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Language Development in Bilingual Preschoolers: A Cross-Linguistic and Cross-Cultural Comparison

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ABSTRACT

Language Development in Bilingual Preschoolers:

A Cross-Linguistic and Cross-Cultural Comparison

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Children acquire linguistic competence via social interactions with adults and learn to converse in accordance with the norms of their communities. The present dissertation examined the communicative patterns of Thai-English bilingual mothers and children in their two languages, as well as compared the bilinguals' conversations to each of their monolingual counterparts. Language samples were elicited using naturalistic tasks in the home. In Experiment 1, mothers and children jointly recounted their past experiences. Bilingual dyads exhibited two different reminiscing styles: high-elaborative–characterized by more detailed narratives and use of evaluative statements–when speaking English and low-elaborative–characterized by use of directives–when speaking Thai. In Experiment 2, mothers and children engaged in book sharing. Bilingual dyads adopted a story co-constructor style–where narrative contributions from children were encouraged–when sharing the book in English, and adopted a storyteller-audience style–where mothers model adult-like language and literacy practices while children listen–when sharing the book in Thai. In Experiment 3, mothers and children played with a set of toys. Bilinguals' play interactions were reminiscent of a child-centered style–characterized by children taking the lead–when speaking English and an adult-centered style–characterized by mothers giving children directions–when speaking in Thai. In Experiment 4, children recalled memories with the interviewer and their personal narratives were compared to those with their mothers. Cross-linguistic differences in bilingual children's speech observed in Experiment 1 were no longer observed during their conversations with the interviewer who provided minimal

scaffolding, suggesting that culture-specific narrative socialization is adult-driven during early stages of child development. Experiments 1-4 also demonstrated that maternal scaffolding strategies influenced children's emerging narrative skills in both languages and that gender-specific socialization goals moderated cross-linguistic differences in bilinguals' narratives. In Chapter 6, bilingual mothers' and children's communicative patterns were compared across languages (English and Thai) and tasks (from Experiments 1-4). Findings confirmed cross-linguistic differences in bilinguals' conversation styles and underscore the influence of task characteristics on mother-child interactions. Taken together, the five Chapters provide evidence for cultural frame switching, specifically that linguistic and cultural norms influence mother-child interactions and that two distinct conversation styles co-exist in bilinguals. Child gender, interlocutor, and nature of dyadic activities influence the ways mothers and children communicate. More broadly, maternal speech transfers knowledge of pragmatic rules and social conventions based on the language of conversation. Through the process of socialization, children acquire language-, culture-, gender-, and context-specific communicative styles and learn to use them appropriately.

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1.1 Abstract

The variability that exists in children's linguistic input stems from various factors, including their cultural background, the languages to which they are exposed, the ways that their conversation partners communicate, and the activities in which children and their interlocutor are engaging. Through interactions with others, children acquire not only linguistic abilities but also social practices. Monolingual mothers and children from different cultures have been shown to have unique communicative styles that align with their societal norms. Cross-linguistic differences have also been observed among bilingual adults, where individuals express themselves differently depending on which of their two languages is spoken. Little is known about language-dependent conversation styles in bilingual children. Thus, the present dissertation examined cross-linguistic differences in maternal scaffolding strategies and child narrative patterns in Thai-English bilinguals in Thailand, as well as compared the bilinguals to their monolingual counterparts in Thailand and the United States. The rationale for choosing these specific demographics was due to the cultural differences between Thai and American values and customs, as well as the distinct purposes that Thai and English serve in Thai society. Four-year-old children were selected based on previous research showing that preschool is a critical period for the development and socialization of narrative skills. Because mother-child interactions have also been shown to differ across settings, language samples were collected during four common activities in the home, including prompted reminiscing, book sharing, toy play, and child personal narrative. The methodology employed in the current dissertation allowed for the influence of language, culture, and dyadic task on communication to be examined.

1.2 Variability in Language Acquisition

Children's language acquisition is influenced by the linguistic input that they receive from people in their social environment (e.g., Hoff, 2006; Hoff & Naigles, 2002; Pearson et al., 1997). Early in development, caregivers support or scaffold children's language by providing examples of sophisticated and complex linguistic structures (e.g., Rogoff, 1990; Rogoff et al., 1993; Vygotsky, 1978). There is variability in each child's cohort of caregivers. A young child's social sphere may include many, if not all, of the following: parents, grandparents, extended family members, siblings, nannies. Given the diversity of speakers, there is natural variability in a child's linguistic input, for example, the number of languages they are exposed to, how much time they are exposed to each of the languages, or the types of activities through which they are receiving linguistic input. The present dissertation aims to examine the variability in linguistic input that stems from the culture- and language-specific norms with which children are growing up, specifically by comparing bilingual and monolingual mothers' scaffolding strategies and children's own communicative patterns.

1.3 Language as a Means of Socialization

From a sociocultural perspective, children's development is influenced by the social and cultural context in which they grow up (Vygotsky, 1978). Particularly, more competent adults, most often parents, are key individuals who pass on cultural values and impart upon children socially acceptable and normative behaviors through adult-guided activities (Harkness & Super, 1995; Rogoff, 1990; Rogoff et al., 1993). Language learning is one of many socialization processes whereby children acquire information about their culture (Miller et al., 2007; Schieffelin & Ochs, 1986). When children are exposed to language, they assimilate values and norms, as well as form a cultural frame that is associated with that particular language.

Additionally, children are taught to use language in ways that are consistent with societal norms. Since language is a social tool that is integral in transmitting cultural practices and traditions, children not only acquire linguistic competence by learning a language, but they also acquire social competence.

1.4 Cross-Cultural Differences in Monolingual Parent-Child Communication

Considering that children are socialized into their communities through language (Miller et al., 2007; Schieffelin & Ochs, 1986), it follows that the socialization process would differ depending on the cultural norms that are associated with each language. Although no one culture is alike, there are broad similarities that cultures share. Cross-cultural researchers have commonly characterized cultures on an individualism - collectivism continuum (Markus & Kitayama, 1991). More individualistic societies are characterized by values placed on independence and autonomy, whereas more collectivist cultures are characterized by emphases on interdependence and group conformity. Another key attribute that correlates with the individualism - collectivism dimension is power distance, which describes the power dynamic between group members (Hofstede, 2001). Individualistic cultures are typically considered low-power-distance, meaning that power is evenly distributed among group members, and everyone has equal power. Conversely, collectivist cultures are oftentimes considered high-power-distance, meaning that certain groups of people (e.g., adults) possess more power than other groups (e.g., children). Due to these distinct value systems, cultures also differ in how much parent-child interactions are adult- versus child-centered (Keller, 2007; Vigil & Hwa-Froelich, 2004). In individualistic low-power-distance cultures, adults and children have relatively equal power and children are socialized to become autonomous. As a result, adults tend to follow the child's lead, particularly responding to the child's wants and preferences, with the goal of

nurturing the child's individuality. Conversely, in collectivist high-power-distance cultures, adults have more power than children and children are raised to respect their elders. Additionally, children are socialized to develop an identity that fits within their community. Thus, adults often take the lead in guiding dyadic interactions, while children defer to adults and learn their role in the society.

Because narrative discourse is universal and is an instrumental process through which cultural norms are conveyed and transmitted (Miller et al., 2007), a common approach to studying language socialization is to examine conversations between parents and children, specifically looking at their narrative patterns in various activities. Researchers examining parental language scaffolding during dyadic discourse have found cultural differences in the ways that children's linguistic skills are supported. Particularly, children are socialized to use language in ways that are congruent with the larger cultural norms. Parents from Western cultures adopt a relatively high-elaborative scaffolding style, whereas parents from Eastern cultures adopt a relatively low-elaborative scaffolding style (e.g., Minami & McCabe, 1995; Mullen & Yi, 1995; Rochanavibhata & Marian, 2020; Winskel, 2010). For example, European-American and Anglo-Australian caregivers tend to have longer conversations, ask more questions, and provide more evaluations, whereas Japanese, Korean, and Thai caregivers tend to have more concise conversations, repeat their children, and request information that has been stated. In turn, children acquire culture-specific communicative norms that are in line with their parents' scaffolding. Children from Western cultures learn to produce longer narratives and evaluative statements, while children from Eastern cultures contribute shorter narratives. These distinct conversation styles are reflective of the previously mentioned norms of individualistic low-power-distance and collectivist high-power-distance cultures, respectively.

1.5 Cross-Linguistic Differences in Bilingual Communication

Individuals from similar backgrounds and social milieus have value systems that are shared by others in their culture (D'Andrade et al., 1984). These culture-specific frames of reference in turn influence individuals' cognition and behaviors (Geertz, 1973; Hong et al., 1997). Given the interrelatedness between culture and language, a question remains regarding the co-existence of two different languages in a bilingual speaker and how knowing more than one language may influence the nature of their communication. Evidence from bicultural and multicultural individuals demonstrates cultural frame switching where people shift their values, attitudes, and preferences depending on culture-relevant stimuli (e.g., Hong et al., 1997; Hong et al., 2000; Ramírez-Esparza et al., 2006). For example, bicultural Chinese Americans have been shown to exhibit internal or self attributions (explaining actions or situations with internal traits or characteristics) when primed with Western cues (e.g., the U.S. Capitol) and external or group attributions (explaining actions or situations with external factors) when primed with Asian cues (e.g., the Great Wall). Therefore, this phenomenon suggests that individuals can access multiple cultural frames of reference and switch between frames depending on the context.

Congruent with cultural frame switching, studies examining the relation between language and memory have shown that the language spoken at a given time mediates memories and self-narratives in bilinguals (e.g., Marian & Kaushanskaya, 2004; Marian & Neisser, 2000), suggesting that *language* can serve as a cue for cultural frames. Specifically, bilinguals recall and express their memories differently depending on the language of memory encoding and retrieval. For instance, Marian and Kaushanskaya (2004) found that Russian-English bilinguals produced more individualistic narratives (focusing more on themselves as the main agent and producing more personal pronouns) when speaking English–a language associated with an individualistic

culture–and produced more collectivist narratives (focusing more on others as the main agent and producing more group pronouns) when speaking Russian–a language associated with a collectivist culture. These language dependence effects are not limited to autobiographical memory but have also been observed in academic learning (Marian & Fausey, 2006) and semantic memory (Marian & Kaushanskaya, 2007).

Considering the evidence that language can trigger culture-specific frames of reference or self-schemas, it is very likely then that the languages spoken by bilinguals will also influence their narrative discourse styles and social interactions in everyday life. In line with the theory of linguistic relativity which posits that the language(s) one speaks can influence one's cognition (Boroditsky et al., 2003; Whorf, 1956), there is evidence from bilingual families showing cross-linguistic differences in caregivers' child-directed speech (Shanks, 2019; Wang et al., 2010). For example, Shanks (2019) found that during play interactions of Spanish-English bilingual mothers and toddlers, mothers produced more utterances and dominated the conversation more when speaking Spanish compared to English. This pattern mirrors the cross-cultural difference between their Spanish and English monolingual counterparts, where there was greater adult talk during the interactions of Spanish monolingual mother-child dyads and greater child talk during the interactions of English monolingual mother-child dyads. Additional evidence of language-specific conversation styles comes from research that has focused on older children's autobiographical memories. In one study, 8- to 14-year-old Chinese-English bilingual children were interviewed about personal memories in either English or Chinese (Mandarin or Cantonese, depending on the children's preference). Children who were interviewed in English provided more elaborate narratives, characteristic of individualistic Western values, whereas children who were interviewed in Chinese produced more concise narratives, characteristic of Eastern values

(Wang et al., 2010). Taken together, these findings suggest that language can activate associated cultural norms even in children.

However, research on cross-linguistic transfer also suggests that bilinguals experience influence from their L1 when speaking their L2 and vice versa, with effects being observed at the phonological, lexical-semantic, and morphosyntactic levels (e.g., Nicoladis, 1999, 2012; Paradis 2001; Yip & Matthews, 2000). For example, French-English bilingual children are more likely to use the periphrastic possessive construction (i.e., *the dog of my friend*, instead of *my friend's dog*) than English monolingual children because they are influenced by their knowledge of French syntax (Nicoladis, 2012). By comparing bilingual mother-child conversation styles in their two languages and to each of their monolingual counterparts, the present dissertation will expand upon the extant literature and examine whether bilinguals also experience cross-linguistic transfer at the discourse level. Specifically, when speaking their L2, bilingual mothers and children may primarily access cultural frames associated with the L2 but occasionally experience interference from their L1 and its associated cultural frames. As a result, bilinguals may exhibit scaffolding strategies and narrative styles that are amalgams of their two monolingual counterparts.

1.6 Task Differences in Parent-Child Communication

Variability in children's linguistic input not only exists due to their cultural and linguistic background but also due to the various contexts in which they are socialized. Because different home activities typically have unique reliable structures, including specific actions and objects that are often associated with each activity, parental linguistic scaffolding inherently differs depending on the communicative setting (e.g., Choi, 2000; Doering et al., 2020; Hoff-Ginsberg, 1991; Tamis-LeMonda, 2019). For example, caregivers tend to ask more questions, use more

diverse vocabulary, and engage in more labeling during book reading compared to toy play but tend to use more directives and social regulatory speech during toy play compared to book reading (Choi, 2000; Hoff-Ginsberg, 1991; Salo et al., 2016; Weizman & Snow, 2001; Yont et al., 2003). Additionally, mothers have been found to use the highest proportion of referential language (declarative or interrogative statements that provide or elicit information about objects or activities), as well as expose children to more words per minute, during book sharing compared to other communicative settings (Tamis-LeMonda et al., 2019). The way children themselves use language also varies across communicative contexts (e.g., Hoff, 2010). For example, children use a greater variety of words and produce more cohesive, topic-contingent responses during book sharing compared to toy play and mealtime.

However, there is evidence to suggest that these task differences in language use do not manifest in the same way across different cultural groups. Doering and colleagues (2020) compared features of German and American mother-child speech during book sharing and toy play and found that task-specific patterns of speech were more prevalent among the American sample than the German sample. This suggests that there may be cross-cultural and cross-linguistic differences in language socialization across adult-guided social activities and highlights the merit of examining parent-child discourse in various communicative contexts, instead of only in one particular setting (Choi, 2000; Salo et al., 2016).

1.7 Narrative Development During Preschool

Existing research on mother-child narrative styles has typically focused on the preschool years because it is a critical period for the emergence of children's ability to engage in narrative discourse (Fivush et al., 1995; Nelson & Fivush, 2004). Thus, researchers have often examined mother-child conversations in three-year-olds (e.g., Melzi et al., 2011; Mullen & Yi, 1995;

Wang, 2001), four-year-olds (e.g., Chang, 2003; Leyva et al., 2009; Zaman & Fivush, 2013), and five-year-olds (e.g., Melzi et al., 2011; Minami & McCabe, 1995; Winskel, 2010). It is important to note that there is variability among preschoolers' narratives depending on the children's age. Three-year-olds' narratives are often simple two-event narratives, while four-year-olds' narratives are more diverse, and finally by age five, children tell lengthy, well-sequenced stories (Peterson & McCabe, 1983). Additionally, the association between maternal and child narrative patterns changes with development. At three years of age, there are no significant correlations between maternal scaffolding strategies and children's discourse. When children are four to five years old, however, significant relationships between maternal and child conversation styles start to emerge (Chang, 2003; Reese et al., 1993). These findings suggest that the narrative skills scaffolded by mothers may require substantial time for children to internalize. Furthermore, the number of questions that mothers ask their children decreases during the ages of four and five years, which suggests that mothers adapt their language as children become more skilled at contributing to the story (van Kleeck & Beckley-McCall, 2002). Specifically, children display gains in their narrative contributions between the ages of three and four, and mothers in turn decrease their questions a year later when children are five years old. This pattern indicates that children's narrative contributions predict mothers' subsequent interactions with children.

Focusing on mother-child interactions specifically in four-year-olds allows for the examination of both mothers' and children's narrative styles. At this age, children are developmentally capable to co-construct narratives in ways that are aligned with their mothers' scaffolding (Chang, 2003; Minami & McCabe, 1995; Reese et al., 1993), but at the same time, are yet able to tell elaborate, well-developed stories on their own without the help from more competent social partners (Peterson & McCabe, 1983).

1.8 Rationale for Focusing on Thai and American Cultures

As an individualistic culture, the European-American culture promotes independence and autonomy (Bornstein, 2012; Harkness et al., 1992; Tamis-LeMonda & McFadden, 2010). Personal accomplishments, uniqueness, and self-reliance are valued traits. In contrast to other cultures where there are clear social hierarchies, European-American children are often treated by their parents as equals, which is common in a low-power-distance society (Hofstede, 2001). Consequently, children are taught to express themselves and establish their own beliefs and opinions, even when there may be points of disagreement between children and adults (Lansford et al., 2011; Nucci & Weber, 1995; Tilton-Weaver & Kakihara, 2007). Such emphasis on individuality and autonomy is evident from very early in development. Young children are often treated as intentional agents capable of making their own decisions, for example, where babbling from an infant is viewed as meaningful (Paradis et al., 2011).

As a collectivist culture, Thai culture emphasizes interconnectedness and relationships with other people. There is also an age-based hierarchy among social members, characteristic of a high-power-distance culture, that is predominantly driven by Buddhist teachings (Eberhardt, 2014; Hanks, 1962). Consequently, filial piety–the belief that children must respect, obey, and defer to their parents and others who are older than them–is a core value in Thai culture (Cameron et al., 2006; Eberhardt, 2014). Another value that is taught from early childhood is the concept of "kreng chai," which means "to have consideration for" and instills a mindset that aims to minimize disturbance to others (Suvannathat, 1979). Such power dynamic between individuals is reflected in communicative and social interaction norms. In terms of language use, honorifics are used to denote status and hierarchy. For example, kinship terms specify whether one's interlocutor is older (e.g., "pi" meaning older brother/sister) and are often used to show respect.

Honorific particles–words that are added to the end of an utterance ("krub" or "ka")–are also used to show politeness to the person being addressed. Deference and respect are also shown through nonverbal behaviors, including via the customary Thai greeting (the wai: palms pressed together along with a head bow). Adults often teach many of these norms explicitly by modeling the appropriate language to show respect and by correcting children for inappropriate or disrespectful speech (Howard, 2011). These differences in the American and Thai norms related to social interactions, specifically with regards to parent-child relationships, allow us to examine cross-cultural and cross-linguistic differences in conversation styles.

1.9 Rationale for Focusing on Thai-English Bilinguals in Thailand

Although Thailand is culturally and linguistically homogenous relative to other countries due to its history of never having been colonized by a Western country (Baker & Jarunthawatchai, 2017), globalization has inevitably influenced language policy and use. Despite Thai being the official language in Thailand, the prominence of English has increased over the years as it is the working language of the Association of Southeast Asian Nations. English is typically associated with modernization and a way to communicate with the rest of the world, but at the same time is viewed as the language of the "other" or "outsider" (Baker, 2012; Baker & Jarunthawatchai, 2017; Draper 2012). There are specific contexts in which English is commonly used in Thailand, including schools, international business, tourism, the internet, and media (Foley, 2005; Wongsothorn et al., 1996).

With the rise in popularity and number of international schools, as well as English or bilingual programs in Thailand (Fry, 2018), it has become more common for children to start acquiring English as early as three years of age. In addition to English itself being associated with globalization and the rest of the world, children are typically taught English by foreign

teachers who have come from other countries, including those from Western societies such as the United States, United Kingdom, Canada, Australia, and New Zealand (Punthumasen, 2007), which further strengthens the association of English with a Western cultural frame. Considering that Thai and English are associated with distinct cultural values and norms, focusing on Thai-English bilingual mother-child dyads from Thailand allows us to examine any potential cultural frame switching effects on interaction and communication styles.

1.10 The Present Dissertation

The present dissertation aims to compare communicative patterns of Thai-English bilingual mother-child dyads across their two languages and to each of their monolingual counterparts (Thai and English monolinguals in Thailand and the United States respectively), as well as across communicative contexts. To elicit narrative samples, mother-child dyads were video-recorded during four naturalistic tasks, including dyadic reminiscing, book sharing, toy play, and child personal narrative (See Appendix 1 in the supplementary materials for pictures of the task setups). Based on previous cross-cultural research (Rochanavibhata & Marian, 2020, 2021, 2022; Winskel, 2010), conversation styles of Thai-English bilingual dyads when speaking Thai and English were expected to be qualitatively different, including on the dimension of elaborateness. Thai-English bilinguals were expected to hold and emphasize different values across their two languages, and thus exhibit different scaffolding and narrative patterns depending on which language is being spoken at a given time. Thus, the bilinguals' conversation styles were expected to resemble those of their Thai monolingual counterparts when speaking Thai and to resemble those of their English monolingual counterparts when speaking English. Bilingual dyads were predicted to adopt a relatively low-elaborative style, characterized by greater use of requests for repetition, when speaking Thai and a relatively high-elaborative style,

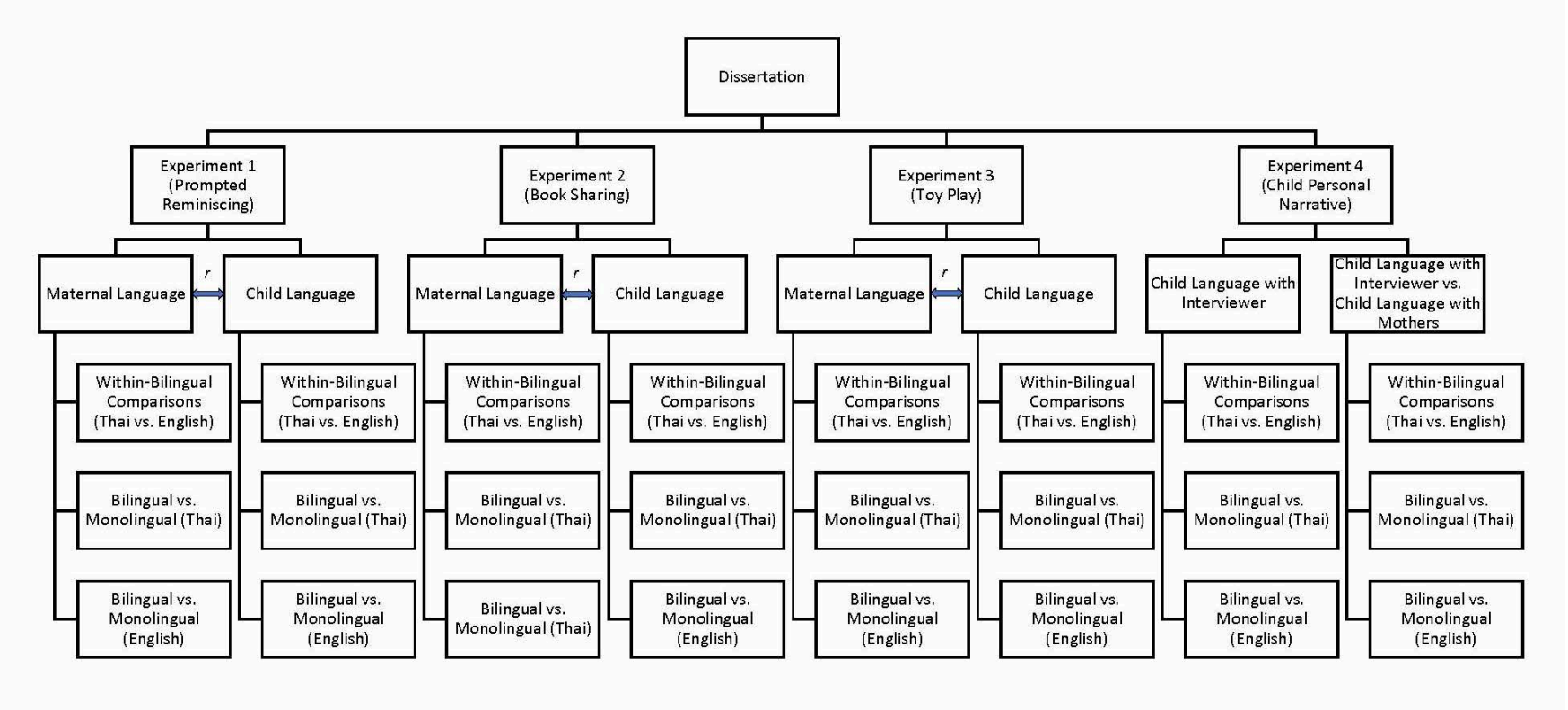
characterized by greater use of questions (open- and closed-ended), evaluative statements (positive and negative feedback), and longer narratives (as measured by number of words and utterances produced) when speaking English. Moreover, bilingual mothers were expected to adopt an adult-centered style, characterized by use of commands (action requests and attention directives) in Thai and a child-centered style, characterized by use of affirmations and repetitions, in English.

The current dissertation presents five experiments to examine cross-linguistic differences in bilingual mother-child conversation styles and to compare language-specific narrative patterns in each of the bilinguals' two languages to their monolingual counterparts. In Experiment 1 (Chapter 2), mothers and children completed a prompted reminiscing task, where they jointly recalled past events in Thai and/or English. In Experiment 2 (Chapter 3), mothers and children completed a book sharing task. Bilingual dyads engaged with two wordless picture books, one in Thai and another in English, whereas monolingual dyads engaged with one wordless picture book in the language that they speak. In Experiment 3 (Chapter 4), bilingual mothers and children completed a toy play task during two separate sessions, one in Thai and another in English, while monolingual dyads completed the task once in either Thai or English. Dyads were given the same culture- and gender-neutral set of toys. Additionally, the associations between bilingual mothers' and children's discourse patterns were examined in the three experiments that included a mother-child dyadic task. In Experiment 4 (Chapter 5), children completed a personal narrative task, where they discussed personal memories with an experimenter in Thai and/or English. In this chapter, bilingual children's individual narrative styles when minimally scaffolded were compared across their two languages. Additionally, the influence of the child's interlocutor was examined, specifically comparing bilingual children's narrative styles when

reminiscing with an interviewer (Experiment 4) compared to when reminiscing with their mothers (Experiment 1). In Chapter 6, mother-child interactions in Thai and English were compared across tasks to examine how maternal scaffolding strategies and child narrative skills differed as a function of language and communicative setting. Lastly, findings from the present dissertation are summarized in Chapter 7, along with discussions of the implications of this work and future directions. An overview of the dissertation design is presented in Figure 1.

Figure 1

An Overview of the Dissertation Design



CHAPTER 2 Cross-Linguistic Differences in Bilingual and Monolingual Mother-Child Reminiscing

2.1 Abstract

Cross-linguistic differences in narrative patterns were examined in bilingual and monolingual mother-preschooler dyads. Twenty-six Thai-English bilingual, 21 Thai monolingual, and 21 English monolingual mother-child dyads completed a prompted reminiscing task where they jointly recalled autobiographical memories related to word prompts. Bilingual mothers and children exhibited different reminiscing styles in each of their languages. Specifically, bilinguals adopted a relatively high-elaborative style when speaking English and a relatively low-elaborative style when speaking Thai. Compared to their monolingual counterparts, bilingual mothers and children exhibited conversation styles that are an amalgam of two distinct styles. Specifically, bilinguals were not as elaborative when speaking English (relative to their English monolingual counterparts) but were more elaborative when speaking Thai (relative to their Thai monolingual counterparts). In other words, on a continuum with Thai and English monolinguals on opposite ends, bilinguals fell in the middle. Additionally, positive associations between maternal and child narrative patterns in both languages suggested that mothers' scaffolding strategies influenced children's own emerging narrative patterns. Findings from the present study are in line with the cultural frame switching hypothesis and suggests that children access the cultural norms associated with their two languages appropriately as early as preschool.

2.2 Introduction

Autobiographical reminiscing is one of many adult-guided activities that facilitate children's development of narrative skills (Fivush, 1991; Haden et al., 1997; Peterson & McCabe, 1992; Reese, et al., 1993). Through the process of recalling personal memories with their caregivers, children learn the appropriate ways to narrate stories. Even though mother-child reminiscing is a universal activity, there is variability in the reminiscing styles of mothers and children from different cultural and linguistic backgrounds (e.g., Melzi et al., 2011; Minami & McCabe, 1995; Reese et al., 1993; Wang et al., 2000). Considering the culture-specific norms for engaging in this activity, it is likely that bilinguals who speak two languages associated with two distinct cultures will also adopt unique reminiscing styles in each of their languages. To examine cross-linguistic differences in mothers' strategies for eliciting personal stories from children, as well as in children's own narrative styles, we compared mother-child reminiscing in Thai-English bilingual dyads across their two languages. Additionally, reminiscing styles in each of the bilinguals' two languages were compared to those of their monolingual counterparts.

Conversations about past personal experiences, particularly ones between a parent and a child, are important in developing children's narrative skills because they tend to contain longer, more complex sentences than conversations about the present (Rowe, 2013). Adults also scaffold or ask questions that implicitly help children structure their stories appropriately. Through the guidance from adults, children learn things that are important to remember and learn ways to engage in discourse about their experiences, thereby shaping their autobiographical memory and self-concept (Fivush, 2019; Fivush & Haden, 2003; Reese, 2009).

Adult-child joint reminiscing is one of many important socialization processes that is largely influenced by one's cultural background. Previous research has examined mother-child

reminiscing across cultures and demonstrated differences in reminiscing styles (e.g., Minami & McCabe, 1995; Mullen & Yi, 1995; Rochanavibhata & Marian, 2020; Winskel, 2010). Particularly, monolingual mothers and children from individualistic Western cultures tend to adopt a high-elaborative style, characterized by longer personal narratives, as well as more questions and evaluative statements, whereas monolingual mothers and children from collectivist Eastern cultures tend to adopt a low-elaborative style, characterized by more concise personal narratives and more requests for repetition. For example, in our cross-cultural comparison of American and Thai mother-child reminiscing (Rochanavibhata & Marian, 2020), we found that American mothers utilized a variety of scaffolding strategies that resemble the high-elaborative style, including the use of more descriptions, extensions, labels, and recasts, as well as use of evaluative statements such as affirmations, positive feedback, and negative feedback. On the other hand, Thai mothers used more commands, including use of attention directives, indirect action requests, and requests for repetition, all of which are more reminiscent of the low-elaborative style. Similar to their mothers, American children adopted a high-elaborative style, as shown by greater use of labels, questions, and affirmations than Thai children.

Cross-linguistic differences in reminiscing styles have also been shown in the bilingual adult literature. Specifically, bilinguals recount personal events differently in their two languages (e.g., Marian & Kaushanskaya, 2004). For example, when asked to recall memories based on various word prompts, Russian-English bilingual adults have been shown to produce more collectivistic narratives when speaking in Russian (the narratives tended to revolve around other people as main agents and a greater proportion of group pronoun was used compared to personal pronouns) and more individualistic narratives when speaking in English (the narratives tended to revolve around the speakers themselves as main agents and a greater proportion of personal

pronoun was used compared to group pronouns). Cross-linguistic differences have also been observed in Chinese-English bilingual school-age children, where their personal narratives were longer in English and shorter in Mandarin/Cantonese (Wang et al., 2010). These language-dependent reminiscing styles suggest that language may prime the closely associated cultural frames, making the relevant traditions and behavioral norms more easily accessible (Ross et al., 2002; Schrauf, 2000), and that it ultimately influences the way that individuals present themselves. Taken together with the cross-cultural differences in the reminiscing styles of monolingual mothers and children, bilingual mothers and their preschoolers are expected to show language- and culture-specific elicitation strategies and narrative patterns.

In the present study, we aimed to examine potential cross-linguistic differences in maternal linguistic scaffolding strategies and children's own narrative styles. To elicit autobiographical narratives from mothers and children, bilingual mother-child dyads participated in a prompted reminiscing task. Based on previous cross-cultural work (e.g., Minami & McCabe, 1995; Mullen & Yi, 1995; Winskel, 2010), including our own that compared reminiscing styles in American and Thai mother-child dyads (Rochanavibhata & Marian, 2020), we hypothesized that Thai-English bilingual mother-child dyads would exhibit a high-elaborative style when reminiscing in English and a low-elaborative style when reminiscing in Thai.

In addition to comparing bilingual mothers' and children's narrative styles across two languages, we also aimed to examine the relation between their discourse patterns. Based on previous work demonstrating that children tend to reminisce in ways that are similar to that of their mothers' (Peterson & McCabe, 1992; Reese & Fivush, 1993; Rochanavibhata & Marian, 2020), bilingual mothers' and children's narratives were expected to be positively correlated in each language.

Lastly, when comparing bilingual and monolingual dyads, the conversation styles of bilingual mothers and children when speaking Thai were expected to resemble those of Thai monolingual mothers and children in Thailand. Conversely, the conversation styles of bilingual mothers and children when speaking English were expected to be similar to those of English monolingual mothers and children in the United States. Therefore, we expected to observe minimal differences, if any, between the bilingual dyads and their monolingual counterparts.

2.3 Method

Participants

Participants were 26 Thai-English bilingual mother-child dyads (12 boys, 14 girls) living in Thailand, 21 Thai monolingual mother-child dyads (10 boys, 11 girls) living in Thailand, and 21 English monolingual mother-child dyads (11 boys, 10 girls) living in the United States. Children were 4-year-old preschool children. Participants in Thailand were recruited through contacts at preschools in Bangkok, Thailand, as well as through snowball sampling. Participants in the United States were recruited through announcements at the YMCA and local preschools in the greater Chicago area, through snowball sampling, and also through Northwestern University databases including the Communication Research Registry and Child Studies Group Registry.

Mothers', fathers', and children's background information were obtained using questionnaires. Mothers and fathers were asked to fill out the *Language Experience and Proficiency Questionnaire* (LEAP-Q; Marian et al., 2007) to assess their language profiles including their proficiency in speaking, understanding, and reading in the language(s) they speak, as well as ages of acquisition, and lengths of immersion for each language. Information regarding maternal and paternal education were also obtained from the questionnaire. Mothers filled out an adapted version of the LEAP-Q that assessed their child's language background and

experience. Previous research examining bilingual children (e.g., Marchman et al., 2010; Marchman et al., 2004; Place & Hoff, 2011) suggests that the less-frequently heard language should constitute at least 10%, and preferably more, of the bilingual children's language exposure. Therefore, our inclusionary criteria for bilingual dyads were (a) mothers and children were exposed to their less dominant language at least 20% daily and (b) mothers' and children's proficiency in their less dominant language were at least 5 on the 0-10 LEAP-Q scale. On the other hand, our inclusionary criteria for monolingual dyads were (a) mothers and children were exposed to their second language less than 20% (if they knew a second language or were exposed to one) and (b) mothers' and children's proficiency in the second language was 5 or lower on the 0-to-10 LEAP-Q scale

In addition to mothers' self-report language measures from the LEAP-Q and maternal report of children's language profiles, mother-child dyads were given the *Peabody Picture Vocabulary Test–Third Edition* (PPVT-III; Dunn & Dunn, 1997), a standardized test of English receptive vocabulary and the *Expressive Vocabulary Test* (EVT; Williams, 1997), a standardized test of English expressive vocabulary that is co-normed with the PPVT-III, or the translated Thai versions of the two tests, or both the English and Thai versions, depending on the dyads' language background. See Tables 1, 2, and 3 for children's, mothers', and fathers' language background and demographic information.

Table 1

Language Background of Bilingual and Monolingual Children in Thailand and in the United States

	Thai-English bilinguals in Thailand (n = 26) Mean (SD)	Thai monolinguals in Thailand (n = 21) Mean (SD)	English monolinguals in the United States (n = 21) Mean (SD)
Gender (% female)	50%	52.4%	47.6%
Age (months)	54.42 (4.34)	53.19 (4.46)	52.43 (3.76)
Age of Thai acquisition (years)	0.02 (0.10)	0.17 (0.69)	-
Age of English acquisition (years)	0.22 (0.33)	1.40 (1.05)	0 (0)
Age of other language acquisition (years)	-	-	1.23 (2.06)
Current exposure[a] to Thai (%)	52.30 (15.76)	91.19 (7.06)	-
Current exposure[a] to English (%)	46.63 (16.09)	8.81 (7.06)	99.50 (1.01)
Mother-reported Thai proficiency[b]	7.56 (1.26)	7.02 (1.57)	-
Mother-reported English proficiency[b]	7.29 (1.01)	2.44 (1.34)	8.33 (1.29)
Thai receptive vocabulary (PPVT)	67.19 (19.05)	65.14 (20.85)	-
English receptive vocabulary (PPVT)	63.00 (18.02)	-	72.67 (12.24)
Thai expressive vocabulary (EVT)	36.15 (5.96)	45.95 (6.28)	-
English expressive vocabulary (EVT)	48.38 (9.14)	-	49.62 (7.19)

[a]Exposure was reported in terms of percentage per day.

[b]Proficiency was averaged across speaking and understanding domains, measured using the LEAP-Q, on a 0-10 scale.

Table 2

Language Background of Bilingual and Monolingual Mothers in Thailand and in the United States

	Thai-English bilinguals in Thailand (n = 26) Mean (SD)	Thai monolinguals in Thailand (n = 21) Mean (SD)	English monolinguals in the United States (n = 21) Mean (SD)
Age (years)	36.72 (3.74)	37.66 (4.35)	37.16 (5.50)
Education (years)	19.77 (2.05)	18.55 (3.07)	18.00 (3.53)
Age of Thai acquisition (years)	0.48 (1.17)	1.60 (1.83)	-
Age of English acquisition (years)	6.35 (2.74)	8.91 (4.35)	0.17 (0.55)
Age of other language acquisition (years)	-	-	11.56 (5.77)
Current exposure[a] to Thai (%)	64.81 (15.90)	91.43 (7.38)	-
Current exposure[a] to English (%)	35.00 (16.06)	8.57 (7.38)	98.81 (1.97)
Self-reported Thai proficiency[b]	9.32 (0.96)	9.13 (0.87)	-
Self-reported English proficiency[b]	7.08 (1.12)	4.25 (1.65)	9.46 (0.60)
Thai receptive vocabulary (PPVT)	198.46 (2.55)	195.57 (3.90)	-
English receptive vocabulary (PPVT)	153.04 (23.21)	-	193.14 (6.69)
Thai expressive vocabulary (EVT)	125.73 (14.93)	148.24 (13.47)	-
English expressive vocabulary (EVT)	109.50 (16.58)	-	155.33 (15.35)

[a]Exposure was reported in terms of percentage per day.

[b]Proficiency was averaged across speaking, understanding, and reading domains, measured using the LEAP-Q, on a 0-10 scale.

Table 3

Language Background of Fathers in Thailand and in the United States

	Thai-English bilinguals in Thailand (*n* = 26) Mean (SD)	Thai monolinguals in Thailand (*n* = 21) Mean (SD)	English monolinguals in the United States (*n* = 21) Mean (SD)
Age (years)	38.99 (5.40)	40.03 (5.13)	39.01 (6.23)
Education (years)	20.00 (3.14)	19.20 (6.09)	17.81 (3.12)
Age of native language acquisition (years)	1.07 (1.33)	1.78 (1.79)	0.47 (0.87)
Age of second language acquisition (years)	7.76 (5.54)	9.33 (6.87)	13.50 (2.29)
Current exposure[a] to native language (%)	71.16 (25.01)	86.90 (12.37)	99.56 (1.01)
Current exposure[a] to second language (%)	26.20 (22.34)	11.35 (10.91)	0.38 (0.82)
Self-reported native language proficiency[b]	9.24 (1.09)	9.03 (1.10)	9.42 (1.15)
Self-reported second language proficiency[b]	6.36 (1.76)	5.44 (1.79)	3.83 (2.29)

[a]Exposure was reported in terms of percentage per day.

[b]Proficiency was averaged across speaking, understanding, and reading domains, measured using the LEAP-Q, on a 0-10 scale.

Procedure

To examine mothers' scaffolding strategies and children's narrative skills during mother-child conversations, mothers have typically been asked to elicit interesting past events and experiences from their children (e.g., Melzi et al., 2011; Minami & McCabe, 1995; Reese & Fivush, 1993). Mothers are typically instructed to converse with their child about specific one-time events that did not last longer than a day. The current Experiment used word prompts to elicit mother-child reminiscing. Previous work has shown that prompts are effective in eliciting autobiographical memories (e.g., Marian & Kaushanskaya, 2004; Marian & Neisser, 2000). Mothers were told that because it might be difficult to come up with many stories on request, they would be prompted with some words to facilitate the reminiscing process. The following two sets of 11 word prompts were used: (Set 1) airplane, birthday, blanket, blood, boat, butterfly, cat, holiday, laughing, lunch, and school, (Set 2) car, dinner, doctor, dog, friend, kitchen, party, spider, summer, yard, and zoo. Their Thai translations, respectively, are: (Set 1) **เครื่องบิน, วันเกิด, ผ้าห่ม, เลือด, เรือ, ผีเสื้อ, แมว, วันหยุด, การหัวเราะ, อาหารเที่ยง,** and **โรงเรียน,** (Set 2) **รถ, อาหารเย็น, หมอ, หมา, เพื่อน, ครัว, งานเลี้ยง, แมงมุม, ฤดูร้อน, สนาม,** and **สวนสัตว์**. Half of all bilingual mothers received Set 1 in Thai and Set 2 in English. The other half of the participants received Set 1 in English and Set 2 in Thai. The order of presentation of the two sets was counterbalanced. Monolingual mothers received one set of prompts in the language that they speak.

All mothers were instructed to converse with their child as they normally would when jointly recounting past events. Mothers were asked to go through all 11 word prompts one at a time and to spend as much time as they would like on each prompt. In the case that mothers accidentally skipped a word, the experimenter would inform the mothers of the word they

missed. To ensure that mothers and children spend substantial time recalling autobiographical memories related to each prompt, mothers were given two phrases to elicit narratives from their child ("what else do you remember?" and "can you tell me more?"). Mothers were instructed to use these two questions as a way to probe whether the child was done reminiscing before moving on to the next cue word. Each child was told that they were going to play a game and should answer as quickly as they could with a past event that comes to mind when hearing each word. All interactions were video-recorded. The average duration of the prompted reminiscing task was 21.75 minutes (*SD* = 9.10 minutes) for bilingual dyads' Thai session, 23.08 minutes (*SD* = 9.99 minutes) for bilingual dyads' English session, 22.71 minutes (*SD* = 10.51 minutes) for Thai monolingual dyads, and 20.51 minutes (*SD* = 5.78 minutes) for English monolingual dyads. There was no significant difference across language or group in the average duration of the sessions (*p*s > .05).

Coding and Data Analysis

Video recordings were transcribed using a standardized format, Codes for the Human Analysis of Transcripts, available through the Child Language Data Exchange System (MacWhinney, 2000). Native speakers of Thai and English transcribed and coded all conversations in their respective languages. Transcripts were coded using a frequency-based approach, where each maternal and child linguistic measure was coded each time it occurred and the total number for each measure was tallied. Intercoder reliability was established between the coders on 20% of the transcripts using Cohen's Kappa for all of the measures (bilingual: $\kappa = 0.90$ for Thai coders, $\kappa = 0.94$ for English coders; monolingual: $\kappa = 0.94$ for Thai coders, $\kappa = 0.93$ for English coders). A bilingual speaker blinded to the hypotheses also coded 20% of both the Thai and English transcripts to ensure that the coding schemes were comparable across both

languages.

Two types of measures were obtained from the coded transcripts: 1) mother's language use and 2) child's language use. Based on coding systems commonly used in the literature (e.g., Bloom, 1970; Tamis-LeMonda et al., 2012; Tomasello & Farrar, 1986), maternal and child utterances were coded for 16 linguistic measures: affirmation, attention directive, closed-ended question, description, direct action request, expansion, extension, indirect action request, label, negative feedback, open-ended question, positive feedback, recast, reframe, repetition, request for repetition. See Tables 4 and 5 for the full list of measures with their corresponding examples. Additionally, measures of conversation length, including the total number of utterances and total number of words, were obtained from the transcripts. See Appendix 2 (Tables 2.1 and 2.2) for raw mean frequencies of all linguistic measures. Example transcripts can be found in Appendix 7.

Table 4

Mothers' Language Use and Corresponding Examples

Maternal linguistic measure	Examples
Label	That's a cat
Description	That's a big dog
Open-ended question	What did you have for lunch yesterday?
Closed-ended question	Are you done?
Reframe	That's green, not blue
Affirmation	Child says, "I ate pizza"; mother says, "yes you did!"
Repetition	Child says, "spider"; mother repeats, "spider"
Request for repetition	Can you repeat that?
Expansion	Child says, "eat"; mother says, "they are eating"
Extension	Child says, "all done", Mother says,

	"all done, we are ready to move on!"
Recast	Child says, "owl tree"; mother says, "is the owl inside the tree?"
Direct action request	Sit down
Indirect action request	Can you sit down?
Attention directive	Look at that
Positive feedback	Good job!
Negative feedback	What you said was not okay!

Table 5

Child Language Use and Corresponding Examples

Child linguistic measure	Examples
Label	That's a frog
Description	That's a little boy
Open-ended question	Why are they angry?
Closed-ended question	Did you like the cake?
Reframe	That's a butterfly, not a bee
Affirmation	Mother says, "doggie"; child says, "yes!"
Repetition	Mother says, "spider"; child repeats, "spider"
Request for repetition	Huh?
Expansion	Mother says, "eat"; child says, "they are eating"
Extension	Mother says, "zoo"; child says, "we went to the zoo and saw so many animals"
Recast	Mother says, "doggy bed"; child says, "is the doggy under the bed?"
Direct action request	Play with me
Indirect action request	Can you play with me?
Attention directive	Here!
Positive feedback	Awesome!

Negative feedback	No, that's wrong!

To compare bilingual mothers' and children's conversation styles across their two languages, the total count of each maternal and child linguistic measure was fitted to Poisson, negative binomial, zero-inflated Poisson, and zero-inflated negative binomial generalized linear mixed models using the glmmTMB function (Brooks et al., 2017). Instances of code-switching and code-mixing were excluded from analyses. Models included fixed effects of language (English, Thai), child gender (male, female), and an interaction term. Both fixed effects of language and child gender were treatment coded (Thai coded as 1, English coded as 0; male coded as 1, female coded as 0). Total number of words produced, L1 and L2 proficiency, and L1 and L2 exposure were added as covariates. The models also included random intercepts for participants. The best fitting models for each linguistic measure were selected by comparing AIC values using the AICtab function of the bbmle package (Bolker & R Development Core Team, 2021). Model assumptions (including overdispersion and zero-inflation) were checked using the performance package (Lüdecke et al., 2021). Post-hoc comparisons, with Bonferroni correction, were conducted to follow up any significant interaction between language and child gender. To examine the relation between maternal and child narrative patterns, correlations were run.

To compare bilingual mothers' and children's conversation styles in their two languages with their monolingual counterparts, the total count of each maternal and child linguistic measure was fitted to Poisson, negative binomial, zero-inflated Poisson, and zero-inflated negative binomial generalized linear mixed models using the glmmTMB function (Brooks et al., 2017). Two sets of models were run, one comparing the Thai conversations of bilingual and monolingual dyads and one comparing the English conversations of bilingual and monolingual

dyads. All models included fixed effects of group (bilingual, monolingual), child gender (male, female), and an interaction term. Both fixed effects of group and child gender were treatment coded (bilingual coded as 1, monolingual coded as 0; male coded as 1, female coded as 0). Total number of words produced, L1 and L2 proficiency, and L1 and L2 exposure were added as covariates. The models also included random intercepts for participants. Model selection and assumption checks were conducted using the same methods as in the within bilingual comparisons. Post-hoc comparisons, with Bonferroni correction, were conducted to follow up any significant interaction between group and child gender. Because models included covariates, estimated marginal means were computed.

2.4 Results

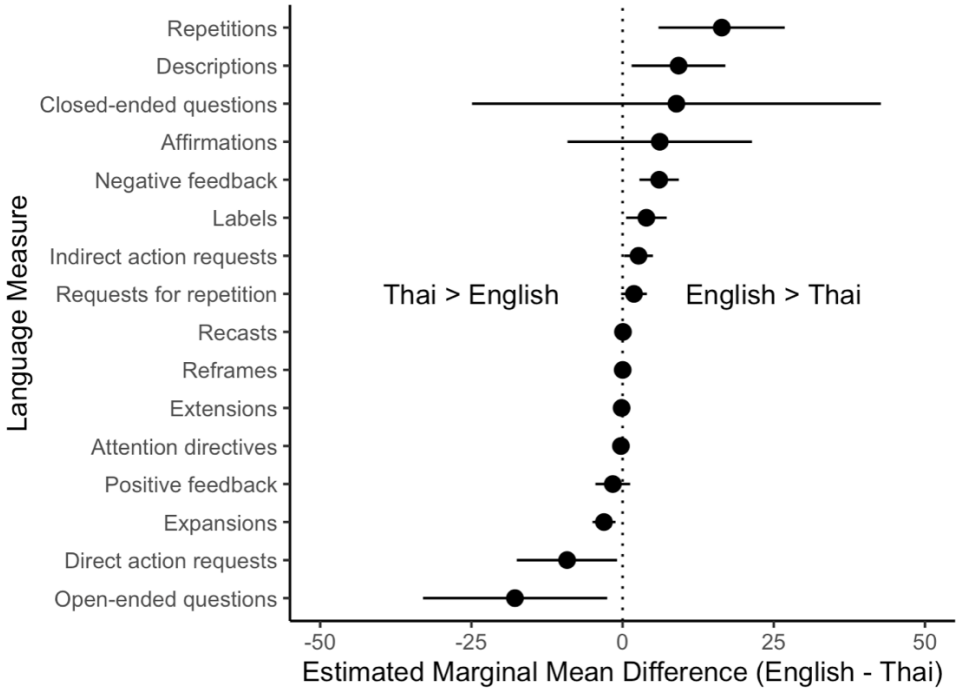
Within Bilingual Comparisons (English Versus Thai)

Maternal Language Measures

When reminiscing with their child, bilingual mothers produced more descriptions, labels, negative feedback, and repetitions when speaking in English than in Thai (ps < .05). On the other hand, bilingual mothers produced a greater number of words, as well as used more direct action requests and expansions when speaking in Thai than in English (ps < .05). See Figure 2 for a summary of mean differences between English and Thai in bilingual mother's communicative patterns. See Appendix 2 for full outputs from the best-fitting generalized linear mixed models for maternal language use (Tables 2A.1-2A.18) and for estimated marginal means (Table 2A.19).

Figure 2

Mean Differences Between English and Thai in Bilingual Mothers' Linguistic Measures During Prompted Reminiscing

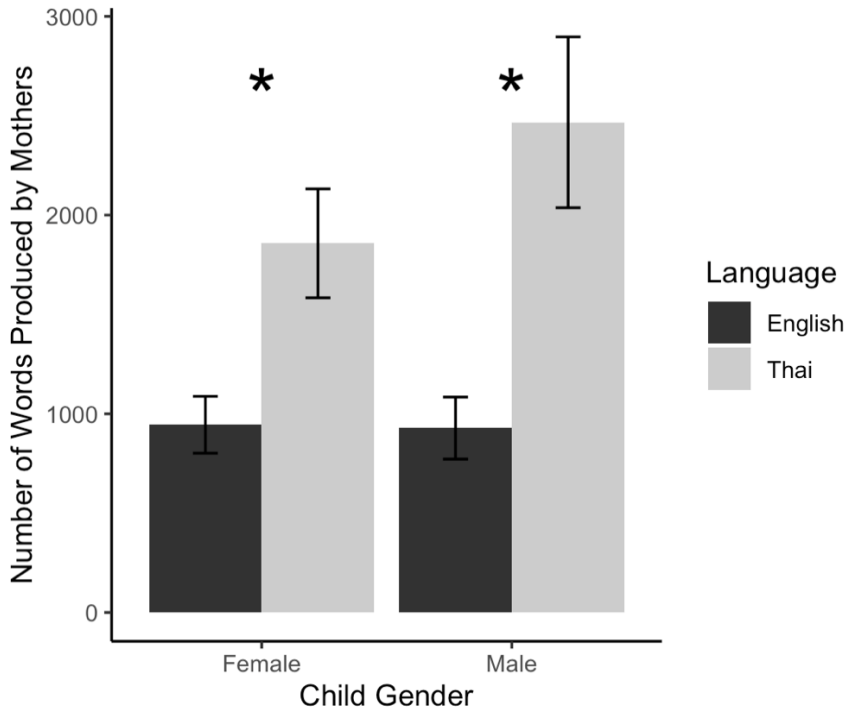


Note. Positive mean difference values indicate mothers' greater use of the linguistic measure in English compared to Thai. Negative mean difference values indicate mothers' greater use of the linguistic measure in Thai compared to English. Error bars represent 95% confidence intervals.

There was no significant main effect of child gender for any of the maternal linguistic measures but there was a significant interaction between language and child gender for the number of words mothers produced ($p < .05$). Both mothers of girls and boys produced more words in Thai than in English ($ps < .025$), but the magnitude of the cross-linguistic difference was larger among mothers of boys. See Figure 3 for the interaction between language and child gender on the number of words produced by mothers.

Figure 3

Number of Words Bilingual Mothers Produced by Language and Child Gender



Note. Error bars represent standard error.

*$p < .025$.

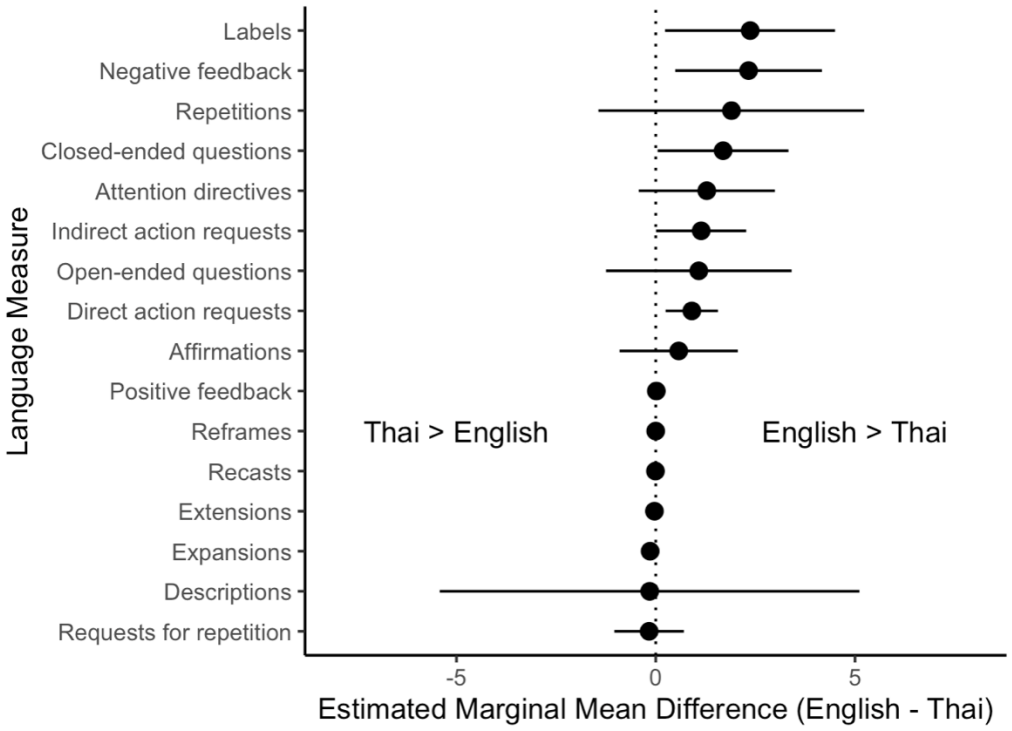
Child Language Measures

When reminiscing with their mothers, bilingual children produced more words in Thai than in English, but produced more affirmations, attention directives, closed-ended questions, direct action requests, labels, and negative feedback in English than in Thai (ps < .05). See Figure 4 for a summary of mean differences between English and Thai in bilingual children's communicative patterns. Boys produced more indirect action requests than girls ($p < .05$).

Additionally, there were significant interactions between language and child gender for child use of affirmations and requests for repetition ($p < .05$). However, follow-up analyses did not reveal significant simple effects for use of affirmations and requests for repetitions ($ps > .025$). See Appendix 2 for full outputs from the best-fitting generalized linear mixed models for child language use (Tables 2A.20-2A.37) and for estimated marginal means (Table 2A.38).

Figure 4

Mean Differences Between English and Thai in Bilingual Children's Linguistic Measures During Prompted Reminiscing



Note. Positive mean difference values indicate children's greater use of the linguistic measure in English compared to Thai. Negative mean difference values indicate children's greater use of the linguistic measure in Thai compared to English. Error bars represent 95% confidence intervals.

Associations Between Maternal and Child Narrative Styles

Correlation analyses revealed significant positive correlations (ps < .05) between maternal and child number of utterances (English r = 0.90, Thai r = 0.97), number of words (English r = 0.54, Thai r = 0.55), use of descriptions (English r = 0.84, Thai r = 0.59), use of labels (English r = 0.92, Thai r = 0.72), and use of negative feedback (English r = 0.77, Thai r = 0.43) when speaking both languages. There was a significant positive correlation between maternal and child use of expansions (r = 0.41) only when speaking in Thai, and significant positive correlations between maternal and child use of affirmations (r = 0.83), attention directives (r = 0.48), and indirect action requests (r = 0.64) only when speaking in English. Full correlation results are presented in Table 6.

Table 6

Pearson's r Correlations Between Bilingual Mothers' and Children's Language Use During Prompted Reminiscing

Linguistic measure	Language	
	English	Thai
Label	0.92 ***	0.72 ***
Description	0.84 ***	0.59 **
Open-ended question	0.03	0.23
Closed-ended question	0.16	-0.03
Reframe	-0.09	-0.08
Affirmation	0.83 ***	0.17
Repetition	0.31	0.34 †
Request for repetition	0.24	0.21

Expansion	-0.06	0.41 *
Extension	0.03	0.15
Recast	N/A	0.25
Direct action request	0.34 †	0.19
Indirect action request	0.64 ***	-0.17
Attention directive	0.48 *	0.33 †
Positive feedback	0.14	N/A
Negative feedback	0.77 ***	0.43 *
Total utterances	0.90 ***	0.97 ***
Total words	0.54 **	0.55 **

†$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Bilingual Versus Monolingual Comparisons (English)

Maternal Language Measures

When speaking in English, bilingual mothers produced more open-ended questions and repetitions than their English monolingual counterparts (*p*s < .05). English monolingual mothers produced more direct action requests, extensions, labels, and positive feedback than bilingual mothers (*p*s < .05). See Appendix 2 for full outputs from the best-fitting generalized linear mixed models for maternal language use (Tables 2B.1-2B.18) and for estimated marginal means (Table 2B.19).

Child Language Measures

English monolingual children produced more indirect action requests than bilingual children did when speaking English ($p < .05$). Girls produced more affirmations and direct action requests than boys (*p*s < .05). Additionally, there were significant interactions between group and child gender on the use of affirmations, direct action requests, and negative feedback. However,

follow-up analyses revealed no significant simple effects for the three linguistic measures (*p*s > .025). See Appendix 2 for full outputs from the best-fitting generalized linear mixed models for child language use (Tables 2B.20-2B.37) and for estimated marginal means (Table 2B.38).

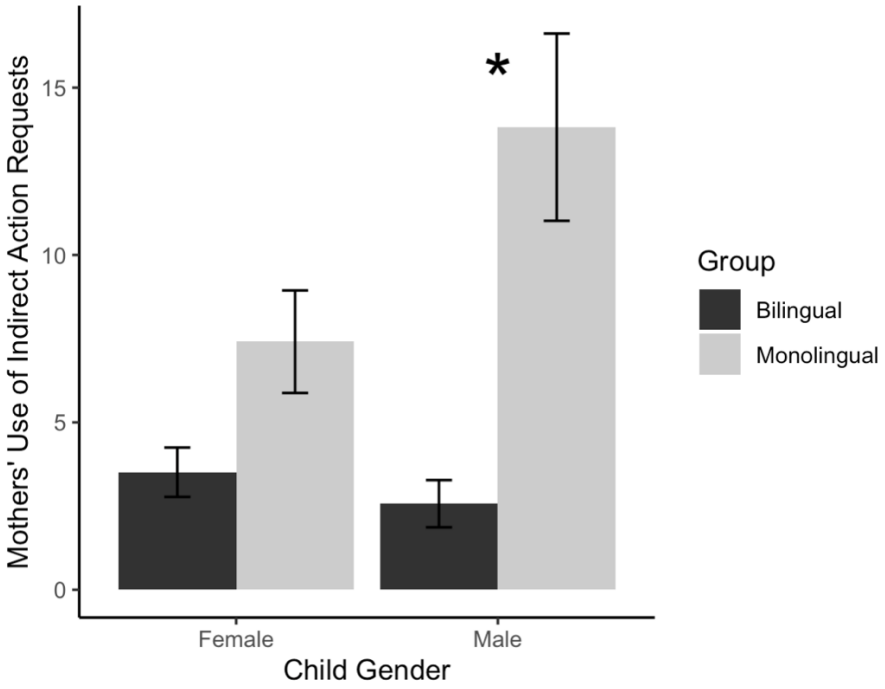
Bilingual Versus Monolingual Comparisons (Thai)

Maternal Language Measures

When speaking in Thai, bilingual mothers produced more affirmations, expansions, and recasts than Thai monolingual mothers (*p*s < .05). Thai monolingual mothers produced more indirect action requests than bilingual mothers ($p < .05$). Mothers of boys produced more attention directives, indirect action requests, and recasts than mothers of girls (*p*s < .05). There were significant interactions between group and child gender on mothers' use of indirect action requests and recasts. Follow-up analyses revealed that Thai monolingual mothers of boys produced more indirect action requests than their bilingual counterparts ($p < .025$), whereas Thai monolingual and bilingual mothers of girls did not differ on their use of indirect action requests. Additionally, bilingual mothers of girls used recasts significantly more than monolingual mothers of girls ($p < .025$), whereas mothers of boys did not differ on their use of recasts. See Figures 5 and 6 for the interaction between group and child gender on bilingual and monolingual mothers' use of indirect action requests and recasts. See Appendix 2 for full outputs from the best-fitting generalized linear mixed models for maternal language use (Tables 2C.1-2C.18) and for estimated marginal means (Table 2C.19).

Figure 5

Bilingual and Monolingual Mothers' Use of Indirect Action Requests by Group and Child Gender

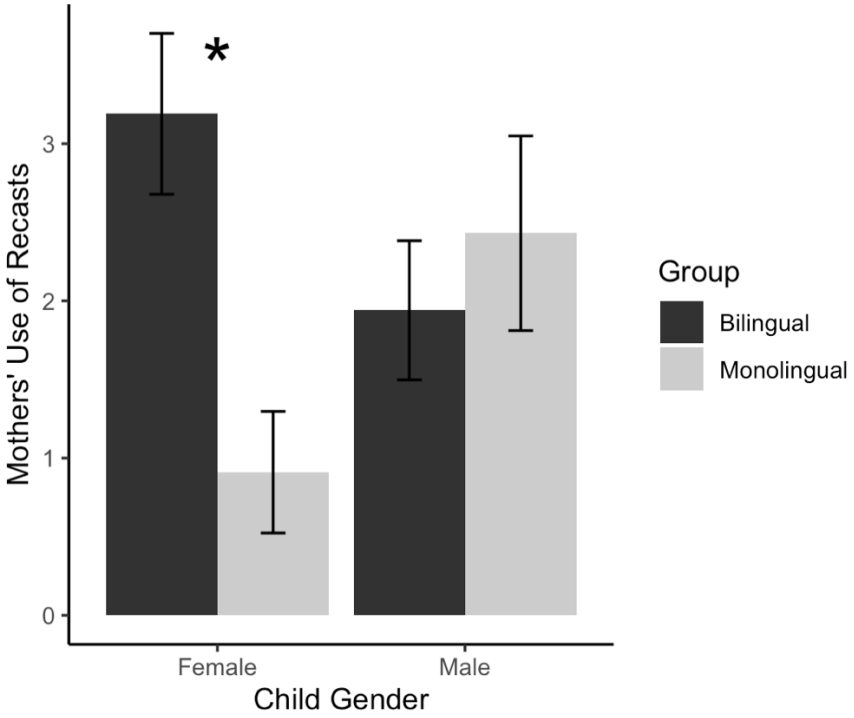


Note. Error bars represent standard errors.

*$p < .025$.

Figure 6

Bilingual and Monolingual Mothers' Use of Recasts by Group and Child Gender



Note. Error bars represent standard errors.

*$p < .025$.

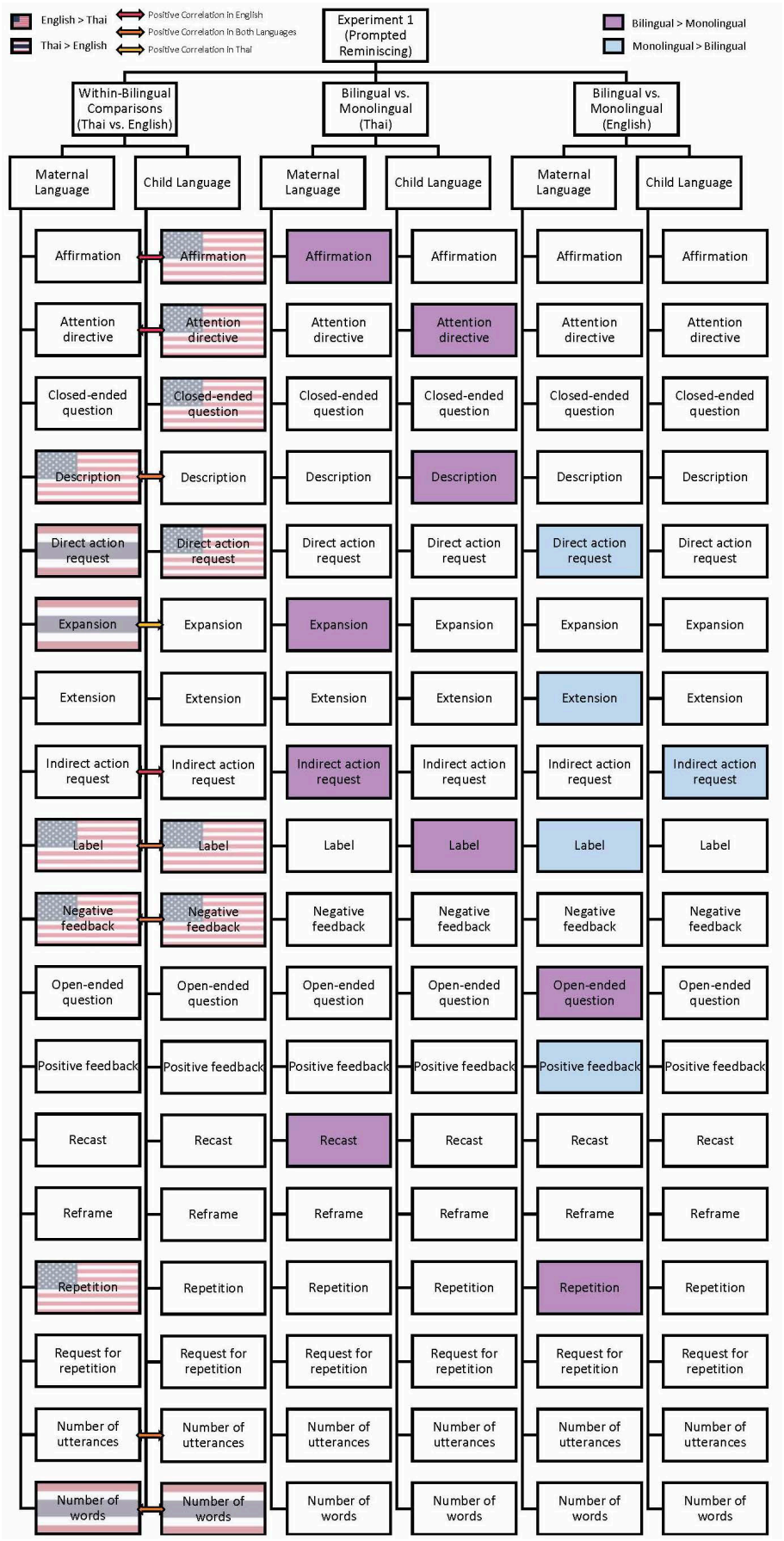
Child Language Measures

When speaking in Thai, bilingual children produced more attention directives, descriptions, and labels than Thai monolingual children (*p*s < .05). Boys produced more direct action requests, open-ended questions, and requests for repetitions than girls (*p*s < .05). There was no significant interaction between group and child gender for any of the linguistic measures. See Appendix 2 for full outputs from the best-fitting generalized linear mixed models for child

language use (Tables 2C.20-2C.37) and for estimated marginal means (Table 2C.38). An overview of the results from Experiment 1 is presented in Figure 7.

Figure 7

An Overview of Experiment 1 Results


English > Thai
Thai > English
Positive Correlation in English
Positive Correlation in Both Languages
Positive Correlation in Thai
Experiment 1 (Prompted Reminiscing)
Bilingual > Monolingual
Monolingual > Bilingual
Within-Bilingual Comparisons (Thai vs. English)
Bilingual vs. Monolingual (Thai)
Bilingual vs. Monolingual (English)
Maternal Language
Child Language
Maternal Language
Child Language
Maternal Language
Child Language
Affirmation
Attention directive
Closed-ended question
Description
Direct action request
Expansion
Extension
Indirect action request
Label
Negative feedback
Open-ended question
Positive feedback
Recast
Reframe
Repetition
Request for repetition
Number of utterances
Number of words

2.5 Discussion

The present Experiment aimed to examine cross-linguistic differences in mother-child autobiographical conversations and the associations between maternal and child narrative patterns during the dyadic task. Findings from the cross-linguistic comparisons provide evidence for cultural frame switching, particularly that each of the bilingual's two languages serves as a cue for the associated culture-specific communicative norms. Results also suggest that bilinguals exhibit conversation styles that are not identical to their monolingual counterparts but rather an amalgam of the two distinct styles. Additionally, gender differences and associations between maternal and child speech patterns were observed.

Cross-linguistic comparisons of bilingual mothers' scaffolding strategies revealed a similar pattern to the difference observed between American and Thai monolingual mothers (Rochanavibhata & Marian, 2020; Winskel, 2010). Bilingual mothers exhibited a high-elaborative style when speaking in English. Relative to when they were speaking in Thai, mothers used a greater variety of scaffolding strategies to build upon their children's narratives, including use of descriptions, labels, and repetitions. Bilingual mothers also used negative feedback more, resembling English monolingual mothers who tend to model autonomy and individuality by using evaluative statements (e.g., Minami & McCabe, 1995; Rochanavibhata & Marian, 2020). Conversely, bilingual mothers exhibited a low-elaborative style when speaking in Thai, as evidenced by the relatively less diverse toolbox of elicitation strategies, including use of direct action requests and expansions. Additionally, bilingual mothers' greater use of directives when speaking in Thai than in English was reflective of the adult-centered high-power-distance social dynamic associated with Thai culture (Hofstede, 2001; Rochanavibhata & Marian, 2020). Despite the evidence suggesting that bilingual mothers' narrative styles resembled the high-

elaborative style when speaking in English, there was one contradicting finding. Contrary to the prediction, mothers produced longer narratives when speaking in Thai, as measured by number of words. The fact that cross-linguistic differences were observed in the total number of words but not in the number of utterances produced may suggest that it is not loquaciousness per se that is being captured here, but rather potential differences in linguistic properties of Thai and English. Particularly, compared to English, Thai may be a more morphologically rich language where more words are typically used to convey the same meaning. However, no research to date has compared such linguistic properties. Therefore, future work is needed to examine potential differences in the morphology of both languages.

Results also revealed that bilingual children exhibited two contrasting reminiscing styles–high-elaborative when speaking in English and low-elaborative when speaking in Thai–mirroring those of their monolingual counterparts (Rochanavibhata & Marian, 2020; Winskel, 2010). Children produced more affirmations, attention directives, closed-ended questions, direct action requests, labels, and negative feedback in English than in Thai. On the other hand, children did not use any of the linguistic measures significantly more frequently in Thai than in English. These narrative patterns reflect the cultural differences in parent-child power dynamic. Bilingual children in our study produced more commands and evaluative statements when speaking in English, a language associated with an individualistic low-power-distance Western culture, than when speaking in Thai, a language associated with a collectivist high-power-distance Eastern culture. These results suggest that when speaking in English, bilingual children were accessing the Western cultural frame and thus felt more comfortable making requests and expressing both their agreement and disagreement. Similar to their mothers, bilingual children produced more words when recounting memories in Thai compared to English. As previously discussed, this

discrepancy between our findings and predictions may be due to linguistic differences in the number of words required to express an idea, rather than a proxy of verbosity.

Correlation analyses revealed positive associations between maternal and child linguistic measures, specifically in their use of descriptions, labels, negative feedback, and narrative length (both in number of utterances and words). Congruent with previous research on monolingual dyads (e.g., Reese et al., 1993; Reese & Newcombe, 2007; Rochanavibhata & Marian, 2020), the current findings suggest that bilingual mothers' scaffolding influences their children's emerging narrative patterns in both languages. However, for some linguistic measures, positive correlations were observed only in one language. There was a significant positive correlation between maternal and child use of expansions only when speaking in Thai, and significant positive correlations between maternal and child use of affirmations, attention directives, and indirect action requests only when speaking in English. These language-specific positive associations between maternal and child speech patterns may be indicative of cross-linguistic differences in the scaffolding strategies and narrative devices that are viewed as important. For example, the relation between mothers' and children's use of affirmations in English may reflect the value placed on providing evaluative statements when speaking that particular language.

In addition to examining cross-linguistic differences in communicative patterns within bilingual mothers and children, we aimed to compare bilingual dyads to their monolingual counterparts. Comparisons of bilingual and monolingual mothers' narrative elicitation and scaffolding strategies revealed that English monolingual mothers exhibited a relatively more elaborative style compared to bilingual mothers when speaking in English. Specifically, English monolingual mothers used a greater variety of scaffolding strategies (direct action requests, extensions, labels, and positive feedback) than bilingual mothers (open-ended questions and

repetitions). Conversely, Thai monolingual mothers exhibited a relatively less elaborative style compared to bilingual mothers when speaking in Thai. Bilingual mothers produced more affirmations, expansions, and recasts, all of which are reminiscent of the high-elaborative style that encourages child participation. Thai monolingual mothers produced more indirect action requests than bilingual mothers, which is characteristic of a low-elaborative adult-centered style that reinforces values of filial piety (Rochanavibhata & Marian, 2020).

Group comparisons among the children revealed that English monolingual children produced more indirect action requests than their bilingual peers when speaking in English, possibly demonstrating that even though bilingual children were speaking a language associated with an individualistic low-power-distance culture, American children were still more comfortable and thus more likely than Thai children to use commands with their mothers. In contrast to Thai monolingual children, bilingual children produced more attention directives when speaking in Thai, suggesting that perhaps as a byproduct of speaking English, they were less influenced by the normative power dynamic in Thai culture. Additionally, bilingual children exhibited a relatively high-elaborative conversation style–with greater use of descriptions and labels–when speaking Thai compared to Thai monolingual children. Overall, the findings from the bilingual versus monolingual comparisons for both mothers and children suggest that instead of resembling each of their monolingual counterparts (in which case no differences in narrative patterns would be observed between the two groups), bilingual mothers and children exhibit communicative patterns that are an amalgam of the two distinct styles.

Additionally, results revealed that maternal and child conversations differed as a function of child gender, and that for specific linguistic measures, child gender moderated the cross-linguistic differences in bilinguals' narrative patterns, as well as moderated the group differences

between bilinguals' and monolinguals' discourse. For example, bilingual boys produced more indirect action requests than girls, which could be due to the influence of their language profile and gender. Specifically, as a result of speaking both English and Thai, these bilingual boys may have assimilated social norms characteristic of the Western child-centered culture. Given that girls are typically socialized to be polite (Gleason, 1987) more than boys are, boys may be more likely to make requests and use directives with their mothers. Comparisons of bilingual and monolingual mothers also revealed that when speaking in Thai, bilingual mothers of girls used recasts significantly more than Thai monolingual mothers of girls, whereas Thai bilingual and monolingual mothers of boys did not differ on their use of recasts. This difference could be due to the prevalent socialization goals that parents have for children, specifically that girls are typically taught to be more elaborative (e.g., Haden et al., 1997; Reese et al., 1996; Reese & Fivush, 1993). Coupled with the fact that Thai monolingual mothers have typically adopted a low-elaborative style, the magnitude of the difference in elaboration was larger among mothers of girls. In other words, compared to Thai monolingual mothers of girls, bilingual mothers were more likely to use recasts due to the additive effect of their internalization of the high-elaborative American cultural norm and the norm associated with raising girls. On the other hand, since boys are not typically socialized to produce detailed narratives, no group difference emerged among mothers of boys.

In sum, a few key findings emerged from the present study. First, bilingual mothers and children exhibit two distinct narrative styles, each one emerging depending on which language is spoken at a given moment. Second, bilingual mothers' scaffolding and elicitation strategies influence children's own communicative patterns in both their languages. However, there are also narrative devices for which there is an association between mothers and children only in one

language, suggesting that not all strategies are equally valued in both Thai and English. Third, bilinguals' discourse style in each language is not identical to that of their monolingual counterpart. Instead, as a result of knowing two languages associated with two sets of cultural frames, bilinguals exhibit a hybrid style that combines elements of each of their monolingual peers. Fourth, child gender also influences how bilingual and monolingual mothers support their children's language and how children themselves talk about their personal memories. We conclude that there are multiple factors that impact children's narrative development, including the language(s) they speak, the cultural context in which they are growing up, and their gender.

CHAPTER 3 Cross-Linguistic Differences in Bilingual and Monolingual Mother-Child Book Sharing

3.1 Abstract

Book sharing practices were examined in bilingual and monolingual mother-preschooler dyads. Participants were 26 Thai-English bilingual, 21 Thai monolingual, and 21 English monolingual dyads. Bilingual mothers and children exhibited distinct literacy practices congruent with the cultural norms associated with each of the languages. During the English session, bilingual mothers used elicitation strategies to invite child participation. In turn, bilingual children contributed to the construction of the narrative and provided their mothers with evaluative feedback. During the Thai session, bilingual mothers used strategies to scaffold the story and model adult-like language. In contrast to when they were speaking English, children did not provide responses and instead took on the role of an audience. Although bilingual mothers and children engaged with picture books differently across languages, it is important to note that the two narrative styles were not characteristically identical to the style of their respective monolingual counterpart. Instead, the findings suggest that bilinguals experienced cross-linguistic transfer. Specifically, they were more likely to use narrative devices that were more congruent with English when speaking Thai and vice versa. Furthermore, bilingual mothers' and children's discourse patterns were positively correlated, which suggests that mothers were effective at socializing children to engage in linguistically and culturally appropriate ways.

3.2 Introduction

Preschool is a critical period for the development of narrative skills (e.g., Applebee, 1978; Chafe, 1980). Parent-child book sharing is a particularly important activity that allows adults to scaffold children's narrative abilities and to promote children's cognitive skills by engaging them in the co-construction of stories (Flack & Horst, 2018; Haden et al., 1996; Hoff-Ginsberg, 1991; Murase, 2014; Schick & Melzi, 2010; Tamis-LeMonda et al., 2012). Across cultures, monolingual mothers and children engage in this task differently. Specifically, there are cultural differences in how much narrative the mothers elicit from children and how much children contribute (e.g., Melzi et al., 2011; Rochanavibhata & Marian, 2021). However, it is unclear whether bilinguals exhibit distinct book sharing practices in their two languages. Thus, the present study aimed to examine book sharing interactions in Thai-English bilingual mother-child dyads, particularly comparing mothers' and children's narrative styles when engaging with books in Thai and English.

As an activity, book sharing presents an opportunity for caregivers and children to engage in discourse in various ways, whether it is telling the story outlined on the page or explicitly teaching literacy concepts such as sounding out the letters (Sénéchal & LeFevre, 1998). Additionally, adults provide children with examples of narrative structures and scaffold children's linguistic skills including teaching vocabulary and syntax (Bus et al., 1995). However, there is variability in the way that a parent socializes their child through book sharing (Haden et al., 1996; Reese & Cox, 1999). For example, White middle-class mothers have been found to adopt different scaffolding styles including the describer, collaborator, and comprehender styles. A describer tends to focus more on describing the pictures, naming the characters, and teaching children vocabulary. A collaborator tends to encourage children to make contributions to and

commentary about the story. On the other hand, a comprehender tends to discuss print knowledge such as letters and words, as well as invite children to discuss topics that are not related to the text. As a result, children develop different literacy skills depending on the type of scaffolding that they received (Haden et al., 1996). For example, children whose mothers are collaborators and comprehenders have better story comprehension than children whose mothers are describers.

Previous cross-cultural research has also shown differences in ways that mothers and children from different cultures interact with books (e.g., Caspe, 2009; Harkins & Ray, 2004; Melzi & Caspe, 2005; Melzi et al., 2011; Rochanavibhata & Marian, 2021). Mothers from individualistic cultures, including American mothers, tend to adopt a story-building style, where they ask questions to invite children's participation. Consequently, children from individualistic cultures tend to contribute more narrative in the joint book sharing session. On the other hand, mothers from collectivist cultures, including Thai mothers, tend to adopt a story-telling style where they take the lead in narrating the story. As a result, children from collectivist cultures often take the role of an audience. These patterns of interaction are congruent with the power dynamic and behavioral norms valued in each society. In addition to the cross-cultural differences in how mothers and children interact with books, there are also differences in linguistic features. For example, American mothers are more likely to label objects, whereas Chinese mothers are more likely to label actions, which result in differences in how much nouns and verbs are used during book sharing (Chan et al., 2009).

Additionally, maternal and child narrative styles tend to be associated (e.g., Kang et al. 2009; Rochanavibhata & Marian, 2021; Wang et al., 2000). For example, mothers who engage in more discussions of content not related to the text of the storybook tend to have children who

also engage in more of the same type of extratextual talk (Kang et al., 2009). Even in cross-cultural comparisons that showed narrative differences in dyads from different backgrounds, maternal and child use of linguistic devices have been shown to be correlated in both cultural groups. For instance, use of repetitions and evaluative statements by mothers and children were found to be positively correlated in both American and Chinese dyads (Wang et al., 2000).

Comparably less is known about book sharing practices among bilingual mother-child dyads, particularly potential differences in narrative styles across bilinguals' two languages, as well as potential associations between the mothers' and children's narrative styles in each language. In the extant literature, researchers of bilingual speakers have focused on story complexity and structure including the macrostructure (e.g., discussions of main characters, conflict, resolution, story ending etc.) and microstructure of the narrative (e.g., types of phrases used, the number of nouns versus verbs used etc.). For example, Mandarin-English bilingual children's narratives were compared across the two languages. Larger cross-linguistic differences were observed in the microstructure compared to the macrostructure of the stories (Hao et al., 2019). These findings suggest that there may be less variability in narrative macrostructure across languages compared to narrative microstructure. However, no study to date has examined bilingual mothers' and children's narrative styles during book sharing in the same way that previous researchers have done with monolingual dyads (e.g., Haden et al., 1996; Rochanavibhata & Marian, 2021; Wang et al., 2000).

Because we are interested in comparing the socialization process in each of a bilingual's two languages, and the most common approach is to study language socialization via narrative and discourse, the present study focused on maternal scaffolding strategies and children's own narrative contributions during the dyadic book sharing task. Specifically, we compared how

bilingual mothers and children engaged with a picture book across their two languages. We hypothesized that Thai-English bilingual mothers and their preschoolers would adopt different narrative styles depending on the language spoken during the book sharing session. Based on previous cross-cultural research (Rochanavibhata & Marian, 2021), we predicted that bilingual mothers would exhibit the story-building style when sharing a book in English and exhibit the story-telling style when sharing a book in Thai. Relatedly, we predicted that bilingual children would provide their own narrative contributions more during the English session and take on the role of an audience more during the Thai session. Additionally, in congruence with past findings (e.g., Rochanavibhata & Marian, 2021; Wang et al., 2000), maternal and child narrative styles during book sharing were expected to be related in each of their languages.

Considering that narrative skills, cognitive abilities, and literacy achievement are all intertwined, it is crucial to better understand how mothers are fostering their children's development in their two languages through the use of books. By comparing mother-child dyadic book sharing practices across languages, the findings of the present work can inform the design of literacy interventions for children who are dual language learners. For example, it may be more effective for caregivers to be trained on scaffolding strategies that are congruent with the cultural norms associated with the native and second languages respectively in order to successfully promote children's narrative skills in both languages.

3.3 Method

Participants

Participants were the same mother-child dyads from Experiment 1.

Procedure

Mother-child dyads completed a book sharing task. In this task, mothers are typically asked to share with their children different variations of wordless picture books, which have been used to elicit narratives from children and adults of diverse linguistic and cultural backgrounds (e.g., Choi, 2000; Melzi et al., 2011; Ogura et al., 2006). In the present Experiment, mothers were asked to share with their children wordless picture books, *Frog, Where Are You?* (Mayer, 1969) and *Frog Goes to Dinner* (Mayer, 1974), which have been used extensively in narrative research. Mothers were instructed to share the story as they typically would share picture books. Half of the bilingual dyads read *Frog, Where Are You?* (Mayer, 1969) during the Thai session and *Frog Goes to Dinner* (Mayer, 1974) during the English session. For the remaining bilingual dyads, the pairing of book and language was reversed. Half of the monolingual mother-child dyads read one book, while the other half read the other book in their respective language. No time limit was imposed on the dyads. The average duration of the book sharing task was 6.98 minutes (*SD* = 2.88 minutes) for bilingual dyads' Thai session, 7.79 minutes (*SD* = 2.50 minutes) for bilingual dyads' English session, 7.39 minutes (*SD* = 2.01 minutes) for Thai monolingual dyads, and 7.99 minutes (*SD* = 2.42 minutes) for English monolingual dyads. There was no significant difference across language or group in the average duration of the sessions (*p*s > .05).

Coding and Data Analysis

Transcription, coding, and data analyses followed the same procedures as in Experiment 1. Cohen's Kappas for the bilingual dataset were: κ = .90 for Thai coders, κ = .95 for English coders; monolingual dataset: κ = .88 for Thai coders, κ = .93 for English coders). See Appendix 3 (Tables 3.1 and 3.2) for raw mean frequencies of all linguistic measures. A selection of excerpts from transcripts can be found in Appendix 7.

3.4 Results

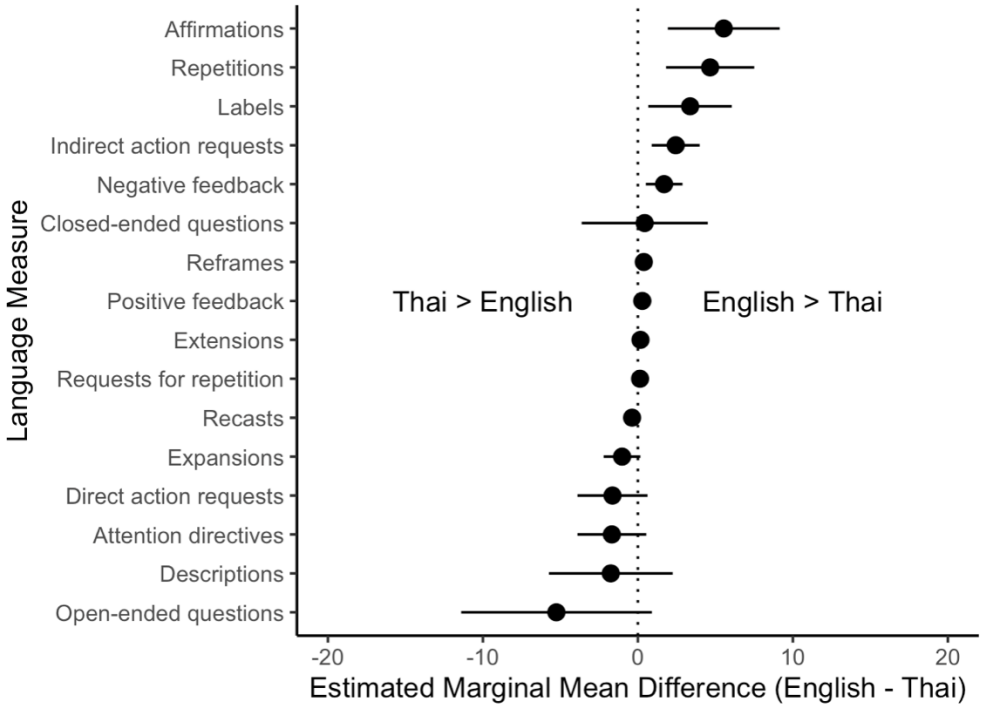
Within Bilingual Comparisons (English Versus Thai)

Maternal Language Measures

Bilingual mothers produced more affirmations, indirect action requests, labels, repetitions, and utterances when speaking in English than in Thai (*p*s < .05). Bilingual mothers produced more expansions and words in Thai than in English (*p*s < .05). See Figure 8 for a summary of mean differences between English and Thai in bilingual mothers' communicative patterns. Mothers of girls produced more attention directives and direct action requests than mothers of boys (*p*s < .05). See Appendix 3 for full outputs from the best-fitting generalized linear mixed models for maternal language use (Tables 3A.1-3A.18) and for estimated marginal means (Table 3A.19).

Figure 8

Mean Differences Between English and Thai in Bilingual Mothers' Linguistic Measures During Book Sharing

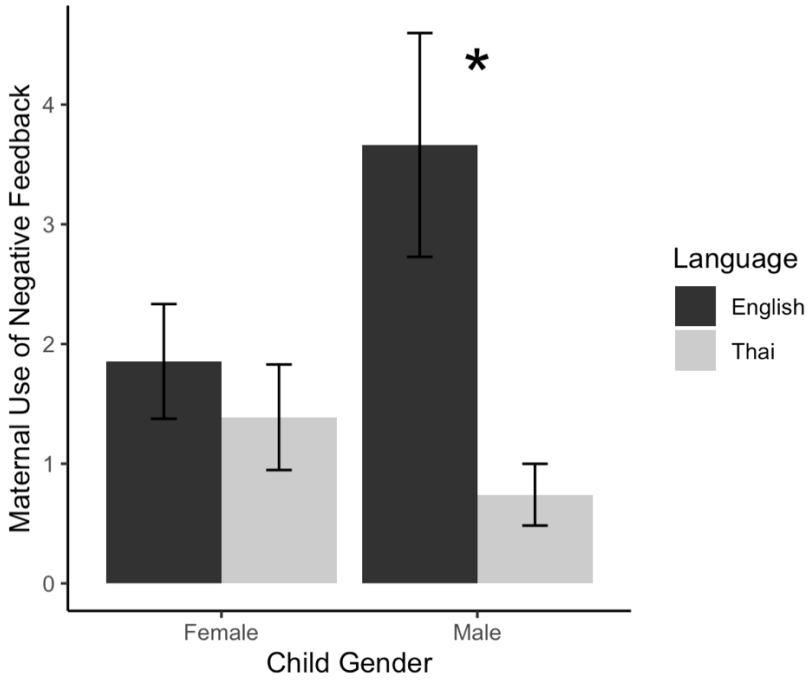


Note. Positive mean difference values indicate mothers' greater use of the linguistic measure in English compared to Thai. Negative mean difference values indicate mothers' greater use of the linguistic measure in Thai compared to English. Error bars represent 95% confidence intervals.

There was a significant interaction between language and child gender for maternal use of negative feedback. Bilingual mothers of boys used more negative feedback when speaking English than Thai ($p < .025$), whereas bilingual mothers of girls did not differ in their use of negative feedback. See Figure 9 for the interaction between language and child gender on bilingual mothers' use of negative feedback.

Figure 9

Bilingual Mothers' Use of Negative Feedback by Language and Child Gender



Note. Error bars represent standard errors.

*$p < .025$.

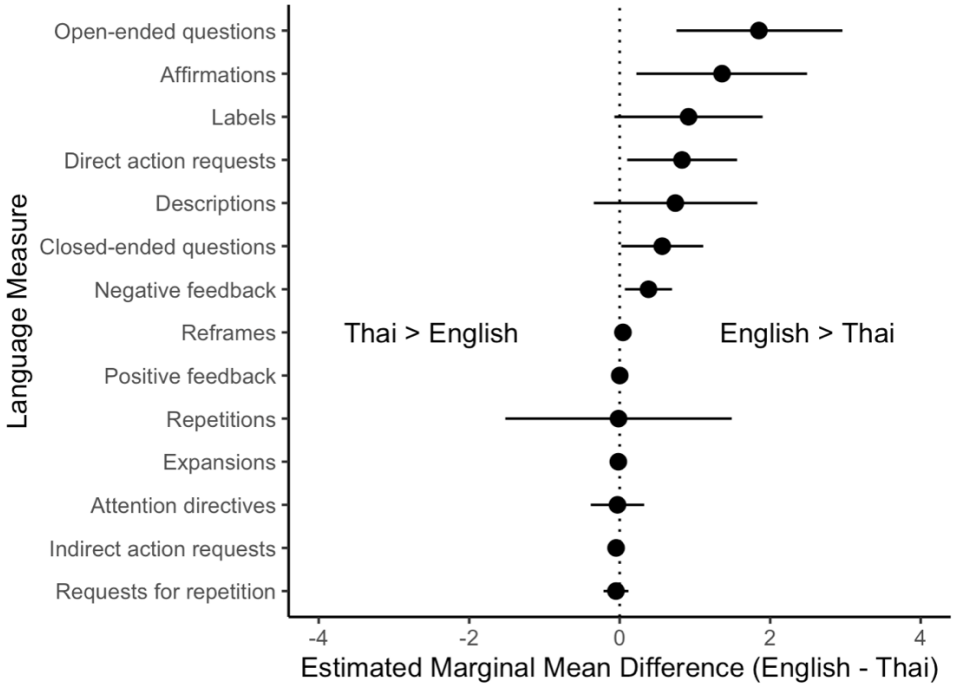
Child Language Measures

Bilingual children produced more affirmations, closed-ended questions, direct action requests, labels, negative feedback, and open-ended questions in English than in Thai (*p*s < .05). See Figure 10 for a summary of mean differences between English and Thai in bilingual children's communicative patterns. There was a significant interaction between language and child gender on child use of descriptions. However, follow-up analyses did not reveal significant simple effects (*p*s > .025). See Appendix 3 for full outputs from the best-fitting generalized

linear mixed models for child language use (Tables 3A.20-3A.35) and for estimated marginal means (Table 3A.36).

Figure 10

Mean Differences Between English and Thai in Bilingual Children's Linguistic Measures During Book Sharing



Note. Positive mean difference values indicate children's greater use of the linguistic measure in English compared to Thai. Negative mean difference values indicate children's greater use of the linguistic measure in Thai compared to English. Error bars represent 95% confidence intervals.

Associations Between Maternal and Child Narrative Styles

Correlation analyses revealed significant positive correlations ($ps < .05$) between maternal and child number of utterances (English $r = 0.65$, Thai $r = 0.86$), use of closed-ended

questions (English $r = 0.56$, Thai $r = 0.58$), use of descriptions (English $r = 0.44$, Thai $r = 0.69$), and use of labels (English $r = 0.75$, Thai $r = 0.66$) when speaking both languages. There were significant positive correlations between maternal and child number of words ($r = 0.56$) and use of negative feedback ($r = 0.76$) only when speaking in Thai, and a significant positive correlation between maternal and child use of reframe ($r = 0.42$) only when speaking in English. Full correlation results are presented in Table 7.

Table 7

Pearson's r Correlations Between Bilingual Mothers' and Children's Language Use During Book Sharing

Linguistic measure	Language	
	English	Thai
Label	0.75 ***	0.66 ***
Description	0.44 *	0.69 ***
Open-ended question	0.20	0.30
Closed-ended question	0.56 **	0.58 **
Reframe	0.42 *	N/A
Affirmation	0.36 †	0.37 †
Repetition	-0.06	0.26
Request for repetition	-0.12	0.38 †
Expansion	-0.12	-0.08
Extension	0.21	N/A
Recast	1.00 ***	N/A
Direct action request	-0.07	0.27
Indirect action request	0.08	-0.06
Attention directive	-0.04	0.25
Positive feedback	-0.12	-0.06

Negative feedback	0.05	0.76 ***
Total utterances	0.65 ***	0.86 ***
Total words	0.34 †	0.56 **

†$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Bilingual Versus Monolingual Comparisons (English)

Maternal Language Measures

English monolingual mothers produced more words and expansions than bilingual mothers when speaking in English (*p*s < .05). Mothers of girls produced more labels than mothers of boys, while mothers of boys produced more open-ended questions (*p*s < .05). There are significant interactions between group and child gender on mothers' use of expansions and labels, as well as how many words they produced. Follow-up analyses revealed no significant simple effects for any of the three measures (ps > .025). See Appendix 2 for full outputs from the best-fitting generalized linear mixed models for maternal language use (Tables 3B.1-3B.18) and for estimated marginal means (Table 3B.19).

Child Language Measures

When speaking English, bilingual children produced more words, utterances, and closed-ended questions than English monolingual children (*p*s < .05). Girls produced more attention directives and labels (*p*s < .05). There are significant interactions between language group and child gender on children's use of attention directives and labels. Post-hoc analyses did not reveal significant simple effects for use of either linguistic measure (*p*s > .025). See Appendix 3 for full outputs from the best-fitting generalized linear mixed models for child language use (Tables 3B.20-3B.37) and for estimated marginal means (Table 3B.38).

Bilingual Versus Monolingual Comparisons (Thai)

Maternal Language Measures

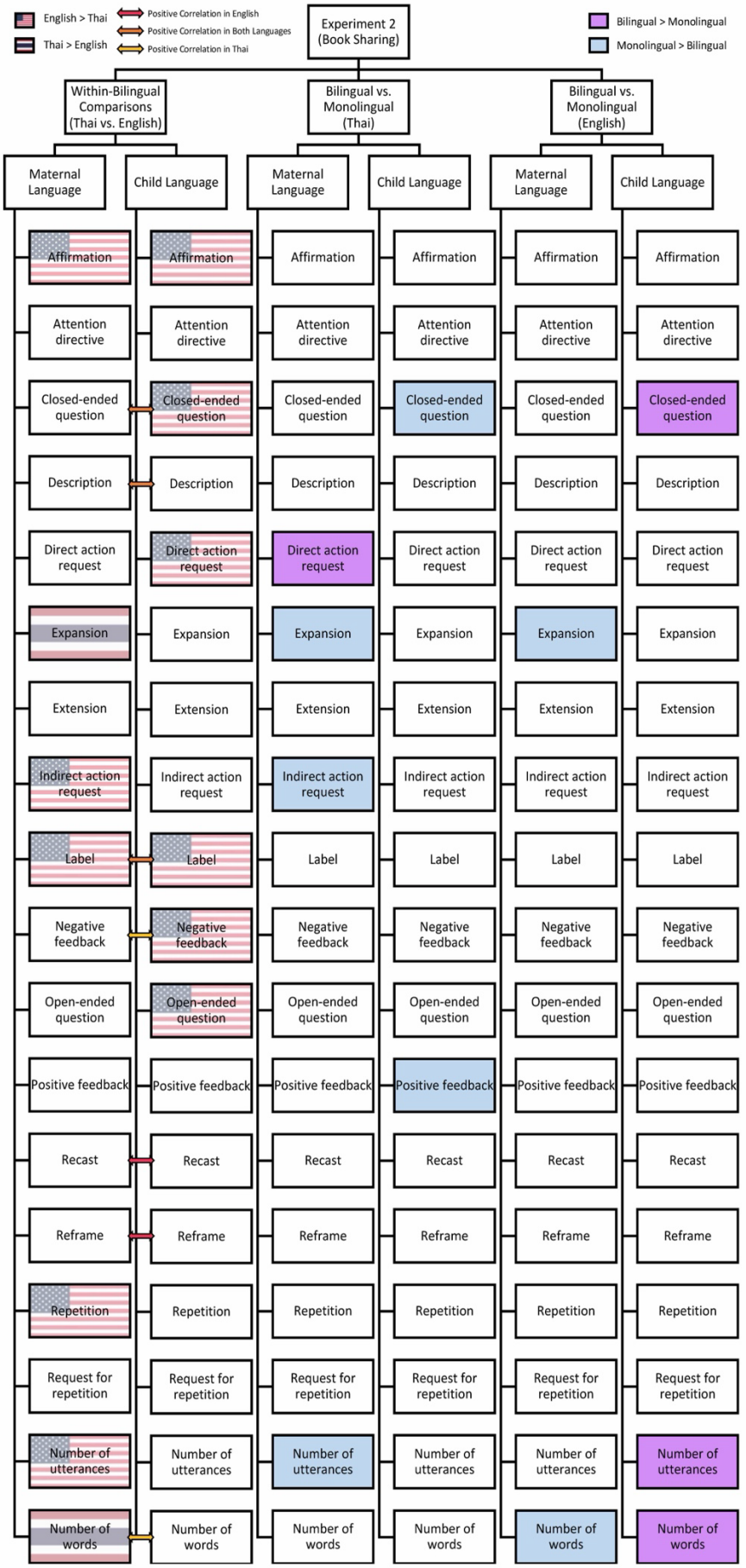
When speaking in Thai, bilingual mothers produced more direct action requests than Thai monolingual mothers ($p < .05$). Thai monolingual mothers produced more utterances, expansions, and indirect action requests than bilingual mothers ($ps < .05$). Mothers of girls produced more affirmations and positive feedback than mothers of boys ($ps < .05$). See Appendix 3 for full outputs from the best-fitting generalized linear mixed models for maternal language use (Tables 3C.1-3C.18) and for estimated marginal means (Table 3C.19).

Child Language Measures

Thai monolingual children produced more closed-ended questions and positive feedback than bilingual children when speaking in Thai ($ps < .05$). See Appendix 3 for full outputs from the best-fitting generalized linear mixed models for child language use (Tables 3C.20-3C.35) and for estimated marginal means (Table 3C.36). An overview of the results from Experiment 2 is presented in Figure 11.

Figure 11

An Overview of Experiment 2 Results


English > Thai
Thai > English
Positive Correlation in English
Positive Correlation in Both Languages
Positive Correlation in Thai
Experiment 2 (Book Sharing)
Bilingual > Monolingual
Monolingual > Bilingual
Within-Bilingual Comparisons (Thai vs. English)
Bilingual vs. Monolingual (Thai)
Bilingual vs. Monolingual (English)
Maternal Language
Child Language
Maternal Language
Child Language
Maternal Language
Child Language
Affirmation
Attention directive
Closed-ended question
Description
Direct action request
Expansion
Extension
Indirect action request
Label
Negative feedback
Open-ended question
Positive feedback
Recast
Reframe
Repetition
Request for repetition
Number of utterances
Number of words

3.5 Discussion

In this study, bilingual mother-child book sharing interactions were compared across languages. Findings revealed that dyads engage in this activity differently depending on which language is spoken. Specifically, bilingual mothers used elicitation strategies to encourage child participation when speaking in English, which consequently leads to bilingual children providing more responses and feedback. On the other hand, bilingual mothers took the lead in narrating the story when speaking in Thai, resulting in bilingual children's less participatory role as an audience. Despite having two distinct narrative styles, bilingual mothers' and children's book sharing practices consisted of characteristics from both of their monolingual counterparts instead of completely resembling each of their monolingual counterparts. Gender differences and correlations between maternal and child narrative patterns were also observed.

Bilingual mothers' elicitation strategies during the English book sharing session are reminiscent of the story-building and child-centered styles characteristic of individualistic cultures (Caspe, 2009; Harkins & Ray, 2004; Melzi & Caspe, 2005; Melzi et al., 2011; Rochanavibhata & Marian, 2021) where mothers encourage participation from their children through the use of strategies including affirmations and repetitions. Consequently, children fulfilled the role of a story co-constructor and contributed more to the narrative–by asking more questions, providing more evaluative feedback and labeling more–during the English session, compared to the Thai session. On the other hand, mothers adopted the storyteller and adult-centered styles–using expansions to grammatically render the child's utterances–while children fulfilled the role of an audience, as shown by the fact that they did not exhibit greater use of any of the linguistic measures during the Thai session compared to the English session. These results provide evidence for the cultural frame switching phenomenon (Hong et al., 1997; Hong et al.,

2000), in which language serves as a cue that triggers culture-specific behavioral norms. Specifically, when interacting in English, bilingual mothers and children engage in the book sharing activity in ways that are similar to other dyads from individualistic cultures. Conversely, when speaking in Thai, bilingual mothers and children interact with books in ways that are appropriate to Thai collectivist culture.

Cross-linguistic differences in bilingual children's communicative patterns also suggest that Thai and English trigger the high-power-distance and low-power-distance constructs, respectively (Hofstede, 2001; Vigil & Hwa-Froelich, 2004). In the Western American culture, children are typically treated as equals by adults. As a result, they tend to exhibit more individuality and autonomy (Bornstein, 2012; Harkness et al., 1992; Tamis-LeMonda & McFadden, 2010). In contrast, children in the Eastern Thai culture are typically expected to listen, show respect, and not talk back (Cameron et al., 2006; Eberhardt, 2014; Rogoff, 2003). These culture-specific communicative norms are reflected in bilingual children's speech, as they provided mothers both positive and negative feedback, asked questions, and used direct requests more when speaking in English compared to Thai.

However, it is important to note that the comparisons between bilinguals to their monolingual counterparts revealed that bilinguals do not behave like two monolinguals. As a result of speaking two languages associated with different cultural values, both bilingual mothers and children seem to adopt communicative styles that are a hybrid of their two monolingual counterparts. For instance, when speaking Thai, bilingual mothers were more inclined to use direct action requests than monolingual mothers, while the opposite pattern was observed for use of indirect action requests. Considering that collectivist cultures, including Thai culture, place an importance on interpersonal relationships and group harmony, requests that are indirect are

typically favored over direct ones (Gudykunst et al., 1996). These findings suggest that as a byproduct of speaking English and acquiring the associated Western cultural frame, bilinguals deviate slightly from their Thai monolingual counterparts in the way that they communicate when speaking Thai. These results provide evidence for cross-linguistic influence and transfer.

Positive associations between maternal and child narrative patterns, including number of utterances and use of closed-ended questions, descriptions, and labels, were observed in both languages during book sharing, suggesting that maternal scaffolding strategies influence children's skills in both languages (Reese et al., 1993; Reese & Newcombe, 2007; Rochanavibhata & Marian, 2021). However, a few linguistic measures were correlated only in one language. Such language-specific association may be illustrative of a narrative device that is deemed important in one linguistic context but not in the other, or a behavioral norm that is acceptable in one cultural context but not in the other. For example, maternal and child use of reframes were positively correlated only during the English book sharing session. Given the corrective nature of reframes, children are more likely to internalize the use of such linguistic skill when speaking in English, a language that is associated with the low-power-distance American culture (Hofstede, 2001; Vigil & Hwa-Froelich, 2004).

Results also revealed an influence of child gender on maternal and child narrative patterns during book sharing. Cross-linguistic differences in bilingual mothers' elicitation strategies were moderated by child gender, suggesting that specific scaffolding devices may become more salient due to the compounding effect of various socialization goals. For example, the finding that bilingual mothers of boys used more negative feedback when speaking English than Thai may be reflective of the value placed on modeling self-expression and independence commonly associated with both individualistic cultures *and* with raising boys (Bornstein, 2012;

Fivush, 1994; Fivush et al., 2003; Harkness et al., 1992; Tamis-LeMonda & McFadden, 2010). On the other hand, regardless of language, the socialization goal of raising polite girls (Gleason, 1987) may override any potential influence of individualistic cultural norms associated with speaking English, resulting in the lack of cross-linguistic difference among mothers of girls.

In sum, findings from the present study suggest that bilingual mothers and children engaged in book sharing differently depending on which of their two languages was in use. Bilingual mothers were more likely to elicit contributions from their children when speaking English and more likely to take the lead in telling the story when speaking Thai. As a result, children took on different roles (co-constructor and audience respectively). These language-specific literacy practices are congruent with the individualistic and collectivist norms associated with each of the languages. However, as a result of assimilating two distinct cultural frames, bilinguals did not exhibit two narrative styles that are identical to each monolingual counterpart, but rather an amalgamation of the two styles. Moreover, positive associations between maternal and child use of narrative devices also suggest that bilingual mothers socialize their children through the book sharing interaction and children start to internalize the behaviors as early as preschool.

CHAPTER 4 Cross-Linguistic Differences in Bilingual and Monolingual Mother-Child Toy Play

4.1 Abstract

Thai-English bilingual, Thai monolingual, and English monolingual mother-child dyads completed a toy play task in their known languages. Results revealed cross-linguistic differences in bilingual mothers' and children's conversation styles. When bilinguals spoke Thai, the nature of their dyadic play was more adult-centered, characterized by use of directives by the mothers and use of repetitions by the children, which was reminiscent of parent-child interpersonal dynamic in high-power-distance Asian cultures. On the other hand, the English play session was more child-centered, evidenced by children's use of directives and evaluative statements, which was congruent with behavioral norms in low-power-distance Western cultures. Bilingual mothers and children exhibited positive associations in their use of linguistic devices during both the Thai and English sessions, suggesting that children were internalizing the socialization goals that mothers imparted upon them. Additionally, language background (i.e., bilingual vs. monolingual dyads) and child gender (i.e., boy or girl dyads) were factors that also influenced how mothers and children interacted during the play session, specifically moderating the cross-linguistic differences observed in speech patterns.

4.2 Introduction

Play has been shown to impact children's linguistic and cognitive development (e.g., Baumer et al., 2005; Ilgaz, H., & Aksu-Koç, 2005; Tamis-LeMonda et al., 2004). Particularly, parent-child play interactions are conducive to language socialization due to their inherently unstructured and spontaneous nature (e.g., Kwon et al., 2013; Newland et al., 2001). Caregivers have the opportunity to focus on teaching linguistic skills and communicative behaviors that they deem important; however, parents differ across cultures in the values and norms that they impart upon their children during play. Considering that many children grow up in households that speak two languages associated with distinct cultures, it is likely that parent-child play may differ depending on the language spoken during the joint activity. The present study examined toy play interactions of bilingual mother-child dyads, specifically comparing the narrative patterns in their two languages, as well as the association between maternal and child narratives.

Early in development, children's play is typically guided or structured by adults (Dunn & Dale, 1984; Fiese, 1990; Haight & Miller, 1993). In fact, due to parental participation and suggestions, children's play during joint interaction tends to be more diverse compared to their own independent play (e.g., Bigelow et al., 2004; O'Connell & Bretherton, 1984; Youngblade & Dunn, 1995). Dyadic play presents an opportunity for parents to promote children's language development by providing complex linguistic input to describe the play activities and elaborate on children's play narratives while jointly attending to the same objects (Howes & Wishard, 2004; Newland et al., 2001; Tomasello & Farrar, 1986; Weisberg et al., 2013). Thus, linguistic scaffolding during adult-child play is important for children's narrative development, particularly during the preschool years.

Because social interactions are influenced by the relevant cultural context (Rogoff, 1990), the nature of parent-child play tends to differ across cultures, specifically in the ways that adults and children engage with play objects and the ways that they narrate stories (Choi & Gopnik, 1995; Farver & Shin, 1997; Rochanavibhata & Marian, 2022; Roopnarine & Davidson, 2015; Tamis-LeMonda et al., 1992). In terms of language scaffolding behaviors, European-American mothers have been found to label play objects more, whereas Korean-American mothers describe the children's play actions more (Choi & Gopnik, 1995; Tamis-LeMonda et al., 1992). Children as early as preschool also differ cross-culturally in the types of language that they use during play with others (Choi & Gopnik, 1995). European-American children tend to use direct commands and openly communicate disagreement, while Korean-American children tend to make polite requests and communicate agreement with their interlocutor (Farver & Shin, 1997). In our own work, we also find cross-cultural differences in the play interactions of American and Thai monolingual mother-child dyads (Rochanavibhata & Marian, 2022). American mothers are more inclined to use scaffolding strategies that promote narrative skills while Thai mothers are more inclined to promote vocabulary learning. Children also show distinct narrative patterns, where American children use more evaluative statements such as affirmations and negative feedback and Thai children repeat their mothers more. These cross-cultural differences in play interactions and narratives reflect the values of each society, particularly the importance placed on autonomy and independence in individualistic Western cultures and the importance of interpersonal relationships and group conformity in collectivist Eastern cultures. Thus, play provides an opportunity for parents to model culturally appropriate behavioral and communicative norms for their children.

Considering that monolingual parents and children from different cultural backgrounds have unique ways of engaging in play, it is likely that bicultural bilingual dyads would also interact differently depending on which language they are using at a given moment. In the extant literature, there is indeed evidence for language-specific interaction styles among bilingual mother-child dyads. In one study, Mandarin-English bilingual mothers were shown to produce more words related to cognition and thoughts in English compared to Mandarin and more words related to desire and wants in Mandarin than in English during play with their children (Cheng et al., 2020). In another study, Spanish-English bilingual mothers produced fewer questions during their Spanish play session compared to English and bilingual children produced fewer utterances in Spanish than in English (Shanks, 2019). These findings suggest that bilinguals may communicate differently depending on the cultural frame that is associated with each language and that, particularly, caregivers are interacting and socializing their children according to culturally and linguistically appropriate norms. However, the aforementioned studies examined mother-child play among bilingual toddlers. Relatively less is known about cross-linguistic differences in bilingual mothers' and preschoolers' play, particularly how bilingual preschoolers' narrative skills in each of their languages are scaffolded.

As previous research on dyadic reminiscing and book sharing interactions has shown, parents' and children's narrative styles tend to be associated (Kang et al., 2009; Reese et al., 1993; Reese & Newcombe, 2007; Wang et al., 2000). Similarly, mothers' and children's language use during play have been found to be correlated (e.g., Farkas et al., 2018; Kwon et al., 2013; Rochanavibhata & Marian, 2022; Youngblade & Dunn, 1995). For example, there is a positive association between maternal and child mean length of utterance, as well as between mothers' play involvement and the diversity of the child's play (Youngblade & Dunn, 1995). Not

only does maternal input influence children's output during an interaction, but mothers' linguistic scaffolding at an earlier timepoint also predicts children's language at a later timepoint. Specifically, the number of words that mothers produce, including the number of mental state words, during play with their infants is related to the children's language outcomes during toddlerhood (Farkas et al., 2018). However, studies in the extant literature have predominantly focused on monolingual dyads. Relatively less is known about the relation between bilingual mothers' and children's play narratives in each of their languages.

The present study examined cross-linguistic differences in Thai-English bilingual mother-preschooler toy play interactions. In congruence with previous cross-cultural comparisons of mother-child toy play (Farver & Shin, 1997; Rochanavibhata & Marian, 2022; Roopnarine & Davidson, 2015; Tamis-LeMonda et al., 2013), bilingual mothers were expected to exhibit unique scaffolding strategies and teaching focus in English and Thai that align with those of American and Thai mothers, respectively. Similarly, bilingual children were expected to differ in their narrative discourse during toy play. Additionally, based on previous research (Kwon et al., 2013; Rochanavibhata & Marian, 2022; Youngblade & Dunn, 1995), maternal and child narrative styles in each language were expected to be associated. Findings from the current study will inform the design of play interventions and the refinement of services for linguistically diverse children growing up acquiring more than one language.

4.3 Method

Participants

Participants were the same mother-child dyads from Experiments 1 and 2.

Procedure

Mother-child dyads were given a toy set consisting of gender- and culturally-neutral farm animals (see Appendix 8 for a picture of the toy stimuli). Mothers were instructed to play with their children as they normally would and to help their children play with as many toys as they were interested in. The same set of toys was used for both the English and Thai sessions. The average duration of the toy play task was 18.21 minutes (*SD* = 10.14 minutes) for bilingual dyads' Thai session, 15.11 minutes (*SD* = 6.96 minutes) for bilingual dyads' English session, 18.83 minutes (*SD* = 10.28 minutes) for Thai monolingual dyads, and 21.14 minutes (*SD* = 13.18 minutes) for English monolingual dyads. There was no significant difference across language or group in the average duration of the sessions (*p*s > .05).

Coding and Data Analysis

Transcription, coding, and data analyses followed the same procedures as in Experiments 1 and 3. Cohen's Kappas for the bilingual dataset were κ = .87 for Thai coders, κ = .90 for English coders; monolingual dataset: κ = .96 for Thai coders, κ = .95 for English coders. See Appendix 4 (Tables 4.1 and 4.2) for raw mean frequencies of all linguistic measures. A selection of excerpts from transcripts can be found in Appendix 7.

4.4 Results

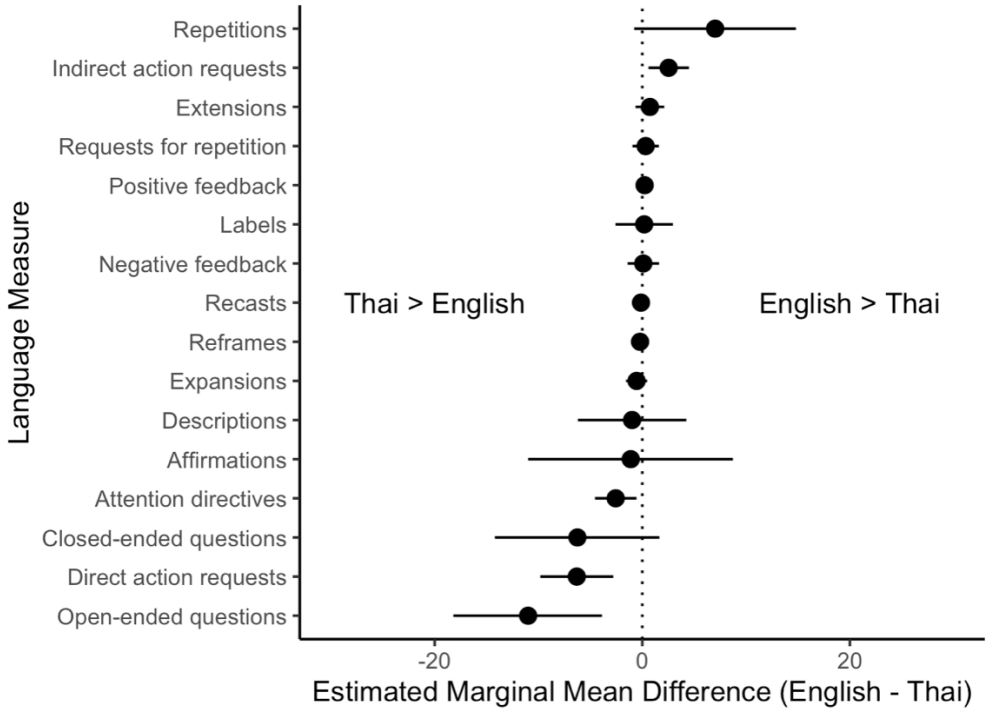
Within Bilingual Comparisons (English Versus Thai)

Maternal Language Measures

Bilingual mothers produced more direct action requests and words when speaking in Thai than in English (*p*s < .05). See Figure 12 for a summary of mean differences between English and Thai in bilingual mothers' communicative patterns. Mothers of girls produced more closed-ended questions than mothers of boys (*p* < .05). See Appendix 4 for the estimated marginal means for maternal language (Table 4A.1).

Figure 12

Mean Differences Between English and Thai in Bilingual Mothers' Linguistic Measures During Toy Play



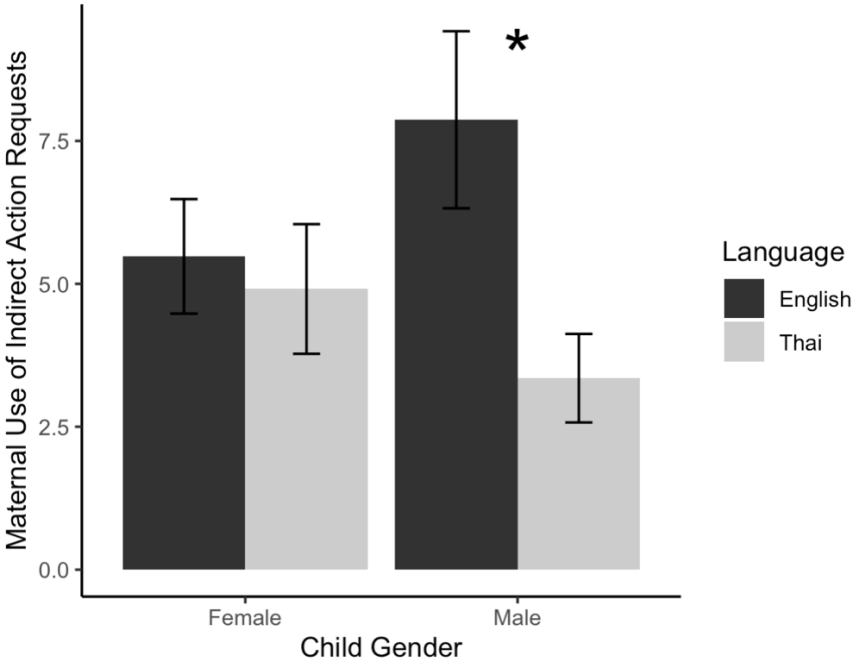
Note. Positive mean difference values indicate mothers' greater use of the linguistic measure in English compared to Thai. Negative mean difference values indicate mothers' greater use of the linguistic measure in Thai compared to English. Error bars represent 95% confidence intervals.

There was a significant interaction between language and child gender on mothers' use of indirect action requests and recasts. Follow-up analyses revealed that bilingual mothers of boys used more indirect action requests when speaking in English than in Thai ($p < .025$), whereas bilingual mothers of girls did not significantly differ across languages on their use of indirect action requests. See Figure 13 for the interaction between language and child gender on bilingual

mothers' use of indirect action requests. There were no significant simple effects for maternal use of recasts (*p*s > .025).

Figure 13

Bilingual Mothers' Use of Indirect Action Requests by Language and Child Gender



Note. Error bars represent standard errors.

*$p < .025$.

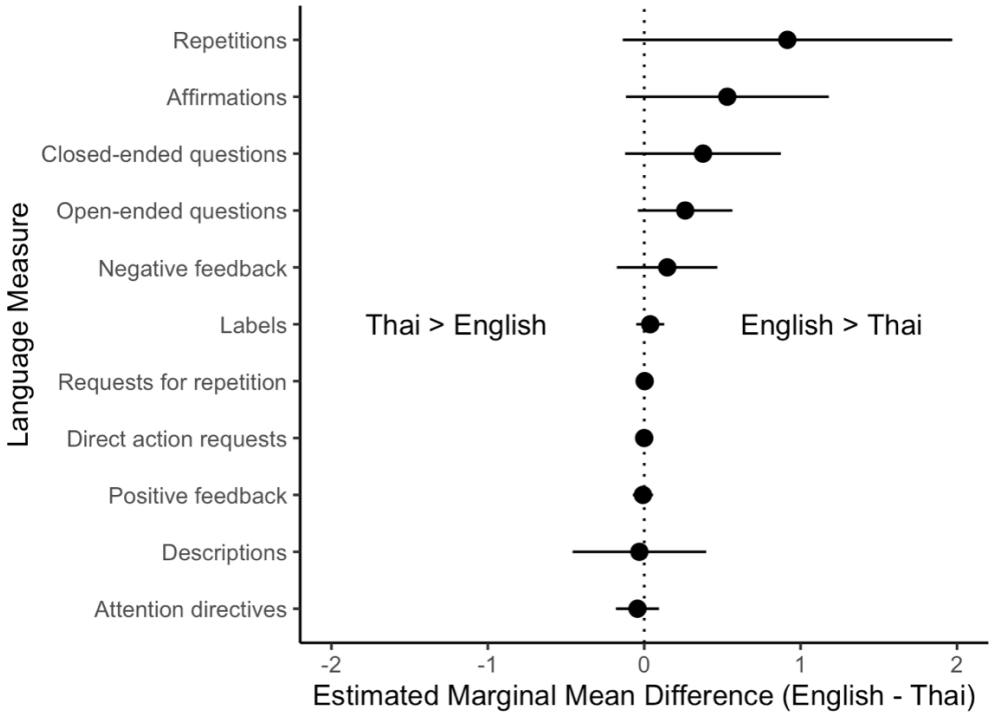
Child Language Measures

Bilingual children produced more affirmations, direct action requests, and indirect action requests in English than in Thai (*p*s < .05). Bilingual children produced more repetitions and words when speaking in Thai than in English (*p*s < .05). See Figure 14 for a summary of mean differences between English and Thai in bilingual children's communicative patterns. Girls

produced more indirect action requests than boys did ($p < .05$). See Appendix 4 for the estimated marginal means for child language (Table 4A.2).

Figure 14

Mean Differences Between English and Thai in Bilingual Children's Linguistic Measures During Toy Play



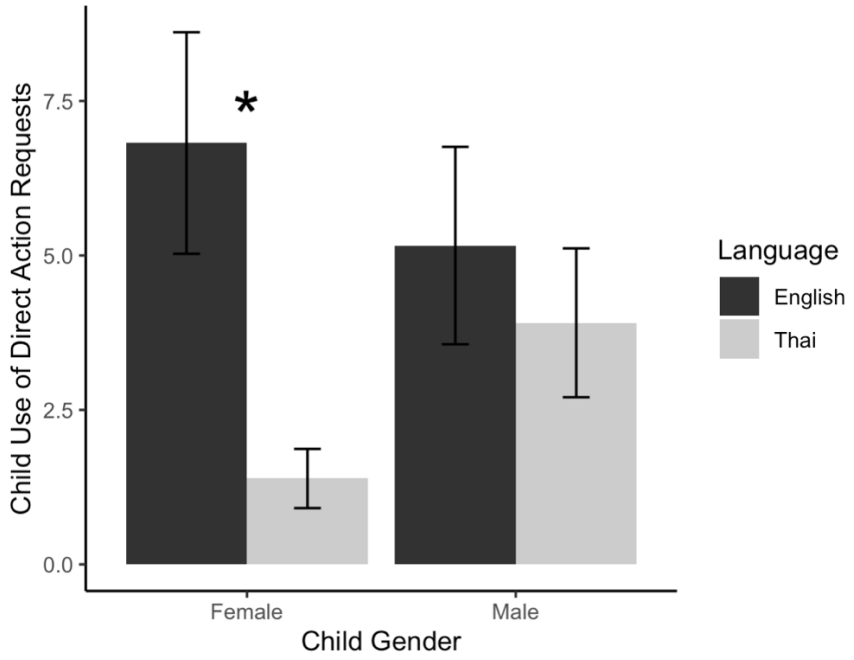
Note. Positive mean difference values indicate children's greater use of the linguistic measure in English compared to Thai. Negative mean difference values indicate children's greater use of the linguistic measure in Thai compared to English. Error bars represent 95% confidence intervals.

There were significant interactions between language and child gender on use of direct action requests, indirect action requests, and repetitions. Bilingual girls used more direct and indirect action requests when speaking English than when speaking Thai (ps < .025), whereas

bilingual boys did not show significant cross-linguistic differences in their use of the two types of action requests. See Figures 15 and 16 for the interaction between language and child gender on bilingual children's use of direct and indirect action requests. Post-hoc analyses did not reveal significant simple effects for child use of repetitions ($p > .025$).

Figure 15

Bilingual Children's Use of Direct Action Requests by Language and Child Gender

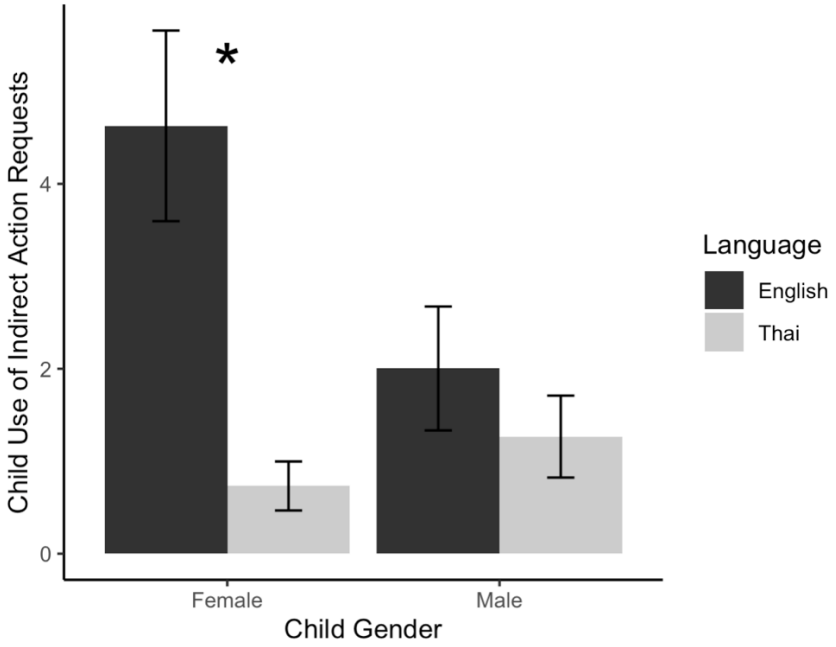


Note. Error bars represent standard errors.

*$p < .025$.

Figure 16

Bilingual Children's Use of Indirect Action Requests by Language and Child Gender



Note. Error bars represent standard errors.

*$p < .025$.

Associations Between Maternal and Child Narrative Styles

Correlation analyses revealed significant positive correlations (ps < .05) between maternal and child number of utterances (English $r = 0.79$, Thai $r = 0.95$), number of words (English $r = 0.54$, Thai $r = 0.70$), use of affirmations (English $r = 0.69$, Thai $r = 0.64$), use of descriptions (English $r = 0.49$, Thai $r = 0.80$), use of extensions (English $r = 0.74$, Thai $r = 0.45$), use of labels (English $r = 0.72$, Thai $r = 0.93$), use of negative feedback (English $r = 0.53$, Thai $r = 0.56$), and use of repetitions (English $r = 0.46$, Thai $r = 0.67$) when speaking both languages. There were significant positive correlations between maternal and child use of closed-ended

questions (r = 0.60), direct action requests (r = 0.60), and indirect action requests (r = 0.70) only when speaking in Thai, and a significant positive correlation between maternal and child use of reframe (r = 0.44) only when speaking in English. See Table 8 for the full correlation results.

Table 8

Pearson's r Correlations Between Bilingual Mothers' and Children's Language Use During Toy Play

Linguistic measure	Language	
	English	Thai
Label	0.72 ***	0.93 ***
Description	0.49 *	0.80 ***
Open-ended question	0.28	0.31
Closed-ended question	0.27	0.60 **
Reframe	0.44 *	0.06
Affirmation	0.69 ***	0.64 ***
Repetition	0.46 *	0.67 ***
Request for repetition	0.09	-0.15
Expansion	N/A	0.23
Extension	0.74 ***	0.45 *
Recast	N/A	N/A
Direct action request	0.31	0.60 **
Indirect action request	0.30	0.70 ***
Attention directive	0.24	0.32
Positive feedback	0.07	0.17
Negative feedback	0.53 **	0.56 **
Total utterances	0.79 ***	0.95 ***
Total words	0.54 **	0.70 ***

†$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Bilingual Versus Monolingual Comparisons (English)

Maternal Language Measures

When speaking in English, bilingual mothers produced more labels and requests for repetition than monolingual mothers (ps < .05). English monolingual mothers produced more descriptions than bilingual mothers ($p < .05$). There were significant interactions between group and child gender on mothers' use of indirect action requests and requests for repetition. Follow-up analyses did not reveal significant simple effects for either linguistic measure (ps > .025). See Appendix 4 for the estimated marginal means for maternal language (Table 4B.1).

Child Language Measures

Bilingual and monolingual children did not significantly differ on any language measure when speaking in English (ps > .05). See Appendix 4 for the estimated marginal means for child language (Table 4B.2).

Bilingual Versus Monolingual Comparisons (Thai)

Maternal Language Measures

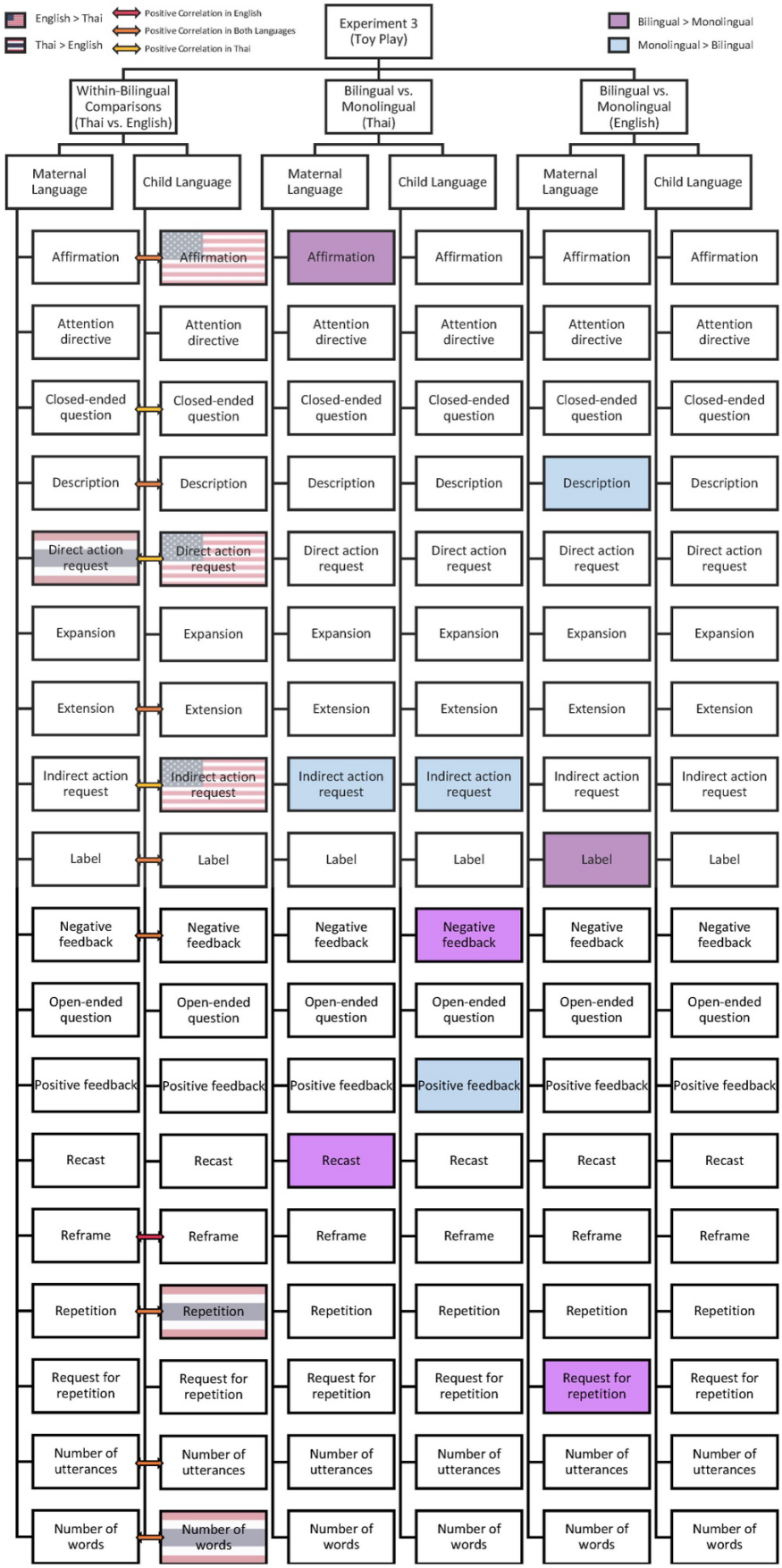
When speaking in Thai, bilingual mothers used more affirmations and recasts than monolingual mothers (ps < .05). Thai monolingual mothers produced more indirect action requests than bilingual mothers ($p < .05$). Mothers of girls produced more affirmations than mothers of boys ($p < .05$). There was a significant interaction between group and child gender on mothers' use of recasts but post-hoc comparisons revealed no significant simple effects (ps > .025). See Appendix 4 for the estimated marginal means for maternal language (Table 4C.1).

Child Language Measures

When speaking in Thai, bilingual children produced more negative feedback than their monolingual peers ($p < .05$). Thai monolingual children produced more indirect action requests and positive feedback than bilingual children ($ps < .05$). There was a significant interaction between group and child gender on children's use of negative feedback, however post-hoc tests did not reveal significant simple effects ($ps > .025$). See Appendix 4 for the estimated marginal means for child language (Table 4C.2). An overview of the results from Experiment 3 is presented in Figure 17.

Figure 17

An Overview of Experiment 3 Results


English > Thai
Thai > English
Positive Correlation in English
Positive Correlation in Both Languages
Positive Correlation in Thai
Experiment 3 (Toy Play)
Bilingual > Monolingual
Monolingual > Bilingual
Within-Bilingual Comparisons (Thai vs. English)
Bilingual vs. Monolingual (Thai)
Bilingual vs. Monolingual (English)
Maternal Language
Child Language
Maternal Language
Child Language
Maternal Language
Child Language
Affirmation
Attention directive
Closed-ended question
Description
Direct action request
Expansion
Extension
Indirect action request
Label
Negative feedback
Open-ended question
Positive feedback
Recast
Reframe
Repetition
Request for repetition
Number of utterances
Number of words

4.5 Discussion

Toy play interactions between bilingual mothers and children were compared across their two languages. Results revealed cross-linguistic differences in maternal scaffolding styles and teaching foci. Bilingual mothers exhibited high-elaborative and child-centered styles when speaking English and low-elaborative and adult-centered styles when speaking Thai. Furthermore, findings suggest that child gender moderates the influence of language on bilinguals' narrative styles and that mothers' speech patterns influence those of their children.

Despite play being a culturally universal activity, mothers and children from various groups do not engage in play the same way. In the current study, cross-linguistic comparisons of narrative patterns revealed that bilingual mothers and children interact with toys differently depending on the language used during play. Bilingual mothers used more direct commands when playing with their children in Thai, which is characteristic of an adult-centered approach where caregivers steer the direction of the dyadic interaction (Keller, 2007; Vigil & Hwa-Froelich, 2004). Bilingual children provided more evaluative feedback and used more commands during the English toy play session, which is reminiscent of a child-centered approach where children are encouraged to express their opinions and dictate how the play interaction unfolds (Keller, 2007; Vigil & Hwa-Froelich, 2004). Conversely, bilingual children used more repetitions when speaking in Thai, which suggests that instead of contributing their own unique narratives, children were more inclined to repeat what their mothers said. This pattern reflects the collectivist Thai norm of filial piety and deference to adults (Cameron et al., 2006; Eberhardt, 2014).

The positive associations between maternal and child use of linguistic devices suggest that mothers' scaffolding strategies influence children's narrative patterns in similar ways across

their two languages. Specifically, children learn from their mothers the typical length of conversation, the types of feedback given to their conversation partners, and the appropriate ways to engage with toys such as labeling and describing the objects. On the other hand, there were other narrative skills that children internalized in only one of their languages. Similar to the correlation results from Experiment 4, there was a positive correlation between mothers' and children's use of reframes only during the English session, which further emphasizes that mothers are imparting knowledge on language- and culture-specific norms, which leads to children exhibiting communicative behaviors in the appropriate context. In this case, the English context cues a low-power-distance cultural frame (Hofstede, 2001; Vigil & Hwa-Froelich, 2004) where it is acceptable for both mothers and children to reframe and correct each other.

Bilinguals' and monolinguals' narrative patterns were also compared. The results suggest that bilinguals do not adopt the exact same conversation style exhibited by their monolingual counterparts. For instance, although they were speaking English, bilingual mothers used some scaffolding strategies that were similar to Thai monolingual mothers, particularly labeling and requests for repetition. As our previous research has shown (Rochanavibhata & Marian, 2022), Thai monolingual mothers tend to adopt a low-elaborative style characterized by the use of requests for repetitions, as well as a vocabulary teaching focus where the play interaction predominantly consisted of labeling each farm animal. Meanwhile, despite the fact that greater use of affirmations and recasts is more characteristic of a high-elaborative style, bilingual mothers used those strategies more than their Thai monolingual counterparts when speaking in Thai. Bilingual children also exhibited behaviors contrary to the predictions where they used more negative feedback than their Thai monolingual peers when speaking in Thai, which

deviates from the Thai cultural norm of respecting elders. Taken together, these patterns may be illustrative of cross-linguistic influences from English to Thai and vice versa.

Additionally, results revealed the interplay between the socialization goals associated with English and Thai, as well as those associated with being a boy or a girl. Bilingual *mothers of boys* used more indirect requests in English than in Thai, whereas bilingual *girls* used more action requests in English compared to Thai. Although maternal and child use of indirect action requests seem contradictory, these two discrepant findings suggest that culture- and gender-specific behavioral expectations may not manifest uniformly among those who are socialization agents and those who are being socialized. Mothers of girls may be more cognizant of modeling respectful and considerate behaviors (Gleason, 1987), resulting in similar use of requests across English and Thai, while mothers of boys generally are not constrained by the same gender roles and are able to model the linguistically and culturally appropriate behavior of autonomy. On the other hand, because girls are typically taught to be polite, making demands of adults would be considered rude. However, when cultural norms are factored in, girls from an individualistic culture using imperatives with their mothers are likely to be considered less rude than girls from a collectivist culture, especially because independence is encouraged among the former and filial piety is emphasized among the latter (Bornstein, 2012; Cameron et al., 2006; Eberhardt, 2014; Harkness et al., 1992; Tamis-LeMonda & McFadden, 2010).

To conclude, findings from the present Experiment provide evidence for the influence of language background and gender on mother-child play practices. Particularly, bilingual mothers and children who speak two languages associated with different cultural frames show unique play behaviors depending on the linguistic context. The caveat is that instead of adopting two distinct narrative styles that are identical to each of their monolingual counterparts, bilinguals

exhibit two sets of communicative patterns that are amalgams of both monolingual groups. Furthermore, correlation results suggest that children do learn discourse skills via mothers' scaffolding, which are dependent on culture- and gender-specific socialization goals.

CHAPTER 5 The Influence of Language and Interlocutor on Bilingual and Monolingual Children's Personal Narratives

5.1 Abstract

Findings from Experiment 1 revealed Thai-English bilingual mothers and children exhibited language-specific conversation styles when jointly reminiscing in Thai and in English. The present study aimed to examine the extent to which interlocutor scaffolding influenced children's narrative patterns. To examine whether bilingual preschoolers had internalized the socialization goals associated with each of their languages, children participated in a personal narrative task where they had to recount autobiographical memories while receiving minimal scaffolding from an interviewer who was an unfamiliar bilingual adult. In contrast to the Experiment 1, in the absence of their mothers' contingent responses, bilingual children did not show as many cross-linguistic differences in their individual reminiscing style. These findings suggest that the socialization and internalization processes are not yet complete at this age, and that preschool children may still require online scaffolding from adults in order to communicate in linguistically and culturally appropriate ways.

5.2 Introduction

Children learn behaviors that more competent social partners model for them during adult-child dyadic interactions (Rogoff, 1990; Rogoff et al., 1993; Vygotsky, 1978). This socialization process is largely influenced by culture-specific values and norms. Across cultures, one of the communicative behaviors children tend to differ on is the way that they engage in narrative discourse about their experiences (e.g., Han et al., 1998; Minami & McCabe, 1991). Such cultural differences have been observed to emerge as early as preschool (e.g., Peterson & McCabe, 1983; Reese et al., 1993). However, less is known about how bilingual preschoolers who speak two languages associated with different cultures tell personal stories, particularly whether bilingual children exhibit distinct narrative styles across their two languages. If cross-linguistic differences in communicative behaviors do exist within bilingual children, it is also unclear whether these patterns emerge because the children have internalized culture- and language-specific ways of talking or because their caregivers are actively guiding and eliciting the behaviors in real time. Thus, we aimed to examine the influence of language and interlocutor scaffolding on children's personal narrative styles by comparing bilingual children's discourse with an unfamiliar adult across their two languages, as well as comparing bilingual children's conversation with an unfamiliar adult to their conversation with their mothers.

Previous research focusing on family reminiscing has shown that the way caregivers discuss past events influences the way children themselves recall memories (e.g., Hudson, 1993; Peterson & McCabe, 1994). For example, mothers who exhibit a high-elaborative style have children who produce longer and more detailed personal narratives (Farrant & Reese, 2000; Fivush et al., 2006; Peterson & McCabe, 1992; Reese & Fivush, 1993). Use of specific narrative devices such as orientations (e.g., providing contextual information about time and place) and

evaluations (e.g., subjective comments about a past event) by mothers are predictive of children's use of the same devices (Haden et al., 1997). The aforementioned patterns are observed even when children are reminiscing independently with an experimenter, without their mothers' scaffolding (Hudson, 1993; Peterson & McCabe, 1994). These findings suggest that by jointly reminiscing with linguistically competent adults, children internalize the way that personal experiences are recounted and learn to use them appropriately in social settings (Nelson & Fivush, 2004).

Children from different cultures have been shown to reminisce and tell personal stories in ways that are congruent with cultural norms modeled by their caregivers (e.g., Han et al., 1998; Minami & McCabe, 1991; Wang, 2004; Wang & Leichtman, 2000). Particularly, children from Western and Eastern cultures tend to have unique narrative styles. For example, across cultures children have been shown to differ in the length of their personal narratives, with American children producing longer narratives and Chinese and Japanese children producing shorter narratives (Minami & McCabe, 1991; Wang, 2004). The contents of children's personal narratives have also been shown to differ (Han et al., 1998; Wang, 2004; Wang & Leichtman, 2000). Compared to their Chinese and Korean counterparts, American children are more likely to use descriptive words, discuss thoughts and feelings, as well as make references to themselves compared to others (Han et al., 1998; Wang, 2004). On the other hand, Chinese children are more likely than American children to make references to social relationships, moral code, and authority figures in their stories, as well as describe themselves neutrally or modestly (Wang, 2004; Wang & Leichtman, 2000). These patterns of conversations that children independently exhibit are consistent with the cultural differences shown in mother-child narrative patterns.

Although there is a natural back-and-forth between the parent and the child during dyadic reminiscing, relatively little research has been done to capture this dynamic and interactive process. A study utilizing a micro-analytic approach to examine preschoolers' responses to their parents' scaffolding and vice versa (Svane et al., 2021) revealed that children tended to provide memory elaborations following parental scaffolding strategies including open-ended questions and positive confirmations, suggesting that elaborative language from adults promote active reminiscing from their children. The reciprocity between parental and child narrative contributions suggests that real-time adult scaffolding is pivotal in influencing children's discourse during the preschool years. Indeed, our previous cross-cultural work has shown that, compared to their interactions with their mothers, American and Thai monolingual children exhibited fewer cross-cultural differences in their narrative patterns when reminiscing with a researcher who provided minimal elicitation and guidance (Rochanavibhata & Marian, 2020). There is also evidence from research comparing toddlers' interactions with their older siblings and mothers showing that young children used more diverse vocabulary and produced more responses to questions during interactions with their mothers than with their siblings, which underscores the influence of complex maternal elicitation strategies on children's speech (Hoff, 2010). Therefore, it may be possible that without contingent responses and active scaffolding, culture- and language-dependent effects in preschool children's personal narratives may not be as robust, particularly in children who are simultaneously acquiring two different languages and are learning two distinct cultural frames associated with each language.

Most of the extant cross-cultural research has focused on comparing the narrative patterns of monolingual preschool children. Relatively less is known about potential cross-linguistic differences in bilingual preschoolers' narratives. In their study, Wang and colleagues (2010)

examined personal narratives in Chinese-English bilingual children who were between the ages of 8 to 14. When reminiscing with a researcher, bilingual children recounted personal memories differently depending on the language that they were speaking. When narrating in English, their conversations were similar to their Western counterparts (e.g., more self-focused narratives) and when narrating in either Mandarin or Cantonese, their conversations were similar to their Eastern counterparts (e.g., more other-focused narratives). Thus, evidence from school-age children suggests that bilinguals exhibit two unique narrative styles that align with each of their corresponding cultures. However, it is unclear when these cross-linguistic differences start to emerge. Considering that children start to become more proficient at narrating personal stories during the preschool years, it is important to examine the development of narrative skills in bilingual children during this critical period.

To examine cross-linguistic differences in Thai-English bilingual preschoolers' *independent* narrative styles, we compared children's narrative patterns when recounting autobiographical memories in their two languages with an unfamiliar adult (researcher). Such context is ideal for allowing us to observe how children produce narratives on their own because the conversation partner is intentionally providing limited feedback and because narratives about personal experiences are one of the most prevalent types of talk among young children (Preece, 1987). Additionally, to examine the influence of interlocutor on children's reminiscing styles, we compared the children's narrative patterns while receiving minimal language scaffolding from the researcher (this Experiment) to their narrative patterns while receiving substantial language scaffolding from their mothers (Experiment 1). When bilingual children recount personal memories in their two languages with limited adult scaffolding, we hypothesized that there would be cross-linguistic differences in their narrative styles that mirror those during their

reminiscing with their mothers. However, similar to previous cross-cultural work (Rochanavibhata & Marian, 2020), we expected that the lack of maternal scaffolding would lead to fewer cross-linguistic differences in language measures being observed in the child personal narrative task compared to the mother-child reminiscing task. Additionally, we expected bilingual children to resemble their monolingual counterparts in their communicative patterns both when reminiscing with the interviewer and with their mothers in the two respective languages. Therefore, we did not expect differences in the speech patterns of and bilingual children when speaking in English and English monolingual children. Similarly, we did not expect differences in the speech patterns of bilingual children when speaking in Thai and Thai monolingual children and. Findings from this work will help inform our understanding of how the languages we speak influence how we interact with others, with implications for caregivers raising bilingual children who are learning two distinct sets of cultural norms.

5.3 Method

Participants

Participants were the same groups of Thai-English bilingual, Thai monolingual, and English monolingual four-year-old preschoolers from Experiments 1, 2, and 3.

Procedure

To assess children's narrative skills, a personal narrative production task (i.e., minimally scaffolded narratives with the interviewer/researcher), which has proved to be effective with young children (e.g., Minami, 1996; Peterson & McCabe, 1983, 1992, 1994), was used in the present Experiment. During this activity, the researcher asked children about a personally experienced event, prompting questions related to injuries (getting hurt, getting a shot, and getting stung by a bee) and an evening routine with their family. The interviewer made sure to

only provide neutral responses (such as “yeah,” “can you tell me more?” and “what else do you remember?”) to encourage the children to continue narrating, in order to minimally scaffold the children. The same set of prompts was used for both the English and Thai sessions. The average duration of the child personal narrative task was 3.22 minutes (*SD* = 1.29 minutes) for bilingual dyads’ Thai session, 3.50 minutes (*SD* = 1.82 minutes) for bilingual dyads’ English session, 3.62 minutes (*SD* = 1.18 minutes) for Thai monolingual dyads, and 3.59 minutes (*SD* = 1.22 minutes) for English monolingual dyads. There was no significant difference across language or group in the average duration of the sessions (*p*s > .05).

Coding and Data Analysis

Transcription and coding followed the same procedures as in Experiments 1, 2, and 3. Cohen’s Kappas for the bilingual dataset were κ = 0.88 for Thai coders, κ = 0.94 for English coders; monolingual dataset: κ = 0.90 for Thai coders, κ = 0.93 for English coders. See Appendix 5 (Table 5) for raw mean frequencies of all linguistic measures. A selection of excerpts from transcripts can be found in Appendix 7.

To compare bilingual children’s conversation styles while reminiscing with the interviewer, the total count of each linguistic measure was fitted to Poisson, negative binomial, zero-inflated Poisson, and zero-inflated negative binomial generalized linear mixed models using the glmmTMB function (Brooks et al., 2017), with the exception of linguistic measures for which there were not sufficient data points (i.e., there were mostly zeros in the data). All models included the same fixed effects, covariates, and random intercepts as those in Experiments 1, 2, and 3. Model selection and model assumption checks (including overdispersion and zero-inflation) were checked using the same procedures as in previous Experiments. Post-hoc

comparisons, with Bonferroni correction, were conducted to follow up any significant interaction between language and child gender.

To compare bilingual children's conversation styles with the interviewer to their conversation styles with their mothers, the total count of each linguistic measure was also fitted to Poisson, negative binomial, zero-inflated Poisson, and zero-inflated negative binomial generalized linear mixed models. Models included fixed effects of language (English, Thai), interlocutor (mother, interviewer), and an interaction term. Both fixed effects of language and interlocutor were treatment coded (Thai coded as 1, English coded as 0; interlocutor coded as 1, mother coded as 0). Total number of words produced, L1 and L2 proficiency, and L1 and L2 exposure were added as covariates. The models also included random intercepts for participants.

5.4 Results

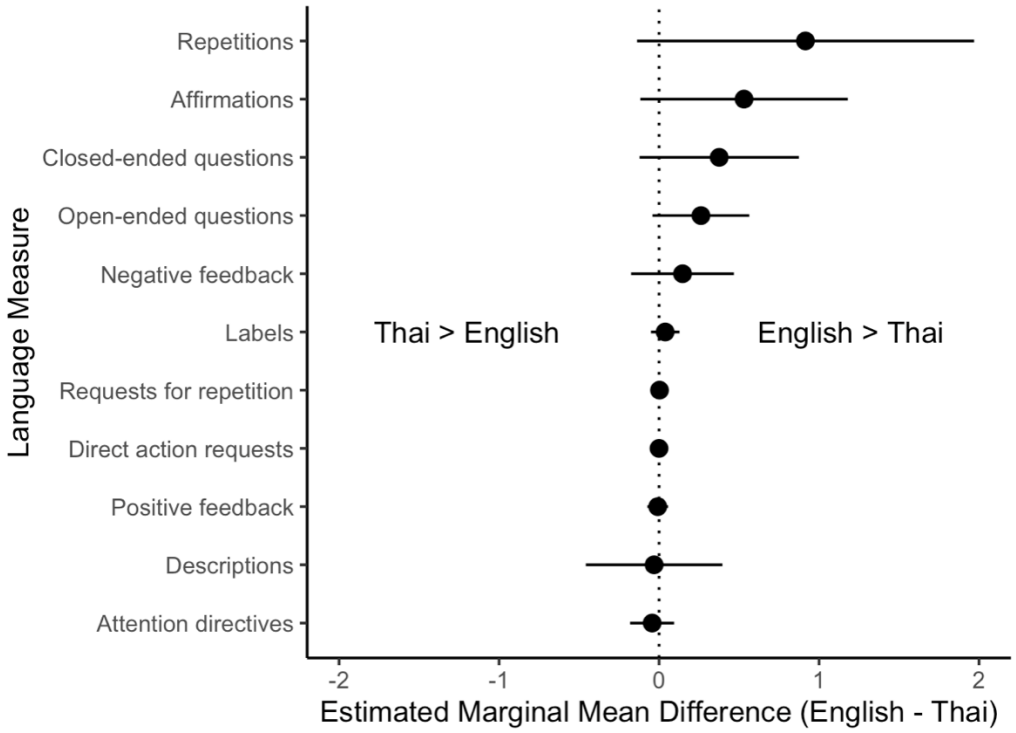
Within Bilingual Comparisons (English Versus Thai)

Children's Narrative Style with Interviewer

When reminiscing with the interviewer, bilingual children produced more words in Thai than in English ($p < .05$). See Figure 18 for a summary of mean differences between English and Thai in bilingual children's communicative patterns. Boys produced more utterances than girls ($p < .05$). There was a significant interaction between language and child gender on use of descriptions, but follow-up analyses did not reveal significant simple effects ($ps > .025$). See Appendix 5 for the estimated marginal means for child language with interviewer (Table 5A.1).

Figure 18

Mean Differences Between English and Thai in Bilingual Children's Linguistic Measures During the Personal Narrative Task with the Interviewer



Note. Positive mean difference values indicate children's greater use of the linguistic measure in English compared to Thai. Negative mean difference values indicate children's greater use of the linguistic measure in Thai compared to English. Error bars represent 95% confidence intervals.

Children's Narrative Style with Interviewer Versus Mothers

There was a main effect of language, where bilingual children produced more affirmations, closed-ended questions, direct action requests, labels, negative feedback in English than in Thai (*p*s < .05).

There was a main effect of interlocutor, where bilingual children produced more affirmations, closed-ended questions, descriptions, labels, negative feedback, open-ended questions, repetitions, requests for repetition, words, and utterances when reminiscing with their mothers than with the interviewer (*p*s < .05). There were no significant interactions between language and interlocutor. See Appendix 5 for the estimated marginal means for child language with interviewer and with mothers (Table 5A.2).

Bilingual Versus Monolingual Comparisons (English)

Children's Narrative Style with Interviewer

When recounting personal memories with the interviewer in English, bilingual and monolingual children did not significantly differ on any linguistic measure (*p*s > .05). See Appendix 5 for the estimated marginal means for child language with interviewer (Table 5B.1).

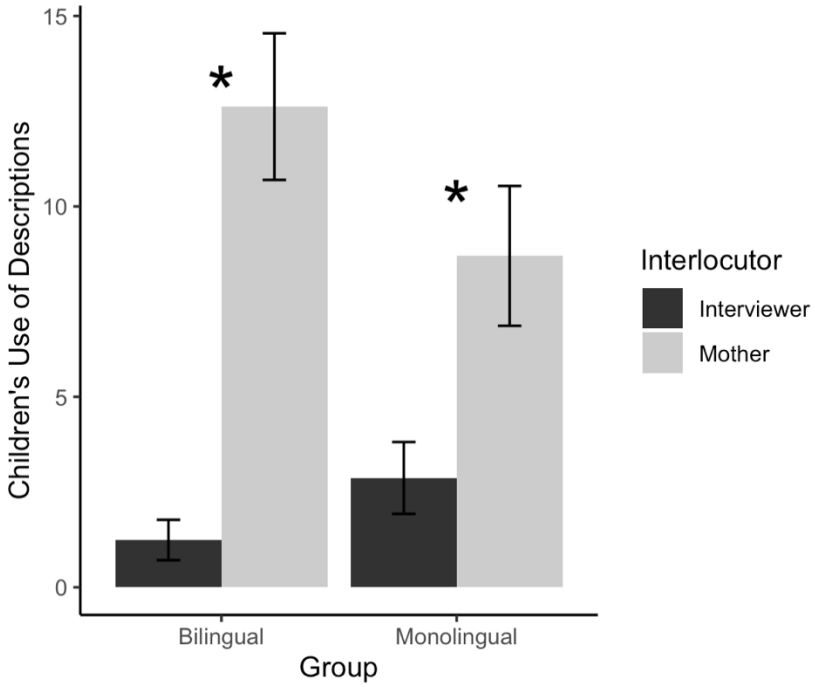
Children's Narrative Style with Interviewer versus Mothers

When reminiscing with their mothers in English, bilingual and monolingual children produced more words, utterances, affirmations, closed-ended questions, descriptions, direct action requests, negative feedback, open-ended questions, and repetitions compared to when reminiscing with the interviewer. There was a significant interaction between group and interlocutor on children's use of descriptions and the number of words they produced. Both bilingual and monolingual children used more descriptions during their English conversation with their mothers compared to with the interviewer (*p*s < .025), but the magnitude of the difference between interlocutors was larger among bilingual children. Children also produced more words when reminiscing with their mothers in English compared to with the interviewer. The difference between interlocutors in the number of words produced was larger among bilingual children (*p*s < .025). See Figures 19 and 20 for the interaction between group and

interlocutor on bilingual and monolingual children's use of descriptions and word production. See Appendix 5 for the estimated marginal means for child language with interviewer and with mothers (Table 5B.2).

Figure 19

Bilingual and Monolingual Children's Use of Descriptions by Group and Interlocutor

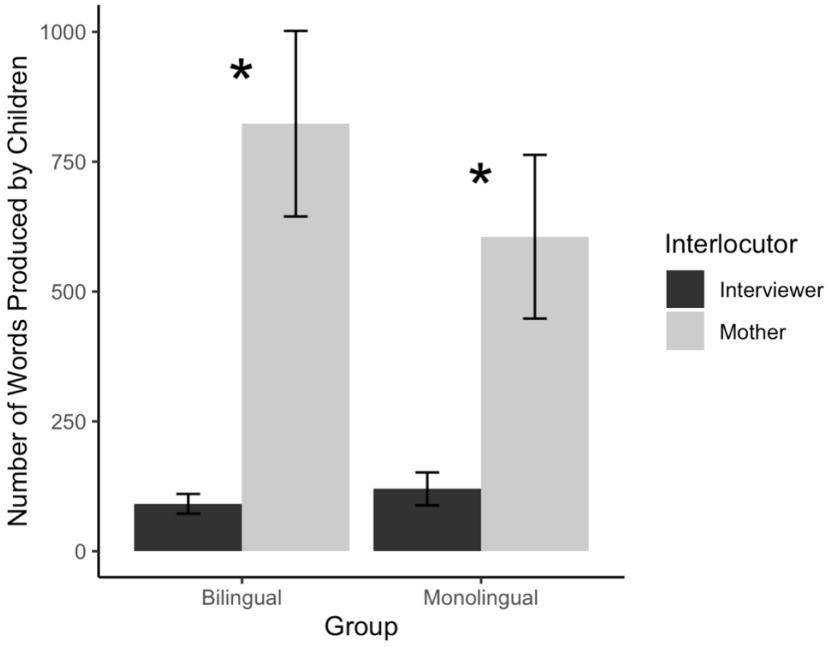


Note. Error bars represent standard errors.

*$p < .025$

Figure 20

Number of Words Bilingual and Monolingual Children Produced by Group and Interlocutor



Note. Error bars represent standard errors.

*$p < .025$

Bilingual Versus Monolingual Comparisons (Thai)

Children's Narrative Style with Interviewer

There were no main effects for group or child gender for any of the linguistic measures (*p*s > .05). There was a significant interaction between group and gender on child use of closed-ended questions when speaking in Thai. However, follow-up analyses revealed no significant simple effects (*p*s > .025). See Appendix 5 for the estimated marginal means for child language with interviewer (Table 5C.1).

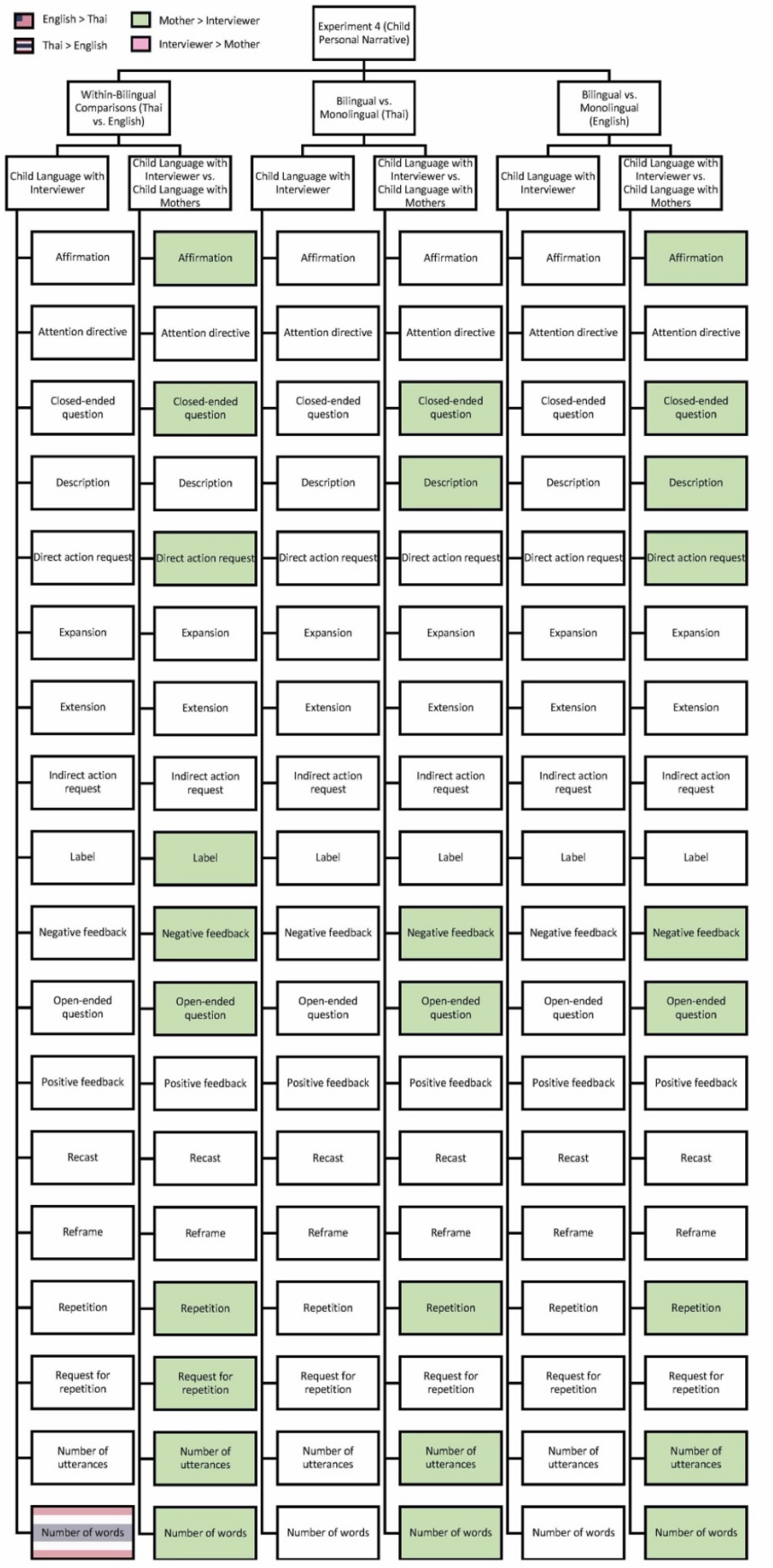
Children's Narrative Style with Interviewer Versus Mothers

When reminiscing in Thai, bilingual children used more descriptions, labels, and repetitions than monolingual children. On the other hand, monolingual children used more indirect action requests than bilingual children.

Bilingual and monolingual children produced more words and utterances, as well as used more closed-ended questions, descriptions, negative feedback, open-ended questions, and repetitions when reminiscing in Thai with their mothers compared to with the interviewer. There were no significant interactions between group and interlocutor. See Appendix 5 for the estimated marginal means for child language with interviewer and with mothers (Table 5C.2). An overview of the results from Experiment 4 is presented in Figure 21.

Figure 21

An Overview of Experiment 4 Results


English > Thai
Thai > English
Mother > Interviewer
Interviewer > Mother
Experiment 4 (Child Personal Narrative)
Within-Bilingual Comparisons (Thai vs. English)
Bilingual vs. Monolingual (Thai)
Bilingual vs. Monolingual (English)
Child Language with Interviewer
Child Language with Interviewer vs. Child Language with Mothers
Affirmation
Attention directive
Closed-ended question
Description
Direct action request
Expansion
Extension
Indirect action request
Label
Negative feedback
Open-ended question
Positive feedback
Recast
Reframe
Repetition
Request for repetition
Number of utterances
Number of words

5.5 Discussion

Bilingual children's narrative patterns were compared across languages during their personal narrative task. Bilingual children showed more cross-linguistic differences in their narrative patterns when speaking with their mothers than with the interviewer. These results suggest that interlocutor scaffolding, particularly their mothers' responsive and contingent linguistic support, plays an important role in shaping children's discourse.

The only cross-linguistic difference that was observed during children's conversation with the interviewer was the number of words produced by children. Further analyses comparing child narrative styles with their mothers and with the interviewer emphasize the influence of interlocutor scaffolding on children's narrative development. Specifically, bilingual children exhibited greater use of eight out of the 16 linguistic measures during the dyadic reminiscing task with the mother compared to during the personal narrative task with the experimenter, including affirmations, closed-ended questions, descriptions, labels, negative feedback, open-ended questions, repetitions, and requests for repetition. These findings are congruent with previous cross-cultural research (Hudson, 1993; Rochanavibhata & Marian, 2020) and emphasizes the crucial role that conversation partners play in preschool children's narratives. However, contrary to our predictions, the present findings suggests that cross-linguistic differences in child narrative styles are not moderated by who the child's interlocutor is or how much scaffolding the child receives.

When children's narrative styles were examined by group (bilingual vs. monolingual) and interlocutor (interviewer vs. mother), comparisons revealed that linguistic status moderated the cross-interlocutor differences. In contrast to monolinguals, bilingual children produced substantially more words and descriptions with their mothers than with the interviewer. The

larger magnitude difference in number of words and descriptions produced by bilingual children during their conversations with the mother and the interviewer may reflect bilingual children's greater sensitivity to pragmatic cues in their linguistic environment compared to their monolingual peers (e.g., Brojde et al., 2012). Arguably, conversing with a relatively unfamiliar person who provides minimal linguistic scaffolding, as well as limited contingent responses, is quite an unusual way of interacting with someone. Moreover, considering that bilingual children were generally producing limited responses to the interviewer, resulting in mostly zeros in the count for half of the linguistic measures, it is possible that the task may not have been the best way to tap into children's individual narrative styles. Perhaps a more ecologically valid alternative is to examine bilingual children with other bilingual interlocutors who naturally provide less scaffolding compared to the children's mother, for instance siblings or same-age peers.

One limitation of the current study is that two variables were manipulated simultaneously: the children's interlocutor and the amount of scaffolding children received. Therefore, it is less clear whether differences in children's individual narrative styles were primarily driven by the familiarity of their conversation partners or the extent to which they had adult guidance. Future research is needed to disentangle the influences of these two factors.

In sum, findings from the present Experiment underscore the importance of contingent and responsive adult scaffolding for preschool children, perhaps even more so for bilingual children who must keep track of two languages and their associated cultural frames.

CHAPTER 6 The Influence of Language and Communicative Setting on Bilingual Mother-Child Narrative Styles

6.1 Abstract

To examine the variability in bilingual mother-child narrative styles across different naturalistic contexts, the present chapter compared bilinguals' language samples from Experiments 1-4. Results revealed that bilingual mothers and children generally adopted a relatively high-elaborative conversation style when interacting in English and a relatively low-elaborative style when interacting in Thai, which aligned with the socialization goals associated with the American and Thai cultures, respectively. Task comparisons also revealed that speakers adapt their linguistic usage to cater to each communicative context and that cross-linguistic differences in bilinguals' discourse manifested differently depending on the communicative context. Across the four experiments, mothers and children consistently used more affirmations, labels, and negative feedback in English and produced more words in Thai. However, there were also idiosyncrasies in their narrative patterns including mothers using more direct action requests in Thai and children using more direct action requests in English, mothers using more repetitions in English and children using more repetitions in Thai, and mothers using more descriptions in English only during prompted reminiscing and no other tasks. These results suggest that scaffolding strategies such as evaluative feedback and labels may promote English skills regardless of the type of dyadic activity, whereas descriptive language may be most useful or most effectively taught when recounting personal stories. Some of the mothers' and children's conflicting narrative patterns may also reflect culture-specific power dynamic associated with each language. Specifically, Thai children are expected to do as adults say while American children are expected to be autonomous. Additionally, the current findings underscore the

variability in adult language-elicitation styles and child developmental trajectories and emphasize the need for research that examines linguistically and culturally diverse speakers across multiple contexts.

6.2 Introduction

Conversations between speakers, including ones between a parent and a child, are situated within specific contexts. Due to the unique demands and characteristics of various dyadic activities, maternal and child language use tends to differ across communicative settings (e.g., Crain-Thoreson et al., 2001; Hoff, 2010; Hoff-Ginsberg, 1991; Salo et al., 2016; Soderstrom & Wittebolle, 2013). For example, monolingual caregivers use different elicitation strategies to support children's narratives when reading a book compared to when playing with toys. The present study aimed to examine how bilingual mother-child interactions differed as a function of the language spoken and the dyadic task. Comparing across four naturalistic settings will provide insight into the influence of cultural norms associated with different languages and the influence of unique communicative demands on conversation styles.

To examine how adults scaffold children's language development, researchers have examined mother-child interactions across various settings in the home, including book reading, toy play, and reminiscing (e.g., Crain-Thoreson et al., 2001; Hoff-Ginsberg, 1991). In particular, book reading and toy play have been extensively compared. Mothers are often found to produce more complex language including richer vocabulary and longer utterances (Soderstrom & Wittebolle, 2013; Tamis-LeMonda et al., 2019; Weizman & Snow, 2001) and more labeling (Blake et al., 2006; DeLoache & DeMendoza, 1987; Namy et al., 2000) during book reading compared to toy play. Children themselves also use a greater variety of words and produce more cohesive, topic-contingent responses during book sharing compared to toy play. However, there are findings to the contrary, showing that toy play elicited longer utterances and more engagement than book reading (Salo et al., 2016). Adults have also been found to use more directives during play compared to book reading (Choi, 2000; Hoff-Ginsberg, 1991; Salo et al.,

2016; Weizman & Snow, 2001; Yont et al., 2003). Additionally, researchers have compared linguistic features such as use of nouns and verbs across these two communicative contexts (e.g., Altınkamış et al., 2014; Choi, 2000; Ogura et al., 2006; Tardif et al., 1999). Overall, regardless of cultural and linguistic background, caregivers tend to produce more nouns and focus on objects more during book sharing than during toy play. Conversely, they produce verbs and focus on actions during toy play more than during book sharing.

Relatively fewer studies have compared parent-child reminiscing with other tasks. From the extant literature, while some studies show a comparable narrative style across reminiscing and book sharing tasks (e.g., Wang et al., 2000), other studies show that communicative patterns during reminiscing interactions differ from those during book sharing and play (e.g., Crain-Thoreson et al., 2001; Haden & Fivush, 1996). For example, reminiscing interactions elicit more linguistic complexity from parents than do play interactions (Crain-Thoreson et al., 2001). Narrative styles, specifically the elaborative versus repetitive styles, are also found to differ across contexts. Relative to book reading and play, reminiscing interactions are associated with more repetitive styles.

Although various studies have shown evidence for similar patterns of context-specific communicative styles across different groups of mothers and children, there is also evidence suggesting that cultural background may moderate these task effects. For example, when book sharing and toy play interactions of German and American dyads were compared, there were more task differences in the American group compared to the German group (Doering et al., 2020). Specifically, American mothers produced utterances with higher complexity and elicited more contributions from children during toy play than in book reading, while German mothers did not differ across tasks on those measures. Similar to their mothers, American children

produced a greater number of utterances and more complex language during toy play compared to during book sharing, but their German counterparts did not show such differences. These findings suggest that there may be cultural and linguistic differences in the variability that exists across communicative settings, such that certain groups may have clear distinct socialization goals associated with each dyadic activity, whereas other groups may have similar socialization goals across all activities.

The majority of the extant literature is focused on the discourse of monolingual mothers and children. Less is known about the variability that exists across languages within the same bilingual individuals. One of the few studies that has compared bilingual mothers' and children's linguistic patterns across communicative contexts examined noun and verb use in Mandarin-English mothers and toddlers (Setoh et al., 2021). Overall, bilingual mothers used more verbs than nouns in both of their languages. However, there were task differences consistent with previous findings (Altınkamış et al., 2014; Choi, 2000; Ogura et al., 2006; Tardif et al., 1999), where mothers produced more verbs during toy play and more nouns during book reading. Although these results suggest that task-specific linguistic features such as noun and verb use are not moderated by the language of conversation, it is unclear whether language and task may interact to influence different aspects of narrative patterns in bilingual mothers and children who speak languages other than Mandarin. Thus, the current study will fill this gap by examining how Thai-English bilingual mother-child interactions differ as a function of the language spoken at a given time and the nature of the communicative context.

The present study aimed to examine potential differences in bilingual mothers' and preschool children's narrative patterns across tasks. Language samples in Thai and English from bilingual mothers and children were compared across three dyadic tasks: prompted reminiscing

(Experiment 1), book sharing (Experiment 2), and toy play (Experiment 3). Additionally, language samples from bilingual children during the personal narrative (Experiment 4) task were compared. Based on previous cross-cultural research showing that task-specific differences were moderated by cultural background (e.g., Doering et al., 2020), we hypothesized that bilinguals' narrative styles would differ across communicative contexts, as well as across languages.

6.3 Method

Participants

Participants were the same groups of Thai-English bilingual mothers and preschoolers from Experiments 1, 2, 3 and 4.

Procedure

Thai-English bilingual mothers and children participated in the prompted reminiscing, book sharing, and toy play tasks outlined in Experiments 1, 2, and 3. Bilingual children also participated in the personal narrative task described in Experiment 4 without their mothers. The average duration of the entire session with all four tasks was 49.60 minutes (*SD* = 13.93 minutes) for bilingual dyads' Thai session, 48.95 minutes (*SD* = 13.47 minutes) for bilingual dyads' English session, 52.11 minutes (*SD* = 20.08 minutes) for Thai monolingual dyads, and 52.76 minutes (*SD* = 17.23 minutes) for English monolingual dyads. There was no significant difference across language or group in the average duration of the sessions (*p*s > .05).

Coding and Data Analysis

Transcription and coding followed the same procedures as in Experiments, 1, 2, 3, and 4. To compare bilingual mothers' and children's conversation styles across their two languages and across the three or four tasks (three for mothers, four for children), the total count of each maternal and child linguistic measure was fitted to Poisson, negative binomial, zero-inflated

Poisson, and zero-inflated negative binomial generalized linear mixed models using the glmmTMB function (Brooks et al., 2017). Models included fixed effects of language (English, Thai), task (prompted reminiscing, book sharing, toy play, child personal narrative), and an interaction term. Fixed effects of language were simple coded, while fixed effects of task were deviation coded. Total number of words produced, L1 and L2 proficiency, and L1 and L2 exposure were added as covariates. The models also included random intercepts for participants. The best fitting models for each linguistic measure were selected by comparing AIC values using the AICtab function of the bbmle package (Bolker & R Development Core Team, 2021). Model assumptions (including overdispersion and zero-inflation) were checked using the performance package (Lüdecke et al., 2021). Post-hoc comparisons, with Bonferroni correction, were conducted to follow up task differences and significant interactions between language and task.

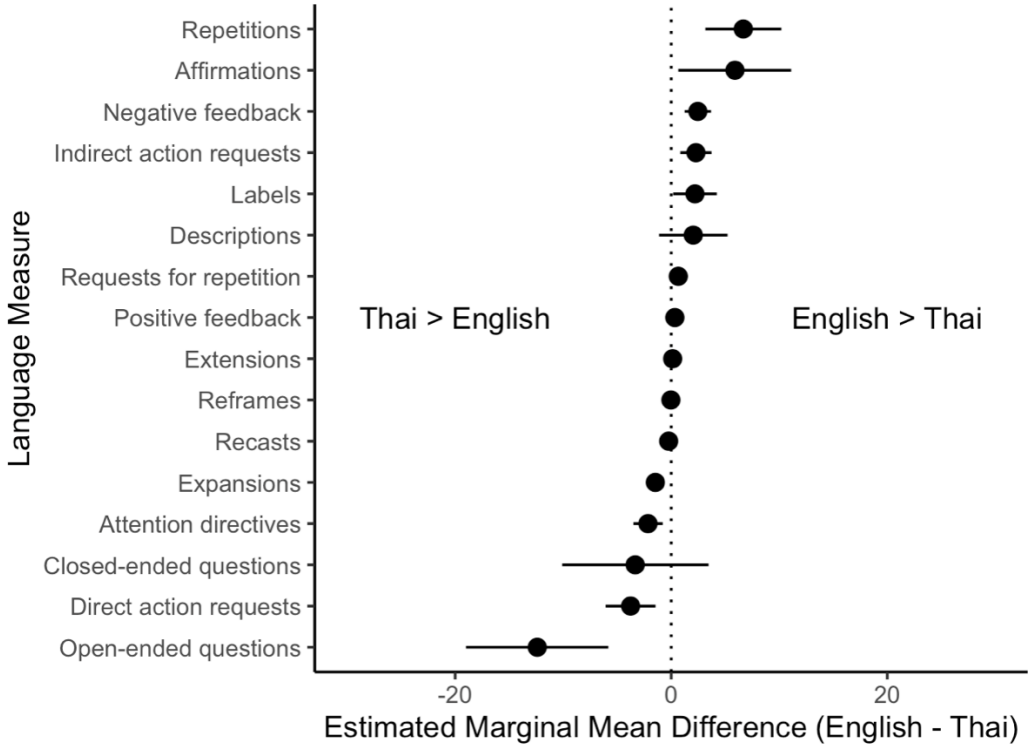
6.4 Results

Maternal Language Measures

Aggregated across all tasks, bilingual mothers used more affirmations, indirect action requests, labels, negative feedback, positive feedback, and repetitions when speaking in English than in Thai. Bilingual mothers produced more words and used more attention directives, closed-ended questions, direct action requests, expansions, open-ended questions, and recasts when speaking in Thai compared to English. See Figure 22 for an overview of mean differences between English and Thai in bilingual mothers' communicative patterns.

Figure 22

Mean Differences Between English and Thai in Bilingual Mothers' Linguistic Measures Aggregated Across All Tasks



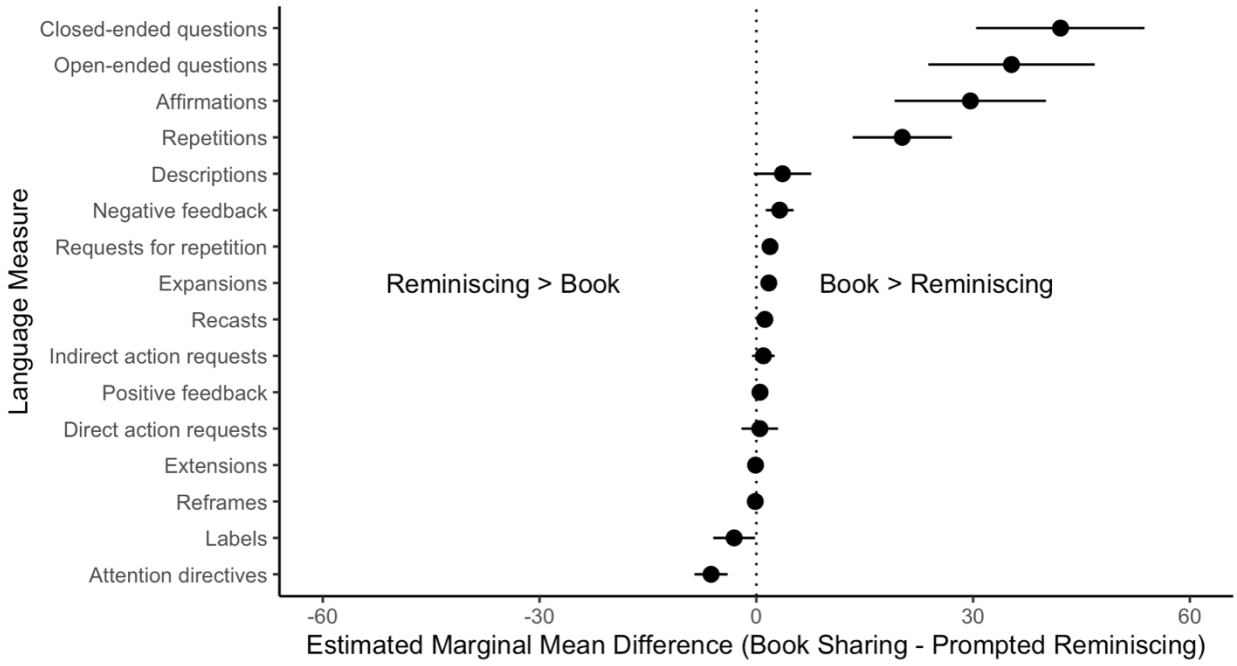
Note. Positive mean difference values indicate mothers' greater use of the linguistic measure in English compared to Thai. Negative mean difference values indicate mothers' greater use of the linguistic measure in Thai compared to English. Error bars represent 95% confidence intervals.

Aggregated across languages, bilingual mothers produced more words and utterances, and used more affirmations, closed-ended questions, expansions, negative feedback, open-ended questions, recasts, repetitions, and requests for repetitions during prompted reminiscing than during book sharing (*p*s < .017). Conversely, mothers used more attention directives and labels during book sharing than during prompted reminiscing. See Figure 23 for mean differences

between prompted reminiscing and book sharing in bilingual mothers' communicative patterns aggregated across languages.

Figure 23

Mean Differences Between Prompted Reminiscing and Book Sharing in Bilingual Mothers' Linguistic Measures Aggregated Across Languages



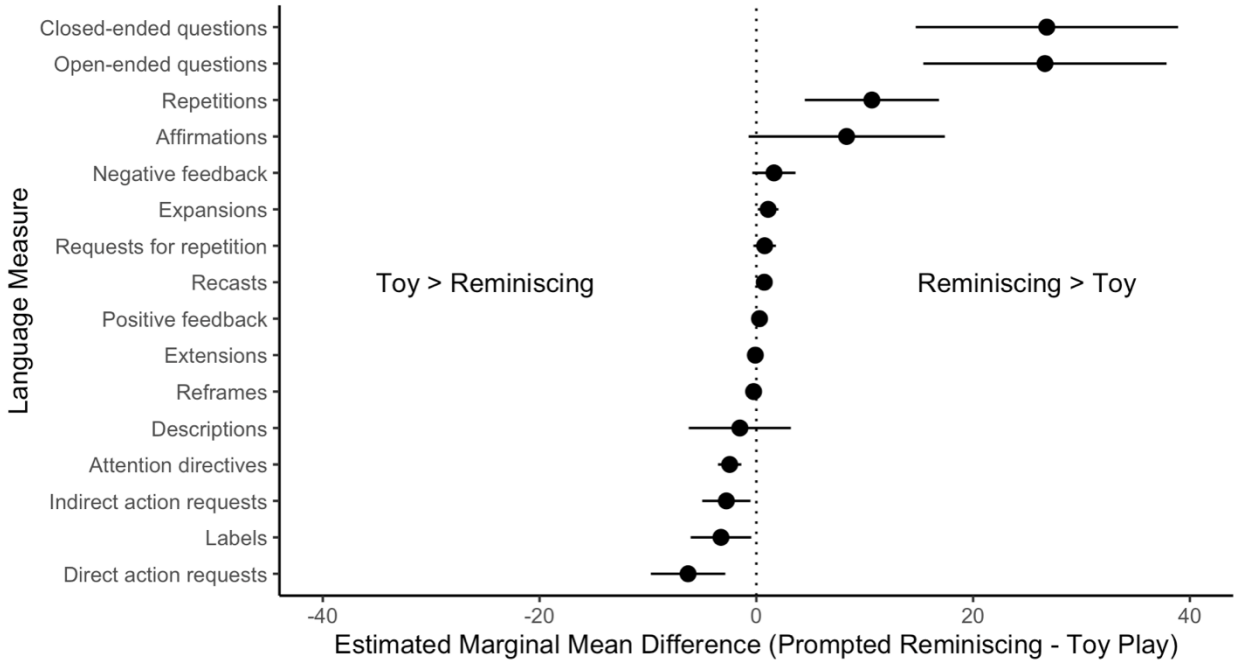
Note. Positive mean difference values indicate mothers' greater use of the linguistic measure during prompted reminiscing compared to during book sharing. Negative mean difference values indicate mothers' greater use of the linguistic measure during book sharing compared to during prompted reminiscing. Error bars represent 95% confidence intervals.

Bilingual mothers produced more words and utterances, and used more closed-ended questions, expansions, indirect action requests, open-ended questions, recasts, and repetitions

during prompted reminiscing than during toy play but used more attention directives, direct action requests, indirect action requests, and labels during toy play than during prompted reminiscing (*p*s < .017). See Figure 24 for mean differences between prompted reminiscing and toy play in bilingual mothers' communicative patterns aggregated across languages.

Figure 24

Mean Differences Between Prompted Reminiscing and Toy Play in Bilingual Mothers' Linguistic Measures Aggregated Across Languages

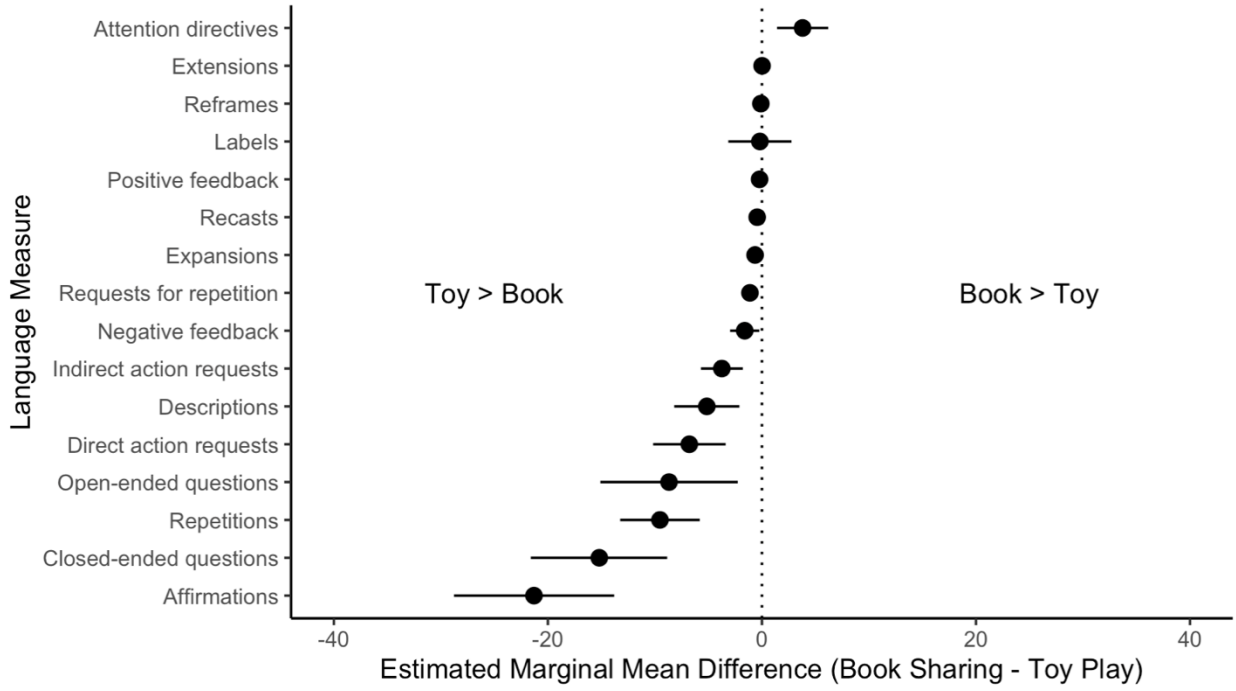


Note. Positive mean difference values indicate mothers' greater use of the linguistic measure during prompted reminiscing compared to during toy play. Negative mean difference values indicate mothers' greater use of the linguistic measure during toy play compared to during prompted reminiscing. Error bars represent 95% confidence intervals.

Bilingual mothers produced more words and utterances, and used more affirmations, closed-ended questions, descriptions, direct action requests, negative feedback, open-ended questions, recasts, repetitions, and requests for repetitions during toy play than during book sharing but used more attention directives during book sharing than during toy play (*p*s < .017). See Figure 25 for a summary of mean differences between book sharing and toy play in bilingual mothers' communicative patterns aggregated across languages.

Figure 25

Mean Differences Between Book Sharing and Toy Play in Bilingual Mothers' Linguistic Measures Aggregated Across Languages



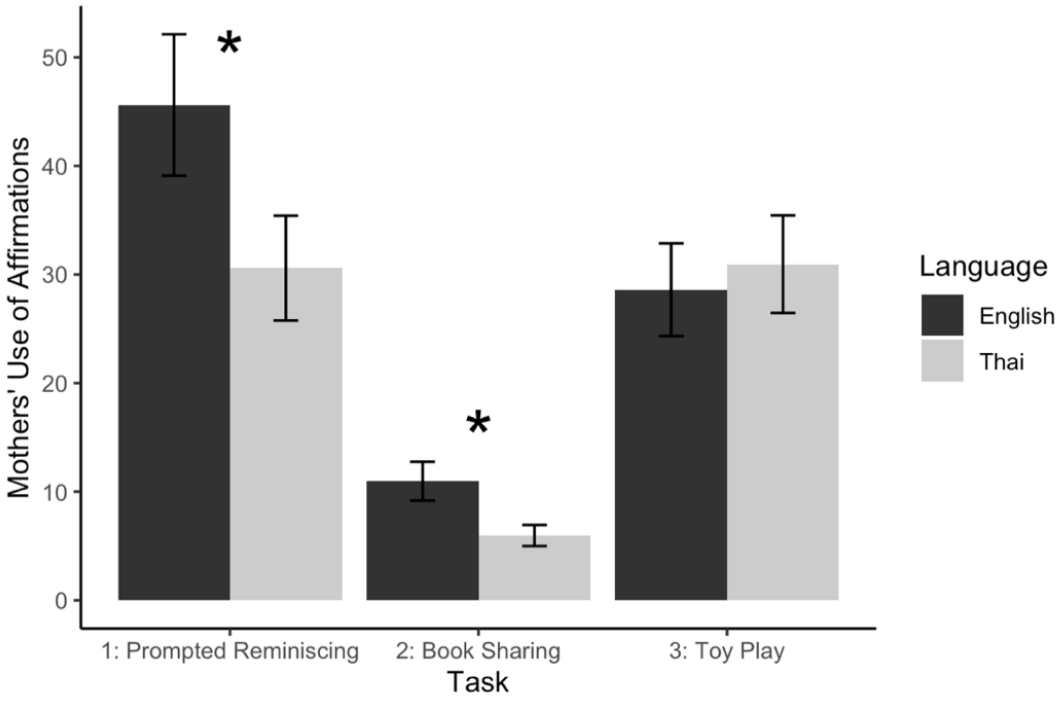
Note. Positive mean difference values indicate mothers' greater use of the linguistic measure during book sharing compared to during toy play. Negative mean difference values indicate

mothers' greater use of the linguistic measure during toy play compared to during book sharing. Error bars represent 95% confidence intervals.

There were significant interactions between language and communicative task for maternal use of affirmations, closed-ended questions, descriptions, labels, negative feedback, recasts, and repetitions, as well as the number of utterances mothers produced. Bilingual mothers used descriptions, labels, and negative feedback significantly more in English than in Thai only during prompted reminiscing (ps < .017) and not during the other two tasks. Bilingual mothers used closed-ended questions and recasts significantly more in Thai than in English only during book sharing (ps < .017). Lastly, bilingual mothers used affirmations and repetitions significantly more in English than in Thai during prompted reminiscing and book sharing (ps < .017) but not during toy play. See Figures 26-32 for the interaction between language and task on bilingual mothers' use of affirmations, closed-ended questions, descriptions, labels, negative feedback, recasts, and repetitions. Post-hoc analyses revealed no significant simple effects for the number of utterances bilingual mothers produced by language and task. See Appendix 6 for the estimated marginal means for maternal language (Table 6A.1).

Figure 26

Bilingual Mothers' Use of Affirmations by Language and Task

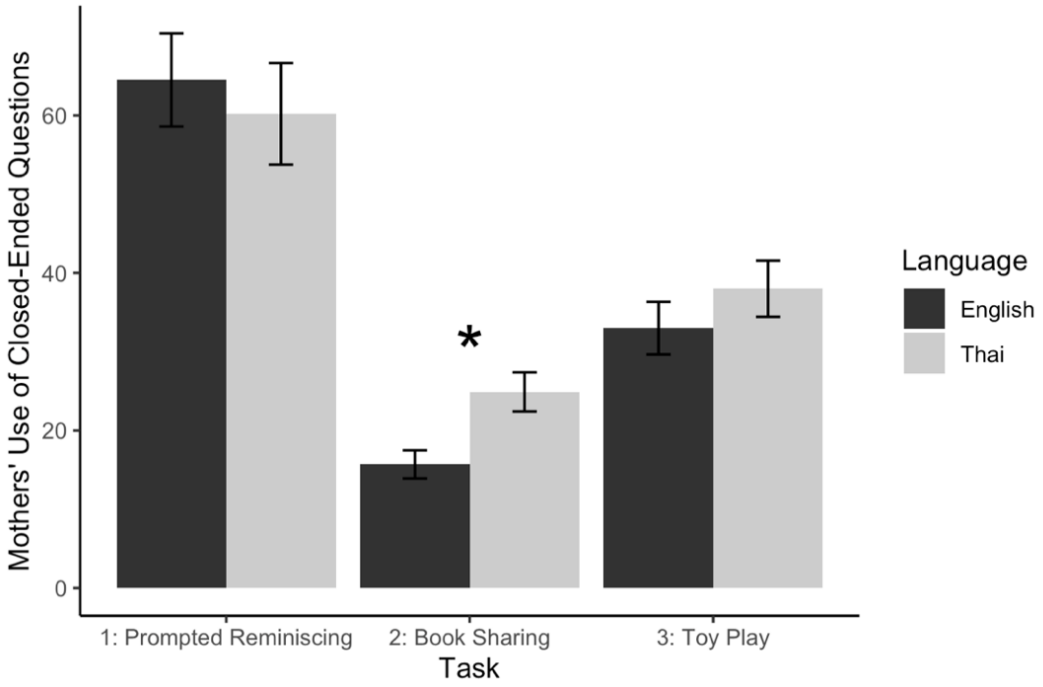


Note. Error bars represent standard errors.

*$p < .017$.

Figure 27

Bilingual Mothers' Use of Closed-Ended Questions by Language and Task

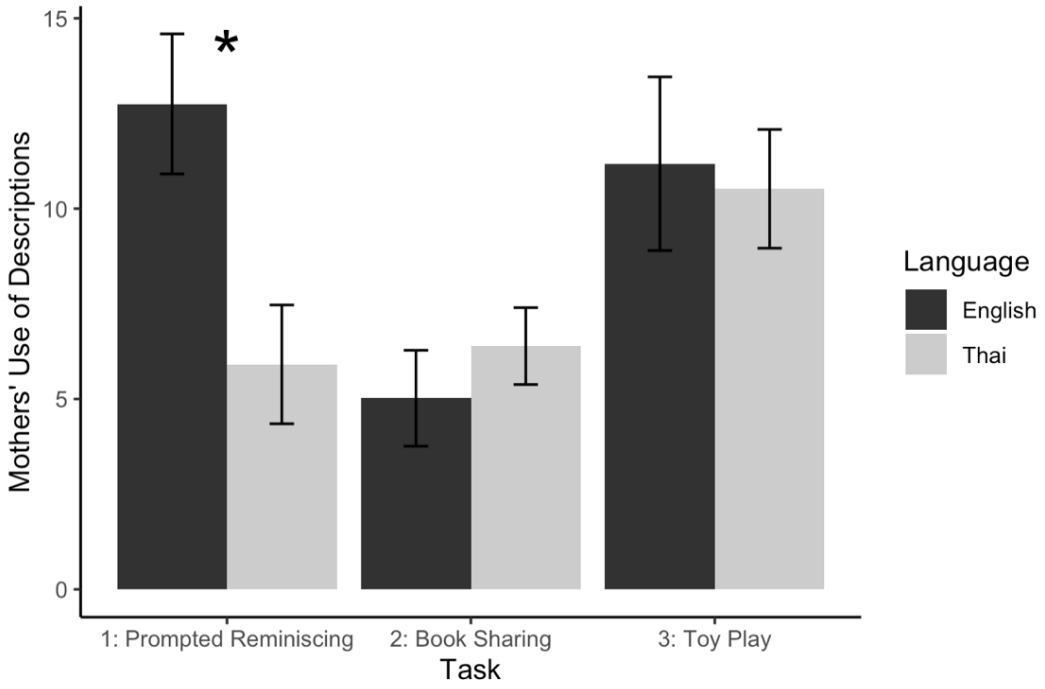


Note. Error bars represent standard errors.

*$p < .017$.

Figure 28

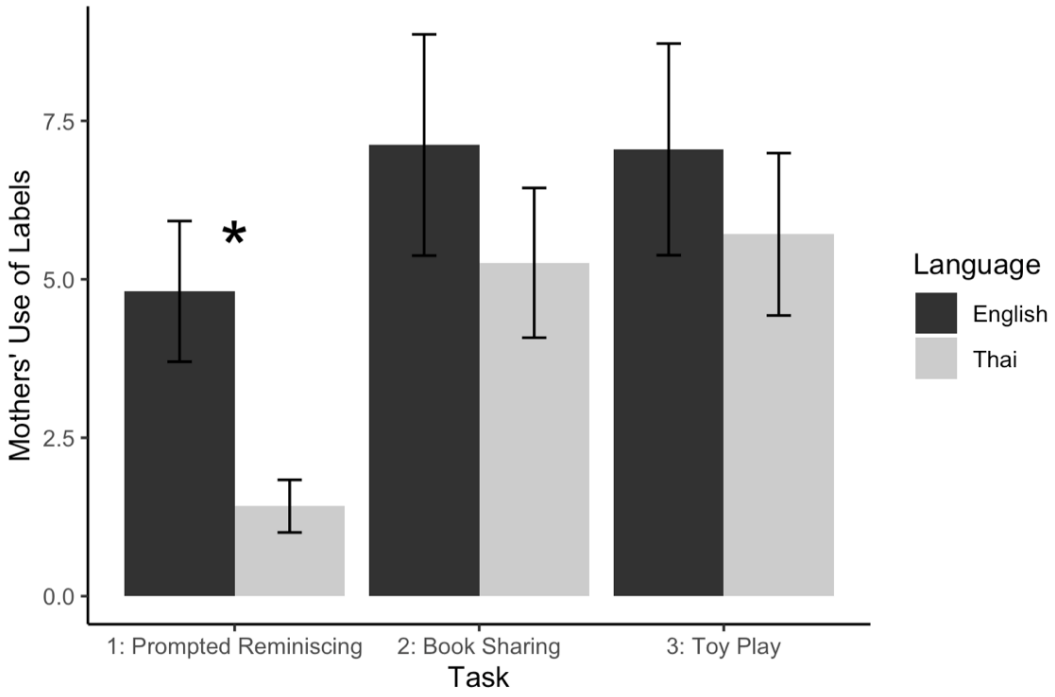
Bilingual Mothers' Use of Descriptions by Language and Task



Note. Error bars represent standard errors. *$p < .017$

Figure 29

Bilingual Mothers' Use of Labels by Language and Task

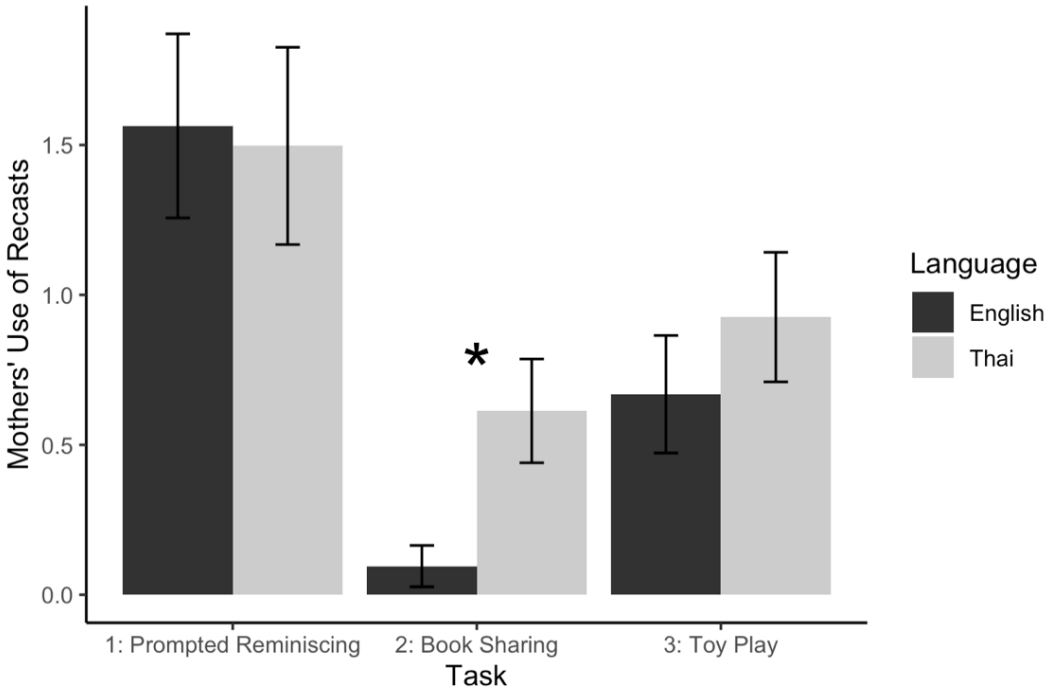


Note. Error bars represent standard errors.

*$p < .017$.

Figure 30

Bilingual Mothers' Use of Recasts by Language and Task

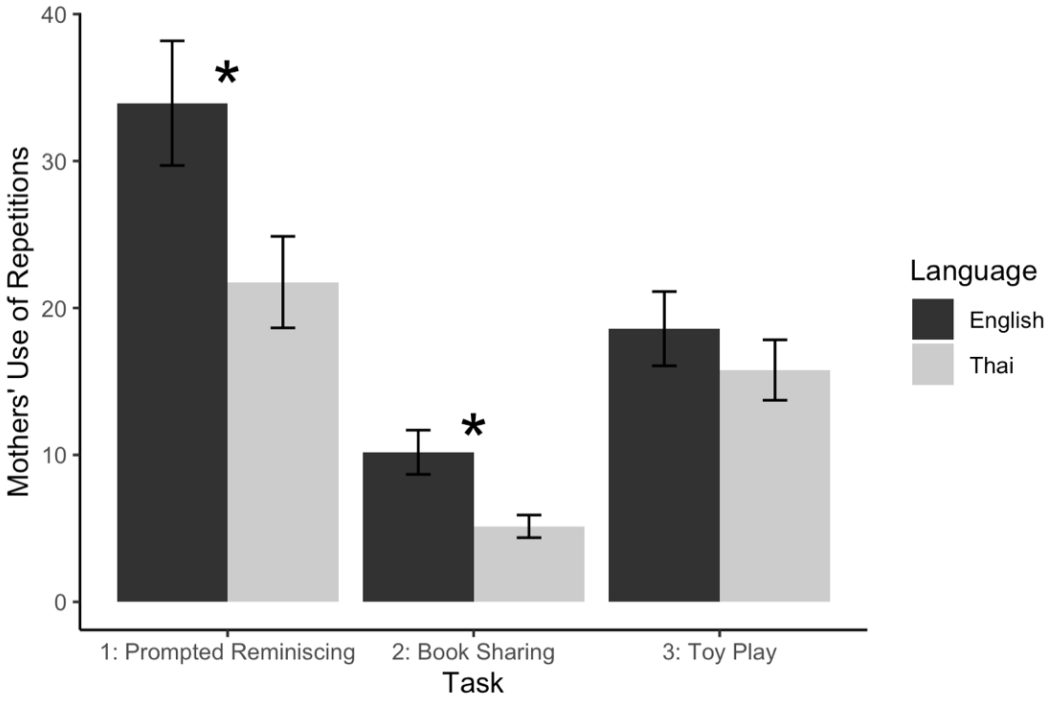


Note. Error bars represent standard errors.

*$p < .017$.

Figure 31

Bilingual Mothers' Use of Repetitions by Language and Task

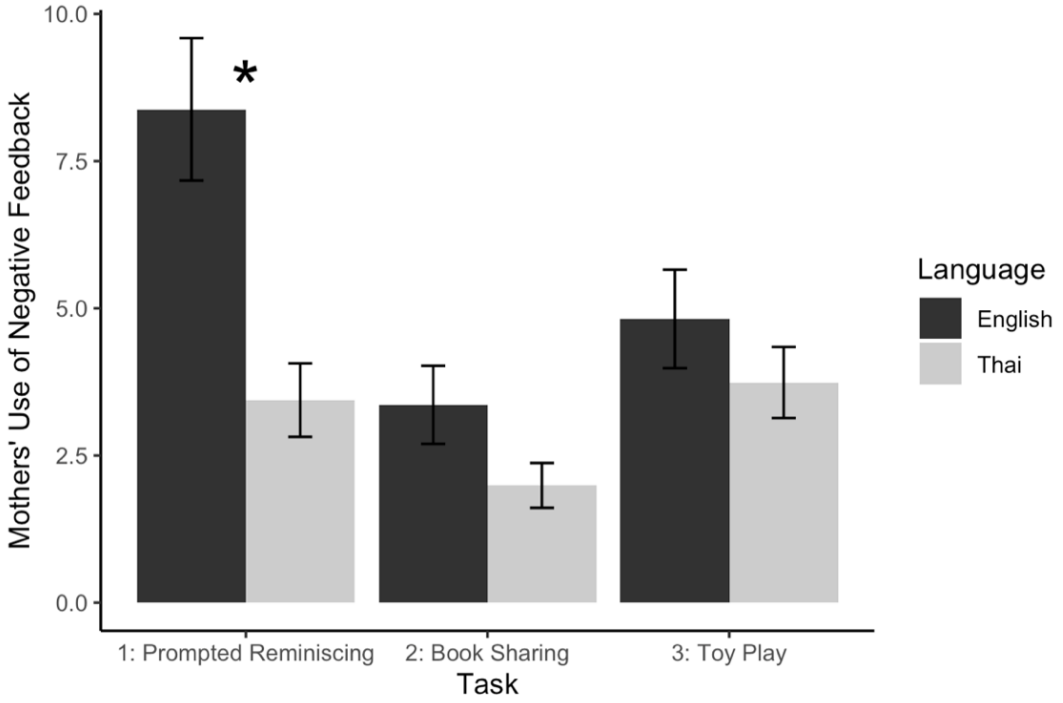


Note. Error bars represent standard errors.

*$p < .017$.

Figure 32

Bilingual Mothers' Use of Negative Feedback by Language and Task



Note. Error bars represent standard errors.

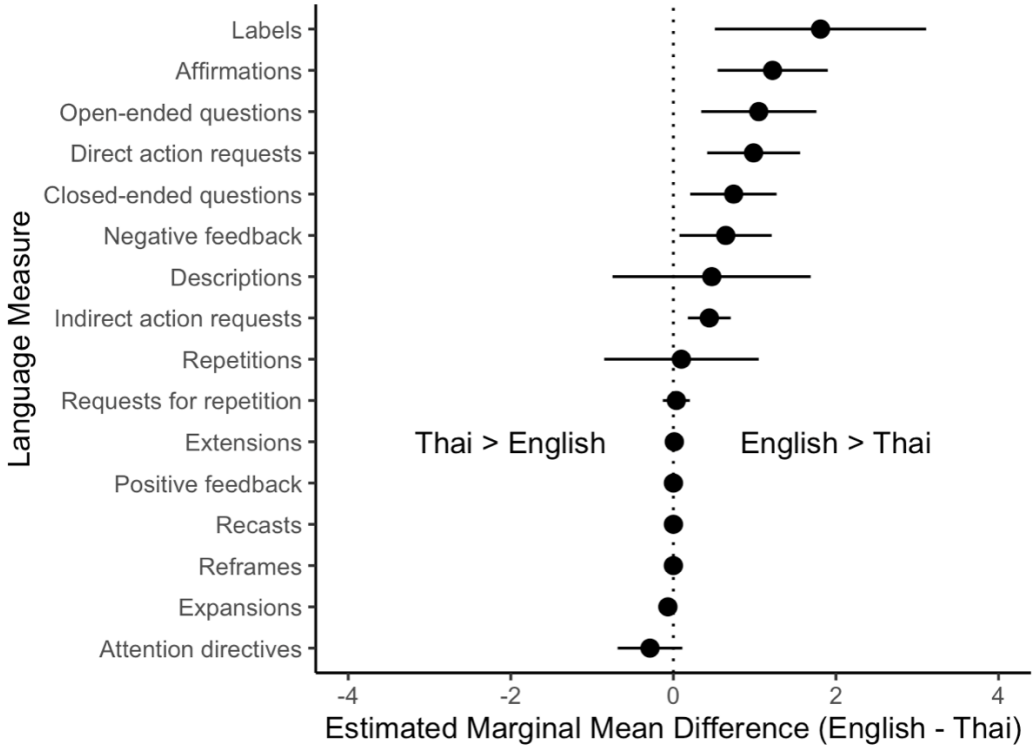
*$p < .017$.

Child Language Measures

Aggregated across tasks, bilingual children used more affirmations, closed-ended questions, open-ended questions, when speaking in English than in Thai. Conversely, bilingual children produced more words when speaking in Thai compared to English. See Figure 33 for an overview of mean differences between English and Thai in bilingual children's communicative patterns.

Figure 33

Mean Differences Between English and Thai in Bilingual Children's Linguistic Measures Aggregated Across All Tasks

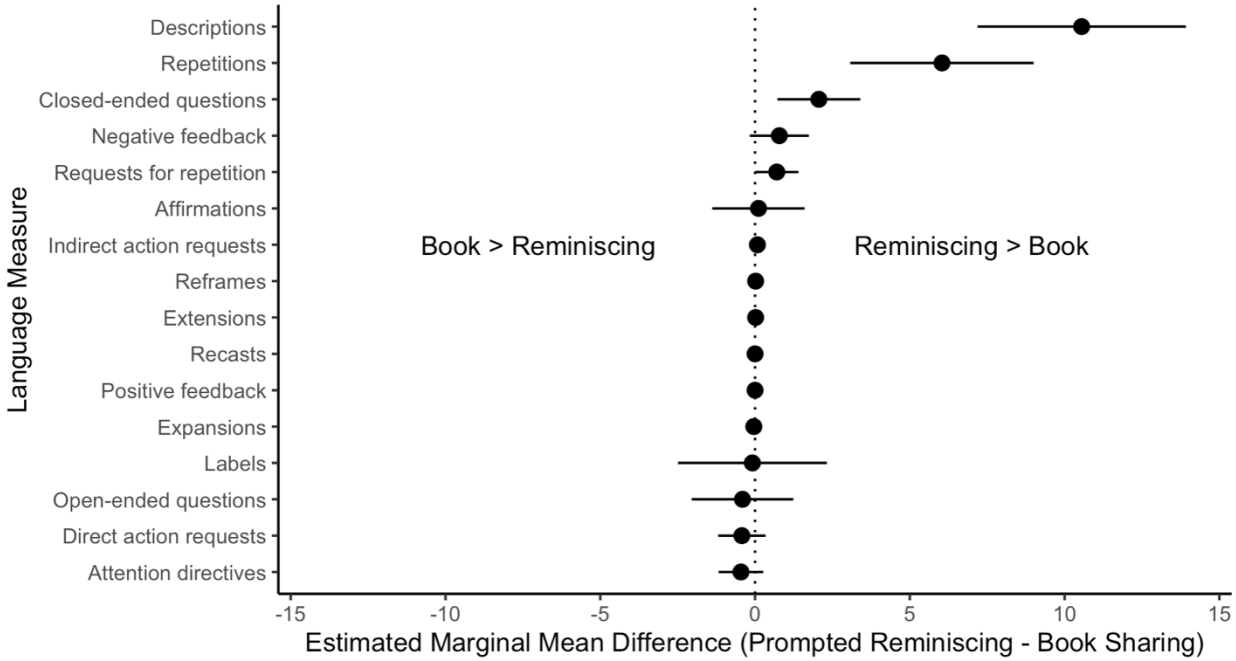


Note. Positive mean difference values indicate children's greater use of the linguistic measure in English compared to Thai. Negative mean difference values indicate children's greater use of the linguistic measure in Thai compared to English. Error bars represent 95% confidence intervals.

Aggregated across languages, bilingual children produced more words and utterances, and used more closed-ended questions, descriptions, repetitions, and requests for repetition during prompted reminiscing than during book sharing. See Figure 34 for a summary of mean differences between prompted reminiscing and book sharing aggregated across languages.

Figure 34

Mean Differences Between Prompted Reminiscing and Book Sharing in Bilingual Children's Linguistic Measures Aggregated Across Languages



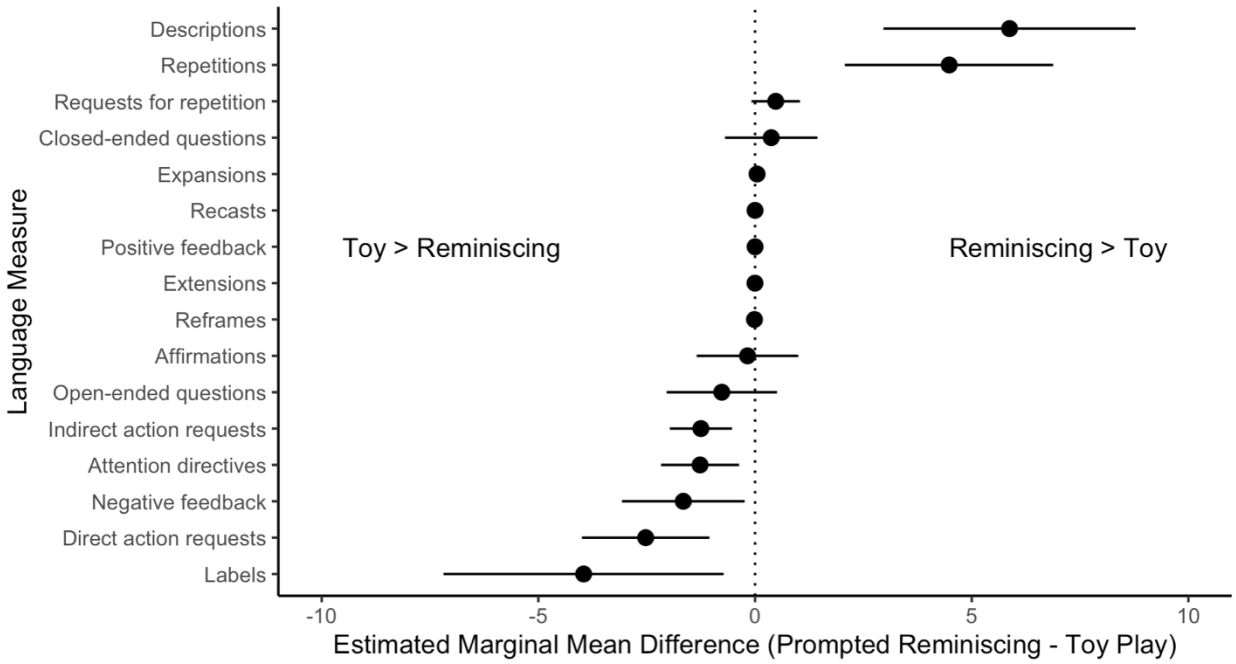
Note. Positive mean difference values indicate children's greater use of the linguistic measure during prompted reminiscing compared to during book sharing. Negative mean difference values indicate children's greater use of the linguistic measure during book sharing compared to during prompted reminiscing. Error bars represent 95% confidence intervals.

Bilingual children produced more utterances, and used more descriptions and repetitions, during prompted reminiscing than during toy play but produced more attention directives, direct action requests, indirect action requests, labels, and negative feedback during toy play than

during prompted reminiscing. See Figure 35 for a summary of mean differences between prompted reminiscing and toy play aggregated across languages.

Figure 35

Mean Differences Between Prompted Reminiscing and Toy Play in Bilingual Children's Linguistic Measures Aggregated Across Languages



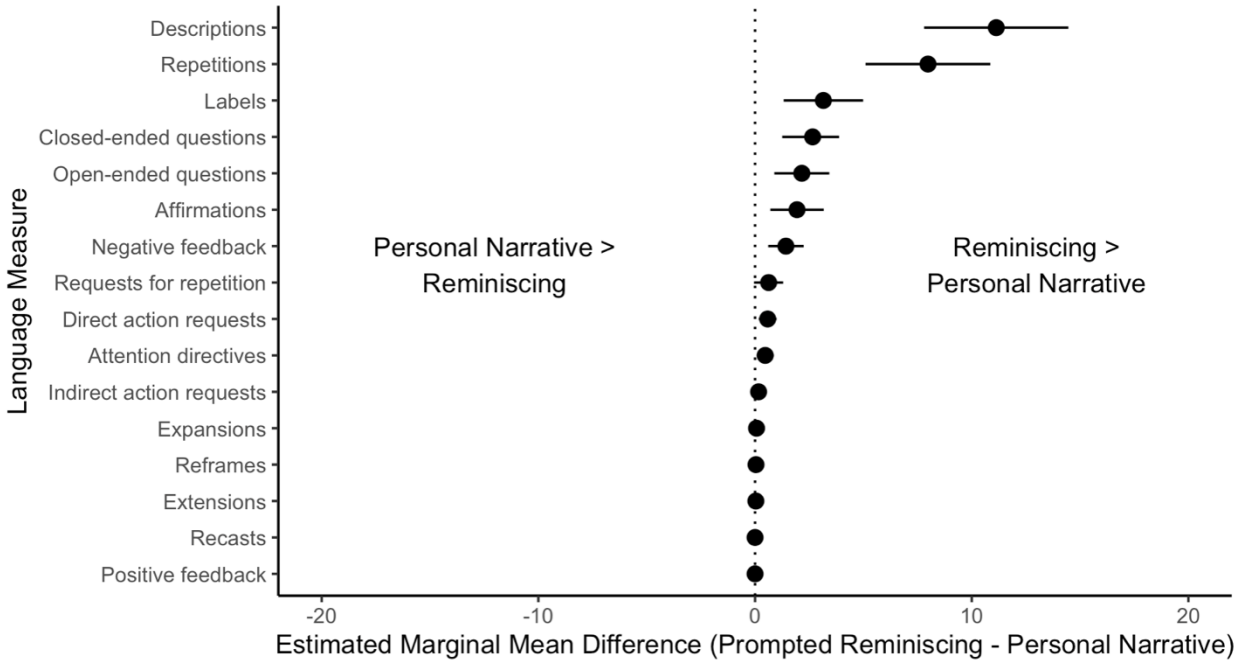
Note. Positive mean difference values indicate children's greater use of the linguistic measure during prompted reminiscing compared to during toy play. Negative mean difference values indicate children's greater use of the linguistic measure during toy play compared to during prompted reminiscing. Error bars represent 95% confidence intervals.

Bilingual children produced more words and utterances, and used more affirmations, attention directives, closed-ended questions, descriptions, direct action requests, indirect action

requests, labels, negative feedback, open-ended questions, and repetitions during prompted reminiscing than during personal narrative. See Figure 36 for a summary of mean differences between prompted reminiscing and personal narrative aggregated across languages.

Figure 36

Mean Differences Between Prompted Reminiscing and Personal Narrative in Bilingual Children's Linguistic Measures Aggregated Across Languages

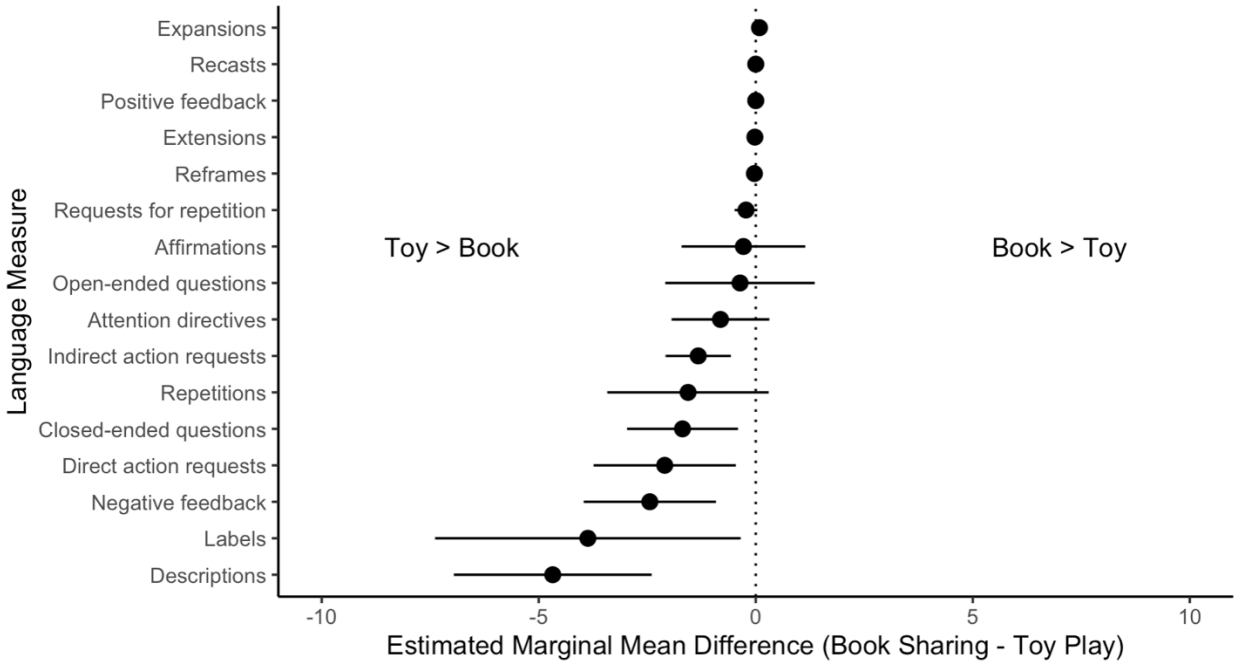


Note. Positive mean difference values indicate children's greater use of the linguistic measure during prompted reminiscing compared to during personal narrative. Negative mean difference values indicate children's greater use of the linguistic measure during personal narrative compared to during prompted reminiscing. Error bars represent 95% confidence intervals.

Bilingual children produced more words and utterances, and used more closed-ended questions, descriptions, direct action requests, indirect action requests, labels, and negative feedback during toy play than during book sharing. See Figure 37 for a summary of mean differences between book sharing and toy play aggregated across languages.

Figure 37

Mean Differences Between Book Sharing and Toy Play in Bilingual Children's Linguistic Measures Aggregated Across Languages

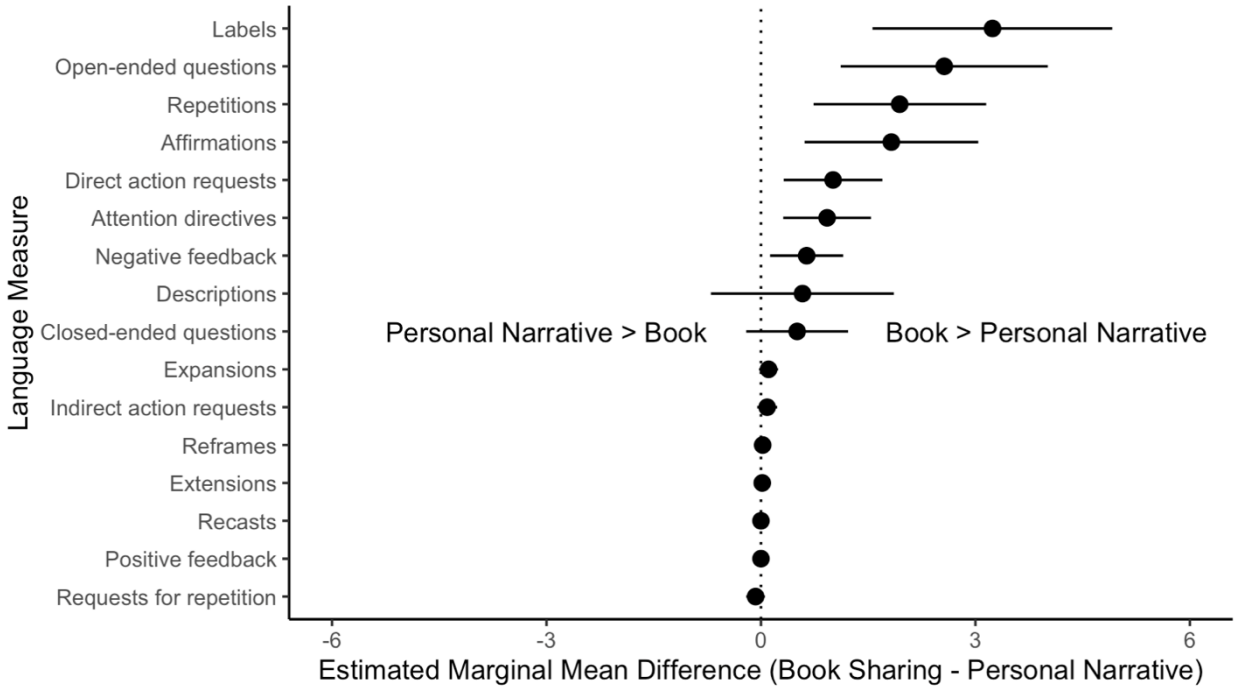


Note. Positive mean difference values indicate children's greater use of the linguistic measure during book sharing compared to during toy play. Negative mean difference values indicate children's greater use of the linguistic measure during toy play compared to during book sharing. Error bars represent 95% confidence intervals.

Bilingual children produced more utterances and used more affirmations, attention directives, direct action requests, labels, negative feedback, open-ended questions, and repetitions during book sharing than during personal narrative. See Figure 38 for a summary of mean differences between book sharing and personal narrative aggregated across languages.

Figure 38

Mean Differences Between Book Sharing and Personal Narrative in Bilingual Children's Linguistic Measures Aggregated Across Languages

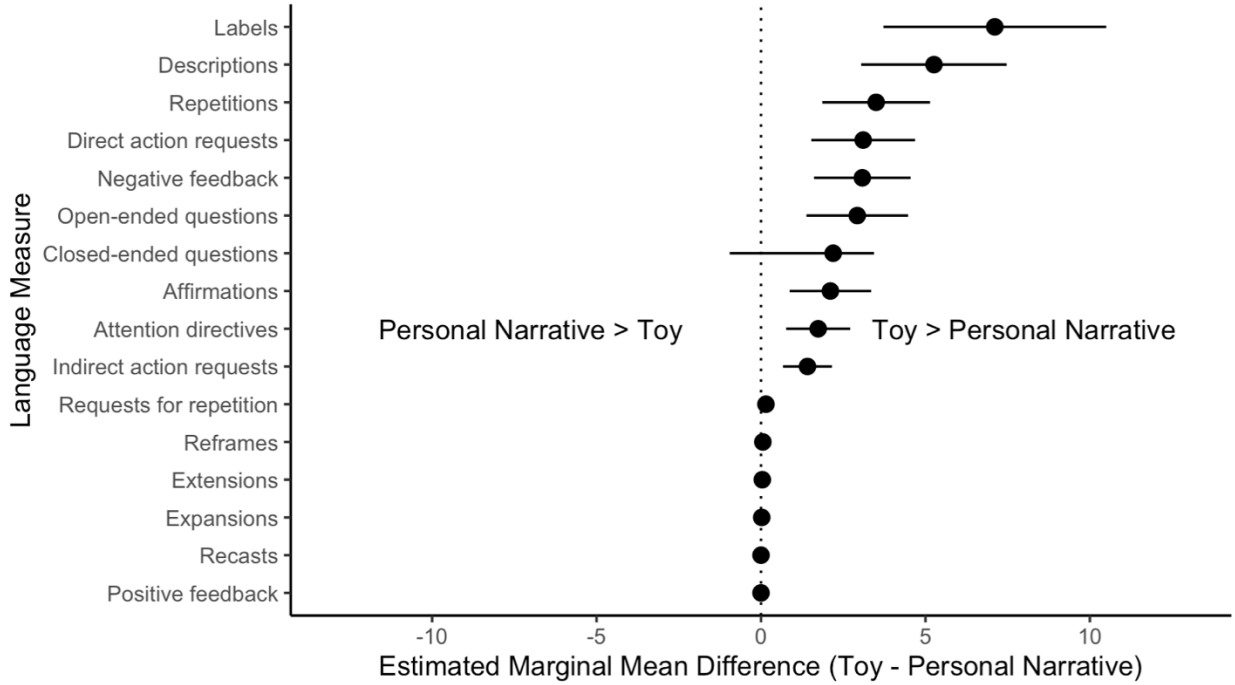


Note. Positive mean difference values indicate children's greater use of the linguistic measure during book sharing compared to during personal narrative. Negative mean difference values indicate children's greater use of the linguistic measure during personal narrative compared to during book sharing. Error bars represent 95% confidence intervals.

Bilingual children produced more words and utterances, and used more affirmations, attention directives, closed-ended questions, descriptions, direct action requests, indirect action requests, labels, negative feedback, open-ended questions, and repetitions during toy play than during personal narrative. See Figure 39 for a summary of mean differences between toy play and personal narrative aggregated across languages.

Figure 39

Mean Differences Between Toy Play and Personal Narrative in Bilingual Children's Linguistic Measures Aggregated Across Languages

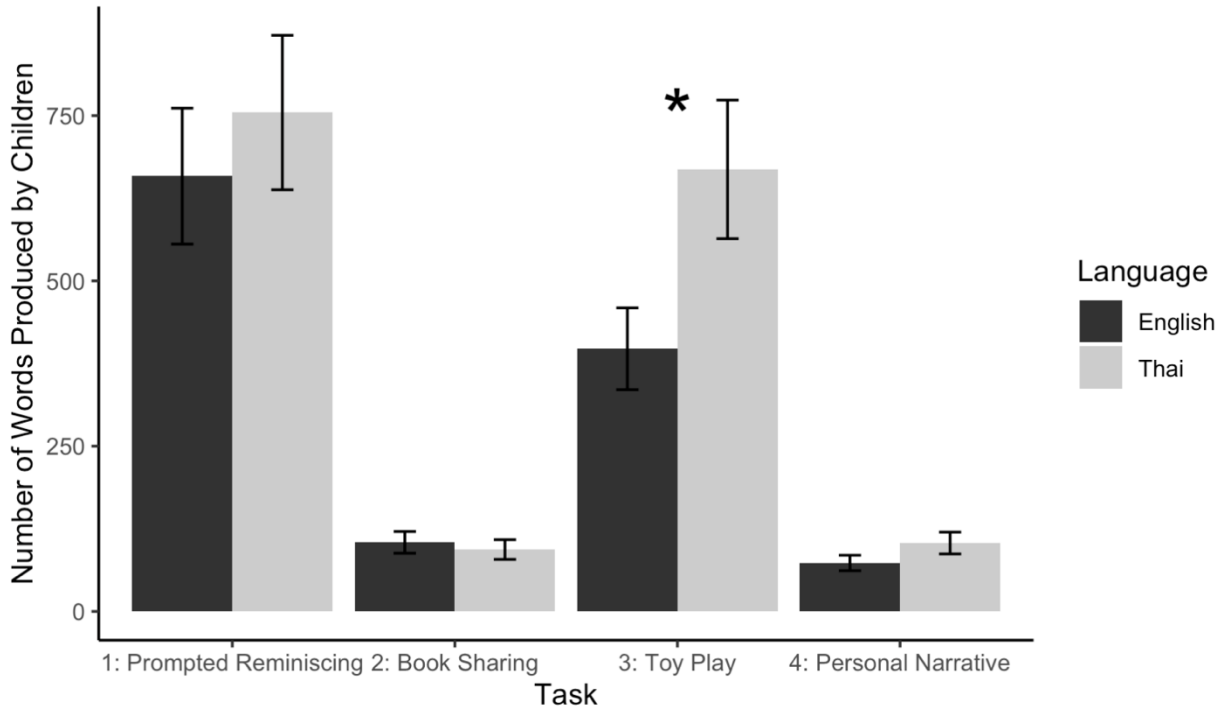


Note. Positive mean difference values indicate children's greater use of the linguistic measure during toy play compared to during personal narrative. Negative mean difference values indicate children's greater use of the linguistic measure during personal narrative compared to during toy play. Error bars represent 95% confidence intervals.

There was a significant interaction between language and communicative task for the number of words children produced. Post-hoc analyses revealed that bilingual children produced more words during the Thai toy play session than during the English session ($p < .0125$). See Figure 40 for the interaction between language and task on the number of words bilingual children produced. There were no cross-linguistic differences in the number of words that children produced during the three other tasks. See Appendix 6 for the estimated marginal means for child language (Table 6A.2).

Figure 40

Number of Words Bilingual Children Produced by Language and Task



Note. Error bars represent standard errors.

*$p < .0125$.

6.5 Discussion

The present chapter examined the influence of language and communicative task on bilingual mothers' and children's conversation styles. Results confirmed the findings from Experiments 1-4 that bilinguals exhibit two distinct narrative patterns depending on the language in which they are conversing. Findings also show that bilingual mothers and children adjust their way of communicating depending on the task demands. Additionally, cross-linguistic differences in maternal elicitation strategies and child linguistic skills are moderated by the dyadic activity.

Consistent with previous cross-cultural research and the findings from the preceding chapters, there were cross-linguistic differences in bilingual mother-child dyadic interactions. Bilingual mothers' and children's greater use of evaluative statements, including affirmations, negative feedback, and positive feedback in English was reminiscent of the low-power-distance, high-elaborative, and child-centered styles, which typically promote competence and self-expression (Hofstede, 2001; Rochanavibhata & Marian, 2020, 2021, 2022; Vigil & Hwa-Froelich, 2004). Conversely, bilingual mothers' greater use of directives and linguistic devices that grammatically correct children's utterances, including expansions and recasts, in Thai was reminiscent of the high-power-distance, low-elaborative, and adult-centered styles that encourage obedience and deference from children towards adults (Hofstede, 2001; Rochanavibhata & Marian, 2020, 2021, 2022; Vigil & Hwa-Froelich, 2004). Overall, these results further emphasize that bilingual mothers and children exhibited distinct communicative patterns in each of their languages.

Findings also revealed that mothers and children adapted their use of narrative devices depending on the nature of the dyadic task. For example, when prompted reminiscing and book sharing were compared, mothers were more likely to use strategies that elicited input from their

children (e.g., closed- and open-ended questions, requests for repetition) when jointly recalling autobiographical memories (Cleveland & Reese 2005; Rochanavibhata & Marian, 2020; Zaman & Fivush, 2013). Additionally, mothers provided feedback (e.g., affirmations, negative feedback) to help guide children's autobiographical narratives. In contrast to the reminiscing task, mothers were more likely to direct children's attention and label objects on the page during book sharing, which highlights the activity's purpose in teaching literacy practices (Bus et al., 1995; Sénéchal & LeFevre, 1998). Comparison of the reminiscing and play interactions highlighted the nature of dyadic play, specifically that joint engagement with objects requires interlocutors to direct each other's attention and make requests. During mother-child play, mothers were also more likely to label the animal toys, suggesting that play activities are viewed as an opportunity to focus on teaching specific concepts, in this case vocabulary (Rochanavibhata & Marian, 2022; Tamis-LeMonda et al., 2013).

Cross-linguistic differences in bilingual mothers' and children's narrative patterns were also moderated by the communicative context. For example, bilingual mothers used more labels in English during prompted reminiscing, but not during book sharing or toy play. Considering that the latter two tasks naturally provide opportunities for labeling objects on the page or in front of dyads, it follows that mothers may engage in labeling equally across languages. However, during prompted reminiscing, the task does not inherently demand joint attention over objects that require labeling (although it is possible to label the prompts written on cue cards, doing so is not a prerequisite to recounting past events). Mothers' tendency to label more when speaking English may be in accordance with the high-elaborative style (Rochanavibhata & Marian, 2020). Bilingual children produced more words in Thai than in English during toy play only, and not during any of the other tasks. This task- and language-specific loquaciousness may

indicate the ease of using the native and more proficient language, as well as the inherent unstructured nature of the task that allows children to lead the interaction more so than in the other three activities.

These findings can be used to inform the development of interventions for children from linguistically and culturally diverse backgrounds. Specifically, practitioners should be cognizant of the clients' language- and culture-specific communicative norms that are considered appropriate in order to increase treatment efficacy. When designing instructions and therapy sessions, clinicians and educators should also take into consideration the nature of various parent-child dyadic tasks and choose activities that lend themselves to specific scaffolding strategies that will most effectively promote the desired narrative abilities.

In sum, the present chapter sheds lights on the factors that influence bilingual mothers' and children's communicative styles. First, the language used during dyadic interactions triggers the associated cultural frame, which results in two distinct scaffolding strategies and narrative patterns. Second, activities have inherent demand characteristics and purposes that elicit specific linguistic devices. Finally, language and context interact and lead to cross-linguistic differences in speech to manifest differently depending on the task at hand.

CHAPTER 7 General Discussion

7.1 Abstract

The present dissertation demonstrated that two conversation styles co-exist within bilinguals, each style corresponding to the cultural norms associated with each of the two languages. Socialization processes are also revealed to vary as a function of child gender, interlocutor, and communicative tasks. Theoretically, these findings contributed to our understanding of the mechanisms underlying cultural frame switching and more broadly our understanding of language acquisition in monolingual and bilingual children. Practically, this line of research provided evidence that can be used to inform the decisions that professionals in the clinical and educational settings make. Finally, immediate future directions of this work include examining cross-linguistic differences in Thai-English bilingual dyads in the United States, discerning the influence of acculturation, examining the relationship between mothers' and children's conversation styles and their language background measures and the relationship between children's conversation styles and their fathers' language background measures, and examining cross-linguistic differences in maternal and child non-verbal communication. Long-term future directions include collecting maternal attitudes on language socialization, taking into account instances of code-switching, collecting additional language samples from other interlocutors in other communicative contexts over an extended period of time, and employing the same methodology with bilingual speakers of other languages.

7.2 Summary of Findings

The current dissertation examined the influences of linguistic and cultural background, child gender, and communicative context on the conversation styles of mothers and their preschoolers. Findings from the five chapters provided evidence for cross-linguistic differences in the interactions of Thai-English bilingual mother-child dyads.

Comparisons of bilinguals and monolinguals showed that bilingual mothers and children have two distinct communicative styles in each of their two languages. However, bilinguals are not two monolinguals in one (Grosjean, 1989). When speaking English, bilinguals exhibit communicative patterns that are generally congruent with their English monolingual counterparts (i.e., high-elaborative), with the exception of some discourse patterns that are more reminiscent of their Thai monolingual counterparts (e.g., using more directives than English monolinguals). These findings suggest that as a result of speaking two languages and having unique cultural frames associated with each language, bilinguals incorporate elements from both their identities to form conversation styles that are slightly different from those of their monolingual counterparts.

Bilingual *mothers* used different elicitation strategies depending on the language that they were speaking at a given time. Overall, when conversing in English, bilingual mothers tended to adopt high-elaborative and child-centered styles, characterized by the use of elicitation strategies that encouraged child participation and fostered independence. On the other hand, bilingual mothers were more likely to adopt low-elaborative and adult-centered styles when speaking in Thai. Specifically, mothers used more directives and grammatically corrected children's utterances more (Hofstede, 2001; Rochanavibhata & Marian, 2020, 2021, 2022; Vigil & Hwa-Froelich, 2004).

Consequently, bilingual *children* exhibited and utilized language-specific linguistic and narrative skills, providing more individual contributions and feedback when speaking in English and taking on a more passive role–listening and repeating after their mothers–when speaking in Thai. Furthermore, the influence of maternal scaffolding on child discourse patterns was observed in both languages. In the Experiments that consisted of a dyadic activity, there were positive associations between mothers' and children's use of linguistic measures, suggesting that children were actively responding and learning the communicative norms modeled by their mothers.

Child *gender* and communicative *contexts* were also important factors that shape the way bilingual mothers support their children's narratives, which in turn influenced the children's emerging conversation styles. Gender-specific socialization goals, including the emphasis placed on raising polite girls and autonomous boys (Bornstein, 2012; Fivush, 1994; Fivush et al., 2003; Harkness et al., 1992; Tamis-LeMonda & McFadden, 2010), were shown to moderate cross-linguistic differences in maternal scaffolding strategies. For example, the additive effect of individualistic cultural norms and male socialization norms resulted in bilingual mothers of boys' greater use of positive feedback and affirmations in English compared to Thai, whereas bilingual mothers of girls did not exhibit such cross-linguistic difference. Mothers and children also adapted their conversation styles according to the nature and demand characteristics of each dyadic activity (Crain-Thoreson et al., 2001; Hoff, 2010; Hoff-Ginsberg, 1991; Salo et al., 2016; Soderstrom & Wittebolle, 2013). As a result, cross-linguistic differences in bilinguals' use of certain narrative devices were observed only in specific tasks. For instance, bilingual mothers used labels more during the English reminiscing session compared to the Thai session, but these patterns did not emerge during book sharing or toy play.

7.3 Scientific Contributions

Findings from the current dissertation provide further support for cultural frame switching (Hong et al., 1997; Hong et al., 2000; Ramírez-Esparza et al., 2006), suggesting that language can trigger culture-specific communicative and behavioral norms. When speaking English, Thai-English bilingual mothers and children access and exhibit a conversation style that is similar to their American-English monolingual counterparts. When speaking Thai, bilinguals behave more similarly to their Thai monolingual counterparts. Although these language dependent effects have been established previously in the bilingual adult and child memory literature (Marian & Kaushanskaya, 2004; Marian & Neisser, 2000; Wang et al., 2010), this is the first set of studies to show that bilingual mothers scaffold their children's narratives differently across languages and tasks and that children also present themselves in distinct ways as early as preschool. Thus, the present work suggests that language not only triggers specific memories, but also cues appropriate cultural practices that come into play during daily activities. However, it is important to note that cultural frame switching may not be the only underlying mechanism for the observed cross-linguistic differences in bilingual mother-child discourse. It is likely that other factors including proficiency in each language, degree of identification with each culture, contexts in which children acquire both languages, and properties of each language also play a role in shaping bilinguals' conversation styles.

Moreover, the present work contributes to a better understanding of cross-linguistic transfer and interference between a bilingual's two languages. Specifically, the fact that bilingual mothers and children exhibit two distinct conversation styles that combine characteristics from the styles of their monolingual counterparts suggests that cross-linguistic transfer may occur not

only at the phonological, morphological, and syntactic levels (e.g., Nicoladis, 1999; Paradis 2001; Yip & Matthews, 2000), but also at the discourse level.

In addition to the theoretical contributions, this program of research has practical implications for applied work. The current findings can be used to inform educators', clinicians', and paraprofessionals' linguistic and cultural competence and to prepare them to best serve individuals from diverse cultural groups. Linguistically and culturally diverse children cannot be expected to show similar developmental trajectories in both the home and mainstream languages. Therefore, individuals working with children from non-WEIRD groups should be cognizant of cross-linguistic differences in communicative norms in order to avoid misdiagnosing differences as disorders. Although there is already a recommended practice of interviewing families prior to adapting interventions to ensure cultural appropriateness (DiLollo & Wolter, 2004; Westby, 1990; Westby et al., 2003), findings from the current work can be used to further supplement the clinician's understanding of the family's practices, as well as to help guide the clinician in formulating questions for the ethnographic interview.

Evidence showing that mothers and children adapt to the unique demands of various everyday activities can also be helpful in the design of therapy and interventions (de la Rie et al., 2018). In terms of assessment, considering that children communicate differently with different interlocutors and across types of interactions, it may be ideal to conduct multiple sessions of observations, instead of making judgments based only on thin slices (Hwa-Froelich & Vigil, 2004). Caregivers have also been shown to fare better when interventions are incorporated into the family's natural environment (Kummerer, 2012; Nunes & Hanline, 2007). To increase the effectiveness of treatment, clinicians should consider using activities in which the family already engages in and choosing tasks that will lend themselves to achieving the intended goals. For

example, both monolingual and bilingual mothers were shown to gravitate towards labeling objects during their play session in Thai. If the therapeutic goal is to improve children's vocabulary, clinicians may suggest that parents engage in toy play using the language where labeling comes most naturally (in this case, Thai). Another point of consideration is that some communicative settings are more constraining than others. In line with previous research examining the effect of socioeconomic status on maternal language scaffolding (Dunn et al., 1977; Hoff-Ginsberg, 1991; Snow et al., 1976), findings from the present dissertation also suggest that book reading may be constraining in nature and thus may not be as conducive to teaching parents new scaffolding strategies as other tasks.

7.4 Future Directions

To better understand the different factors that influence bicultural bilingual children's language development, the immediate future directions for this work include examining 1) cross-linguistic differences in Thai-English bilingual dyads in the United States, 2) influence of acculturation on conversation styles, 3) relationship between mothers' and children's conversation styles and their language background measures, 4) relationship between children's conversation styles and their fathers' language background measures, and 5) cross-linguistic differences in maternal and child non-verbal communication. Long-term future directions include 6) collecting self-report and behavioral data on beliefs about languages and cultures, 7) broadening the scope in terms of the child's interlocutors and linguistic contexts, 8) examining families longitudinally, 9) examining code-mixing and code-switching during dyadic interactions, and 10) looking at cross-linguistic differences in other bilingual populations.

Immediate Future Directions

First, to tease apart the influence of the larger cultural milieu on language-dependent conversation styles in bilinguals, the next step would be to examine cross-linguistic differences in Thai-English bilingual mother-child dyads in the United States, for which data collection and processing are currently ongoing. Comparing bilinguals who speak the same two languages but reside in two different countries with two distinct cultural norms would allow us to discern the extent to which the observed conversation styles are a result of learned language-culture associations and the extent to which the communicative patterns are a result of the larger societal context (whether dyads live in a collectivist Thai or an individualistic American society).

Second, to further disentangle the influence of acculturation–the extent to which speakers identify with the cultures associated with each language–on bilingual mother-child conversation styles, data from the maternal and child LEAP-Q including amount of exposure to Eastern and Western cultures, context in which English is acquired (e.g., television), and self-reported cultural identification should be added to models as covariates. Doing so will shed light on the cultural aspects that play an important role in shaping bilingual communication.

Third, to expand upon the findings of the present dissertation, the relationship between conversation styles and language background measures should be examined. Currently, conclusions about bilingual mothers' and children's conversation styles were drawn based on the behavioral measures. However, language background information, including objective (receptive and expressive vocabulary scores) and subjective (LEAP-Q) measures, were also obtained. Examining how individual differences in language experience and proficiency influences communicative patterns will contribute to a better understanding of the variability in bilingual language development.

Fourth, although the present dissertation focused on mother-child dyadic interactions, language background measures were also collected from fathers. Because mothers are not the sole caregiver in the home and linguistic input from fathers has also been shown to impact children's language development (e.g., Salo et al., 2016; Tamis-LeMonda et al., 2012), it is necessary to examine the relationship between fathers' linguistic profiles and children's communicative behaviors.

Fifth, considering that the communicative system is comprised of both verbal and non-verbal cues (Bhatia & Ritchie, 2014; Gullberg et al., 2008), it is important to also examine cross-linguistic differences in bilinguals' gesture and joint attention. Understanding the variability in bilingual mothers' and children's nonverbal communication in both languages will provide a comprehensive picture of their linguistic profiles and inform decisions that professionals make when serving linguistically and culturally diverse children.

Long-Term Future Directions

Sixth, although our findings suggest that bilingual mothers and children are accessing different cultural frames associated with Thai and English, it is unclear whether they in fact hold unique beliefs about each language's functions, and what those beliefs entail. Since parents' attitudes and language ideologies play a role in children's bilingual acquisition (De Houwer, 2015), the next step would be to probe mothers' beliefs about bilingualism, the languages they speak, and their cultural backgrounds, especially the communicative functions and socialization goals associated with each language. This can be done via an interview or using tools such as the Perceptions of Bilingualism Scales (Luk & Surrain, 2019). Having the self-report data will allow us to corroborate whether bilinguals' attitudes match the behaviors they exhibit in each language

and allow us to draw more definite conclusions about the mechanisms of cultural frame switching that underly the patterns observed in bilingual mother-child interactions.

Seventh, the paradigm of the current dissertation can be used to cross-linguistically compare communicative patterns in other contexts (e.g., mealtime, dressing) and of other bilingual speakers in the home (e.g., fathers, siblings). Previous research has shown that children hear distinct kinds of language input depending on the types of activity (e.g., Hoff-Ginsberg, 1991) and that children communicate differently with their mothers compared to with siblings (e.g., Hoff, 2010). Thus, it would be informative to capture other kinds of dyadic tasks as well. For example, mealtimes have also been shown to be an important language learning context (e.g., Hu et al., 2019). Additionally, considering that a child's linguistic environment is comprised of many individuals, it is crucial to examine the scaffolding styles of other caregivers in a child's life in order to understand the nature of input that children receive in their two languages. Collecting naturalistic language samples using the LENA (Language ENvironment Analysis; see Wang et al., 2017 for a review of the technology) recording system or a similar device will allow for day-long recordings over an extended period of time to be obtained, improving ecological validity and minimizing potential parental biases and reactivity. Such additional observations will give clinicians a more accurate understanding of the linguistic scaffolding that the child receives, as well as the child's abilities (Hwa-Froelich & Vigil, 2004).

Eighth, it is critical to examine changes over time in the language input that bilingual children receive from their conversation partners, as well as children's own narrative skills. Participants in this dissertation were four-year-old preschoolers who were observed only at one time point. Therefore, inferences cannot be made about children's developmental trajectory or the causal relationship between adult scaffolding and child outcomes. A future direction for this

work is to collect language samples from families longitudinally over the course of early childhood, starting from infancy up until school-age. With the use of tools such as the LENA, long-term data collection is possible.

Ninth, considering that the results presented in the current dissertation were based only on language samples in the session-appropriate language, the next step would be to examine the codeswitched utterances in the dataset. Although bilingual mother-child dyads were asked to converse exclusively in one language per session, most of the bilingual participants unintentionally codeswitched at some point (although to varying degrees). Enforcing a one-language rule resulted in an unnatural environment since most bilinguals frequently switch between their two languages (e.g., Grosjean, 1989), especially when emotional (e.g., Williams et al., 2020). Thus, it would be beneficial to analyze the instances of codeswitching to examine which language bilingual mothers and children are naturally inclined to use when recounting specific memories (e.g., positive vs. negative) or when engaging in a teaching moment (e.g., labeling objects in books or toy sets). Additionally, it may be ideal for future studies to obtain recordings of naturalistic interactions, rather than imposing a language requirement on the bilinguals. Use of the LENA or a similar recording device would allow for a large enough dataset that has representative samples of bilinguals' communicative patterns in both languages.

Lastly, the current dissertation focused exclusively on Thai-English bilingual mother-child dyads. Similar cross-linguistic comparisons with other groups of bilinguals are necessary in order to better understand the variability that exists in the developmental trajectories of dual language learners from different populations. Extending this research to a wider range of communicative settings, ages, and linguistic backgrounds will have broad practical implications for the education, clinical assessment, and treatment of children from diverse groups.

Specifically, professionals will be able to make informed decisions based on a body of research that is representative of world languages and populations, instead of drawing on the extant literature that is heavily skewed towards WEIRD monolingual children (Kidd & Garcia, 2022).

7.5 Conclusions

Across a series of five studies, the current dissertation systematically examined the influences of linguistic background, child gender, conversation partners, and communicative task, as well as the interplay between these factors, on children's language development. Findings demonstrate that mothers adapt their scaffolding strategies to promote their children's linguistic skills and socialize children in culturally appropriate ways, and that children internalize communicative norms as early as preschool. This research contributes to our theoretical understanding of the consequences of bilingual language development and provide practical implications for professionals working with children from linguistically and culturally diverse populations.

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Curriculum Vitae

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EDUCATION

2018-2022	Ph.D., Communication Sciences and Disorders Dissertation: *Language development in bilingual preschoolers: A cross-linguistic and cross-cultural comparison* Certificate in Cognitive Science Institute for Innovations in Developmental Sciences Cluster Member Northwestern University Committee: Dr. Viorica Marian (Chair, Northwestern University) Dr. Erika Hoff (Florida Atlantic University) Dr. Adriana Weisleder (Northwestern University)
2015-2018	M.A., non-clinical, Communication Sciences and Disorders Northwestern University Master's thesis: *Influence of maternal scaffolding on children's developing narrative skills: A cross-cultural comparison* Committee: Dr. Viorica Marian (Chair, Northwestern University) Dr. Erika Hoff (Florida Atlantic University) Dr. Steve Zecker (Northwestern University)
2012-2015	B.A., Psychology, with Departmental Honors Honors thesis: *The relation between bilingual children's productive vocabularies and word learning* Minor in Applied Developmental Psychology University of California, Los Angeles Summa Cum Laude

ACADEMIC APPOINTMENTS

2022-2024	*Postdoctoral Fellow*, Department of Communication Sciences and Disorders, Northwestern University • Bilingualism and Psycholinguistics Research Group, PI: Dr. Viorica Marian
2015-2022	*Graduate Researcher,* Department of Communication Sciences and Disorders,

Northwestern University
- Bilingualism and Psycholinguistics Research Group, PI: Dr. Viorica Marian (2015-2022)
- Neurodevelopmental Disabilities Lab, PI: Dr. Molly Losh (2016)

2016-2020 *Teaching Assistant*, Department of Communication Sciences and Disorders, Northwestern University

GRANTS & FELLOWSHIPS

2021-2023	Co-I, National Institutes of Health, NICHD R21 HD106759, *Language Development in Bilingual Preschoolers: A Cross-Linguistic and Cross-Cultural Comparison* ($434,500)
2019-2020	Institute for Innovations in Developmental Sciences Graduate Student Cluster Pilot Research Initiatives Seed Fund Award, Northwestern University ($5,000)
2019	Evelyn Marks Siegel & Joel S. Siegel Endowed Fellowship, Northwestern University ($11,000)
2019	The Graduate School Conference Travel Grant, Northwestern University ($1,000)
2017	The Graduate School Conference Travel Grant, Northwestern University ($1,100)
2017	Cognitive Science Travel Grant, Northwestern University ($300)
2015-2016	Cognitive Science University Fellowship, Northwestern University ($24,240)

HONORS & AWARDS

2012-2015	College Honors, UCLA
2012-2015	College of Letters and Sciences Dean's Honors List (nine quarters), UCLA
2012-2015	Psi Chi International Honor Society in Psychology, UCLA

PUBLICATIONS

Peer-Reviewed Publications

1. **Rochanavibhata, S.,** & Marian, V. (2022). Diversity in bilingual child language acquisition research: A commentary on Kidd and Garcia (2022). *First Language.*
2. **Rochanavibhata, S.,** & Marian, V. (2022). Culture at play: A cross-cultural comparison of mother-child communication during toy play. *Language Learning and Development*, 1-16. https://doi.org/10.1080/15475441.2021.1954929
3. **Rochanavibhata, S.**, & Marian, V. (2021). Cross-cultural differences in mother-preschooler book sharing practices in the United States and Thailand. *Journal of Child Language*, *48*(4), 834-957. https://doi.org/10.1017/S0305000920000562
4. **Rochanavibhata, S.,** & Marian, V. (2020). Maternal scaffolding styles and children's developing narrative skills: A cross-cultural comparison of autobiographical conversations in

the US and Thailand. *Learning, Culture, and Social Interaction*, *26*, 100413. https://doi.org/10.1016/j.lcsi.2020.100413

5. Bartolotti, J., Schroeder, S. R., Hayakawa, S., **Rochanavibhata, S.**, Chen, P., & Marian, V. (2020). Listening to speech and non-speech sounds activates lexical and semantic knowledge differently. *Quarterly Journal of Experimental Psychology*, *73*(8), 1135-1149. https://doi.org/10.1177/1747021820923944
6. Chen, P., Bartolotti, J., Schroeder, S. R., **Rochanavibhata, S.**, & Marian, V. (2018). Words and non-speech sounds access lexical and semantic knowledge differently. *Proceedings of the 40th Annual Conference of the Cognitive Sciences Society.* 1470-1475. *Austin*, TX: Cognitive Science Society.
7. Marian, V., Bartolotti, J., **Rochanavibhata, S.**, Bradley, K., & Hernandez, A. E. (2017). Bilingual cortical control of between- and within-language competition. *Nature Scientific Reports, 7*, 11763. https://doi.org/10.1038/s41598-017-12116-w
8. **Rochanavibhata, S.**, Atagi, N., Schonberg, C. C., & Sandhofer, C. M. (submitted). The role of syntactic cues in monolingual and bilingual two-year-olds' novel word learning.
9. **Rochanavibhata, S.,** Chuang, Y.-C., & Marian, V. (submitted). Bilingual mothers and children gesture differently in their native and second languages.
10. **Rochanavibhata, S.,** & Marian, V. (submitted). Culture and gender influence self-construal in mother-preschooler reminiscing.
11. **Rochanavibhata, S.,** & Marian, V. (in preparation). Bilingual mother-child joint attention differs across two languages.

Book Chapters and Other Articles

12. Atagi, N., & **Rochanavibhata, S.** (2021). The role of diverse linguistic experiences in young children's cognitive and language development. In E. B. Bauer, L. Sánchez, Y. Wang, & A. Vaughan (Eds.), *Enhancing bilingual education: A transdisciplinary lens for improving learning in bilingual contexts* (pp. 33-54). Routledge. https://doi.org/10.4324/9781003152194-4
13. Marian, V., & **Rochanavibhata, S.** (2019). How to raise a bilingual child: Seven strategies for success. *Psychology Today*, March 15, 2019. https://www.psychologytoday.com/us/blog/language-and-mind/201903/how-raise-bilingual-child-seven-strategies-success

    Republished in *Medium*, May 4, 2019: https://medium.com/@VioricaMarian1/how-to-raise-a-bilingual-child-seven-strategies-for-success-e0465a8cd4f8
14. Vorobyov, N., **Rochanavibhata, S.**, & Marian, V. (2019). A cross-cultural comparison of communicative patterns in bilingual and monolingual mother-child dyads in the United States and Thailand. *Alpenglow: Binghamton University Undergraduate Journal of Research and Creative Activity*, *5*(1).

CONFERENCE PRESENTATIONS*

** Indicates student mentee author*

1. **Rochanavibhata, S.**, Chuang, Y.-C.*, & Marian, V. (2022, April). Different languages, different contexts, different gestures: A cross-linguistic comparison of bilingual mothers' and children's nonverbal communication. Paper presented at the *International Symposium on Monolingual and Bilingual Speech*, Lafayette, Louisiana.
2. **Rochanavibhata, S.**, Borland, J.*, & Marian, V. (2022, April). A cross-cultural comparison of American and Thai mother-child communication during toy play. Poster presented at the *Society for Research in Child Development Special Topic Meeting: Learning through Play and Imagination*, St. Louis, Missouri.
3. **Rochanavibhata, S.**, Hester, K.*, Borland, J.*, van den Berg, N.*, & Marian, V. (2021, November). Cross-linguistic differences in bilingual mother-child communication during toy play. Poster presented at the *American Speech-Language-Hearing Association Convention*, Washington, D.C.
4. **Rochanavibhata, S.**, Chuang, Y.-C.*, Simcox, C.*, Meza, L.*, & Marian, V. (2021, November). Bilingual mothers and children gesture differently across languages. Poster presented at the *American Speech-Language-Hearing Association Convention*, Washington, D.C.
5. **Rochanavibhata, S.**, Borland, J.*, Hester, K.*, Chuang, Y.-C.*, Simcox, C.*, Meza, L.*, van den Berg, N.*, & Marian, V. (2021, July). Bilingual mothers and children communicate differently in their two languages. Talk presented at the *13th Biennial Meeting of the International Symposium on Bilingualism*, Warsaw, Poland.
6. Borland, J.*, **Rochanavibhata, S.** & Marian, V. (2021, April). Cross-cultural differences in mother-child engagement with picture books. Talk presented at the *Midwestern Psychological Association 93rd Annual Meeting*, Chicago, Illinois.
7. **Rochanavibhata, S.**, Borland, J.*, & Marian, V. (2021, April). The influence of cultural background and communicative task on maternal scaffolding styles. Poster presented at the *2021 Biennial Meeting of the Society for Research in Child Development,* Minneapolis, Minnesota.
8. Borland, J.*, **Rochanavibhata, S.** & Marian, V. (2020, May). Maternal scaffolding strategies differ depending on cultural background and communicative setting. Poster accepted to the *32nd Association of Psychological Science Annual Convention*, Chicago, Illinois. (Conference canceled)
9. **Rochanavibhata, S.**, Borland, J.*, & Marian, V. (2020, February). Comparing book reading across cultures: A study of mother-child dyads in the United States and Thailand. Poster presented at the *Northwestern University Institute for Innovations in Developmental Sciences Cluster Poster Session*, Evanston, Illinois.
10. **Rochanavibhata, S.**, & Marian, V. (2019, November). A comparison of mothers' scaffolding strategies and children's conversation skills across cultures and communicative settings. Talk

presented at the *2019 American Speech-Language-Hearing Association Convention*, Orlando, Florida.

11. **Rochanavibhata, S.**, Borland, J.*, & Marian, V. (2019, June). Culture and conversation: A comparison of mother-child discourse in the US and Thailand. Talk presented at the *12th Biennial Meeting of the International Symposium on Bilingualism,* Edmonton, Canada.
12. Borland, J.*, **Rochanavibhata, S.,** & Marian, V. (2019, May). A comparison of mother-preschooler book reading practices in the United States and Thailand. Poster presented at the *Northwestern University Undergraduate Research and Arts Exposition*, Evanston, Illinois.
13. Borland, J.*, **Rochanavibhata, S.,** & Marian, V. (2019, May). A comparison of mother-preschooler book sharing practices in the United States and Thailand. Poster presented at the *Roxelyn and Richard Pepper Department of Communication Sciences and Disorders Undergraduate Day*, Evanston, Illinois.
14. Vorobyov, N.*, **Rochanavibhata, S.**, & Marian, V. (2019, April). A cross-cultural comparison of communicative patterns in bilingual and monolingual mother-child dyads in the United States and Thailand. Poster presented at the *SUNY Undergraduate Research Conference*, Farmingdale, New York.
15. Borland, J.*, **Rochanavibhata, S.**, & Marian, V. (2019, April). Culture and interlocutor scaffolding influence preschoolers' conversation styles. Poster presented at the *Midwestern Psychological Association 91st Annual Meeting*, Chicago, Illinois.
16. **Rochanavibhata, S.**, Borland, J.*, & Marian, V. (2019, March). A comparison of mother-preschooler book sharing practices in the United States and Thailand. Poster presented at the *2019 Biennial Meeting of the Society for Research in Child Development*, Baltimore, Maryland.
17. Borland, J.*, **Rochanavibhata, S.**, & Marian, V. (2018, October). Cross-cultural differences in maternal communication with preschool-age children in the United States and Thailand. Poster presented at the *2018 University of Illinois at Chicago Bilingualism Forum*, Chicago, Illinois.
18. Chen, P., Bartolotti, J., Schroeder, S. R., **Rochanavibhata, S.**, & Marian, V. (2018, July). Words and non-speech sounds access lexical and semantic knowledge differently. Poster presented at the *40th Annual Cognitive Science Society Meeting, Madison, Wisconsin.*
19. **Rochanavibhata, S.**, Borland, J.*, & Marian, V. (2018, May). Do Thai and American mothers talk to their preschool children differently; A cross-cultural comparison. Poster presented at the *Workshop on Approaches and Issues in the Study of Variability in Language Processing*, Evanston, Illinois.
20. **Rochanavibhata, S.**, Zecker, S. G., & Marian, V. (2018, April). Cross-cultural differences in mother-preschooler conversation styles in the United States and Thailand. Talk presented at the *Midwestern Psychological Association 90th Annual Meeting*, Chicago, Illinois.
21. **Rochanavibhata, S.**, Borland, J.*, & Marian, V. (2017, November). Communication style differences in mother-preschooler dyads in Thailand and the United States. Poster presented

at the *2017 American Speech-Language-Hearing Association Convention*, Los Angeles, California.

22. **Rochanavibhata, S.**, Borland, J.*, Montenegro, L.*, & Marian, V. (2017, October). A cross-cultural comparison of mother-preschooler autobiographical conversations. Poster presented at the *2017 Cognitive Development Society*, Portland, Oregon.
23. Marian, V., Bartolotti, J., **Rochanavibhata, S.**, Bradley, K., & Hernandez, A. E. (2017, June). Bilingual cortical control of within- and between-language competition. Poster presented at the *11th Biennial Meeting of the International Symposium on Bilingualism*, Limerick, Ireland.
24. Marian, V., Bartolotti, J., **Rochanavibhata, S.**, Bradley, K., & Hernandez, A. E. (2017, April). Cortical activation during linguistic competition in bilinguals. Poster presented at the *Midwestern Psychological Association 89th Annual Meeting*, Chicago, Illinois.
25. **Rochanavibhata, S.**, Atagi, N., Schonberg, C. C., & Sandhofer, C. M. (2015, November). The effects of syntax and productive language on monolingual and bilingual children's use of mutual exclusivity. Poster presented at the *Psychonomic Society 56th Annual Meeting*, Chicago, Illinois.
26. **Rochanavibhata, S.**, Atagi, N., Schonberg, C. C., & Sandhofer, C. M. (2015, May). The relation between bilingual children's productive vocabularies and word learning. Poster presented at the *15th Annual Stanford Undergraduate Psychology Conference*, Palo Alto, California.
27. **Rochanavibhata, S.**, Atagi, N., Schonberg, C. C., & Sandhofer, C. M. (2015, May). The relation between bilingual children's productive vocabularies and word learning. Poster presented at the *10th Annual Symposium on Cognitive and Language Development*, Irvine, California.
28. **Rochanavibhata, S.**, Atagi, N., Schonberg, C. C., & Sandhofer, C. M. (2015, May). The relation between bilingual children's productive vocabularies and word learning. Poster presented at the *24th Annual UCLA Psychology Undergraduate Research Conference*, Los Angeles, California.
29. **Rochanavibhata, S.**, Atagi, N., Schonberg, C. C., & Sandhofer, C. M. (2015, March). The relation between bilingual children's productive vocabularies and word learning. Poster presented at the *2015 Biennial Meeting of the Society for Research in Child Development*, Philadelphia, Pennsylvania.
30. Veeraswami, S., **Rochanavibhata, S.,** Goldenberg, E. R., Sandhofer, C. M., & Repetti, R. (2015, March). The relationship between the environmental context and noun categories in children's linguistic input. Poster presented at the *2015 Biennial Meeting of the Society for Research in Child Development*, Philadelphia, Pennsylvania.
31. **Rochanavibhata, S.,** Ramos, V. L., Jung, A. J., Goldenberg, E. R., Sandhofer, C. M., & Repetti, R. (2014, May). The relationship between the environmental context and noun categories in children's linguistic input. Poster presented at the *9th Annual Symposium on Cognitive and Language Development*, Los Angeles, California.

INVITED TALKS

Rochanavibhata, S., & Marian, V. (2021, June). Monolingual and bilingual mother-child dyadic interactions in Thailand and the United States. Talk presented at the *Northwestern University SciLang Discussion on Analyzing Dyadic Data*, Evanston, Illinois.

Rochanavibhata, S., & Marian, V. (2019, March). Influence of maternal scaffolding on children's developing narrative skills: A cross-cultural comparison. Talk presented at the *Northwestern University Institute for Innovations in Developmental Sciences Data Blitz*, Evanston, Illinois.

TEACHING INTERESTS

Language Development, Bilingualism, Cognitive Development, Linguistic and Cultural Diversity, Introduction to Psychology, Psychological Statistics, Research Methods

TEACHING EXPERIENCE

Directed Teaching, Northwestern University

2020 Linguistic and Cultural Diversity in Communication Sciences and Disorders
Instructor: Dr. Viorica Marian
Lecture Titles:
(1) *Typical and Atypical Language Development in Linguistically Diverse Populations*
(2) *Hearing Impairment in Children from Culturally and Linguistically Diverse Populations*
(3) *Autism Spectrum Disorder in Culturally and Linguistically Diverse Populations*

Guest Panelist, Smith College

2021 Language Acquisition
Instructor: Dr. Brianna McMillan
Lecture: Writing for Public Discourse

Guest Lecturer, Northwestern University

2019 Linguistic and Cultural Diversity in Communication Sciences and Disorders
Instructor: Dr. Viorica Marian
Lecture Title: *Typical and Atypical Language Development in Linguistically Diverse Populations*

2018 Linguistic and Cultural Diversity in Communication Sciences and Disorders
Instructor: Dr. Viorica Marian
Lecture Title: *Language Development in Linguistically and Culturally Diverse*

Populations

2016-2022 Seminar in Communication Sciences and Disorders: Bilingualism
Instructor: Dr. Viorica Marian
Lecture Title: *Language Development in Bilinguals*

Teaching Assistant, Northwestern University

2018-2019 Linguistic and Cultural Diversity in Communication Sciences and Disorders
2018 Clinical Methods: Pediatric Population
2018 Clinical Methods: Adult Populations
2017 Aural Rehabilitation
2017 Language and Cognition in Atypical Development
2017 Phonetics
2016-2018 Language Science

MENTORING

Master's Students

2019-Present Jessica Chuang, Northwestern University, *Master's Thesis Advisee and Research Assistant*
2019-2021 Claire Simcox, Northwestern University, *Research Assistant*

Undergraduate Students

2021-2022 Kamorichan Tongthiraj, Chulalongkorn University and the University of Queensland, *Research Assistant*
2020-2021 Lesley Meza, Northwestern University, *Research Assistant, 2020 Summer Undergraduate Research Assistant Program (URAP)*
2020 Pasawat Sakulpanich, University of California, Los Angeles, *Research Assistant*
2020 Isabella Vavra, Northwestern University, *Research Assistant*
2019-Present Kaniya Hester, Northwestern University, *Research Assistant, 2019-2020 Early Research Experience Award Recipient*
2019-2020 Pooja Venkatesh, Northwestern University, *Research Assistant*
2018 Neli Voyobrov, SUNY at Binghamton, *Research Assistant, Summer Research Opportunity Program*
2018 Minna Ito, Northwestern University, *Research Assistant*
2018-2021 Julia Borland, Northwestern University, *Research Assistant, 2018-2019 Undergraduate Research Assistant Program (URAP)*
2017-2018 Grace Pickens, University of North Carolina at Chapel Hill, *Research Assistant*
2017 Laura Montenegro, Pitzer College, *Research Assistant*

High School Students

2020-Present	Nadia van den Berg, Evanston Township High School, *Research Assistant*
2016-2018	Julia Borland, Evanston Township High School, *Research Assistant*

Undergraduate Student Mentee Grants & Awards

2020	Undergraduate Research Assistant Program Grant to Lesley Meza ($3,500)
2019-2020	Early Research Experience Award to Kaniya Hester ($2,000)
2019	Conference Travel Grant to Julia Borland ($375)
2018-2019	Undergraduate Research Assistant Program Grant to Julia Borland ($2,000)
2018	Summer Research Opportunity Program Award to Neli Voyobrov ($4,500)

SERVICE ACTIVITIES

University Service

2019-Present	*Member and Childhood Bilingualism Workgroup Member,* Bilingualism Matters Chicago, Chicago, IL
2018-2022	*Developmental Origins of Lifespan Learning, Well-Being, Health & Disease Cluster Member,* Institute for Innovations in Developmental Sciences, Northwestern University
2018-2020	*Health & Wellness Co-Chair and Executive Board Member*, Graduate Women Across Northwestern, Northwestern University
2016-2020	*Recognized Student Organization Advisor*, Thai Student Association, Northwestern University
2013-2014	*Secretary and Member*, UCLA Residential Life Global Connections Council, UCLA
2013	*Service Liaison*, UCLA Volunteer Day, Chatsworth Park Elementary School, Los Angeles, CA
2013	*Thai Interpreter,* UCLA Bruin Day, UCLA
2013	*Volunteer*, UCLA Community Service Commission Alternative Spring Break, Best Friends Animal Society, Kanab, UT
2012-2014	*Member*, Dashew Center Global Siblings Program, UCLA
2012-2013	*Peer Tutor*, UCLA Thai Smakom Thai American Students for Success in Education and Leadership, Los Angeles, CA

Ad Hoc Reviewer

Peer-Reviewed Journals: *Child Development, Translational Issues in Psychological Science*

Conferences: *International Symposium on Bilingual and L2 Processing in Adults and Children*

PROFESSIONAL AFFILIATIONS

Cognitive Development Society, Society for Research in Child Development, Midwestern Psychological Association, Women in Cognitive Science