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INFLUENCE OF PARENT-CHILD INTERACTIONS IN PRETEND PLAY ON LANGUAGE
DEVELOPMENT IN BILINGUAL CHILDREN

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ABSTRACT

Pretend play is a form of play in which children use their imaginations to assign roles to inanimate objects or people. The role of pretend play in fostering development in children is known to be significant. Prior research has shown that increasing play is associated with healthy social, linguistic and cognitive development (Hersh-Pasek et al., 2003). This is because it requires children to use higher forms of language and cognitive skills than they would in everyday situations (Han et al., 2010). In fact, the most complicated grammatical forms of language first become prevalent in play (Bruner, 1983). In the case of bilingual children, exposure to multiple languages from a young age allows them to obtain a level of language proficiency equivalent to that of the native speaker (Hoff & Eledge, 2005), and bilingualism has been linked to benefits in executive functioning and perspective taking (Schroeder, 2018).

In the present study, we recruited 12 bilingual families that consisted of parent-child dyads, with children between the ages of 4 and 6. Through conducting Zoom interviews and distributing individual and combined parent-child surveys, we aimed to explore how parent-child pretend play interactions relate to language and cognitive development in early childhood. The specific aspects of cognition that we studied were language development, executive functioning, perspective-taking, and creativity. In particular, we also aimed to examine the extent to which children's formulation of and interaction with unique symbolic object representations in pretend play fosters their language development.
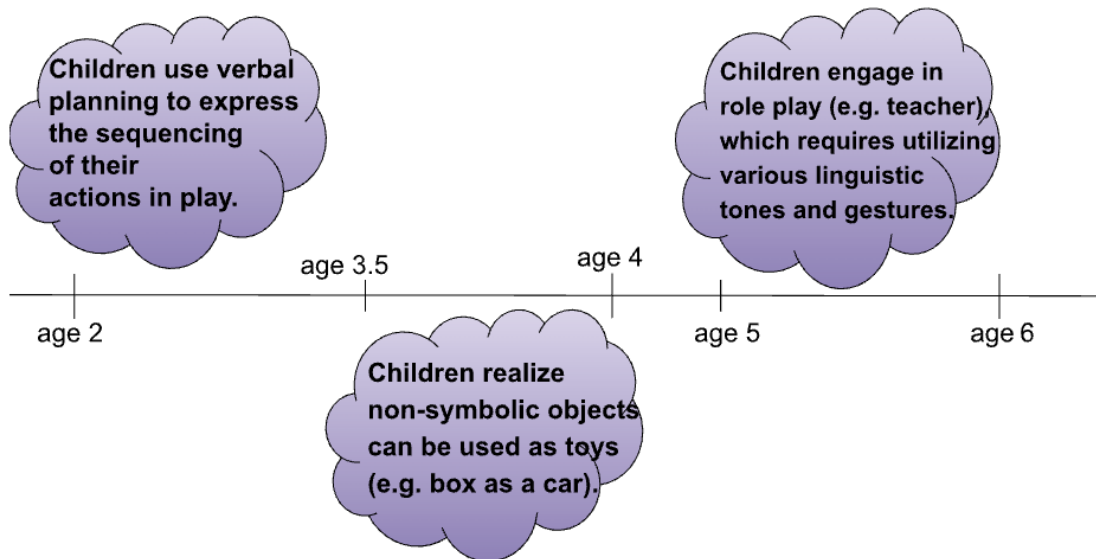
ACKNOWLEDGEMENTS

TABLE OF CONTENTS

INTRODUCTION

Pretend play is a significant social activity that gradually becomes more constant and complex throughout the preschool years of early childhood. Extensive research that has been conducted in the past has established a strong positive relationship between pretend play and language development in that it aids with the formulation of a stronger vocabulary (Hersh-Pasek et al., 2003; Han et al., 2010). Increased play has also been known to foster healthy social and cognitive development (Hersh-Pasek et al., 2003). In children between the ages of 4 and 6, this can be significantly observed (Bruner, 1985). This is due to the knowledge that during this time period, they start to engage in play that utilizes several complex grammatical structures, promoting their overall linguistic growth (Bruner, 1985).

When playing pretend, children tend to use higher level language abilities than they would use in typical social contexts (Han et al., 2010). Play requires young children to comprehend and implement more advanced language processing than they would in their average daily routines through employing abstract verbal reasoning and word formation skills (Han et al., 2010). Children frequently interact with such complex grammatical forms when engaging in role play through imitating (Han et al., 2010). This allows them to take on the role of a teacher or a doctor and play in a way that realistically mimics the vocabulary used by individuals who are in those roles in the real world (Han et al., 2010). These intensive and personalized interactions with play give children the opportunity to learn from early on that different contexts necessitate the use of different types of vernacular.

Figure 1

General Progression of Interaction with Play

Children use verbal planning to express the sequencing of their actions in play.

Children engage in role play (e.g. teacher), which requires utilizing various linguistic tones and gestures.

age 3.5   age 4

age 2   age 5   age 6

Children realize non-symbolic objects can be used as toys (e.g. box as a car).

From as early as between the ages of 2 and 3, children begin to use *verbal planning* to express the sequencing of their actions in pretend play. For example, they might say that it is "time for lunch" and then proceed to feed a doll (Westby, 2017). When a child is between the ages of 3.5 and 4, their pretend play starts to center on things they have only seen or heard about, but not experienced themselves (Westby, 2017). At this age, children realize a box can be used as a car or a rug can be transformed into a magic carpet and thus, non-symbolic objects are utilized as toys (Westby, 2017). This type of play can help kids perceive novel events and situations in more relatable and enjoyable contexts by combining views of their surrounding events (Westby, 2017). The perception of multiple roles, such as those of mother and teacher, becomes heightened between the ages of 5 and 6 (Westby, 2017). This is significant, because play that involves roles is of the highest form, since children learn to express themselves through a variety of linguistic tones, voice timbres, and gestures (Yogman et al., 2018).

6

Between the ages of 4 and 6, children typically begin to interact with more advanced forms of pretend play, which is also when they learn to read and write (Han et al., 2010). During this time, young children learn words at an accelerated rate using a technique known as *fast mapping* (Han et al., 2010). This occurs through introducing a new concept to a child alongside another concept with which the child is already familiar (Han et al., 2010). For instance, in one study, two trays, one blue and the other olive green, were placed in front of preschool children (Carey & Bartlett, 1978). They were instructed to "select the chromium tray, and not the blue one" (Carey & Bartlett, 1978). When given a comprehension test, the researchers found that kids were not only able to create the association between "chromium" and olive green, but were also able to maintain it for at least a week (Carey & Bartlett, 1978). This study demonstrates the value of fast mapping in helping kids to quickly map and remember words and also grow their vocabularies more quickly and extensively. In the context of pretend play, this process is important, as it can help promote children's skills in vocabulary and grammar.

In this study, our primary goal was to understand the significance of the role of pretend play in fostering language development, specifically in bilingual children. While there has been a significant amount of research that has previously examined pretend play and language development, it needs to be studied more in the context of bilingualism. This is a crucial component to consider, because exposure to multiple languages from a young age allows bilingual children to obtain a level of language proficiency that is equivalent to the level of a native speaker (Hoff & Eledge, 2005). Therefore, this enhanced neuroplasticity makes bilingual children an ideal population worth studying in the cross-context of pretend play and language development.

Furthermore, we aimed to explore this cross-context through observing parent-child interactions in pretend play in tandem with variables such as the number of object representations utilized in play. Based on prior research, we know that language acquisition accelerates when a parent and child can interact in a way that can "serve as a microcosm for communicating and for constituting a shared reality" (Bruner, 1985). From as early as infancy, simply engaging in games such as peekaboo, hide and seek, and object exchange can promote healthy parent-child relationships that are regulated by a common language environment (Bruner, 1985). Engaging in such play activities regularly facilitates language development among children (Bruner, 1985). Therefore, this shared context between the parent and the child is the foundation in which a vital aspect of language is learned by the child (Bruner, 1985).

Gaining a deeper understanding of diverse factors that could potentially serve as influences to language learning in the context of bilingual children is necessary in order to understand the role of the environment. Given that young children are heavily shaped by their primary environments, observing the extent to which individuals who are immediate influences, such as parents, are impactful in bilingual children's language development can allow for us to view it as an ongoing process rather than as an immediate outcome.

Guiding Question

❖ How do parent-child interactions in pretend play influence language development in bilingual children?

Hypotheses

❖ <u>H1</u>: Children between the ages of 4 and 6 who form more object representations in pretend play will have greater linguistic knowledge in both L1 (English) and L2 (any other second language) than children at the same age who form fewer object representations in pretend play.

❖ <u>H2</u>: Children with parents who code-switch more often in pretend play are likely to demonstrate having greater communication skills in both English and L2 through exposure to multiple creative contexts in play as opposed to children of parents who only utilize L1 in pretend play.

❖ <u>H3</u>: When knowledge of English and L2 are combined, children between the ages of 4 and 6 of bilingual parents who code-switch in play will demonstrate greater levels of higher-order cognitive skills, such as perspective-taking, creativity, and executive functioning, than children of the same age of parents who do not code-switch in play.

METHODOLOGY

Participants

For this study, we recruited 12 monolingual and bilingual families (41.7% were monolingual and 58.3% were bilingual) consisting of parent-child dyads with kids between the ages of 4 and 6 (the mean age was 5 years old). Families originated from various socioeconomic and secondary linguistic backgrounds (42.8% were Spanish speakers, 28.6% were Hindi speakers, and 28.6% were Kannada speakers). Recruited parent-child dyads were from a multitude of diverse ethnic backgrounds: 50% were Asian, 25% were Hispanic/Latino, 17% were White, and 8% were American Indian. As for inclusion criteria, we specifically chose to not involve children with

developmental delays in order to ensure that those who participated would enjoy the experience and not struggle with crucial portions of the cognitive tasks (interpreting visual stimuli, understanding verbal prompts, etc.).

Parent participants were recruited entirely through social media advertising on virtual platforms, such as Facebook and Instagram, since this study was conducted through Zoom. Families who responded to advertised flyers were then contacted with further information on how to sign up.

Terminology

- *Communication in first and second languages*: This variable measures how well children are able to communicate verbally and through writing in L1 (English) and L2 (their second language). Data was gathered through the *Alberta Language and Development Questionnaire* that was administered to parents and was measured on a scale of 1-5 (lowest to highest proficiency).

- *Object representations*: An object representation is essentially the way in which a child attributes meaning or significance to an inanimate object. This can include both typical and abstract ways of representing an object (e.g. utilizing a box in its true form vs. playing with a box as if it were a magic carpet; each would count as 1 object representation).

- *Code-switching:* Code-switching is when an individual alters back and forth between 2 different languages (in this case, English and L2). In this study, we measured it as a percentage by calculating code-switched utterances / total utterances.

- *Executive functioning:* It refers to a set of higher-order cognitive skills that allow us to plan, focus our attention, remember events, and multi-task efficiently. We scored children's answers on a scale of 0-2 (0 = less than half correct, 1 = half correct, 2 = more than half correct).

Measures

Alberta Language and Development Parent Self-Report Questionnaire

Parents were asked to complete a self-report questionnaire that consisted of questions about their demographics, along with their linguistic backgrounds and experiences. For this study, we utilized Sections A & B of the ALDeQ (Alberta Language and Development Questionnaire; Paradis et al., 2010). Section A asked 4 questions about early developmental milestones, while Section B asked 6 questions about current language abilities. Parents answered questions from Session B twice, once in reference to English and again in reference to their second languages. We also distributed 18 questions from the Language Use Questionnaire (Pan et al., 2017), 9 of which asked about when children began to speak each language and what their proficiency in communicating in each language were.

Procedures

Participants were recruited until the beginning of Winter 2023. All participants were informed of the procedures and were told that when combined, tasks would take a maximum of 30 minutes to complete. Prior to participating in the study, parents were asked to read and sign an informed research consent form that entailed more information on the purpose of the study and what they could expect. Parents were then made aware that to ensure confidentiality, participant names

were omitted from the main file for data storage and were replaced with randomized numbers. In addition, the recorded Zoom sessions were stored in a secure browser that only the primary investigators were able to access throughout the duration of this project. Parent participants were then able to sign up for a time slot for a 20-minute Zoom meeting with a trained researcher.

At the start of the Zoom session, parents were first sent a link to the parent questionnaire, administered through Qualtrics to obtain more information about their home environment, demographics, etc (Alberta Language and Development Questionnaire; Paradis et al., 2010). During this time, I verbally provided a brief pretend play interview to the children, which consisted of 12 questions about their solitary and social pretend play habits in both English and their second language (e.g. "What do you most like to pretend with your parent?" or "When you play pretend, do you pretend in English, your second language, or both?)

Then, I administered a series of brief child tasks to the child participants. The first was the Story Completion task, in which child participants were shown a series of pictures depicting events that formed a story (Mottweiler & Taylor, 2014). The first story was about a little boy attending a birthday party (a familiar event) and the following story was about 2 kids who found a magic key (a fantastical event). Children were read each story out loud and were then prompted to complete the story when the researcher asked "what happens now?". In this task, we measured creativity based on the extent to which children used their imagination to come up with an ending to each story. Responses were coded depending on how atypical the ending was (0 = no response provided or the child did not know, 1 = provided an ending that was generic to the storyline, 2 = provided an ending that was elaborate and unique).

Next, I administered the Day/Night Stroop task through 16 randomized trials in which children were shown pictures of the sun and moon, but were told this was an 'opposites' game

(Gerstadt, Hong, & Diamond, 1994). To ensure child participants understood the task, I went through a few practice trials with them. During the task, children were asked to say "night" whenever they were shown a picture of the sun and "day" when they saw a picture of the moon. Children's answers were coded based on the amount of questions they answered correctly out of the entire set of 16 randomized trials. (0 = less than half correct, 1 = half correct, 2 = more than half correct). The goal was to measure executive functioning (higher-order cognitive skills), since this task necessitated children to suppress a habitual response and utilize greater processing speed.

The last child task measured perspective-taking through the Cognitive Perspective Taking Subset of the Perspective Taking Test for Children (Aslan & Akyol, 2017). Children were shown a set of 5-6 slides depicting a story, the first story about a little boy and his sister and the second story about a little boy and his dog. For each story, children were shown 2 versions, the second of which mirrored the first, except a crucial slide for understanding the storyline was removed. After the second version of each story was shown, children were asked to imagine what would happen if "we called [their] best friend here and showed their best friend [the new] version of the story" and what they would say occurred in the missing picture. The objective was to measure perspective-taking through asking child participants to imagine this situation from another individual's point of view. Since this was a very open-ended task, answers were coded on a scale of 0 - 1 (0 = assuming their friend would know the story, 1 = realizing their friend would not know the story).

Finally, the combined parent-child task consisted of a 5-minute parent-child pretend play session. Parents and children were asked to go on a scavenger hunt and then play with the following 5 common household objects: a bowl, a pen, a piece of paper, a towel, and a chair.

Participants were made aware that there was no prompt for this portion of the study and were encouraged to play with the objects however they typically would. In addition, at the beginning of the joint play sessions, parents were prompted to "feel free to speak in [their] second language" if they choose to do so. We used a scale of 0-2 to quantify this information depending on children's interaction with both languages during a coded pretend play session (0 = never spoken, 1 = sometimes spoken, 2 = heavily spoken).

RESULTS

In this study, data was overall collected from 12 parent-child dyad participants. However, 1 parent-child dyad was omitted from the pretend play interaction analysis, since they were unable to complete the task. Data from this dyad was included for the remainder of the parent, child, and combined parent-child task analyses.

Figure 2

Table: Correlation Between Object Representations and Linguistic Knowledge

Correlation Between Object Representations and Linguistic Knowledge in L1 & L2	
Variables	*Correlation * p < 0.05*
	Object Representations
Linguistic Knowledge (L1)	0.24
Linguistic Knowledge (L2)	0.33

In order to examine the relationships between our variables, we conducted a Pearson's two-tailed correlation test through the statistical software SPSS (Statistical Package for the

Social Sciences). After inputting our data, we discovered that our findings were congruent with our first hypothesis. Results showed there was a significant positive correlation between the number of object representations utilized in play and linguistic knowledge in the first language (L1); n (11) = .24, p < 0.05. There was also a significant positive correlation between object representations in play and linguistic knowledge in the second language (L2); n (11) = .33, p < 0.05. As presumed, a stronger correlation was recorded between object representations and linguistic knowledge in L2.

Figure 3

Table: Code-Switching Correlation Group Statistics

Group Statistics

	CodeSwitch_YN	N	Mean	Std. Deviation
L1_Comm_15	No	7	3.7886	.65669
	Yes	5	3.8800	.78134
L2_Comm_15	No	7	2.8800	1.50768
	Yes	5	3.8240	.99291
L1_LingKnow_14	No	7	3.6900	.41356
	Yes	5	3.3660	.52128
L2_LingKnow_14	No	7	2.9286	1.02789
	Yes	5	3.0000	1.17260
StoryCreativity_Avg	No	7	1.2143	.56695
	Yes	5	1.1000	.54772
Stroop_DN	No	7	15.00	1.826
	Yes	5	14.00	2.345
Age	No	7	5.00	.816
	Yes	5	5.00	.707
PP_Objects	No	7	3.43	2.070
	Yes	5	3.80	.837

Next, we ran group statistics in SPSS to calculate subgroup means and standard deviations for our primary variables (communication in L1 and L2, creativity, executive functioning, and

number of object representations). We discovered that in relation to the binary variable of code-switching (a categorical variable with outcomes of yes or no), the mean for linguistic communication in L1 was higher for individuals who code-switched than for those who did not. We also saw this in the case of communication in L2, since the mean score was significantly higher for parent-child dyads who code-switched more when compared to dyads who only utilized L1.

Finally, to observe the credibility of our third hypothesis, we utilized the same descriptive statistics that we calculated to test the validity of our second hypothesis in order to identify the relationships between engagement in code-switching and levels of higher-order cognitive skills. We specifically looked into creativity and executive functioning. Results did not indicate a significant positive correlation as we had initially hypothesized. The mean score for creativity based on the story completion task (on a scale of 0-2, with 0 as an indicator of minimal creativity exemplified and 2 indicating high creativity) was 1.21 for parent-child dyads who did not partake in code-switching. Participants who did code-switch, on the other hand, had a mean creativity score of 1.10.

We also observed a similar pattern for the stroop task that was administered with regards to code-switching levels, which measured for executive functioning. The mean score for parent-child dyads who did not engage in code-switching was slightly higher ($\bar{x} = 15$) than those who did code-switch ($\bar{x} = 14$). These averages indicate that out of 16 total randomized trials, children of parents who did not code-switch generally answered 15 questions correctly; children of parents who did code-switch had an average score of 14 trials answered correctly.

DISCUSSION

Key Findings

Our goal when formulating this project was to address certain gaps that prior literature on the topic of pretend play and language development had not focused on. We particularly were interested in observing and identifying relationships with language centered around the number of object representations utilized in play. We also aimed to understand the role of code-switching between L1 and L2 in terms of its potential influence on language development in the form of grammatical knowledge.

Our results indicated a significant positive correlation between the number of object representations used in the pretend play sessions and linguistic knowledge in L1 and L2. This suggests that perhaps children who utilize a greater number of object representations in pretend play tend to have greater linguistic knowledge in both L1 and L2. In addition, we noticed a greater correlation between object representations and linguistic knowledge in L2, which highlights the significant role bilingualism plays in fostering language development in young children. It also shows the significance of creativity in how it helps to boost children's ability to form more atypical and abstract object representations (e.g. utilizing a box as a magic carpet). This finding is therefore congruent with our first hypothesis.

In analyzing the data relevant to our second hypothesis, we discovered that the mean score for linguistic communication in both L1 and L2 was higher for parent-child dyads who utilized code-switching when compared to those who did not. This inherently suggests that bilingual children of parents who code-switch more often around their children or when conversing with them are more likely to demonstrate accelerated learning and communication in both their first

and second languages. Therefore, we have reason to believe that our second hypothesis is indeed credible.

However, contrary to the third hypothesis we had developed, we did not find a significant positive correlation between code-switching and each of the respective higher-order cognitive skills (executive functioning and creativity). In fact, across both tasks, parent-child dyads who did not code-switch during their 5-minute play sessions demonstrated greater mean scores for both the executive functioning and creativity tasks than participants who did code-switch. Although the scores were not vastly different, these slight numerical inconsistencies may have to do with children not fully understanding the tasks at hand. Nevertheless, our findings indicated that the majority of our hypotheses were supported by our statistical analyses.

Real World Implications

Given that we conducted this study over Zoom, we had more flexibility in terms of being able to witness how parent-child dyads interacted within their homes. This was an important factor for us to consider, since individuals' housing and schooling environments are the primary locations where language development occurs in early childhood. Furthermore, this virtual modality allowed us to observe parent-child interactions in a naturalistic setting.

After finalizing our findings, we noticed that similar to prior research on pretend play and language, our results emphasize the importance of parental modeling and consistent involvement when teaching children how to communicate in a language. We found that in general, parent participants of bilingual parent-child dyads were almost always the ones to initiate speaking in their second languages. Despite bilingual children repeatedly exemplifying that they understood

what their parents were communicating, children still chose to respond primarily in their first language (English).

Regardless of how comfortable children may feel about speaking in their second language, however, our study shows that children clearly benefit from receiving exposure to L2 as early as the age of 4. Not only did children of bilingual families exhibit greater levels of creativity through their ability to form more numerous and meaningful object representations, but they also helped to demonstrate that code-switching in play can foster language development.

These findings would most likely benefit immigrant families who may not even be aware of how beneficial it is for children to be raised in a multilingual environment. It may also broaden the perspective and change the opinion of individuals who may believe prior research that particularly emphasizes that learning a second language prevents children from fostering proper language development in L1, as this is not the case. Furthermore, our study may serve as motivation for teachers to facilitate students' learning in their classrooms in the context of a second language, especially among communities that predominantly speak one.

Future Directions

While our study yielded fruitful results, there were some limitations to conducting it thoroughly. First of all, our sample size consisted of 12 families in total, which is generally too small to be statistically significant. Therefore, we plan to continue running more participants in order to fully confirm the scope of our findings. We also decided to omit the perspective-taking task from our overall analyses and discussion, due to the fact that the vast majority of child participants were unable to properly comprehend and perform the task at hand. In the future, we

hope to use a more concise and unique activity that achieves the same goal, while keeping children engaged.

In addition, we hope that future research that is conducted on this topic limits participant recruitment so that participants stem from an individual linguistic background. This is in order to ensure more consistency across the sample and so that researchers can establish a fixed baseline for phonotactic constraints. We would also like to see more research conducted on specifically mother-child and father-child interactions in play, as this may provide more insight into how parental role influences children's development.

Ultimately, research on pretend play and language development, specifically through the lens of parent-child interactions, is important to understand how children learn and absorb language. Especially in the context of bilingualism, it is necessary to ensure that children have the proper resources at home and at school to best facilitate the language learning process in a way that is most conducive to their development. As pretend play continues to be a significant contributor to boosting children's healthy development and social interaction skills from a young age, we ultimately hope that different avenues of research on this topic continue to explore and reveal its benefits in diverse contexts.

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