play music?	
	Experimenter 1		Oh is that why? (2) Ohh (15)	George nods
10:36	George		Where does this one go?	directed at Experimenter 2
	Experimenter 2		I think it goes right over here (1) Whoops upside down (4)	
	George		Pew pew pew	whispered
	Experimenter 2		There you go (39)	George smacks lips several times, shrugs
11:22	George		Where does this one go?	directed at

				Experimenter 2
	Experimenter 2		I think right there (2) Is that right? (2) Yep	George taps finger on puzzle
	Experimenter 1		Good job	
	George		This one goes (1) Why are you smart?	
	Experimenter 2		Why am I smart?	
	George		Little eins little einsteins are smart too	
	Experimenter 1		Mmhmm (1) And you're smart	
	Experimenter 2		You are smart	
11:55	George		Why do you why do doggie has paws? (1) Scratch	
	Experimenter 1		I don't know (2) So they can dig maybe	
	George		And to scratch	
	Experimenter 1		Yea	
	George		Scratching is not nice	
	Experimenter 1		No (3) It's not	
	George		Doggies scratch their self	
	Experimenter 1		Yea (8)	
12:25	George		Where does this one go?	
	Experimenter 2		Almost (.) A little lower (1) No a little lower (2) Right in here (8) There you go (5)	
	George		*Makes percussive sounds with mouth* (13) Where do this one go? (4) Does it go right here?	
13:08	Experimenter 2		Why do you think it goes there? (5)	George smiles
	George		Goose	
	Experimenter 2		Goose (1) Are you calling me a silly goose now? (7) You are? (.) Oh okay (2) I think it goes right there (3)	George nods
	George		I'm right	
	Experimenter 2		You're right?	
	George		*Makes sounds*	George places piece
	Experimenter 1		Good job (4)	
	George		I'm right	
13:44	Experimenter 1		Yes you are	
	George		I mean (.) Yea (.) You are right (13)	
	Experimenter 1		How many pieces do you have left?	
	George		One two three four (2) five	
	Experimenter 1		Five (3) Is that how old you are?	
	George		I'm (.) I'm four	
	Experimenter 1		Four (.) You're not five yet	
	George		I was three but I'm now four (4) Does it go right here?	
	Experimenter 2		Nope (14)	
14:36	George		Can I take his nose off?	
	Experimenter 2		You can't finish the puzzle if you take out his nose (6)	
	George		It's a hard puzzle?	
	Experimenter 1		Do you think it's hard? (2) Yea (2) Me too (3)	George scrunches up nose and nods head
14:59	George		Got it	says proudly
	Experimenter 1		Perfect	
	George		Mmhmm *makes noises, almost humming* (4)	
	Experimenter 2		You're getting close	
	Experimenter 1		Almost (14) You're almost finished=	David turns

				around to look out window
	Experimenter 2		Who was that?	
15:27	George		Miss Chelsey (2) peeking	
	Experimenter 2		Oh (.) Peeking (13) Only two pieces left (5)	
	Experimenter 1		Do you know where they go? (2) No?	George shakes head
16:04	George		I finished this this this this this this this (1) I want to take off his paws	Points around puzzle
	Experimenter 2		Here (.) Can you put these last two pieces in? (13) Good job	
	Experimenter 1		Good job	
	Experimenter 2		You finished it	
	Experimenter 1		Yay	
	George		Can I do it again?	
	Experimenter 1		No I don't think we have time for that but thanks for doing it	

Ryan, 4 years; 7 months
*did not complete puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:12	Experimenter 1		Do you remember Miss Grace?	
	Ryan		Yes	
	Experimenter 1		Yea? (2) Well she really likes to do puzzles (.) She does them every day so right now she's taking a break do you think we could do this puzzle?	
	Ryan		Yes	
	Experimenter 1		Yea okay great	
	Experimenter 2		Have a seat (16)	
00:45	Ryan		I've got a little puzzle at my house	
	Experimenter 1		Oh really? What is it?	
	Ryan		It's a dinosaur puzzle	
	Experimenter 1		Oh wow	
	Ryan		And I've got (.) I got lots of puzzles	
	Experimenter 1		Yea	
	Ryan		So many	
	Experimenter 1		Do you like to do puzzles?	
	Ryan		Yes (8) My daddy used to have his own puzzle when he was little	
01:17	Experimenter 1		Oh yea?	
	Ryan		Yea when (.) when my daddy was a baby he (.) he knowed the puzzles (1) there was (.) there was a lion (1) it was the colorful one (.) it was a rainbow lion	
	Experimenter 1		Oh wow (24) Have you ever done this puzzle before?	
02:02	Ryan		Yea my daddy he has a different puzzle as this	
	Experimenter 1		Ohh=	
	Ryan		=It's a cool puzzle (.) and very there's lots of dinosaurs in it	
	Experimenter 1		Oh wow (.) Do you like dinosaurs?	
	Ryan		I got I got a pirate puzzle	
	Experimenter 1		A pirate puzzle? Wow	
	Ryan		It's so big	

	Experimenter 1		Yea? (2) That's cool	
	Ryan		He hasn't saw it in a while (4) I buy it out in the store	
	Experimenter 1		Yea?	
	Ryan		The puzzle store (6) Everybody starts running and then I got tired	
02:45	Experimenter 1		Ohh today?	
	Ryan		Yes	
	Experimenter 1		Do you like to run?	
	Ryan		Yes I am so fast	
	Experimenter 1		Yea I bet you are (6)	
	Ryan		I'm so fast (2) There's lots (.) I learned how to run fast (.) but now I can ride my bike fast	
	Experimenter 1		Oh cool (1) Do you ride your bike a lot?	
	Ryan		Yes I learned how to not wear my helmet	
03:17	Experimenter 1		Oh no	
	Ryan		I didn't fall off	
	Experimenter 1		Well that's good (2) We wouldn't want you to get hurt (8) Good job (21)	
03:54	Ryan		And daddy does puzzles at night time (.) a light up puzzle	
	Experimenter 1		A light up puzzle?	
	Ryan		Yea when it starts (.) er (.) the lights turn on all by itself	
	Experimenter 1		Wow	
	Ryan		It's magnetic	
	Experimenter 1		Yea? What's it a picture of?	
	Ryan		It's a picture of (.) of of a rainbow	
	Experimenter 1		Ohh=	
	Ryan		=And cool clouds	
	Experimenter 1		Yea (9)	
04:32	Ryan		It's almost time for me to leave	
	Experimenter 1		Do you think you'll be able to finish the puzzle?	
	Ryan		I think my mommy will see that I uh (.) that I'm not out there	
	Experimenter 1		Mmhmm (23) Do you think that Grace knows where the puzzle pieces go?	
05:16	Ryan		Yea	
	Experimenter 1		Yea she does this every day (7)	
	Ryan		I'm going to get a puzzle like this	
	Experimenter 1		You're going to go get one?	
	Ryan		Yea at the store (2) the fun store (2) It has a rainbow dog	
	Experimenter 1		A rainbow dog?	
	Ryan		My dog is black (1) My big dog is black	
	Experimenter 1		Yea	
05:48	Ryan		His name is Avery (1) And he gets (.) he gets in his green kennel (1) He rests in there when he gets tired	
	Experimenter 1		Yea? Where does he rest?	
	Ryan		His kennel	
	Experimenter 1		Oh his kennel	
	Ryan		When he barks my daddy puts him in his kennel (.) and daddy doesn't know brown dogs (3) Um my (.) my Shelby has black and white	

06:31	Experimenter 1		Wow do you have two dogs?	
	Ryan		Yea got two dogs (24) My daddy really loves puzzles	
	Experimenter 1		Mmhmm	
07:01	Ryan		He does them all day	
	Experimenter 1		All day? Grace does puzzles all day too	
	Experimenter 2		Yep	
	Ryan		I know he has a light up puzzle at the house	
	Experimenter 1		Yea	
	Ryan		At the store I'm gonna go get a light up puzzle and uh til for my daddy and me	
	Experimenter 1		Oh so you'll have your own?	
	Ryan		I'm gonna get mine own	
07:31	Experimenter 1		Cool	
	Ryan		It's gonna be (.) It's gonna be a rainbow (.) There's gonna be a rainbow lights	
	Experimenter 1		Hmm	
	Ryan		All of them are rainbow (1) One is red and one is blue and another one is green (.) There's kind of a pink one too (1) Right on the bottom	
	Experimenter 1		Really? Of the rainbow?	
08:10	Ryan		Yea and there's lot of sides to work on it even there's one light on the bottom (6) And when when I know how (6) Trey is bigger than me	
	Experimenter 1		Yea	
	Ryan		You know how small the big kids are bigger than us	
	Experimenter 1		Are you a big kid?	
	Ryan		We are all four except Maddie	
	Experimenter 1		How old is Maddie?	
	Ryan		Five	
08:53	Experimenter 1		She's five? Wow (7)	
	Ryan		Maybe I don't know how to work uh work on a (.) daddy's helicopter if I charge mine daddy's helicopter that won't help	
	Experimenter 1		No	
	Ryan		This time it's out (.) This time it's out of batteries helicopter there is out of batteries this time it's (.) it's the charging won't help it	
	Experimenter 1		Yea (.) that stinks (5)	
09:41	Ryan		My daddy stinks	
	Experimenter 1		He stinks?	
	Ryan		Yea he he he (.) um he's a boy and he has big hair	
	Experimenter 1		Oh so does that mean he stinks?	
	Ryan		Yea he's he really stinks	
	Experimenter 1		Do you have big hair?	
10:02	Ryan		Mm I have short hair I got (.) I got a hair cut	
	Experimenter 1		Oh so do you stink?	
	Ryan		Mm yes	
	Experimenter 1		You do?	
	Ryan		My daddy put me a bath (.) this my mommy was making hot chocolate at my house	
	Experimenter 1		Ohh do you drink hot chocolate after your bath?	
	Ryan		Yea	
	Experimenter 1		That sounds good	

10:30	Ryan		I make grilled cheese and mommy makes grilled cheese while I'm taking a bath they had bath toys (4) They're a little bit heavy	
	Experimenter 1		The bath toys?	
	Ryan		Yea the bath toys are a little bit heavy	
	Experimenter 1		Is this puzzle hard?	
	Ryan		Yes	
	Experimenter 1		Yea? (4)	
11:02	Ryan		And daddy doesn't even know about a dog (2) He can't see him cuz he's cuz my daddy is big	
	Experimenter 1		Do you know where the puzzle pieces go?	
	Ryan		Yes	
	Experimenter 1		Yea? (2) I don't (4)	
	Ryan		I'm gonna show my daddy how I can work hard (.) I'm good at doing rainbow puzzles	
	Experimenter 1		Mmhmm	
	Ryan		It's a (.) it's a lion puzzle so the lion puzzle will go again till rainbow puzzle or or lion rainbow puzzle	
	Experimenter 1		Yea? (10)	
12:00	Ryan		After school there's I'm gonna get a snack and daddy is at work he has lots of work to do	
	Experimenter 1		Yea (.) Do you think you'll be able to finish the puzzle? We only have a few more minutes	
	Ryan		Only a few more minutes	
	Experimenter 1		I think your mom might be here	
	Ryan		No she's not here yet	
	Experimenter 1		She's not here yet? (.) How do you know?	
	Ryan		That's because I'm very smart and my daddy doesn't know why we're smart	
	Experimenter 1		He doesn't know why you're smart?	
12:34	Ryan		Yea I'm very smart	
	Experimenter 1		You are very smart (5)	
	Ryan		I won't be able to finish the puzzle	
	Experimenter 1		You don't think you'll be able to finish it?	
	Ryan		Yea	
	Experimenter 1		Well that's okay	
	Ryan		I can't finish it in time	
	Experimenter 1		You can't finish it in time?	
	Ryan		Nobody can finish it	
	Experimenter 1		Do you think Grace knows where all the pieces go? Because she does it everyday?	
	Ryan		Yes	
13:03	Experimenter 1		Yes? You think she knows? Hmm (7)	
	Ryan		I think my daddy (.) my daddy takes the bathroom door shower but I don't like showers	
	Experimenter 1		No (.) You ready to go back to your classroom?	
	Ryan		There's this (.) there's a	
13:33	Experimenter 1		How about you figure out where that piece goes and then we'll go back to your classroom? (6)	
	Ryan		I think you can finish when I go	
	Experimenter 1		Yea we'll finish it when you go (4)	
	Ryan		I'm able to get a rainbow lion puzzle	
	Experimenter 1		Yea	

13:58	Ryan		I'm gonna get monster truck pants, monster truck underwear and my monster truck shirt	
	Experimenter 1		Oh you're going to get lots of stuff (2) Oh you did it (.) Good job	

John, 4 years; 6 months
*completed puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:04	Experimenter 1		Do you remember Grace? (.) Well did you know that she loves to do puzzles?	
	John		Uh huh	
	Experimenter 1		She does them all the time (1) But right now she's taking a break so do you think we could do this one?	
	John		Hmm	
	Experimenter 1		Yea?	
	John		That is a dog	
	Experimenter 2		That is a dog you're right=	
	Experimenter 1		=Good job (6)	
00:28	John		Get in here now (1) Ah bee (1) Got you (.) This one is not working (3) Not working (4) What is it hey get back in here (6) Get in (3) Too much	
01:02	Experimenter 1		Have you ever done this puzzle before?	
	John		Nope (.) Help	
	Experimenter 1		Do you need help?	
	John		Yea	
	Experimenter 1		Hmm (.) I've never done this puzzle before so I don't know does this go here?	
	John		Maybe so (1) Maybe not	
	Experimenter 1		Grace does this puzzle every day do you think she knows where the pieces go? (5)	
	John		Maybe here (2) That (4) Got it	
	Experimenter 1		There you go	
	John		I got it	
01:38	Experimenter 1		Yea you did (5)	
	John		Can you help me?	
	Experimenter 1		You want me to help you?	
	John		Yes	
	Experimenter 1		Hmm does that go here?	
	John		I think so	
	Experimenter 1		No I've never done this one so I'm not very good at it (15)	
02:11	John		Can you help? (7) Can you help?	
	Experimenter 1		Yea hmm so does it go here?	
	John		Maybe so (2) Nope	
	Experimenter 1		No	
	John		Maybe there nope (.) nope nope nope nope nope nope nope nope (3) Hmm where does that piece go? (8)	Moves piece around puzzle as saying 'nope'
02:45	Experimenter 1		Do you think Grace knows where they go? She does this puzzle every day?	
	John		Can you help?	Question directed at Experimenter 2
	Experimenter 2		Mmhmm that's actually in the right spot you just have to turn it a little bit (.) There you go	

	Experimenter 1		She's good at this (4)	
	John		Can you help me?	
	Experimenter 2		Mmhmm that one goes right here (.) keep turning	
	John		Right here?	
	Experimenter 2		Yea (3)	
03:12	John		This (.) Can you help me with this?	
	Experimenter 2		Yea I think that one goes there (.) Yep (.) Keep turning (3) Keep turning	
	John		Keep turning?	
	Experimenter 2		Mmhmm	
	John		Can you help me?	
	Experimenter 2		Keep turning (.) There you go (2) There we go	
	John		One two (2) Why you doggie?	
03:43	Experimenter 1		Why is it a doggie?	
	John		Mmhmm	
	Experimenter 1		I don't know (.) It just is (5)	
	John		Can you help me?	
	Experimenter 2		Mmhmm can I see the piece? (3) Hmm let's see here (.) I think this one goes right over here	
	John		Mm (.) Can turn it?	
	Experimenter 2		Keep going (2) Keep going (2) Keep going (2) There you go (8) Yep=	
	Experimenter 1		=Good job (7)	
4:30	John		Where does this go? (5) Can you help me? (9) Can you help me?	Whispered under breath
	Experimenter 2		Can I help you? (1) I think it goes right here (6) Good job (7) Now that's a corner piece (4)	
05:13	John		Can you help? (5)	Whispered under breath
	Experimenter 2		Is that a corner? (8)	
	John		You see	
	Experimenter 2		It's a corner piece see? It goes right down here in the corner (12) There you go good job (4)	
05:48	John		Maybe (6) What is that sound? (3) Can you?	Whispered
	Experimenter 2		Mmhmm right here (5)	
	John		Can you turn it? (4)	
	Experimenter 1		Good job (18)	
06:33	John		Can you help me?	Whispered
	Experimenter 2		That one has some green on it (1) I think it goes right there see (.) There we go	
	John		Where does this go?	Whispered
	Experimenter 2		Hmm I think it goes where there's some black and some white and some green (1) Do you see a spot over here that has black white and green?	
	John		Yes	Whispered
	Experimenter 2		You do? You think it goes there? (12) There you go (8)	
07:14	John		What does this? (8) Can you?	Whispered under breath
	Experimenter 2		Hmm?	
	John		Can you?	Whispered
	Experimenter 2		Can I help you?	
	John		Uh huh	
	Experimenter 2		Hmm that one has an edge on it so it must go up here somewhere (5) Oops the edge needs to be on	

			the outside	
	John		I did it	Whispered
07:43	Experimenter 1		Good job (14)	
	John		Can you?	Whispered
	Experimenter 2		Hmm (.) I think it goes up here somewhere (5) Maybe turn it around (6) There you go (5) What's on that puzzle piece?	
08:37	John		White and black	Whispered
	Experimenter 2		I can't hear you	
	John		Black and white	
	Experimenter 2		Black and white and what other color?	
	John		And grey	
	Experimenter 2		And grey (.) I think you found the right spot	
	Experimenter 1		It's his nose (8)	
	Experimenter 2		Do you have a puppy dog?	
	John		Uh huh (5)	
09:07	Experimenter 2		Where do you see that color in the puzzle?	
	John		Green yellow	
	Experimenter 2		Green and yellow do you see green and yellow?	
	John		Yes	
	Experimenter 2		Where?	
	John		Right here	
	Experimenter 2		Where else? (1) Show me where else in the puzzle you see green and yellow	
	John		Um on bottom	
	Experimenter 2		Where on the puzzle do you see green and yellow?	
	John		Maybe there	
	Experimenter 2		Maybe (1) Where else do you see green and yellow?	
	John		Umm different	
	Experimenter 2		Where do you see green and yellow that's on a corner? (.) See how that's a corner?	
09:41	John		I see green and yellow	
	Experimenter 2		Mmhmm	
	John		Where is that? There (3) Uh	
	Experimenter 2		Here let's look up here you see how this is a corner? It has two straight sides (2) There you go	
	Experimenter 1		Good job	
	John		This is grey	
	Experimenter 2		It's grey?	
	John		A puppy dog	
	Experimenter 2		It is a puppy dog (6)	
10:12	John		Can you help me?	
	Experimenter 2		I don't think it's that part of the puppy dog go a little bit over (1) oops down (.) over (.) other way over (3) No go that way	
	John		This way?	Whispered
	Experimenter 2		That way	
	John		That way?	
	Experimenter 2		No move the piece over not turn it (6) Nope it doesn't go there (1) Right there (1) There we go	
	John		I see green and orange	
10:43	Experimenter 2		Mmhmm (3) Great job	
	John		I see this (7) Can you help me?	Question

				whispered
	Experimenter 2		Yea make sure that all of the straight part lines up (.) All the straight part goes together	
	John		Black and pink and (.) and um white	
	Experimenter 2		There you go (3)	
	John		Where does this go?	
	Experimenter 2		Ooh do you see the straight part on that piece?	
	John		Uh huh	
	Experimenter 2		Where is a piece with a straight part?	
	John		Right there	
	Experimenter 2		Yea (8) Oops uh oh (.) Here I got it	
11:31	John		Oh it slipped off my hands	
	Experimenter 1		It slipped off your hands?	
	Experimenter 2		It did slip off your hands	
	Experimenter 1		That silly puzzle piece (5)	
	Experimenter 2		Oh you almost got it (1) Right there you can do it yay (8) Mm almost (11) Let's try another spot for that piece (5) There we go (22)	
12:42	John		Where does it?	Whispered
	Experimenter 2		Well it didn't go there so there's only one more spot for it	
	John		Uhh another spot	
	Experimenter 2		Uh huh	
	John		Another spot (3) Can you help me?	
	Experimenter 2		It goes there just keep turning it (3) There you go	
	Experimenter 1		One more	
	Experimenter 2		Last piece (5) Oh can you put the little yellow spot with the other yellow with more yellow? (4) There we go great job	
12:18	Experimenter 1		Good job (2) Was that hard?	
	John		No	
	Experimenter 1		No it wasn't hard? (1) You did a really good job	

Tyler, 3 years; 8 months
*did not complete puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:21	Experimenter 1		Do you remember Miss Grace? (1) Well she really likes to do puzzles so she was working on this one earlier (.) do you think we can do it?	
	Tyler		Yes	
	Experimenter 1		Oh good (12)	
	Tyler		It's so hard to get this	
	Experimenter 1		It's hard to do it?	
	Tyler		Uh huh	
	Experimenter 1		Hmm I've never done this puzzle before	
	Tyler		But it's so hard	
	Experimenter 1		It's really hard? Grace does it every day	
	Experimenter 2		Mmhmm I do	
01:01	Tyler		Huh where this go? I don't know	
	Experimenter 1		Where does it go? Does it go right here? (3) No? I don't know because I've never done this puzzle (2) Do you think Grace knows? (1) That's Grace	
	Tyler		But I forgot to do it because I don't have this puzzle at my home I don't know I just checked	

			everywhere for another one oh I know (9)	
01:35	Experimenter 1		Um does that go there?	
	Tyler		No	
	Experimenter 1		Yea maybe not (6)	
	Tyler		You have to lift it up to connect it	
	Experimenter 1		Yea you do	
	Tyler		Yea but how you have to lift it at this puzzle	
	Experimenter 1		Yea I don't know	
	Tyler		You have to do it in like that	
	Experimenter 1		No we don't want to lift the whole puzzle	
	Tyler		But then I I then I connect it to there	
02:05	Experimenter 1		Oh you connect it when I lift it to the puzzle? I don't think it will work that way (5) Hmm I don't know I've never done this one before	
	Tyler		But it's a very hard puzzle=	
	Experimenter 1		=It's very hard?	
	Tyler		Mmhmm	
	Experimenter 1		Do you think Grace knows? (.) The way to do it? Because she does it every day	
	Tyler		Hey Grace	
	Experimenter 2		Mmhmm?	
	Tyler		Can you help me?	
	Experimenter 2		Uh huh I'd love to let's see (.) can I see that piece?	
	Tyler		Yea	
	Experimenter 2		I think that piece goes down here I think (3) There you go (.) Good job	
02:45	Tyler		Did you do all of these?	
	Experimenter 2		Yea (.) It all matches doesn't it?	
	Tyler		Yea and this brown and this brown and this this and this where like (6) I don't know where this fits (7) Oh that's where	
	Experimenter 1		Good job	
03:14	Tyler		Where does this go? (1) How about it? (2) Uhhhhh (4) This is a big puzzle	Question not directed anyone, second question made in silly voice
	Experimenter 1		It is a big puzzle (1) Do you know what it is?	
	Tyler		What?	
	Experimenter 1		What is this? (4)	
	Tyler		That's pup (.) I love puppy dogs	
	Experimenter 1		Oh me too	
	Tyler		Okay where this go? I see a black (5) Where this go? (2) How about here? (1) Hmmm just like this (5) You see this black (.) See?	
04:13	Experimenter 1		Yea	
	Tyler		This one is sticking	
	Experimenter 1		There's black here	
	Tyler		Okay I'll try this	
	Experimenter 1		No I don't think so (10)	
	Tyler		How about this one? (6)	
	Experimenter 1		Uh oh	
	Tyler		Oops	
	Experimenter 1		It goes right there	
	Tyler		I think it was (3) Okay now where does this go? I	

			don't know (5) I know a puzzle that's my oh my puzzle at home is really easy	
05:00	Experimenter 1		Really? What is your puzzle at home?	
	Tyler		Umm it's this but I have this puzzle but my mommy said I cannot buy it	
	Experimenter 1		Oh you have this puzzle?	
	Tyler		No because my mommy said I cannot buy it	
	Experimenter 1		Oh your mommy said you can't	
	Tyler		Because it's for big people (.) for girls	
	Experimenter 1		Oh it's for girls? Why is it for girls?	
	Tyler		Because it's too hard for boys	
	Experimenter 1		Oh it's too hard for boys (.) So are girls smarter than boys?	
	Tyler		Not smarter than boys	
	Experimenter 1		No? Then why can't boys do it?	
	Tyler		Because they're too young	
05:32	Experimenter 1		Oh they're too young	
	Tyler		I don't know where this fits	
	Experimenter 1		Hmm I don't either (2) What can we do?	
	Tyler		Oops	Drops a piece
	Experimenter 1		Oh	
	Tyler		Where is it?	
	Experimenter 2		Right there behind you	
	Tyler		But I don't know how to get these (.) two different places (1) Can you help me?	Question directed at Experimenter 2
	Experimenter 2		Mmhmm (.) It goes down here (2) Turn it around so the colors match up (2) No not like that	
	Tyler		Huh	
06:04	Experimenter 2		Put the white on the bottom	
	Tyler		I don't know what's the matter	
	Experimenter 2		Here (.) Let me show you (1) You put it like that (2) And then you put it down here (3) There you go (3)	
	Tyler		I got something (.) Ooh ah where this goes? (.) How about I know where this goes (1) This one (2) See that	
	Experimenter 1		Yea I see it	
06:36	Tyler		But where it goes?	
	Experimenter 1		I don't know (.) Does it go here?	
	Tyler		Oh yea	
	Experimenter 1		No	
	Tyler		Hm	
	Experimenter 1		Or here there's some green right there (.) Does it have green on it?	
	Tyler		But it's half white	
	Experimenter 1		Oh half white	
	Tyler		It doesn't really stick to these puzzles (3) But how you put this puzzle piece?	
07:04	Experimenter 1		I don't know does it go there maybe? In the corner	
	Tyler		Okay but it has three on it	
	Experimenter 1		Oh	
	Tyler		Well which where this go?	
	Experimenter 1		I don't know	
	Tyler		Can you help me?	Question directed

				at Experimenter 2
	Experimenter 2		Mmhmm it's a corner so I think it goes up here	
	Experimenter 1		Ohh I see	
	Tyler		It worked now I see this (.) Okay okay I know something which way I know (5) Can you help me?	Question directed at Experimenter 2
	Experimenter 2		Mmhmm (1) It's an edge piece so it has to go somewhere on the edge (.) I think it goes over there (1) Do you know what the edge is? (.) Where's the straight part?	
	Tyler		I know	
07:56	Experimenter 2		Where's the straight part? (.) See how this is straight? And see how this is straight? (3) So they have to go next to each other	
	Tyler		Like this? And hey now watch this (.) I'm wiping up a floor	
	Experimenter 1		Oh yea that's silly	
	Tyler		Uh two	
	Experimenter 2		Oops put the straight next to each other	
	Tyler		This?	
	Experimenter 2		No	
	Tyler		Uh I don't know how to do this one	
	Experimenter 2		You turn it like that you see how the straight parts are next to each other?	
08:31	Tyler		I uh (11) I can do this I see straight lines (14) Hey hey songs make me sad	
	Experimenter 1		Songs make you sad?	
09:08	Tyler		Uh huh I go mm	Makes sad face
	Experimenter 1		Aww why do they make you sad?	
	Tyler		Because (.) because I was singing and I said mm	Makes same sad face
	Experimenter 1		Ohh	
	Tyler		Isn't that funny?	
	Experimenter 1		That is funny	
	Tyler		I sing songs mmm (2) Can you help me?	Makes same sad face, Question directed at Experimenter 2
	Experimenter 2		Mmhmm	
	Tyler		I (.) just see this edge	
	Experimenter 2		That one goes over here that's not an edge piece (1) It goes over here put the green next to the green	
	Tyler		Green next to what's this?	
	Experimenter 2		Green next to green	
09:36	Tyler		Green (.) Okay (6)	
	Experimenter 2		Here you need to put the green next to the green	
	Tyler		Green wait goes here (1) but it's moving	
	Experimenter 2		There you go	
09:54	Tyler		Yay thanks for helping me (2) I just need (.) I just need one one one (2) See? (.) Look	Says it in funny voice, Command targeted at Experimenter 1
	Experimenter 1		I see it	
	Tyler		Now where this go? (1) I think right here (4) Can	Question directed

			you help me?	at Experimenter 2
	Experimenter 2		Mmhmm (.) Let's see here (2) Can I see the front of it? (2) Hmm	
	Tyler		Hey does it hey	
10:26	Experimenter 2		I think it goes right here	
	Tyler		But this looks like a back door (5)	
	Experimenter 2		Turn it around (5) You have to turn it so that the parts that stick out go here	
	Tyler		*Laughs* Okay (1) Heyyy this goes here and this (6) It's not connected (2) It's not oh there (1) There are (3) Hey what's that?	
11:10	Experimenter 1		I don't know (1) A poster?	
	Tyler		I think it is (.) Can you help me?	Question was much quieter
	Experimenter 2		Mmhmm can I see the piece? (2) Hmm (.) I think that one goes over here	
	Tyler		Well let's see but I cannot reach this far (10)	
	Experimenter 2		Keep turning (2) See if you do it like that (6)	
11:47	Experimenter 1		Good job (3)	
	Tyler		I see a puppy dog's nose	
	Experimenter 2		You do? Where do you think that goes? (6)	
	Experimenter 1		Good job	
	Experimenter 2		There we go	
	Tyler		Hey this is a great puppy dog now where this go?	
	Experimenter 2		I can't see it (2) Hmm I think it's a corner piece	
	Tyler		This is like puppa golf	
	Experimenter 1		Like what?	
	Tyler		Puppa golf	
	Experimenter 1		I don't know what that is	
	Tyler		It's like puppa golf	
	Experimenter 1		I think she said it's a corner piece	
12:30	Experimenter 2		Mmhmm so it should go down here	
	Tyler		Mmmm daaaa	
	Experimenter 2		The green has to show though (1) There you go	
	Tyler		Like this?	
	Experimenter 2		Oh you had it right a minute ago before you turned it (3) There you go	
	Experimenter 1		Good job	
	Tyler		Ooh ooh look at this brown	
	Experimenter 1		Hey we only have about one more minute you think you'll be able to finish it?	
13:00	Tyler		Okay but then I (.) then then I want to finish it what's this? (1) See an edge	
	Experimenter 2		No that one's not an edge piece (.) Can I see? Hmm	
	Tyler		It's like fronting	
	Experimenter 2		No I don't think those mean anything I think it's the picture that's the important part (1) I think it goes here	
	Tyler		Let's see (3) But I have a one more (5)	
	Experimenter 2		It goes there you just don't have it turned the right way	
13:37	Tyler		But see there's two on his	
	Experimenter 2		Like these? (3)	
	Tyler		There's the look (1) This is like an alien	

	Experimenter 1		Ohh (.) Okay one more piece and then maybe Grace can finish it by herself	
	Experimenter 2		Yea	
	Tyler		Yeaaa but this nothing (.) This how you see	
	Experimenter 1		Yea it doesn't have anything	
	Tyler		Look it I'll try this (3) Fitting	
	Experimenter 1		Not quite	
14:13	Experimenter 2		I don't think so	
	Tyler		See? Now you put it (2) but this piece see this (6) It's sloppy it's slop (3)	
	Experimenter 1		One more piece which one are you going to place? (2) That one? Okay where's it go?	
	Tyler		I think these two	
	Experimenter 2		Mmhmm	
	Tyler		But then let's (.) I think it goes right there	
14:47	Experimenter 2		Uhh I don't think so	
	Tyler		But ooh puppy's missing (4) I know where it goes	
	Experimenter 2		You do? Where does it go? (7)	
	Experimenter 1		Mmm maybe not (6)	
	Experimenter 2		I don't think it goes there	
15:19	Tyler		Maybe (2) Work on it (.) Hey I know where this piece goes	
	Experimenter 2		Where does it go? (5) Almost (.) You see another empty spot that looks like that? (3) Oops you had you hand on it	
	Tyler		Like it I can see this (4)	
	Experimenter 2		Hmm (.) Do you see another spot that looks like this one? (1) Does this one look the same? (2) No	
15:51	Tyler		Hey no wait	
	Experimenter 2		No there's no green in the puppy	
	Tyler		But (3) ooh clock where's the clock?	
	Experimenter 1		The clock is right there	
	Tyler		Okay one minute (.) I just need to (.) but I don't know where this (.) Can you find it?	
	Experimenter 2		This one goes over here (7) There you go	
	Experimenter 1		Good job	

Jack, 3 years; 2 months
*did not complete puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:19	Experimenter 1		Did you know that Grace really likes to do puzzles? (2) She does them all the time she was working on this one today do you think we can do it?	
	Jack		I (.) I got these (2) I have some orange (.) I have two orange pieces	
	Experimenter 1		You have two orange pieces?	
	Jack		One two three four five (2) so (2) these are (.) these are all my orange pieces	
	Experimenter 1		Those are all your orange pieces? Where do all your orange pieces go?	
	Jack		Orange right here	
	Experimenter 1		Ohh can you put them there where they go?	
00:55	Jack		Yea (10) It can't really fit there	

	Experimenter 1		Yea that doesn't fit there	
	Jack		Yea (3)	
	Experimenter 1		Good job (5)	
	Jack		This piece fits this piece goes (19)	
01:44	Experimenter 1		Do you know what this puzzle is? (1) What is it?	
	Jack		A dog	
	Experimenter 1		A dog yea (3) Have you ever done this one before?	
	Jack		Yea	
	Experimenter 1		You have?	
	Jack		Yea I have I have I have a dog movie (.) I have I have two of them	
	Experimenter 1		Yea? Which ones?	
	Jack		Oh the one (.) three (.) no I don't know I have two but I but but I buh buh buh but I (2) I have this movie	
02:27	Experimenter 1		Oh yea?	
	Jack		Yea	
	Experimenter 1		Cool	
	Jack		Yea	
	Experimenter 1		Is this a hard puzzle?	
	Jack		Yea	
	Experimenter 1		I've never done it before Grace does it every day	
	Experimenter 2		Mmhmm	
	Jack		Yea but I haven't done it (2) Because I have I have I have that piece	
	Experimenter 1		Oh yea? (3) I don't think those go together (15)	
03:09	Jack		*Mutters something* (2) What what three times	
	Experimenter 1		You did the puzzle three times?	
	Jack		I have I have I have Toy Story one	
	Experimenter 1		Oh Toy Story one do you like it?	
	Jack		Yea I have I have all of them	
	Experimenter 1		You have all the Toy Stories?	
	Jack		Yea	
	Experimenter 1		How many are there?	
	Jack		Mmm and I and I have one animal puzzle	
	Experimenter 1		Ohh what animal?	
	Jack		Oh I have I have one (.) one have have (1) one has a dog and one has (.) and one has (.) has (.) has (2) has (.) has has (1) has some night animals	
	Experimenter 1		Oh that's cool you think we can do this puzzle? Where do the puzzle pieces go?	
	Jack		The white one matches this color	
	Experimenter 1		Yea where is that in the puzzle? (1) Where does it go?	
04:25	Jack		Goes where?	
	Experimenter 1		I don't know (.) I've never done this one	
	Jack		Yea but (.) but do you want to help? (2) Do you help?	
	Experimenter 1		Do you want me to help?	
	Jack		Yea but here's a puzzle piece	
	Experimenter 1		Oh thank you I don't (.) maybe it goes right there?	
	Jack		No (.) Nope	
	Experimenter 1		Do you think Grace knows where they go? (.)	

			Because she does this everyday (4) Do you think she knows where they go?	
04:56	Jack		You know where this piece goes?	Directed at Experimenter 2
	Experimenter 2		I do know where that piece goes (1) Do you want me to show you?	
	Jack		Yea	
	Experimenter 2		That's right where it goes	Jack places piece correctly on own
	Experimenter 1		Good job (13)	
05:21	Jack		You (.) you can have more of them you can have two of my pieces	
	Experimenter 1		Oh thank you (3) I don't know where they go	
	Jack		You (.) you (.) you gotta keep waiting you gotta keep waiting until we do the whole puzzle	
	Experimenter 1		We have to do the whole puzzle? What if it's too hard for us? (4)	
	Jack		Well it don't go there	
	Experimenter 1		No	
	Jack		Nope (4) No	
	Experimenter 1		Maybe Grace knows where this one goes	
	Jack		Do you know (.) Do you know where this piece goes?	Question directed at Experimenter 2
	Experimenter 2		Mmhmm	
	Experimenter 1		Should she show us?	
	Jack		Can you show us where this piece goes?	
06:03	Experimenter 2		Yea it goes right here	
	Experimenter 1		Ohh there it is (6)	
	Jack		Yea but you know where my piece (.) this piece goes right (.) this piece goes right (.) this piece goes (.) goes right here (.) right?	
	Experimenter 2		Mm no I don't think so (.) There you go	
	Experimenter 1		Oh good job (4) Whose pieces are these? (4) Whose pieces are these over here?	
06:37	Jack		Grace's	
	Experimenter 1		Oh they're Grace's? So these are yours?	
	Jack		And these (.) and these (3)	
	Experimenter 1		And this one's mine?	
	Jack		Yea	
	Experimenter 2		Here I'm gonna share my pieces	
	Jack		Hey hey I have part of the eye	
	Experimenter 2		Part of his eye?	
	Jack		Yea I see part of his eye right here	
	Experimenter 1		Oh are those eyes or a nose? (4)	
	Jack		Ohh	
07:05	Experimenter 1		Where's his nose go? (5) Oh good job	
	Jack		Yea it goes right there (3) So so (.) and this one (.) this goes right (.) right here (4) And where's this goes?	Question directed at Experimenter 2
	Experimenter 2		Where does that one go? (.) Hmm (1) I think it goes right over here (3) There we go	
07:36	Experimenter 1		Good job (3)	
	Jack		Now where this piece goes?	
	Experimenter 2		Do I know where that piece goes? Hmm (2) So close I think it goes over here though (3) Oh good	

	Jack		Do you know where this piece goes?	
	Experimenter 2		Hmm (.) I think it's right here	
08:01	Jack		Yea (.) yea	
	Experimenter 2		Oops turn it around (4) There we go	
	Jack		Yea yea I don't have *unintelligible*	
	Experimenter 2		Are you going to put those pieces in for me? (5)	
	Jack		And these are all for my puzzle (6) Hey hey do you have these?	moves pieces to other side of puzzle
	Experimenter 1		You can have these pieces	
08:34	Jack		Okay (2) No?	
	Experimenter 1		You can have all the pieces	
	Jack		What's that noise?	
	Experimenter 1		I don't know	
	Jack		There is maybe (1) maybe maybe maybe (.) maybe it's that (.) maybe it's that window	
	Experimenter 1		Maybe (.) I don't know (8)	
09:01	Jack		Yea I will share my pieces	
	Experimenter 1		You're going to share your pieces?	
	Jack		Yes (2) Yes	
	Experimenter 2		You're really good at putting them in though	
	Jack		Yea but I will share my pieces	
	Experimenter 2		Ohh thank you	
	Jack		And these ones are for me	
	Experimenter 1		Oh those are for you?	
	Jack		Yes	
	Experimenter 1		So can you put them in?	
	Jack		Well can we (.) Where does this one go?	Question directed at Experimenter 2
	Experimenter 2		Where does that one go? (.) Hmm (1) I think it goes over here (2) Hmm maybe over here (5)	
	Jack		No	
09:38	Experimenter 2		Uh oh can we turn it? (2) I think it goes there (2) Ah there we go (2)	
	Jack		Yea but where this one go?	
	Experimenter 2		Ooh hmm (2) I think that one's over here (2) You think so? (3)	
	Experimenter 1		Good job (3)	
	Jack		Now where this one go?	
	Experimenter 2		Where does that one go? I can't see it when you're hiding it from me (2) I can't see what it is to see where it goes (.) Ohh that piece (.) That piece is tricky (.) I think it goes here let me see (1) Can I see it? (.) Oh yes of course I think that one goes right here (5) Good job	
10:31	Jack		Where this one go?	
	Experimenter 2		I don't know where do you think? (3) Oh so close (1) There you go	
	Jack		Where this one go? Hm	
	Experimenter 2		What colors is it?	
	Jack		It's orange	
	Experimenter 2		Orange (.) It's a bright orange piece all over	
	Jack		A little white here	
	Experimenter 2		Oh okay	
	Jack		Do you got this one for your house?	Directed at

				Experimenter 2
	Experimenter 2		Oh I remember where that one goes (.) That one goes right over here (9) Yay	
11:19	Jack		What's that noise?	
	Experimenter 2		I don't know	
	Jack		Where this one go?	
	Experimenter 2		Hmm I think it does go there actually I think you're right	
	Jack		Where this one go?	
	Experimenter 2		I think it goes right here (4) Ah no I think it goes right here (6)	
	Jack		Yea but there are a couple more pieces	
	Experimenter 2		There are	
	Jack		One two three four five six	
	Experimenter 2		Would you help me put these in too?	
11:57	Jack		One two and three	
	Experimenter 1		Are you going to do those or do you want Grace to do them?	
	Jack		I want Grace to do them	
	Experimenter 1		You want me to do them?	
	Jack		Yea	
	Experimenter 1		Well you can go back to your classroom now and she'll do them later (.) Is that okay?	
	Jack		Yea but you can put these in there	
	Experimenter 2		Hmm?	
	Jack		You can put these in there (.) all of these so so so (3) you have to put them there	
	Experimenter 2		Of course and I'll put them there once I finish taking a break	
	Jack		Yea and I put in those and I put in those	
	Experimenter 2		You did that was great	

Adam, 3 years; 8 months
*completed puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:09	Experimenter 1		Do you remember Grace? (1) Yea? (2) Did you know that she likes to do puzzles? (.) She does them all the time so she was working on this one but right now she's taking a break so you think we can do it? (10) Do you know what this puzzle is? (1) What is it?	Adam nods to answer questions
	Adam		A dog puzzle	
00:35	Experimenter 1		A dog puzzle (.) Good job that's right (2) Have you done it before? (1) You have done it?	
	Adam		I have one of these at my house	
	Experimenter 1		Oh you have it at your house? (.) So do you know where all the pieces go?	
	Adam		Mmhmm	
	Experimenter 1		Yea? (.) Can you show me? (6)	
	Adam		Where does this one go?	
	Experimenter 1		Where does that one go? (.) I don't know I've never done this one before (.) Maybe it goes here (1) I don't know (27) Grace does this puzzle everyday (4) Do you think she knows where the pieces go? (35)	

02:08	Adam		I think I found it	
	Experimenter 1		You think you found it?	
	Adam		Mmhmm	
	Experimenter 1		Good job you did find it (3)	
	Adam		I told you it goes right there	
	Experimenter 1		Yea you did tell me	
	Adam		It was on the bottom part	
	Experimenter 1		Mmhmm	
	Adam		Where does this one go?	
	Experimenter 1		I don't know	
	Adam		Right here? (1) Right here?	
	Experimenter 1		Maybe here?	
	Adam		Oh I think it goes right here	
	Experimenter 1		Oh does it? Maybe not (.) I bet you're close though (21) Good job (99) Is this puzzle hard? (1) Yea? (1) I think it would be hard for me too (.) It's not hard for Grace (.) She does it every day	
	Experimenter 2		I do (5)	
04:45	Adam		I don't know how to do this one	
	Experimenter 1		You don't know how to do it? (.) Yea me neither	
	Adam		It's really hard	
	Experimenter 1		Yea I think so too (4) Do you think Grace knows where the pieces go? (.) Yea (.) I bet she does (4)	
	Adam		I know where this one goes	
	Experimenter 1		Where does it go?	
	Adam		Right (15)	
	Experimenter 1		Good job	
05:25	Adam		I told you it was going right there	
	Experimenter 1		Mmhmm (6)	
	Adam		I'm almost finish the puzzle	
	Experimenter 1		Yea	
	Adam		And this is a really hard puzzle	
	Experimenter 1		It is really hard (.) I think so	
	Adam		It's hard (9) Where does this one go?	
	Experimenter 1		I don't know (.) Does it go right here?	
	Adam		I think it does	
	Experimenter 1		You think it does?	
	Adam		Mmhmm	
06:06	Experimenter 1		Oh maybe not (2) I'm not really sure (1) Grace might know (3)	
	Adam		Grace?	
	Experimenter 1		That's Grace (2) Yea? She might know (3)	Adam nods head
	Adam		Where does this piece go Grace?	
	Experimenter 2		Hmm I think it goes right here (2) There we go	
	Experimenter 1		Good job she knew	
	Adam		Where does this one go? Or maybe it goes right=	
	Experimenter 2		=Almost (.) I think it goes up in that corner (13)	
06:53	Adam		But where does it go? (26) I need a Kleenex	
	Experimenter 1		You need a Kleenex? Oh there's one right there (79) Do you know where it goes?	
08:41	Adam		No	
	Experimenter 1		No?	
	Adam		It's really hard	
	Experimenter 1		It is hard (26) Did Grace tell you where that one goes? (3) I thought she said it went here (2) but I	

			don't know (5)	
09:25	Adam		I did that one already	
	Experimenter 1		Oh that is good (3)	
	Adam		Where do these go? (8) Hey I found it (4)	
	Experimenter 2		I don't think it goes there (.) I think it goes over here	
	Adam		Here?	
	Experimenter 2		I think so (1) There we go (1) You got it	
09:54	Adam		Where does this one go? (.) I think it goes right here	
	Experimenter 2		Hmm ohh I don't think so oh I think you found it (6) What's the puppy sitting in? (5)	
	Adam		Where does this one go Grace?	
	Experimenter 2		Mm I think it goes over there	
	Adam		Right here?	
	Experimenter 2		Mmhmm (31) Oh close	
10:52	Adam		Grace where does this one go?	
	Experimenter 2		I think it goes here (5) No I think it goes there you just didn't turn it around enough (4) There you go	
	Adam		And this is the last piece	
	Experimenter 2		Oh you still have a whole bunch over there (3)	
	Experimenter 1		Do you think you'll be able to finish them? (2) Yea?	
	Adam		I bet I finish them (4) Where does this one go (.) Grace?	
	Experimenter 2		I think that goes up here	
	Experimenter 1		Good job	
11:39	Adam		There is black in his eyes	
	Experimenter 2		Mmhmm (.) You got that one all by yourself	
	Adam		And there are more eyes right here	
	Experimenter 1		More eyes? (.) Or is that his nose? (9)	
	Adam		Where does this one go Grace?	
	Experimenter 2		You had it it goes right there	
	Adam		Right here?	
12:06	Experimenter 2		Nope right here	
	Adam		Right here?	
	Experimenter 2		Mmhmm (5)	
	Adam		I told you it was his nose	
	Experimenter 1		Yea (4)	
	Adam		I know where this one goes	
	Experimenter 1		Where?	
	Adam		Right (.) here (2) It goes right here because I found it	
	Experimenter 2		Yep you did (5)	
12:35	Adam		Where does this one go (.) Grace?	
	Experimenter 2		You had it	
	Adam		Right here?	
	Experimenter 2		Mmhmm	
	Adam		That was funny (2) That silly piece it tricked me (3) Where does this one go?	
	Experimenter 2		I think right there (3) You can turn it a little bit (4) There we go (5)	
13:09	Adam		Where does this one go (.) Grace?	
	Experimenter 2		I think it's right here (3)	

	Adam		Where does this one go?	
	Experimenter 2		Umm I think right up here	
	Adam		Right here?	
	Experimenter 2		I think so	
	Adam		I think so	
	Experimenter 2		I think if you keep turning it then it will fit (12) There you go just a couple more pieces (36)	
	Adam		Where does this one go?	
14:18	Experimenter 2		You had it right it goes right there	
	Adam		There?	
	Experimenter 2		Uh huh (1) There we go	
	Adam		One more to go	
	Experimenter 1		How many more?	
	Adam		Where does this one go?	
	Experimenter 2		Right here with the puppy dog fur (5)	
	Adam		I (.) can't (.) reach	
	Experimenter 2		There we go (7)	
	Experimenter 1		How many more pieces? (4)	
	Adam		This has a puppy one (2) This has a sharp point thing under it (2) I almost finished the puzzle	
	Experimenter 1		Yea (10)	
	Adam		I told you it wasn't hard	
	Experimenter 2		Great job	
	Experimenter 1		No it wasn't hard (2) Good job	

Girls

Allison, 3 years; 9 months
*did not complete puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:15	Experimenter 1		Do you remember Grace? (.) Well she really likes to do puzzles (.) She does them all the time (.) She was working on this puzzle but now I think she's taking a break (.) Do you think we can do it? (3) Do you think we can do this puzzle? (30) Do you like to do puzzles?	Allison nods in response to working on puzzle
01:02	Allison		Yes (8) Where does this go?	Very quiet, mumbled, reaches for puzzle pieces
	Experimenter 1		Where does it go? Hmm (1) I don't know (.) Does it go here?	
	Allison		Or maybe it goes here	
	Experimenter 1		Oh maybe (3) Oh I think so (.) Good job (.) I'm not very good at puzzles	Allison places puzzle piece without assistance
	Allison		Hm (.) I think this one goes (12)	Sighs, moves makes thinking facial expressions
01:44	Experimenter 1		Oh good job (5) Have you ever done this puzzle before?	
	Allison		Nuh uh no (.) I don't have any of these puzzles in my classroom or at my house=	
	Experimenter 1		=Oh you've never done a puzzle before?	
	Allison		Nuh uh	
	Experimenter 1		No? Wow	

	Allison		I don't have any puzzles at my house	
	Experimenter 1		Oh you don't?=	
	Allison		=But except I have a coconut puzzle at my house	
	Experimenter 1		A coconut puzzle?	
02:09	Allison		It's a coconut tree puzzle (.) it's like in the coconut book	Working on puzzle while speaking
	Experimenter 1		You have a book about coconuts?	
	Allison		I mean puzzles	
	Experimenter 1		I see	
	Allison		Hm (.) I wonder where this is going	
	Experimenter 1		Hm (.) I wonder	
02:32	Allison		Mm (.) I think it's going right (1) I think (.) where this go? (3) I think it probably doesn't go there	
	Experimenter 1		No I don't think it goes there	
	Allison		Let's try that (.) Hm (7)	
	Experimenter 1		Grace has done this puzzle before	
	Experimenter 2		I have (.) I do it a lot	
02:58	Allison		What was that?	Referring to outside noise
	Experimenter 1		I don't know	
	Allison		I don't know what that is either (1) Let's try this (5) Hm (.) I think this goes (.) um maybe it goes here? (7) Hm (31)	
03:58	Experimenter 1		Good job you got it	
	Allison		Where does this one go?	
	Experimenter 1		I don't know (.) Here?	
	Allison		I think it goes right there (.) No=	
	Experimenter 1		=No maybe not	
04:19	Allison		I think we're trying to figure this puzzle out	
	Experimenter 1		Yea we are	
	Allison		What's this that goes there?	
	Experimenter 1		Does it? (2) It went (.) Perfect	
	Allison		I think this one goes here	
	Experimenter 1		Oh yes	
	Allison		This one (.) I think it goes hmm (8) This one's hard (1) Maybe that goes here	
	Experimenter 1		Maybe	
	Allison		No	
	Experimenter 1		No? No it doesn't?	
04:55	Allison		Let's try this (.) Hm (.) Does this one goes (.) Hm	
	Experimenter 1		Does it go here?	
	Allison		No	
	Experimenter 1		Does it go here?	
	Allison		Hm (.) I'm trying to figure it out (5) I only have one piece (.) I'm trying to figure this out (5) A puppy in a garden	
05:27	Experimenter 1		Yea	
	Allison		A puppy in a pot	
	Experimenter 1		That's funny	
	Allison		Funny funny	
	Experimenter 1		Is that what this is? (3) A puppy? Do you ever put puppies in pots?	
	Allison		No I don't put my puppy in my pot	
	Experimenter 1		No you don't?	

	Allison		Because my mommy and daddy don't let me do it	
	Experimenter 1		No (.) But would you want to?	
	Allison		I don't want to (1) It's not my favorite (.) I like keeping my puppy out (7)	
05:57	Experimenter 1		What's your puppy's name?	
	Allison		Jingles (2) Hm (.) I'm trying to get this pot filled and I think this one goes (2) nope I figured that one (.) Hm (.) (120)	
08:12	Experimenter 1		Is this puzzle hard? (1) Yea? (10) Does that go here? (3) No (10) Do you think Grace knows how to do it? (2) Yea? You think she does? (1) I bet she does (.) She does it a lot (43) Does that go here? (3) No (.) Hm (22) Well what should we do? (2) It's really hard (.) isn't it? (1) What do you think would help us?	Allison nods to respond to questions, taps pieces on table
10:12	Allison		Um I want to go back to the playground	
	Experimenter 1		Okay (.) That's okay (.) Thank you for working on it though (.) You did a good job	

Caroline, 3 years; 11 months
*finished but recording cut off

00:00	**Name**		**Dialogue**	**Comments**
00:21	Experimenter 1		Do you remember Grace? From the puppets? (2) Do you remember her?	
	Caroline		No	
	Experimenter 1		No? That's okay (.) But she really likes to do puzzles=	
	Experimenter 2		=I do=	
	Experimenter 1		=She does them all the time (.) She was working on this one but now she's going to take a break (.) Do you think we could do it?	
	Caroline		Yea	
	Experimenter 1		Yes? Let's try (21)	
01:01	Caroline		Where does this one go?	
	Experimenter 1		Where does it go? Hm (3) Does it go right here?	
	Caroline		No (1) It has brown and kind of white on it	
	Experimenter 1		I've never done this puzzle before (.) I'm not really sure (.) Grace has done it	Caroline looks at Experimenter 2
	Experimenter 2		I have done it before (3) I remember where a lot of the pieces go too (4)	
	Experimenter 1		Do you think she knows where that piece goes?	
	Caroline		*Mutters something*	Looks at Experimenter 2
	Experimenter 2		What? (2)	
	Caroline		Where does this piece go?	
	Experimenter 2		Hm (.) I think it goes right here (1) Perfect (21)	Caroline laughs and moves around in seat happily
02:03	Caroline		Where does this piece go?	Directs question to Experimenter 2, very quiet
	Experimenter 2		Hm (.) Let me see (4) I think it goes right over here (6) There you go	Caroline looks for approval when placing piece

	Experimenter 1		Good job (5)	
	Caroline		Where does this piece go?	Directs question to Experimenter 1
	Experimenter 1		Good job (5)	Caroline places piece without help
02:35	Caroline		This one?	Directs question to Experimenter 1
	Experimenter 1		Does it go right here?	
	Caroline		No?	Questioned her response
	Experimenter 1		No (8) Does it goes here?	
	Caroline		No? (4) How about this one?	Questioned her response
	Experimenter 1		That one? Does it goes here?	
	Caroline		No?	
	Experimenter 1		Up here?	
03:01	Caroline		No	
	Experimenter 1		Hm (.) I don't know (17)	
	Caroline		This one goes here	
	Experimenter 1		Does that go here? (15)	
03:53	Caroline		It looks like a puppy one	
	Experimenter 1		Oh it does look like a one (.) That's true (.) How did you know that? (16)	
	Caroline		Hm (64)	Shakes head and makes facial expressions, looks to Experimenter 2 for approval
05:22	Experimenter 1		Is this one hard?	
	Caroline		No it isn't (4) How about this one?	Holds piece between two experimenters
	Experimenter 1		Where does that one go?=	
	Caroline		=I don't know=	
	Experimenter 1		=I don't know either	
	Caroline		This one (14)	
	Experimenter 1		Good job (3) You got another one (6)	Caroline places puzzle pieces, smiles excitedly after
	Caroline		No	Places piece incorrectly
	Experimenter 1		No that doesn't go there	
	Caroline		Goes there? (5) Let's look at these ones (29)	Question almost whispered
06:51	Caroline		Where does this one go?	Directs question at Experimenter 2
	Experimenter 2		Let's see here (.) Hm	
	Caroline		I see brown=	
	Experimenter 2		=I think it goes right here (.) There you go	Caroline squirms in seat when piece is placed
	Caroline		This one=	
	Experimenter 1		=Grace is better than I am	
	Caroline		Where does this one go?	Directed toward

				Experimenter 2, mumbled
	Experimenter 2		Where does that one go? (.) I think it goes right in here somewhere (7) Yay (.) Good job (5)	
07:28	Experimenter 1		Good job (1) I didn't know where that one went (25)	Caroline places a piece
	Caroline		Hm (4) What's this? (.) What where (.) What's that one go?	Caroline points to an open place
08:03	Experimenter 1		What's that one?	
	Caroline		Yea	
	Experimenter 1		I don't know (4) Do you think Grace knows? (22)	Caroline looks at experimenter 2 but does not respond
	Caroline		Um	
	Experimenter 1		Good job	Caroline places puzzle piece
08:30	Caroline		*Mutters something* (9) I can't do this one (.) I didn't fit this one so I took it out and it moved kind of moved a little	
	Experimenter 1		That's okay (30)	
09:19	Caroline		I can't do this one	Muttered
	Experimenter 1		You can't do that one? What should we do?	Caroline looks at Experimenter 2
	Caroline		Will you where this one goes?	Muttered
	Experimenter 2		Let's see (5) I think it goes=	
	Caroline		=it goes here	Caroline tries to place in incorrect spot
	Experimenter 2		I think I remember where this one goes (1) I think it goes right in here (2) oh good job (30)	Caroline laughs
10:17	Experimenter 1		What are you doing?	Caroline looks around and adjusts pieces
	Caroline		Putting the pieces over here	
	Experimenter 1		Why?	
	Caroline		I want to (7) Where does this one go?	Question directed at Experimenter 1
	Experimenter 1		Hm (.) What does it look like?	
	Caroline		The face	
	Experimenter 1		The face? Hm I don't know (.) Where's the face on there? Is that the face?	
	Caroline		No (1) That's the face	
	Experimenter 1		Oh there's the face	
10:45	Caroline		It's a hamster face	
	Experimenter 1		A hamster face?=	
	Caroline		=Yea	
	Experimenter 1		I don't know	
	Caroline		It got mixed up in here	
	Experimenter 1		You don't think it's the puppy's face?	
	Caroline		No	
	Experimenter 1		No?	
	Caroline		This one has little eye balls like a hamster	
	Experimenter 1		I see=	
	Caroline		=A hamster puzzle	
	Experimenter 2		I don't know (.) I think that one might have gone	

			in this puzzle too (7)	
11:17	Experimenter 1		Do you think that's a nose? (5)	
	Caroline		It's a puppy's nose	Laughs
	Experimenter 1		Oh yea	Chuckles
	Caroline		I was silly	
	Experimenter 1		Yes you were silly that's okay	
11:44	Caroline		Hm	
	Experimenter 1		Good job (5)	Caroline places piece
	Caroline		Where does this one go? (5) Oh it's looking for its place	Moves piece around puzzle
	Experimenter 1		Where's its place? (2) I don't know (4) Is that it's place?	
	Caroline		Maybe (5)	
	Experimenter 1		You found its place (.) Good job	
	Caroline		That's mine	Makes thinking face

Brianna, 5 years; 1 month
*completed puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:08	Experimenter 1		Do you remember Miss Grace? (2) Yea? From the puppet show (2) Well do you know that she really likes to do puzzles? (.) She does them all the time (1) So this puzzle (.) She was working on it (.) She does it every day but now she's gonna take a break so do you think we could do it? (33)	
00:50	Brianna		*Makes noise*	
	Experimenter 1		Do you think it goes right there?	
	Brianna		*Makes noise* (31)	
01:31	Experimenter 1		Do you know what this puzzle is?	
	Brianna		Mmhmm	
	Experimenter 1		What is it?	
	Brianna		Puppy=	
	Experimenter 1		=A puppy? (.) That's right (1) How'd you know that?	
	Brianna		I just know what they're called	
	Experimenter 1		Yea (5)	
	Brianna		I found some of its foot	
	Experimenter 1		Yea	
	Brianna		But where does this one go?	Question not directed at anyone
	Experimenter 1		I don't know (.) Do you think it goes here? (3) Hm maybe not I've never done this puzzle before (.) so I don't know (3) But Grace does it a lot (5)	
02:05	Brianna		I need to find this piece	
	Experimenter 1		You need to find that piece?	
	Brianna		Hm (.) Hm (.) Not quite (9) I'll work on this side	Places piece
	Experimenter 1		Good job (.) You're good at the side pieces (15)	
02:43	Brianna		I wonder where this one goes	
	Experimenter 1		I don't know (2) Do you think it goes there? (1) Maybe I'm not sure	
	Brianna		Doesn't fit	Shrugs shoulders
	Experimenter 1		Doesn't fit?	
	Brianna		No (2) I'm sure I could find a piece that goes	

			right there (7) This is a puppy's nose	
	Experimenter 1		It's a puppy nose (1) Where does it go? (3)	
03:14	Brianna		There's its nose	
	Experimenter 1		Oh good	
	Brianna		There's a one last piece of his eye (3) Hm almost got it (13)	
	Experimenter 1		Do you do puzzles a lot?	
	Brianna		Yea	
	Experimenter 1		You do them at home?	
	Brianna		Mmhmm	
	Experimenter 1		You're very good at them (4)	
	Brianna		I have two little (.) I have a little (.) um I have boxes of tangled and cars on it and the tangled puzzle is really little	
03:58	Experimenter 1		Oh really? Is that easy because it's little?	
	Brianna		Yea it's really hard	
	Experimenter 1		Oh it's really hard? (1) Are the pieces really little?	
	Brianna		Yea=	
	Experimenter 1		=Oh I see (11)	
	Brianna		Doesn't fit (5) Maybe if I try another side piece (3) This one goes (3)	
	Experimenter 1		Good job (1) You did all the side pieces	
04:28	Brianna		There's a couple more left	
	Experimenter 1		Mmhmm (.) Do you think you can do them?	
	Brianna		Mmhmm (77) I have a couple more pieces left	Places 1 piece
05:55	Experimenter 1		Yea (.) You do=	
	Brianna		=I think this one goes (2) here	
	Experimenter 1		Oh you're really fast at it (16)	
	Brianna		This is the wrong kind (2)	
	Experimenter 1		It's what?	
	Brianna		This one is sometimes really hard to do	
06:23	Experimenter 1		Yea (.) Why?	
	Brianna		Oh sometimes it is and I can't really do my tangled puzzle	
	Experimenter 1		Oh (.) No (.) That's not good	
	Brianna		It's really hard to work on	
	Experimenter 1		But do you like to do it?	
	Brianna		Mmhmm (.) It's very pretty (21) I'm trying to figure out what to do (.) where this one goes (3)	
07:04	Experimenter 1		I don't know	
	Brianna		Maybe (4)	
	Experimenter 1		Do you think Grace knows? (5) Maybe? (.) She's done it before (.) She does it a lot	Brianna shrugs shoulders
	Experimenter 2		Yep (34)	
07:53	Brianna		I'm looking around	
	Experimenter 1		You what?	
	Brianna		I'm trying to figure out which one goes (1) *makes noise* (.) Hm maybe it fits somewhere (4) *laughs* It doesn't go there (6) It goes there	
08:17	Experimenter 1		There you go (.) Good job (16)	
	Brianna		This one? (2) Yea where does it go?	
	Experimenter 1		I don't know (.) Maybe here?	
	Brianna		It doesn't fit	
	Experimenter 1		Oh no not there (2) Hm (1) I'm not good at	

			puzzles (.) I don't know (.) I guess there's some hair there but maybe here	
08:55	Brianna		That one doesn't fit there	
	Experimenter 1		No	
	Brianna		Let's find this one goes (3) This one (5)	
	Experimenter 1		Oh good job	
	Brianna		Oh yea (.) Hm (.) I've seen this one before	
	Experimenter 1		Yea?	
	Brianna		It goes right there=	
	Experimenter 1		=Oh perfect	
09:25	Brianna		I'm still looking for some more (.) Here's a little bit of hair (6) It goes right there	
	Experimenter 1		Yea it does	
	Brianna		We still have a little bit left	
	Experimenter 1		Is that the hard piece?	
	Brianna		Yea	
	Experimenter 1		I wish I knew where it goes (25)	
09:57	Brianna		I think this one (1) I don't know	
	Experimenter 1		I don't know either	
	Brianna		I know where this one goes (.) It goes right here	
	Experimenter 1		Oh yea that does go there (6)	
	Brianna		This one goes right here (.) Hmm (.) This one goes (1) Umm (3) There	Almost said under her breath
	Experimenter 1		Good job	
	Brianna		I don't (.) Hm (42)	
11:07	Experimenter 1		Got it (1) Good job (.) That was a hard one (10)	
	Brianna		Two more left	
	Experimenter 1		Yep (14) You did it (.) Good job (1) Was it hard?	
	Brianna		Mmhmm	
	Experimenter 1		But you did it (1) Awesome (.) Well thanks for doing it with us	

Amanda, 4 years; 8 months
*did not finish puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:09	Experimenter 1		Do you remember Grace? (.) Well she really likes to do puzzles (.) She does them all the time (.) She was working on this puzzle but now I think she's taking a break (.) So you think we can work on this puzzle? (1) Yea? (.) Okay (20) Do you know what the puzzle is? (4) Do you know what this picture is?	Amanda is reserved, nods to answer questions
00:50	Amanda		A lion	Says answer confidently
	Experimenter 1		It's a lion? (3) Maybe (.) I don't know I've never done this one before (2) Grace does it all the time=	
	Experimenter 2		=I do=	
	Experimenter 1		She does it every day (3) Do you think we can do it?	Amanda has not touched puzzle
	Amanda		Mmhmm (1) We watched a show that um um um (1) We watched a show that hadded um people that hadded bunny costumes on	
	Experimenter 1		Oh really? (.) At school today?	
	Amanda		No it was the hungry caterpillar	

	Experimenter 1		Ohhh I liked that (1) It's a book too (5) How are we going to do the puzzle? (3)	Amanda looks at both experimenters
01:38	Amanda		You know big puzzles are kind of hard to do	
	Experimenter 1		Yea they are hard to do	
	Amanda		But I can't do hard puzzles cuz my mommy helps me do hard puzzles but I can't	
	Experimenter 1		Is this a hard puzzle? (.) This one? (9)	
	Amanda		I think it is a hard puzzle=	
	Experimenter 1		=You think it is a hard puzzle? So can you do it?	
	Amanda		No	
	Experimenter 1		No? (1) Do you think Grace knows how to do it?	
02:10	Experimenter 2		Mmhmm	Amanda looks at Experimenter 2 and slightly nods
	Experimenter 1		Yea? (2) So what should we do? (5) Do you want to try to do it?	
	Amanda		No	Shrugs shoulders, talks more quietly
	Experimenter 1		No? (.) You don't want to try? (1) Do you think someone could help you?	Amanda looks away to avoid eye contact
	Amanda		Mmhmm	Softly
	Experimenter 1		Do you think Grace could help you? (1) Yea? (2) Do you want to ask her? (4) Yea? (3) What do you say? (10) You don't know? (3) Do you want to try to do it with Grace or you want to go back outside? (5) It's okay if you want to go back outside you don't have to do it (16) Let's go back outside (.) Is that good? (1) Yea? (.) Okay	Amanda nods to wanting to ask but shrugs to what to say; looks around to avoid eye contact, especially in her lap

Diana, 4 years; 6 months
*completed puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:09	Experimenter 1		Do you remember Grace? (.) Well she really likes to do puzzles (.) She does them all the time (.) She was working on this puzzle but now I think she's taking a break (.) So you think we can work on this?	
00:31	Diana		We need to take it apart	
	Experimenter 1		We need to take it apart? (.) But how (.) We gotta finish it why would we take it apart?=	
	Experimenter 2		=I started on it but I just needed some help finishing it	
	Experimenter 1		Yea	
	Diana		Uh uh	Places piece
	Experimenter 1		Good job you already got one piece	
	Diana		Now where does this one go?	Looking at puzzle when asking
	Experimenter 1		I don't know (.) Does it go right here?	
	Diana		Oh okay (.) I'll try (2) It doesn't fit there (1) Maybe (.) Oh I see (.) Maybe it will fit here (.) It doesn't	
	Experimenter 1		I'm not very good at this puzzle (.) I've never done it before	

	Diana		I (.) I'm not even good at puh (.) I not even good at puzzles either	
	Experimenter 1		Oh you're not?	
	Diana		Look it (.) Look	
	Experimenter 1		Grace is really good at puzzles though	
	Diana		Well I (.) I not good at doing them as Grace (1) She's the best (.) She's the best puzzlerer	
	Experimenter 1		Yea she is the best puzzler	
01:27	Diana		And here where is this puzzle go here? (1) Where does this go? (.) I think it goes somewhere in the center (1) There	Places piece
	Experimenter 1		Good job	
	Diana		Now let's try this one (.) Good it's a corner piece (.) There corner piece	
	Experimenter 1		Perfect	
	Diana		And uh this one fits here (1) No (.) Huh (15) Uh uh (1) Does it fit there? (.) Hey I'm trying this one (3) What is what hey this one goes here	Talking to herself
02:14	Experimenter 1		Maybe it goes there	
	Diana		No it doesn't fit	Hits puzzle to get piece in
	Experimenter 1		Oh good job	
	Diana		It's a good fit	
	Experimenter 1		It's a good fit yes (3)	
	Diana		Hm (4) Okay do (2) Hm (7) Where does th (.) Where hey does this thi this one heya which pieces looks like this one?	
	Experimenter 1		I don't know I've never done this before (1) Do you think Grace knows? (1) She does this puzzle everyday	
	Experimenter 2		I do	
	Diana		Hey hey can you (.) I did these others so can you please finish this puzzle?	
	Experimenter 2		You want me to finish it?	
	Diana		Yea and I (1) Oh I found where this piece goes (.) It goes right there (2) Um I think it will fit (2) There	
03:13	Experimenter 1		Good job	
	Diana		Now what piece goes right there? (8) Oh there (2) Ooh umm (1) That fits (3) Where does thi this one go? (2) Oh (3) Where does this one go?	Places piece
03:43	Experimenter 1		I don't know	
	Diana		It has a thing on it	
	Experimenter 1		Does it go here?	
	Diana		No=	
	Experimenter 1		=No (3)	
	Diana		Where do you see a part just like this one? (.) Wait I think I see (.) I think hey we'll just hey ooh it fits	Places piece
	Experimenter 1		It does	
	Diana		Where does this go? (3) Where do you think this goes? (.) Oh it goes right here (2) There (1) We did it (.) I'm trying to find all the edges first	Places piece
	Experimenter 1		Oh that's smart (3)	
	Diana		Does it look like we did all the edges?	

	Experimenter 1		I think so	
	Diana		Whoa I think so (.) Whoa we did finish all the edges	
	Experimenter 1		Mmhmm	
04:35	Diana		Mmm	
	Experimenter 1		We did	
	Diana		Hmmm (2) Uh (2) Hmm (3) Ooh (2) Where does this one go?	Does not look up from puzzle when asking
	Experimenter 1		I don't know	
	Diana		Look it has a little bit of doggy part on it	
	Experimenter 1		Yea	
	Diana		So where does this go? (1) Hey where does this go?	Looks up on second question
	Experimenter 1		I don't know	
	Diana		I think I (.) I think I (.) I know (.) I think I need to find (.) I I I (.) I think I need to do real good (.) I think I can do this part	
	Experimenter 1		You don't think you're very good at this puzzle?	
	Diana		I think I'm a little bit good=	
05:22	Experimenter 1		=I think you're very good	
	Diana		Oh I think I'm just a little bit (.) Well (2) Well I need to think about where those other pieces go	
	Experimenter 1		Yea (5)	
	Diana		Uh uh (1) Hey what (.) Hey (.) Look at this number	
	Experimenter 1		Oh there's a number on there	
	Diana		So where does this go?	
	Experimenter 1		I don't know (2) Does it go here?	
	Diana		No it doesn't look like it because it has one of those little things you know	
06:04	Experimenter 1		Oh I see (.) Well there's some green right there	
	Diana		Oh (.) But look it has the little light there	
	Experimenter 1		Ohh	
	Diana		I think it goes right here (.) There (.) Hey we did it	
	Experimenter 1		Good job (6)	
	Diana		Hmm (14) Where does this go? (.) Hmm this one (.) There (.) Perfect (4) Where do you think this one goes? Oh I think it goes right there	
	Experimenter 1		Oh yea maybe (4)	
07:02	Diana		Hey I think this one goes right there (3) There (2) It has some few more holes (3) I need (.) I trying (.) Hey where does this one go? (.) Hm (2) Hey where does this one go? (1) Hey does anyone know where this one goes?	Last question directed at Experimenter 2
	Experimenter 2		Hmm	
	Diana		Look at what number is one it	
	Experimenter 2		Let me see=	
	Diana		=Here you go	
	Experimenter 2		I don't think the numbers have anything to do with it (1) We're going by the picture aren't we?	
07:34	Diana		But but we need to see the numbers to see how hard it is	
	Experimenter 2		Oh	

	Diana		Look at (.) Look at how hard it is	
	Experimenter 2		Oh okay (.) But I think to find out where it goes we need to look at the picture (.) I think it goes right over here	
	Diana		Oh	
	Experimenter 2		There we go	
	Diana		I did it with you	
	Experimenter 2		Yes you did	
	Diana		Look at all those extra lines	
	Experimenter 2		Mmhmm (5)	
	Diana		I think that's from the music teacher (4) Hm (2) There (.) Perfect (3) Where does this one go?	Looks around
08:16	Experimenter 2		Hmm (1) I think it goes right here	
	Diana		So we need to see how hard it is (1) Look how hard it is	
	Experimenter 2		Okay	
	Diana		Mm except I think it goes right here (2) Uh	
	Experimenter 2		Other way	
	Diana		Uh (.) uh (2) There	
	Experimenter 2		You did it (5)	
	Diana		You think I can finish this puzzle?	
	Experimenter 1		You don't think you can?	
	Diana		I think I can	
	Experimenter 1		Oh I know you can	
	Diana		Hmm (.) Where does this one go? (3) Because it's all grass (1) See?	
08:53	Experimenter 2		Yea it is (.) You're right I don't know what those numbers mean	
	Diana		It means that it's (.) it's (.) forty-six tall so that it goes right there (.) so this is right there (.) uh (.) I'm trying to fit it in here	
	Experimenter 2		Maybe try turning it around (.) There you go	
	Diana		Uh (.) Mm (.) There it fits (1) Now where does this one go?	Holds puzzle piece to Experimenter 2
	Experimenter 2		Hmm (.) The picture's really more helpful	
	Diana		Look (1) Look how big it is	
	Experimenter 2		I see	
	Diana		We need to find a spot that's big than this (1) Hm (.) I think it goes right there (2) Now where I need to turn it other way (1) There (3) Now what piece goes right there? (3) I think this one (7) This goes (.) Hmm (2) Look how tall it is	
09:59	Experimenter 2		Mmhmm I see	
	Diana		What tall how tall is it?	
	Expeirmenter 2		I don't know I don't know what that means	
	Diana		What tall is this?	To Experimenter 1
	Experimenter 1		I don't know (1) I don't think that means anything	
	Diana		Does (.) It says how tall it is=	
	Experimenter 1		=Oh I see (6)	
	Diana		Umm (1) Err (1) This puzzle is hard to do when when I (.) when I'm trying to do it	
	Experimenter 1		Oh it's hard?	
	Diana		Yea	
	Experimenter 1		You're good at it though	
	Diana		Mm	

10:30	Experimenter 1		Do you do puzzles a lot?	
	Diana		Yea (3) Hm (2) What does this one go? (1) It has a number on it so what's (.) how (.) where does it go?	
	Experimenter 1		I don't know what the numbers mean I don't think they mean anything	
	Diana		Yes it does it says how tall it is	
	Experimenter 1		Maybe it goes right here	
	Diana		Oh okay (1) It (.) Does it have any of that (.) of that green on it?	
	Experimenter 1		Oh there's no green on it=	
	Diana		=See (1) see	
	Experimenter 2		So the picture is really a lot more helpful (.) I think it goes here	
11:04	Diana		Okay (5) Goes it (.) I think it goes right (2) Um	
	Experimenter 2		You didn't turn it around silly	
	Diana		Uh (5) there perfect	
	Experimenter 2		There we go	
	Diana		Now (2) Not any (1) There's four more parts to finish	
	Experimenter 2		Mmhmm	
	Diana		So where (.) where do these go? (1) On here (1) There perfect (2) Uhh hmm (1) There (4) This is the last piece (3) There I finished it	
	Experimenter 1		Good job	
	Diana		I finished it	
	Experimenter 1		Was it fun?	
	Diana		Look it I finished it	

Kelly, 4 years; 8 months
*completed puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:10	Experimenter 1		Do you remember Miss Grace?	
	Kelly		Mmhmm	
	Experimenter 1		Yea	
	Experimenter 2		Oh good	
	Experimenter 1		Did you know that Grace really likes to do puzzles? (2) She does them all the time	
	Experimenter 2		Albert and I do them together sometimes	
	Experimenter 1		Yea but right now she's going to take a break so you think we can work on this one?	
	Kelly		Mmhmm	
	Experimenter 1		Oh good	
00:36	Kelly		My Hannah goes to a school and it's called Grace Lutheran	
	Experimenter 1		Oh yea? What are you doing?	
	Kelly		I don't know	
	Experimenter 1		You taking it apart?	
	Kelly		*Laughs*	
	Experimenter 1		Why are you taking it apart? We want to put it together	
	Kelly		*Laughs*	
	Experimenter 1		So silly (2) Yea put that one back (5)	
	Kelly		Mmm (3) hmm (4) hmm (3) maybe it goes right here	

01:10	Experimenter 1		Oh good job (16)	
	Kelly		I have a dog and her name is Piper	
	Experimenter 1		Oh like your school (2) named Piper Center	
	Kelly		Yea	
	Experimenter 1		Does your dog look like this dog?	
	Kelly		No she has a lot of white on her and she has a little bit of brown	
	Experimenter 1		Ohh is she big?	
	Kelly		She isss (1) She's a little big but she's tiny (.) Now let's see (48) Hm maybe (2) goes (7)	
02:48	Experimenter 1		I've never done this puzzle before (2) have you?	
	Kelly		No	
	Experimenter 1		No? (2) Grace does it every day	
	Kelly		*Chuckles* (3) I have a Winnie the Pooh puzzle	
	Experimenter 1		Oh a Winnie the Pooh puzzle is it big?	
	Kelly		No	
	Experimenter 1		No (.) Is it hard?	
	Kelly		No (1) but it has bigger pieces (.) and I have a princess one and they're so tiny (.) They're really hard to put together that my daddy can't even do it	
03:19	Experimenter 1		Your daddy can't even do it? Wow that must be very hard	
	Kelly		Yea they're so tiny (1) Maybe when Josie gets bigger maybe me and her can do it together	
	Experimenter 1		Yea who's Josie?	
	Kelly		She's my baby sister	
	Experimenter 1		Ohh how old is she?	
	Kelly		I don't know (2) I'll ask my momma again (4) it's two months away	
03:48	Experimenter 1		Her birthday?	
	Kelly		Mmhmm (11)	
	Experimenter 1		Good job (61) Do you like to do puzzles?	
05:02	Kelly		Mmhmm	Nods head
	Experimenter 1		Yea (10)	
	Kelly		My momma says I'm really good at puzzles	
	Experimenter 1		Yea I think you are (1) better than I am	
	Kelly		*Laughs* (8)	
	Experimenter 1		Good job (.) You got another piece in (86) You got another one (22) Is this puzzle hard?	
07:18	Kelly		A little bit hard	
	Experimenter 1		Not too hard for you though?	
	Kelly		No (6)	
	Experimenter 2		Do you put your puppy in a pot like that puppy's in?	
	Kelly		No	
	Experimenter 2		You don't?	
	Kelly		No *laughs* (.) But Dorothy puts her dog in a basket	
	Experimenter 1		Really? (2) Do you put your dog in a basket?	
	Kelly		No	
	Experimenter 1		No	
07:48	Kelly		She (.) she growls at me when I do that	
	Experimenter 1		Oh your dog?	
	Kelly		Yea she doesn't like that	

	Experimenter 1		What's Dorothy's dog's name?	
	Kelly		Toto	
	Experimenter 1		Yep (12)	
08:12	Kelly		Hmm (7)	
	Experimenter 2		You finished it	
	Experimenter 1		Great job (.) Are you ready to go back out?	
	Kelly		I dress my puppy up with lipstick and clothes	
	Experimenter 1		Really? Does it like that?	
	Kelly		Mmhmm	
	Experimenter 1		He likes having lipstick	
	Kelly		*Laughs*	
	Experimenter 1		You're silly	
	Experimenter 2		Well thank you for coming and doing the puzzle	

Emma, 3 years; 4 months
*completed puzzle

00:00	**Name**		**Dialogue**	**Comments**
00:15	Experimenter 1		Grace really likes to do puzzles (.) She does them all the time (.) She was working on this one earlier but now she's taking a break so you think we can do it?	
	Emma		Yea (16) I don't know what piece goes to there	
00:43	Experimenter 1		Oh me neither I've never done this puzzle before (.) Grace does it everyday (1) Oh there that one goes there	
	Emma		Hmm	
	Experimenter 1		Good job	
	Emma		Hmm (6) Hmm (7) Hmm (5) Hmm	
01:17	Experimenter 1		Does that go there? (.) No	
	Emma		Hmm (5)	
	Experimenter 1		Grace does this puzzle everyday do you think she knows where the pieces go? (2) Yea? (5)	
	Emma		Hmm (24) Hmm (18)	
02:20	Experimenter 1		Do you know what this is? (2) What is it? (4) Do you know what the puzzle is going to be? (7) Is it a kitty kat?	
	Emma		No a dog	
	Experimenter 1		Oh a dog that's right	
	Emma		Hmm	
	Experimenter 2		What's he sitting on? (12)	
02:55	Experimenter 1		Is the dog in a box? (5)	
	Emma		Mm I can't figure out what it is but when I get it done I'll know	
	Experimenter 1		You're gonna what? (3) You're gonna get it done?	
	Emma		Mmhmm	
	Experimenter 1		Oh okay	
	Emma		Hmm (46)	
03:59	Experimenter 1		Good job (25) Is this puzzle hard? (5) I think it would be hard for me (13) Good job (51) Do you do puzzles at home?	
05:40	Emma		Mm no	
	Experimenter 1		No?	
	Emma		No	
	Experimenter 1		You do them at school? (2) Yea? (5)	

	Experimenter 2		Do you do a puzzle at school with a puppy dog on it?	
	Emma		No	
	Experimenter 2		What kind of puzzles do you have at school?	
	Emma		We've got ones that go through those tables and we've got hammers	
06:08	Experimenter 1		Oh do you like those? (18) Good you've got it	
	Experimenter 2		What is that he's sitting in?	
06:38	Experimenter 1		I don't know (2) Is it a tree? (.) Is it a puppy in a tree?	
	Emma		I've got to wait until I fix the puzzle	
	Experimenter 1		Oh okay (1) Then we'll know (32) Good job (55) Where does that one go? (1) You don't know? (.) I don't know either (1) I bet Grace knows though (132) Good job (18) Good job (64) We've got about one more minute you think you'll be able to finish it? (28) Good job	
12:38	Experimenter 2		You're doing great (7) Do you have a better idea of what the picture's of now? (5) What is this? (5) I think maybe that one goes a little lower (4) There you go (13)	
13:13	Experimenter 1		We only have a little bit longer you think you can finish it? (14) Good job (49) How many more pieces do you have? (5)	
14:24	Experimenter 2		I think that one is going to have to go over there with the rest of the flowers (4) Oh this one's brown like a puppy dog (.) Do you think it goes in there in the puppy dog? (3) There you go	
	Experimenter 1		Oh good job	
	Experimenter 2		Oh that one looks like it goes there good job	
	Experimenter 1		A few more	
	Experimenter 2		Oh look that one has puppy dog fur on it (3) Do you think puppy dog fur goes near the flowers? (9) Oh let's keep turning it (.) Oh no I think it went there (2) No I think it went over here girlie (2) Keep turning it (3) There you go (.) Two more pieces (2) Oh it's all done over here there's just those two spots (4)	
15:38	Experimenter 1		Good job (5)	
	Experimenter 2		That's the only spot left it has to go in there somehow (8) Yay now we can see what it is what is this?	
	Emma		A puppy	
	Experimenter 2		A puppy what's the puppy sitting in? (3) In the flowerpot?	Emma points at pot
	Experimenter 1		Good job	

WORKS CITED

Atkinson, J. & Heritage, J. (2006). Jefferson's transcript notation. In A. Jaworski & N. Coupland (Eds.), *The discourse reader* (pp. 158-165). New York: Routledge. (Reprinted from *Structures of social action: Studies in conversation analysis*, ed. by J. Atkinson and J. Heritage, 1984, Cambridge: Cambridge University Press).

Barnett, M., Sinisi, C., Jaet, B.P., Bealer, R., Rodell, P., & Saunders, L. (1989). Perceived gender differences in children's help seeking. *The Journal of Genetic Psychology, 151*(4), 451-460.

Escalera, E. (2009). Gender differences in children's use of discourse markers: Separate worlds or different contexts? *Journal of Pragmatics, 41,* 2479-2495.

Kyratzis, A. (2001). Children's gender indexing in language: From the separate worlds hypothesis to considerations of culture, context, and power. *Research on Language and Social Interaction, 34*(1), 1-13.

Lakoff, R. (1973). Language and woman's place. *Language in Society, 2*(1), 45-80.

Maccoby, E. (1990). Gender and relationships. *American Psychologist, 45*(4), 513-520.

Sheldon, A. (1990). Pickle fights: Gendered talk in preschool disputes. *Discourse Processes, 13*, 5-31.

Tannen, D. (1990). *You just don't understand: Men and women in conversation*. New York: Harper Collins Publishers, Inc.

Thompson, R. B., & Moore, K. (2000). Collaborative speech in dyadic problem solving: Evidence for preschool gender differences in early pragmatic development. *Journal of Language and Psychology, 19*(2), 248-255.